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The NAPS has pioneered Indian Psychological Science Congress in 2011 and thereafter it has been elevated to International level. **Very recently (2024) organized 11th International and 13th Indian Psychological Science Congress at Meerut.** The dear scholars, professionals and academicians always extended full support and contribute their significant share for the success of Psychological Science Congress annually.

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ABOUT CONFERENCE

ICSSR-Sponsored National Conference:

“Inclusive Social Development: Advancing Health and Wellness Through Holistic and Tech-Enabled Interventions”

Date: 25th April 2025

Organised by: School of Liberal Arts and Sciences, RV University, Bengaluru

Sponsored by: Indian Council of Social Science Research (ICSSR), New Delhi

The **National Conference** held on **25th April 2025** at **RV University, Bengaluru**, served as a dynamic platform for academic exchange on the theme of **inclusive social development** through **holistic** and **technology-enabled frameworks**. Supported by the **Indian Council of Social Science Research (ICSSR)**, New Delhi, as a part of the Project titled “Enhancing Mental and Physical Well-being of Bangalore City Police Officers through a Holistic and Tech-Enabled Program” under Category A of Vision Viksit Bharat @2047. The event brought together **academicians, practitioners** and **students** for interdisciplinary discussions aimed at **advancing health** and **wellness** in India’s development agenda.

The conference was **inaugurated by Mr Soumendu Mukherjee, IPS, Chief Guest** and **Additional Director General of Police (ADGP), Government of Karnataka**, who emphasised the importance of integrating **mental health strategies** into **high-stress professions**. The inaugural session was further dignified by the presence of:

- **Prof. Dwarika Prasad Uniyal** (*In-charge Vice Chancellor*)
- **Prof. Sahana D. Gowda** (*Registrar*)
- **Prof. Priya Nair** (*Dean, School of Liberal Arts and Sciences*)

Coordinated by Dr Madhu Karnat S, the event featured **keynote addresses, thematic paper presentations** and **interactive sessions** exploring topics such as:

- Mental Health Resilience in High-Stress Professions
- Technology-Enabled Health Solutions
- Workplace Wellness
- Community-Based Interventions
- Policy and Governance for Inclusive Healthcare

A major highlight was the **keynote address by Dr Naveen Kumar C, Project Coordinator, Tele-MANAS**, who elaborated on **India's digital mental health mission**, showcasing its real-world application and scalability.

The **Valedictory Address** was delivered by **Dr Prashanth N R, Professor, Dept of Psychiatry, Victoria Hospital, BMCRI**, who offered reflections on institutional responsibilities in ensuring integrated, accessible health systems for all.

From **over 50+ submissions, 25 research papers** were selected through a **rigorous double-blind peer-review process**. These selected papers are presented in this **Special Issue of the Indian Journal of Psychological Science**, which is **indexed in the Web of Science**. The publication aims to support the **Viksit Bharat@2047 vision** by promoting research that is **inclusive, technology-integrated and socially impactful**.

We extend our sincere gratitude to the **Chief Editor of the Indian Journal of Psychological Science** for supporting the publication of this special issue and to all **guest editors, peer reviewers, panel chairs and contributors** for their exceptional efforts.

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Understanding the Role of Ecological Grief in Climate Distress Among Emerging Adults

Anjo George* and James C.K.**

Abstract

Background: Climate change is recognized as one of the fundamental threats to human existence globally. It has a profound impact on environmental stability and human life, making human survival more complex. Though the literature emphasized the physical consequences of climate change, there is no adequate explanation about the psychological impact. The psychological impact is more prevalent in youth, and it intensifies the age-related crisis among emerging adults. Emerging adulthood is already a critical period where identity crises, future planning, and uncertainties take place, and environmental changes also play a pivotal role in developing anxiety, emotional imbalance, self-doubt, depression, and other disturbances. Ecological grief is one of the predominant climate change impacts on emerging adults, and it becomes a natural response to environmental loss and ecological destruction. Unlike traditional grief, there is no structured treatment or coping strategies for ecological grief, and that aggravates the psychological burden.

Method: The objective of the present study is to understand the role of ecological grief on climate distress among emerging adults. A sample of 142 adults aged between 18 to 29 years is chosen by using convenience sampling. Personal data sheets and standardized questionnaires such as the Eco-Grief Questionnaire and Climate Change Distress and Impairment Scale were used. To answer the research question correlation and simple linear regression was carried out. Findings: The results indicated that a significant positive correlation was found between ecological grief and climate change distress ($r = .562, p < .01$). Similarly, a significant positive correlation was found between ecological grief and climate change impairment ($r = .309, p < .01$). Regression results also revealed that ecological grief positively predicted climate change distress, explaining 32% of the variance in distress levels, and ecological grief positively predicted climate change impairment, explaining 9% of the variance in impairment levels. Conclusion: The findings discovered that ecological grief plays a significant role in climate distress, and designing interventions is essential for emerging adults to deal with ecological grief.

Keywords: ecological grief, climate change, and climate distress.

About authors:

*Assistant Professor, Department of Psychology, Rajagiri College of Social Sciences, Cochin, Kerala, Mobile No:8891673521,

Corresponding Author

**Assistant Professor, Department of Statistics and Data Science, Christ University, Bengaluru – 560029, Mobile No: 7010669742

Introduction

Climate change has been considered a long-term crisis, and it has been observed that climate change poses a significant threat to our health and environment (Clayton et al., 2023). There is extensive literature which emphasizes

the physical consequences of climate change, but the growing evidence shows that it also has a significant impact on human's psychological functioning (APA, 2014). The impact is not only a cause but also an amplifier for mental health issues and demands collective action (Pearson,

2024). One of the most significant psychological responses to climate change is climate distress. It became an alarming concern, and it was directly associated with anxiety, depression, and other mental health disturbances (Schor et al., 2024).

Climate distress is documented in the literature as an umbrella term that covers all negative emotional reactions to climate change and environmental degradation. Climate distress arises with the awareness of changes in the ecosystem and its potential consequences. Most people experience emotional reactions such as apathy, despair, fear, guilt, anxiety, and helplessness (Katie et al., 2023). The distress can be a triggering factor for emerging adults due to their developmental crisis and remains a challenge at the global level. The exposure to climate change problems and the awareness about the potential consequences are leading to persistent negative emotional reactions and making them vulnerable to long-term impairment (Ogunbode et al., 2022). The emerging adults continue to experience the emotional burden, and it demands comprehensive mental health services (Williams et al., 2024). Though it is an alarming issue, the climate research is primarily focused on environmental and physical health consequences, and the psychological impact remains unaddressed (de Jarnette, 2024).

The people who experience substantial amounts of climate distress can lead to severe impairments in their day-to-day activities and overall wellbeing. Prolonged distress may exacerbate the difficulty level and even affect sleep hygiene (Cianconi et al., 2020). Studies have reported that people may feel paralyzed, isolating themselves from other people, and sometimes being fully consumed by the crisis may lead to emotional exhaustion (Palinkas, 2020). A clinical level of psychological impairment has been identified in the extreme cases, and distress can even contribute to suicidal ideation in the young adults. People feel that there is an incompatibility between their value system and aspirations and were not able to

contribute to environmental decline (Hayes et al., 2018). The emotional imbalance can also make alterations in the interpersonal relationships, life satisfaction and internal motivation (Kasser, 2009).

Several studies highlighted the unpredictable nature of climate distress and its impact on mental health. When people are encountering climate distress, they are more vulnerable and adopt certain coping mechanisms to deal with the distress (Seth et al., 2023). It is also playing a significant role in activating pro-environmental engagement among young adults as a meaningful coping strategy (Runkle et al., 2025). Latkin et al. (2022) reported that, social support is essential for people who experience climate distress and assisting them with adequate resources will help them to deal with the distress. Teo et al. (2024) stated that, there is an urgent need for a support system to help people with climate distress and educating them with sufficient communication and expression strategies are essential. Padhy et al. (2015) also found that climate change causes distress and mental health challenges in the Indian population, and there is an additional requirement for mental health services to mitigate the challenges. Researchers also highlighted the need for documenting the mental health impact of climate change and quantifying descriptive and analytical research outcomes among the young population who are living in Indian ecological vulnerable areas (Majumder et al., 2023).

There are several determinants that significantly affect the intensity and nature of climate distress. Direct environmental experiences, personal values, nature-relatedness and exposure to information are key factors that determine the intensity of the condition (Reser et al., 2020). People who have high environmental awareness and high nature-relatedness have experienced an adequate amount of distress compared to the other groups (Nicholsen, 2003). Cultural and social factors also play a central role in the society to minimize the importance of

emotional struggle and indirectly ignore the existence of distress-related concerns (Gifford & Nilsson, 2014). Regardless of the existing challenges, the unstructured treatment system, lack of coping strategies and lack of qualified mental health experts aggravate the prevalence of climate-related distress (Koder et al., 2023).

Though there is extensive literature about the emotional reactions towards climate change, limited information is available about the risk factors. Hence, understanding the role of psychological risk factors and its impact on climate distress is essential. The study will provide better understanding about the role of specific risk factors like ecological grief and its underlying mechanism on climate distress.

Objective

The objective of the present study is to understand the role of ecological grief on climate distress among emerging adults.

Hypotheses

H₁: There is no significant relationship between ecological grief, climate change distress, and climate change impairment among emerging adults.

H₂: Ecological grief does not predict climate change distress among emerging adults.

H₃: Ecological grief does not predict climate change impairment among emerging adults.

Method

Participants

A sample of 142 adults aged between 18 to 29 years is chosen by using convenience sampling. The researcher adopted a correlational research design to understand the relationship between the study variables.

Instruments

1. Socio-demographic profile
2. Eco-Grief Questionnaire (Ágoston et al., 2022)

The Ecological Grief Questionnaire (EGriQ-6) consists of 6 items designed to measure grief-related emotional responses to environmental degradation and climate change. It assesses individuals' experiences of loss, sadness, and emotional pain resulting from observed or anticipated changes in the natural environment, including loss of species, landscapes, and familiar ecosystems. The questionnaire uses a 4-point Likert scale, with responses ranging from 1 (strongly disagree) to 4 (strongly agree). The total ecological grief score is computed by averaging the responses across all six items, where higher scores indicate greater levels of ecological grief. The scale demonstrated high internal consistency, with a Cronbach's alpha of 0.77, indicating reliable measurement of the construct.

3. Climate Change Distress and Impairment Scale (Hepp et al., 2023)

The scale consists of 23 items and primarily measures two distinct components related to psychological responses to climate change: climate change distress and climate change impairment. The distress subscale includes 15 items distributed evenly across the three emotional domains, and the impairment subscale includes 8 items, covering general, social, and occupational areas of functioning. A combination of positively worded and reverse-coded items ensures balanced measurement and minimizes response bias. The scale uses a five-point Likert-type rating system, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire has demonstrated strong psychometric properties, including excellent internal consistency ($\alpha = 0.93$ for distress; $\alpha = 0.81$ for impairment)

Procedure

After obtaining informed consent, participants completed the personal data sheet and the two questionnaires online. Data were anonymized and stored securely. The primary statistical method used was simple linear regression to examine whether ecological grief significantly predicted levels of climate distress.

Ethical Statement

The authors have obtained written consent from all participants involved in the research study. This process involved informing participants about the purpose, procedures, potential risks, and benefits of the study, ensuring

they understood their rights and the voluntary nature of their participation. Ethical clearance for the study was obtained from the Institutional Ethics Committee to ensure compliance with ethical standards and the protection of participant's rights and well-being.

Results**Table 1**

Pearson's correlation coefficient between climate change distress, climate change impairment, and ecological grief (n=142)

Variable	n	M	SD	1	2	3
1 Climate change distress	142	55.27	8.86	-		
2 Climate change impairment	142	20.83	5.43	.151	-	
3 Ecological grief	142	18.15	3.36	.562**	.309**	-

**p<.01, * p<.05

Table 1 displays Pearson's Product-Moment Correlation, examining the relationships between climate change distress, climate change impairment, and ecological grief among emerging adults. A significant positive correlation was found between ecological grief and climate change distress ($r = .562$, $p < .01$), as well as between ecological grief and climate change impairment ($r = .309$, $p < .01$), thus rejecting the null hypotheses (H_1).

Table 2

Ecological grief as predictor of climate change distress among emerging adults

Variable	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	B	SE	Beta (β)		
Constant	28.41	3.39		8.37	.001
Ecological grief	1.48	.18	.562	8.04	.001

$R^2 = .32$, $Adj. R^2 = .31$, $F = 64.77$, $p < .05$

Table 2 presents a simple linear regression analysis, identifying ecological grief as a predictor of climate change distress among emerging adults. Ecological grief significantly predicted climate change distress, explaining 32% of the variance in distress levels and the null hypotheses (H_2) is rejected.

Table 3

Ecological grief as predictor of climate change impairment among emerging adults

Variable	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
	B	SE	Beta (β)		
Constant	11.79	2.39		4.92	.001
Ecological grief	.498	.13	.309	3.83	.001

$R^2 = .09$, $Adj. R^2 = .08$, $F = 14.73$, $p < .05$

Table 3 presents a simple linear regression analysis, identifying ecological grief as a predictor of climate change impairment among emerging adults. Ecological grief significantly predicted climate change impairment, explaining 9% of the variance in impairment levels and the null hypotheses (H_3) is rejected.

Discussion

The objective of the present study is to understand the role of ecological grief on climate distress among emerging adults. The results from Table 1 highlight the relationship between ecological grief and climate change distress and impairment. The results indicated that ecological grief and climate change distress are positively correlated. From the results we can infer that people who experience greater ecological grief will also increase their emotional distress about the ecological loss. In addition to that, there is a moderate correlation between ecological grief and climate change impairment, suggesting grief may increase the level of impairment. The experience of ecological grief in a prolonged period may disrupt day-to-day functioning, sleep quality, academic performance, and social engagement (Ojala et al., 2021). The findings also highlight the necessity of addressing ecological emotions in mental health care (Lawrance et al., 2022).

The regression results from Table 2 also revealed that ecological grief is a significant predictor of climate change distress. There is a 32% variance in the climate change distress and underlines the contribution of ecological grief as a significant psychological risk factor. The findings also suggest the severity of climate change and its psychological impact on emerging adults (Cunsolo & Ellis, 2018). From the results we can infer that emotional imbalance is a predominant response pattern towards climate change, and it demands healthcare attention as an alarming public health concern. Findings also signal the urgent need for psychological support systems and a comprehensive approach among emerging adults (Dooley et al., 2021).

The findings from Table 3 indicated that ecological grief significantly predicted climate

change impairment. It suggests that people who experience more ecological grief are actually vulnerable to experiencing difficulty in their daily functioning. The grief may cause certain changes in their functional areas, including job, personal, and interpersonal levels. Though ecological grief showed a smaller proportion of variance, it has some potential role in making changes in the climate change impairment. The results portray the role of psychological risk factors beyond their feelings aspect and how it is making an impact on the people's everyday lives (Ojala, 2016). It may start with the minimal level of impairment, and if it is unaddressed, then gradually it may cause severe impairments in later life. It also promotes the need for collective efforts to build appropriate psychological resources in the vulnerable population (Comtesse et al., 2021).

From the results we can understand that ecological grief is a significant psychological risk factor, and unaddressed grief can create multiple problems in the functional areas such as academic, occupational, personal and community levels (Cianconi et al., 2020). Since emerging adults are more vulnerable to these feelings, early detection and administration of psychological interventions will be the solution. Enhancing pro-environmental behavior and cultivating sustainable practices will be the individual-level strategies, and encouraging individuals to convert their feelings into appropriate actions will also help them to get relieved from the emotional distress.

Conclusion

The current study findings provide better understanding about the critical role of ecological grief in both climate distress and impairment. The findings from correlation and prediction substantiate ecological grief as a significant risk factor which has the capacity to intervene in the

functional areas of the individuals. The findings can be considered for designing interventions by emphasizing the role of ecological emotions in mental health care. It can be implemented at multiple levels to educate people about the consequences and necessary precautions to avoid long term impairments. The study also has some limitations in terms of the specific age group. A wide spectrum of adults could have been included in the study to understand further about climate distress. So future studies can focus on different adult groups with a larger sample size for a better understanding. Considering mental health as one of the variables will also give a different perspective about the phenomenon.

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Building Resilience in Nursing: A Three-Tiered Model for Addressing Burnout and Stress in High-Stress Clinical Settings

Thirtha Vijayan* and Dr. Sindhu Vasanth B**

Abstract

This research aims to explore how structured resilience-building can effectively mitigate burnout, chronic stress, and emotional fatigue experienced by nurses in very stressful clinical environments. It proposes a three-tiered resilience model that addresses the resilience issue at the individual, peer, and organizational levels. The model incorporates evidence-based interventions that include mindfulness practices, peer support systems, and organizational policies focused on staff well-being, drawing from qualitative synthesis of existing research and real-world case analyses. The key theoretical frameworks on which the study stands include Resilience Theory, Lazarus and Folkman's Stress and Coping Theory, and Social Support Theory, which offer a more comprehensive lens for understanding psychological adaptation and the protective nature of interpersonal as well as systemic support. Employing thematic analysis, content synthesis, and case study integration, this research has identified several core areas related to resilience, including enhanced coping strategies, emotional regulation, improved decision-making, and workplace engagement. This model aims to be scalable, adaptable, and implementable along the lines of evidence, with real-world applications that reinforce mental health, retain nurses, and work within healthcare.

Keywords: *Nursing Resilience, Burnout, Stress Management, Peer Support, Organizational Wellness.*

About authors:

Student, Department of Psychology, PES University, Bengaluru, India.

Assistant Professor, Department of Psychology, PES University, Bengaluru, India.

Introduction

Nurses within critical care and emergency departments often face intense occupational stress, leading to burnout, emotional exhaustion and reduced job satisfaction. The professions can be demanding in terms of both clinical expertise as well as psychological resilience to navigate ethical dilemmas, patient suffering and heavy workloads all of which can negatively impact a nurse's well-being (Galanis et al., 2021). Limited resources can further fuel widespread problems of compassion fatigue and moral distress which intensify existing workplace stressors (Kackin et al., 2021). Nurses in emergency units along with intensive care units and palliative care areas frequently report high levels of moral distress which occurs when professionals feel powerless to carry out ethical actions due to institutional restrictions (Epstein et

al., 2019). Compassion fatigue born out of repeated exposure to trauma is now being recognised as a serious issue by professionals (Zhang et al., 2022). Prolonged emotional exhaustion can aid in impairment of the quality of care provided, increase medical errors whilst driving nurse turnover, weakening healthcare systems that are already strained due to staff shortages (Foster et al., 2019; Galanis et al., 2021; Zhang et al., 2022). Although the problem is widely recognized, comprehensive solutions addressing it are scarce (Henshall et al., 2020). As nurses are the backbone of most of the health services; it is not only morally but operationally necessary to ensure they are psychologically and emotionally well.

Resilience in nursing can refer to the ability to adapt positively to adversities, maintain

function under pressure and recover from stress (Cooper et al., 2020). It can be seen as a dynamic, multi-dimensional process developed through psychological, emotional and social measures. Key traits for which can include emotional regulation, self-awareness and empathy which can help manage compassion fatigue and help sustain professional identity. More than a disposition, resilience can be viewed as emergent through reflective practice, life experience and social support (Cooper et al., 2020; Foster et al., 2019; Jackson et al., 2007; Henshall et al., 2020). Resilience is increasingly being seen as more than just a personality trait. While traits like optimism and emotional regulation are important, they are not nearly enough without the systemic support such as adequate staffing, strong leadership and organisational commitment (Henshall et al., 2020; Jackson et al., 2007). For example, individual focused strategies such as mindfulness may help for certain individuals but overlook the structural roots of burnout and focus blame on nurses as they cannot cope. Resilience should not be considered a personal, nor a social, nor an organizational dimension but a whole (Delgado et al., 2021). Without institutional support, mental health programs can fail, despite individual efforts. Jackson et al. (2017) explains that resilience is shaped by personal capacity as well as surrounding work environment. Hence, lasting change required alignment of personal strength, peer support and organisational reform

The purpose behind this study is to develop a three-tier holistic model specifically designed for nursing professionals. The research combines 15 peer-reviewed studies from psychological, social and organizational viewpoints which lead to building an extensive framework to clarify and develop nursing resilience. The model offers an integrated framework to support nurses in a high stress environment. It addresses resilience at three levels: individual, peer, and organizational. At the individual level, resilience builds through

methods such as reflection, self-control and adaptable methods of coping (Foster et al., 2019). The model highlights that peer relationships between nurses should focus on both mentorships and work-based social connections to support nursing staff as stress levels become less detrimental when peers provide support together (Cooper et al., 2020). The organizational level focuses on addressing systemic workplace factors which include staff policies and resource availability along with organizational cultural elements. Organizational resilience of health institutions involves providing nurses with both freedom to report their concerns while giving appropriate compensation for their performance (Henshall et al., 2020). By viewing resilience as a relational and structural process, this model aims to provide evidence-based strategies to build compassionate and sustainable nursing workforce.

Burnout and Resilience in Nursing

Kim's meta-analysis (2020) underlined that emotional exhaustion and depersonalisation in nurses is strongly linked to emotional labour particularly emotional acting and suppression. Furthermore, White et al. (2019) established a strong link between high-stress levels and low job satisfaction in long-term care settings and situational factors, such as understaffing and missed care episodes which can harm both the nurse as well as the patient's wellbeing. These conditions are increasingly understood as forms of moral injury, i.e psychological harm caused by actions or inactions conflicting one's moral values. Epstein and Delgado (2019), while validating the Moral Injury Symptom Scale-Healthcare Professionals, found strong links between moral distress and burnout in ethically happening healthcare environments.

Initially, resilience was equated as a personality attribute, it is now viewed as a dynamic process shaped by personal coping strategies and environmental support (Delgado et al., 2021). Structured resilience-trained programs

reviewed by Foster et al. (2018) demonstrate the value of cognitive reframing, emotional regulation, and self-compassion in reducing stress among mental health nurses. Henshall et al. (2020) emphasized that lasting resilience requires not only individual strategies but also team cohesion and institutional backing. Delgado et al. (2021) further argue that when frameworks ignore these broader needs, they risk masking deeper structural issues. A key concern is the tendency to pathologize emotional labour, framing it as a personal failing rather than a response to inadequate organizational support.

Fragmentation in Resilience Research

While resilience literature in nursing is extensive, it remains fragmented in theory and practice.. According to a randomised controlled trial, undergraduate nursing students' short-term results were enhanced by a resilience intervention studied by Rees et al. (2020). However, without additional institutional support, the results were not consistently maintained. Henshall et al. (2020) critiques tokenistic wellness efforts such as yoga or mindfulness apps, stating they fail to address deeper systemic issues. Supporting this view, Delgado et al. (2021) emphasize resilience as a complex, context dependent concept rarely supported by standardized, evidence-based frameworks. Some interventions for the development of resilience in healthcare practice focus more on stress management for the individual, while others provide mentorship or team-building activities. This disunity between theory and practice undermines the effectiveness and sustainability of resilience intervention in the healthcare setup.

Need for Integrated Resilience Model

Resilience is widely discussed in nursing literature, yet most interventions focus on either individual behavior or institutional changes without addressing interdependent systems nurses operate within. Chow et al. (2023) stress the need to align individual coping with broader clinical and educational culture, especially during the

student transitioning to a professional phase. On the other hand, Cooper et al. (2020) notes the lack of clear conceptual framework for resilience in critical care, limiting standardization. The identification of organisational, social, and personal resilience variables by Jackson et al. (2007) laid the foundation, but their model is still primarily theoretical. This study builds on that foundation to offer a more integrated and practical model that incorporates peer relationship, education and institutional practices

Research objectives

1. To explore the psychological, social, and organizational factors contributing to burnout, stress, and emotional fatigue among nurses in high-stress clinical settings.
2. To review and synthesize existing evidence-based interventions for building resilience in nurses at the individual, peer, and organizational levels.
3. To develop a three-tiered, integrative resilience model tailored to nursing professionals, incorporating individual, peer, and organizational strategies.

Method

Research Design

A qualitative secondary data synthesis method examined strategies which build resilience in nursing professionals. Research employed thematic synthesis as its methodology to understand patterns throughout peer-reviewed publications and use this information in developing conceptual models based on empirical facts (Thomas & Harden, 2008). The integration technique enables systematic unification of various data results that works optimally for examining intricate constructs like resilience across different nursing settings.

Data Collection and Analysis

The research used PubMed together with MDPI and ResearchGate databases for systematic searching. A combination of search terms used

“resilience” and “nursing” and “burnout” along with “emotional fatigue” and “support strategies”. This research included articles spanning from 2015 through 2024 to maintain relevance with recent times. The research included exclusively open access peer-reviewed studies. The research criteria specified selection of articles focusing on nursing professionals with practical evidence about resilience-building interventions written in English while being accessible through open-access peer-reviewed full-text publications. The study excluded articles focusing on healthcare staff that did not include nurses and articles without practical intervention details and theoretical research. Studies that did not focus on emotional fatigue and burnout with specific attention paid to nursing staff were excluded from consideration. The research review identified 15 suitable studies for thematic analysis based on its qualitative criteria.

This research adopted a thematic synthesis method to study the identified papers. A detailed review of each article generated essential points about nurse resilience-building methods which received coding implementation. Initial codes were grouped into larger themes that specifically followed three support levels starting from individual and advancing to peer and organizational aspects. The multi-level analysis system created better understanding about how various intervention methods cooperate to boost resilience. Analysis focused on recognizing both recurring patterns in combination with exclusive elements from individual studies to create final themes which incorporated standardized practices with a wide range of approaches. The researchers worked to ensure process consistency along with accuracy and transparency by performing thorough checks and improvements to the developing themes.

Ethical Considerations

The research exclusively used secondary data from peer-reviewed publications which were available publicly thus no human participants

were involved in the study. The absence of human participants in this research process waived the requirement for institutional review board evaluation. The research included appropriate referencing of all selected studies for providing proper citation to authors and maintaining academic standards. The researchers maintained full respect toward original contexts and research outcomes and refrained from any form of misrepresentation. The scholarly analysis sought to merge available doctrinal information for backing ethical nursing practices which support care provider well-being.

Results

This section presents the findings of the studies that were reviewed in an organised manner as per the three main components of the proposed model of resilience: individual, peer and organizational. Thematic analysis draws upon the studies included within the review for valuable insights into resilience-building strategies in nursing.

Theme 1: Individual-Level Resilience

A fairly large amount of literature points out the importance of focusing on aspects such as self-care, emotional regulation and cognitive strategies to combat burnout or manage stress: these aspects could be considered individual-focused resilience strategies. Nurses engaging in personal resilience practices exhibit enhanced emotional well-being and reduced stress levels (Henshall et al., 2020; Pantha et al., 2023). Resilience was confirmed as a protective factor by Galdames et al. (2024), who found a strong inverse relationship between high resilience and poor mental health outcomes. In fact, self-care techniques can aid in stress management. Emotional regulation and stress management are defined as personal health routines vital for resilience in very high-stress environments in health care (Henshall et al. 2020). Similarly, emotional control and flexibility are critical components of resilience. The study by Pantha et al. (2023), illustrates how nurses may adjust to

various stressors on a daily basis while implementing their own personal management techniques. Nurses were better able to manage stress and feel more in control of their emotional reactions at work thanks to mindfulness practices and emotionally intelligent nursing practice (Han et al., 2022).

Foster et al., 2022 study indicates that resilience training programs that are focused on individual strategies, such as cognitive-behavioral therapy (CBT) and mindfulness-based interventions, tend to be effective at reducing burnout among nursing professionals. The findings act as a catalyst for the creation of tools for personal resilience that can enable nurses to confront and manage these emotional demands. Individual resilience, then, is a key component of the multi-level model that helps people control their emotional states and stress levels as a solid basis for overcoming emotional stressors from outside circumstances. According to a study by Pantha et al. (2023), emotional control and flexibility serve as indicators of long-term resilience and mental health in the nursing profession. Nurses who will be practicing self-care and emotional regulation have better outcomes from the stress of the profession and are more likely to show a more positive well-being than others. Blaney et al. (2024) confirmed these findings, showing that targeted education in resilience and emotional regulation can be impactful at early career stages. According to Han et al. (2023), a meta-synthesis study revealed a list of personally employed strategies that recurred across studies-emotional intelligence, stress appraisal, and boundary setting. The above studies showcase that resilience is not merely reactive but could be cultivated via proactive self-care.

Theme 2: Peer Support Networks

The peer-level resilience strategies underline the importance of social bonding, group solidarity, and emotional reciprocity among nursing staff. Structured peer support

programmes during the COVID-19 pandemic were successful in lowering emotional exhaustion and fostering a sense of collective strength, particularly in trying hospital settings (Godfrey and Scott's, 2020). Janzarik et al. (2022) also demonstrated the effectiveness of social approaches to mental health by conducting a randomised controlled trial of group-based interventions aimed at improving resilience. The study participants' psychological well-being scores showed highly significant improvements.. Rayani et al. (2024) took this research slightly further to establish that peer mentorship, together with reflective exercises, reduced academic stress for student nurses while enhancing their long-term coping mechanisms. Chiu et al. (2024) also highlighted the importance of peer teamwork in the clinical environment, where shared feedback and responsibilities help build resilience by diffusing emotional labor among team members. The effect of narrative upon peer relationships was investigated by Conolly et al. (2022), who concluded that creating meaning and validating emotions through shared trauma stories allowed nurses to reframe distressing experiences and thereby heal more effectively. Supporting this point further, Martinho et al. (2022) found statistically significant reductions in stress and emotional exhaustion through group-based resilience training programs, particularly among new nurses early in their careers, suggestive of a role for collective interventions in providing both immediate and durable psychological benefits. The implication is that peer support becomes a critical intervention point in the multi-level resilience framework and reiterates the conclusion that community-based approaches are needed for the psychological sustenance of nursing practice.

Theme 3: Organisational Level Resilience

Yu et al. (2024) noted that when provided with institutional facilitation, beset with digital and physical resilience interventions, results in a higher degree of compliance and psychological ramifications. In a parallel

investigation, Kellett et al. (2024) found that nurses performing in an environment fostering autonomy and situational awareness were able to flourish. Mallon et al. (2023) put the spotlight on organizational culture, supporting the argument with examples of how support systems, participatory governance, and leadership transparency were actually put to use to minimize psychosocial distress. Investigating resilience in conditions of crises and in resource-poor settings, Kunjavara et al. (2025) revealed that institutional flexibility and emergency planning have largely enabled sustaining morale.

Chiu et al. (2024) further reinforced the notion that policy-oriented support mechanisms, that is, protected break times and reflective sessions, enhanced resilience at a team level. In our study, Blaney et al. (2024) illuminated how organizations supported educational programs that arm nurses with practical strategies to deal with stress. Finally, Delgado et al. confirmed in 2022 that actual check-ins for employees' mental health or debriefing spaces were resources that actually helped maintain workers' psychological homeostasis over time.

Discussion

The model positions resilience to be a dynamic process that is influenced by various factors such as internal attributes and external systems. The studies that were incorporated reinforce resilience as a factor that emerges not solely based on personal traits but from an interplay of psychological, social, and structural mechanisms. (Henshall et al., 2020; Han et al., 2023). Individual strategies- emotional regulation, mindfulness, adaptability critical, but insufficient by themselves. As emphasized by Pantha et al. (2023) and Galdames et al. (2024), while engaging in acts of self-care can enhance one's level of well-being, the actual effectiveness of self-care practices can be often modulated by external support systems. Peer-level relational dynamics like mentorship, peer feedback, and emotional reciprocity are consistently related to

the increment of psychological strength (Chiu et al., 2024; Godfrey & Scott, 2020). This level perhaps denotes that resilience in health care is relational and arises from cooperative coping and mutual assistance. At its core is organisational support which shapes workloads, resources and overall workplace culture. Studies by Mallon et al. (2023) and Yu et al. (2024) affirm that institutional policies, leadership responsiveness, and resilience training enhance both individual and collective well-being.

At the heart of the multi-level framework lies interaction among its components, which results in resilience becoming a sustained process rather than a short-term response. Rayani et al. (2024) highlight how mentorship enhances reflection, while Blaney et al. (2024) emphasize the role of institutional training in reinforcing resilience. This interconnected approach aligns with holistic nursing models that prioritize both emotional and structural support (Kellett et al., 2024), moving beyond one-dimensional views that ignore systemic or relational needs.

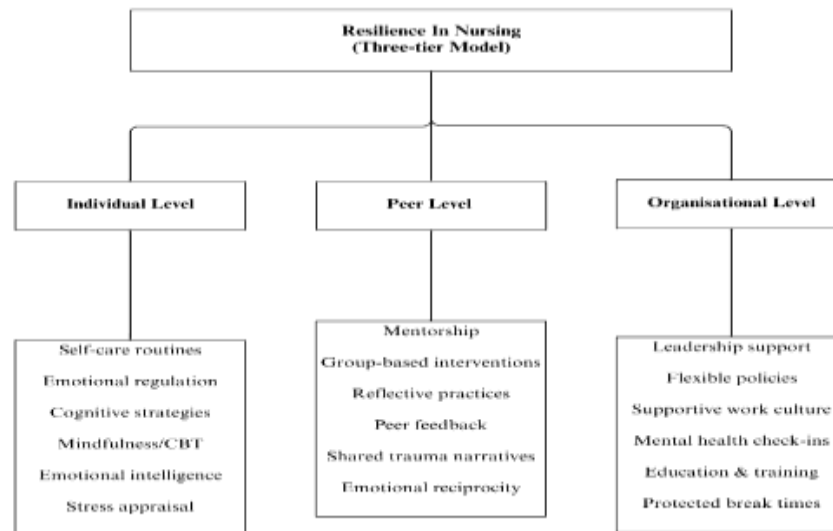
While previous models—those described in Yu et al. (2024)—have tended to focus on individuals or educational strategies, the current model highlights interdependence across levels, thereby filling an important gap. Single-level models may place too much emphasis on personal accountability, forcing nurses to adjust while neglecting systemic limitations. However, according to this model, adaptability goes a step further and incorporates relational environments, organisational climate, and individual capacity in the co-production of resilience. This framework pushes organisations to assume accountability for establishing environments that promote psychological safety and adaptability by integrating resilience into a vast ecosystem of supports. Nursing workplace interventions and policy are then directly informed by the model.

According to the conceptual model, institutional policies, staff training, and formal nursing education should all include these multi-

level interventions. Nursing curricula can incorporate stress management training modules, emotional literacy training, and mindfulness training on an individual basis (Blaney et al., 2024). At the peer level, formal mentorship structures, reflective group practices, and common debriefing should be created to endorse solidarity among peers (Conolly et al., 2022;

Janzarik et al., 2022). The organization can further build an environment that supports sustainable workloads, training of the leaders for resilience, and pro-resilience policies, as these set the foundation for individual and peer resilience to prosper (Mallon et al., 2023; Kunjavara et al., 2025).

Figure 1: Three-tier model of resilience strategies in nursing.



Note. Created by the author

The model promotes resilience at three levels: individual (e.g., self-care, mindfulness), peer (e.g., mentorship, reflection), and organizational (e.g., leadership, check-ins, supportive policies).

Conclusion

This paper emphasizes the urgency for a multi-level perspective in resilience at the nursing workforce-individual, peer, and organizational levels. A synthesis of fifteen studies shows the high effectiveness expected of resilience support in its holistic development. Personal strategies, a solid social network, and backing from the institution, for example, boost the psychological well-being of nurses while mitigating the continuous threat of burnout in healthcare. Individual forms of coping-including mindfulness and emotional regulation (Henshall et al., 2020; Pantha et al., 2023)-become more sustainable through peer support structures such as mentorship and sharing learning (Godfrey & Scott, 2020; Chiu et al., 2024). These would be further enhanced by institutional activities

promoting autonomy, even workloads, and a caring culture. Together, these levels encourage a nurturing society where nurses would not suffer but be empowered with connection and shared responsibility

Implementation of this model entails investment by health organizations in a multilevel resilience activity and their subsequent integration into clinical training and workplace policies. They should underpin leadership engagement, equitable workload distribution, and reflective group practices. Future research should test this empirically across various clinical contexts, to validate adaptability and application. As much as possible, the model is implementable because it has the potential to transform resilience from an individual burden to become shared collective weight.

Limitations and Future Scope

Only secondary data from published empirical studies served as the basis for this paper. There was no field data collection, and the synthesis depended heavily upon the methodological rigor and contextual applicability of the literature involved. Thus the results are kept within the bounds of the studies selected, and a universal application of findings may not extend to all populations within the nursing profession or healthcare settings. In addition, some studies have been done in specific cultural or institutional contexts such as during the COVID-19 pandemic or within academic nursing programs, which may fail to represent common practice environments (Godfrey & Scott, 2020; Rayani et al., 2024). Application of this multi-level theoretical model is yet to be confirmed empirically, and suggestions for future studies must focus on mixed-method or longitudinal designs to test this model in varied clinical and organizational contexts.

Further research can test the empirical testing and scalability of the proposed three-tier resilience model in various clinical set-ups, such as rural, urban, public and private healthcare institutions. It is suggested for longitudinal and mixed-method methods to be used to measure the effect of the model on long-term nurse retention, mental health outcomes, and quality of care delivered to patients. It is also possible that cross-cultural research might expose the way cultural norms and healthcare systems determine resilience strategies. Additionally, integration with digital tools including resilience apps or AI-guided peer support systems could provide insightful extensions of the current interventions. This framework can also be extended into nursing curricula and leadership training programs upon the pursuit of targeted-evaluation studies.

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Cognitive Flexibility, Decision-Making Styles and AI Acceptance Among University Teachers

Anushka Muliylil* Dr. Sruthi Sivaraman** and Megha D. Prasad**

Abstract

This research explores the role of cognitive flexibility in several decision-making approaches—rational, intuitive, dependent, spontaneous, and avoidant—and looks into the moderation role of Generative AI acceptance in this link among teaching professionals in universities and colleges. A total of 150 teaching professionals (male and female) representing different academic backgrounds were recruited by purposive sampling. There was no age limitation among participants to enable a mixed group in experience and generation view. Results showed that there was a significant correlation between cognitive flexibility and two of the decision-making styles, namely spontaneous and avoidant. Higher cognitive flexibility levels were correlated with lower tendencies to use spontaneous and avoidant decision-making, implying that cognitive flexibility aids educators in being responsive to challenges, decreasing stress, and staying psychologically well. Additionally, acceptance of Generative AI significantly moderated the relationship between cognitive flexibility and spontaneous decision-making style. Such moderation was in its positive form, showing that such people with strong AI acceptance and high cognitive flexibility were less apt to use reactive decision-making. Multivariate Analysis of Variance (MANOVA) and moderation analysis were carried out with Jamovi software. These findings underscore the need for developing adaptability and a willingness to accept new technologies in academic environments, as well as the ongoing necessity for stress management and emotional regulation support strategies among educators. Future studies may further examine these relationships using larger and more diverse samples.

Keywords: Artificial Intelligence, Cognitive Flexibility, Decision Making Styles, Generative AI Acceptance, GPT Models, University Teachers

About authors:

*Student, IV MSc Counselling Psychology Kristu Jayanti College, K Narayana Pura, Kothanur (PO), Bengaluru -560077

**Head - Department of Psychology, Kristu Jayanti College, K Narayana Pura, Kothanur (PO), Bengaluru -560077

***Assistant Professor, Department of Psychology, Kristu Jayanti College, K Narayana Pura, Kothanur (PO), Bengaluru -560077

Introduction

Cognitive Flexibility (CF) refers to the capacity to shift perspectives, change strategies, and react well to change—is an essential executive function (Cañas, 2006; Diamond, 2013; Dajani & Uddin, 2015). First examined in neuropsychological environments (Shallice & Burgess, 1991), it has more recently been associated with overall psychosocial functioning and professional flexibility (Ionescu, 2012; Smith

et al., 2018). In the classroom, CF supports creative problem-solving and resilience in the face of changing pedagogical requirements (Monsell, 2003). More recently, Yilmaz and Karaoglan Yilmaz (2023) highlighted that very cognitively flexible individuals are better equipped to deal with digital transformation and technological uncertainty in the workplace, underlining its salience in the AI age.

Scott and Bruce (1995) hypothesized five

fundamental decision-making styles (DMS), which can be interpreted as customary information processing patterns and conclusions: rational, intuitive, dependent, avoidant, and spontaneous. Each reflects a distinct cognitive-emotional position—ranging from weighing carefully (rational) and relying on instinct (intuitive) to relying on others (dependent), delaying deciding (avoidant), and deciding spontaneously (spontaneous) (Ferrari & Emmons, 1995).

Generative AI technologies such as GPT and GANs (Goodfellow et al., 2020; Radford et al., 2018) are defined by their capacity to create novel outputs based on training data. These technologies enhance efficiency and creativity but raise issues with ethical usage, authenticity, and dependence (Floridi & Chiriatti, 2020). Within the context of higher education, these problems intersect with pedagogic integrity and intellectual investment (Zhang & Dafoe, 2019). Technology acceptance models have addressed the adoption of AI. Predictably, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have demonstrated that perceived utility, ease of use, social influence, and facilitative conditions can predict individual user engagement. (TAM; Davis, 1989; UTAUT; Venkatesh et al., 2003; Blut et al. 2022)

This study dives into the relationship between the variables of CF and DMS of university teaching faculties, and the moderating influence of the extent generative AI acceptance. As the scholarly faculty progressively integrates artificial intelligence into the ecosystem of the educational sphere, it becomes increasingly crucial to recognize how these considerations can impact effective and ethical adapt pedagogical practices.

Review Of Literature

Ionescu (2017) explores the multidimensional nature of CF, highlighting the role the element plays in educational

environments. The research discusses precisely how CF grants students to shift between varying perspectives and strategies when confronted with novel academic problems. The author notably recognizes the strength of this tactic, especially university level – cognitive demands such as integrating feedback, processing ambiguous or conflicting information including the selection of appropriate problem-solving strategies in response to the context. The study exactly exemplifies the condition that CF cannot be categorized as a trait but as a skill that can essentially be trained and developed, shaped through experiences (in this case academic) and challenges.

Galotti et al. (2006) study on university students elucidated their application of different decision-making styles in selecting a college major. They go on to identify individual differences in the approaches (in reference to Scott & Bruce, (1995)) as well as the influence they may have on the students' satisfaction and confidence in their verdict. The results indicated that students who employed rational and analytical styles reported greater clarity and satisfaction. This contrasts the results of those that lean on avoidant and dependent styles who were seen to have more stress and indecision. These results corroborate the view that DMS components are not dispositional, but shaped by the environment and cognitive demands, once again in this context using the academic atmosphere as guides.

Khlaif et al., (2024) conducted a study that dived into the factors influencing the adoption of Generative AI tools for student assessment among university teachers in the Middle East. Utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) model, they surveyed 358 faculty members across various countries. The findings revealed that performance expectancy, effort expectancy and social influence and hedonic motivation significantly motivated teachers' behavioural intentions and actual use of Generative AI tools It

is here exemplified the importance of understanding faculty perspectives to effectively integrate AI technologies into higher education assessment practices and to apply a systematic approach to develop assignments.

Although earlier studies have separately connected CF to DMS and emphasised the expanding use of generative AI in higher education, little focus has been placed on how these factors interact with university teachers. In particular, little is known about how teachers' adoption of generative AI tools may influence the connection between their CF and the methods they use to make decisions in the classroom. Although generative AI supports this adaptability and flexible educators are believed to be better able to adjust to changing pedagogical needs, it is yet unclear how much acceptance of AI influences or reinforces this relationship. By investigating the relationship between university teachers' CF and DMS, moderated by the acceptance of Generative AI this study seeks to close that gap.

Hypothesis

H1: There is no relationship between cognitive flexibility and adaptive DMS (e.g., rational, intuitive).

H2: The acceptance of generative AI does not moderate the relationship between cognitive flexibility and decision-making styles.

H3: There is no influence of cognitive flexibility on specific decision-making styles that is

moderated by generative AI acceptance

Method

This quantitative study utilized structured questionnaires to analyze the relationship between cognitive flexibility, generative AI acceptance, and decision-making styles among 150 faculty members (between the ages of 24 to 47) of universities in India, with a minimum of two years of experience, actively engaged in research affiliated to the institution for the past year, employing purposive sampling. The participants (86 females and 64 males) hailed from various states in India, namely from Kerala, Tamil Nadu, Andhra Pradesh, West Bengal and Karnataka. The authors used this size for feasibility in terms of time, resource availability and access to eligible participants. Using measures such as the Cognitive Flexibility Inventory (CFI), General Decision-Making Style (GDMS) Inventory, and Generative AI Acceptance (GAIA) scale, the research gathered information regarding participants' mental flexibility, decision-making styles, and receptivity to AI. Data was collected through Google Forms, and statistical analysis was carried out using Jamovi, (MANOVA and Moderation Analysis). This allowed for an analysis to determine the impact of cognitive flexibility on total and each of the decision-making styles. With which, the data was then tested to examine the moderative extent acceptance of generative AI on the relationship.

Results And Discussion

Table 1. Multivariate Test Results

		value	F	df1	df2	p
cfi	Pillai's Trace	0.263	10.3	5	144	<.001
	Wilks' Lambda	0.737	10.3	5	144	<.001
	Hotelling's Trace	0.358	10.3	5	144	<.001
	Roy's Largest Root	0.358	10.3	5	144	<.001

Table 2. Univariate Test Results

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
cfi	rat	0.120	1	0.120	0.197	0.658
	int	1.133	1	1.133	1.780	0.184
	dep	0.191	1	0.191	0.303	0.583
	spo	12.093	1	12.093	28.272	< .001
	avo	11.001	1	11.001	24.971	< .001
Residuals	rat	90.158	148	0.609		
	int	94.189	148	0.636		
	dep	93.173	148	0.630		
	spo	63.303	148	0.428		
	avo	65.198	148	0.441		

Table 3. Moderation Estimate of 'spo'

	Estimate	SE	Z	p
cfi	-0.01302	0.00222	-5.87592	< .001
genai	-0.00156	0.00236	-0.65983	0.509
cfi * genai	-2.43e-7	1.01e-4	-0.00241	0.998

Table 4. Moderation Estimate of 'avo'

	Estimate	SE	Z	p
cfi	-0.0115	0.00222	-5.180	< .001
genai	-6.62e-4	0.00237	-0.280	0.780
cfi * genai	2.09e-4	1.01e-4	2.082	0.037

The MANOVA findings as seen in Table 1 (Pillai's Trace = 0.263, $F(5, 144) = 10.3$, $p < .001$; Wilks' Lambda = 0.737, $F(5, 144) = 10.3$, $p < .001$) indicated a significant multivariate effect of cognitive flexibility (CF) on decision-making styles (DMS), where CF was significantly related to variations in the total DMS profile. Follow-up univariate analyses (Table 2) had displayed that CF significantly predicted Spontaneous ($F(1, 148) = 28.272$, $p < .001$) and Avoidant ($F(1, 148) = 24.971$, $p < .001$) styles, indicating that greater CF is associated with greater impulsivity and decision avoidance. The moderation analysis between the Spontaneous style (shown on Table 3) and the Avoidant style (shown on Table 4) further underscored that the acceptance of

Generative AI was strongly moderated the relationship between CF and the Spontaneous style (Estimate = $2.09e-4$, $SE = 1.01e-4$, $Z = 2.082$, $p = .037$) but not the Avoidant style (Estimate = $-2.43e-7$, $SE = 1.01e-4$, $Z = -0.00241$, $p = .998$), proposing that GenAI acceptance enhances the influence of CFI on spontaneous choices but fails to modify its relationship with avoidant decision-making.

The study, comprising 150 female and male faculty members of institutions of higher learning, revealed high mean score in the Cognitive Flexibility Inventory ($M = 82.0$), which depicts good adaptability and innovative thinking skills, though Generative AI Acceptance only scored moderately ($M = 55$), inferring average

levels of comfort when using AI technologies.

Cognitive flexibility had a strong impact on spontaneous and avoidant decision-making, with high CF facilitating rapid but reflective decisions and minimizing dependence on impulsive responses (Özen-Akın & Cinan, 2022). However, low CF increased avoidant tendencies that are commonly linked with anxiety and uncertainty (Scott & Bruce, 1995), in line with the notions of CF. High CF is seen to cushion such tendencies through enhanced confidence and flexibility (Jain et al, 2024). Notably, the acceptance of generative AI substantially mediated the relationship between CF and spontaneous DMS, not with the avoidant DMS. This would suggest that individuals who are receptive to AI usage are more likely to leverage their elasticity for speedy adaptive decisions (Callaway et al., 2022).

This notion is seen to tie into the TAM framework (Davis, 1986) in which behaviour is determined by intention, that is mediated by the perceived usefulness and ease of use of technology. The organizational setting from which the participants are from, contributes to affirm the UTAUT framework's (Venkatesh et al, 2003) interplay in behaviour. The core constructs of facilitating conditions (where individuals are to make the best use of available resources) and performance expectancy (the belief that the use of technological systems (in this case generative AI models) improves the performance). The link potentially enables individuals with high CF to feel greater support and security while engaging in spontaneous decision making in contrast to those with AI reliance scores are low (Buçinca et al, 2021).

It is to be noted in the Indian context, wherein technology or basic technological resources such as computers or access to the internet is limited in educational institutes (Padhi et al, 2023), the phenomenon of AI use is considerably lower. In respect to teaching staff integrating the new age tool into their daily

constructs, this study seems to extend to technologically capable institutions (Singh, 2022).

Conclusion, Implications And Limitations

Taking in the results, this study can determine that cognitive flexibility imparts an essential function in impacting decision-making styles, specifically boosting spontaneous decisions by teaching faculty, and the usage of generative AI tools further enhances this relationship. These results indicate the growing importance of both adaptive thinking and technological openness in enhancing teachers' responsiveness in dynamic academic environments. Classroom spaces require higher levels of flexibility to overcome a plethora of situations, especially in a space where the audience themselves are being encouraged to view the world and its opportunities as limitless. This as suggested by Cañas (2006) in his approach to CF, would be acquired by experience.

The study therefore implies that teachers who are more cognitively flexible are better at handling the spontaneous nature of classrooms, enabling them to react timely and effectively towards student needs. The incorporation of Gen AI tools in decision-making has the promise of facilitating real-time, intuitive, and well-informed decisions, especially among teachers who accept the use of technology. This points to the necessity of systematic interventions in teacher training programs that not only build adaptive thinking but also build technological confidence, one that fuses the notions of UTAUT (Venkatesh et al, 2003) in a modern-day educational set up. Recommendations highlight developing professional training modules to enhance both cognitive flexibility and acceptance of AI. Mindfulness, adaptability exercises, and familiarization with AI-driven decision-making tools could be introduced in teacher training. Future research would need to investigate the synergistic impact of these trainings in varied educational environments and among varied populations to identify their universal

applicability. Longitudinal study designs and experimental research are also suggested to determine long-term effectiveness and causality.

The limitations include a small sample size and time span, which could limit external validity and generalizability of the findings. Furthermore, online data collection may have dampened the quality and authenticity of participant responses. The socio-economic forces that dictate the resources available at universities have severe implications on the accessibility to technology. The results, the findings are to an extent limited in its generalizability towards lower economically supported facilities. India as a nation is diversified in every natural and man-made context, whether in respect to agency or any elementary unit.

This study propounds knowledge that deems to solely be applicable to higher educational set up with an influx of private and/or public donations, that supports the systems to be utilized and amalgamated into culture and lifestyle. The author's own affiliation with a higher end university may have impacted the accessibility to the participants. Future studies can be enhanced with in-person interviews or mixed methods to elicit richer, context-specific information.

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Controlled Hyperventilation and its Impact on Perceived Stress and Meta-Cognition: A Pilot study

Saurav Nilesh*, Raghavendra Bhat**, Dr. Dhamodhini KS*, Preagya Bharati*, Krishna Dwivedi*, Amit Kanthi* and Ramesh MN*

Abstract

Background: Controlled hyperventilation practices such as Kapalbhathi and Bhastrika forms of high-frequency yogic breathing have been traditionally linked to physiological vitality, but their cognitive and psychological effects remain underexplored. This study aimed to investigate the impact of a two-week controlled hyperventilation intervention on Perceived Stress and meta-cognition, assessed through perceived stress, working memory, and autonomic regulation.

Methods: Fifteen healthy adults participated in a structured daily breathing protocol for 14 days, incorporating Kapalbhathi and Bhastrika pranayama. Pre and post-intervention assessments included the Perceived Stress Scale (PSS) for mindfulness-related stress levels, the Sustained Attention to Response Task (SART) for meta-cognitive function (attention and response inhibition), and heart rate variability (HRV) via ECG as an index of autonomic regulation. Data were analysed using repeated-measures ANOVA and paired t-tests.

Results: Statistically significant improvements were observed in omission errors ($p < 0.01$) and perceived stress scores ($p < 0.01$), indicating enhanced attentional control and reduced emotional reactivity. Although HRV metrics did not show significant group-level changes over time, trends suggested an increase in parasympathetic activation.

Conclusion: Controlled hyperventilation appears to enhance Perceived Stress and meta-cognitive performance by reducing stress perception and improving sustained attention. Shreds of evidence suggest that practices may help in stress management and cognitive training programs for both healthy and mild clinical populations. Future randomized controlled trials with larger samples are recommended to validate these outcomes further.

Keywords: Controlled hyperventilation, High-frequency breathing, Meta-cognition, Mindfulness, Perceived stress, Attention, HRV

About authors:

*Department of Yoga and Life Sciences, Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bengaluru

*School of Sports Sciences, Yoga and Education, Central University of Rajasthan

Introduction

Breathing exercises are increasingly recognized for their cognitive and psychological benefits. In Indian knowledge system, breathing practices have been known to function as a bridge between the body and mind. Modern scientific investigations also validate this principle by showing improvements in attention, emotional

regulation, and reduced stress levels following breathing practices from yogic tradition.

Breathing practices known as *pranayama* are effective in enhancing psychophysiological well-being as well. They help in reducing anxiety and depression, improve sleep quality, and overall mental health (Tellhed et al., 2019). This implies that breathing practices can help individuals in the

effective management of stress and anxiety by promoting relaxation and cognitive flexibility.

These practices are often studied by incorporating them with other yogic practices. For case in point, mindfulness meditation often involves breathing practices that have been known to reduce anxiety by activating areas of the brain involved in emotion regulation, such as the anterior cingulate cortex and ventromedial prefrontal cortex. This activation helps regulate self-referential thought processes, resulting in anxiety relief (Zeidan et al., 2013). Breathing practices coupled with mindfulness techniques significantly influence meta-cognitive processes as well.

Metacognition involves being aware of one's cognitive processes and regulating them, which is crucial for effective learning and emotional management (Fleur et al., 2021). Mindfulness, which often includes controlled breathing, has been shown to activate metacognitive modes of processing that can help disrupt dysfunctional thinking patterns and promote flexible cognitive responses (Thimmapuram et al., 2012; Wells, 2002). Additionally, it is associated with the cultivation of certain metacognitive aspects. For example, fringe consciousness, a metacognitive awareness of underlying cognitive and emotional processes, is heightened during mindfulness practices, allowing individuals to become more attuned to subtle cognitive and emotional shifts (Norman, 2016). This heightened state of awareness can support better metacognitive monitoring and control, potentially leading to improved cognitive regulation and emotional resilience.

Although the effect of breathing practices on psychological well-being and cognitive functions is studied, studies on hyper-ventilatory practices *Kapalbhati* and *Bhastrika* are scarce. The hyperventilatory practices in yogic traditions emphasize on rapid and rhythmic breathing patterns (Telles et al., 2011). These practices are traditionally believed to enhance physical vitality.

However, studies investigating their psychological and cognitive effects are scarce.

Kapalabhati for example, involves rapid, active exhalations followed by passive inhalations, creating bodily conditions that enhance psychological resilience. It affects the autonomic nervous system when practiced at a moderate rate of 30 strokes per minute by enhancing the parasympathetic regulation and reducing the sympathetic arousal (Telles et al., 2011). According to Polyvagal Theory (Porges, 2001), breathing techniques can promote changes in autonomic states that improve vagal tone and emotional regulation, resulting in lower levels of perceived stress. This offers a physiological explanation for the efficacy of regulated breathing methods in alleviating stress, which Cohen et al. (1983) describe as the extent to which people view their life situations as unpredictable, uncontrollable, and overwhelming. The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) supports this notion by highlighting the importance of cognitive appraisal in shaping the psychological effects of stressors. The breathing practices require focused attention, respiratory control, and sustained somatic awareness, which are associated with improvements in executive functioning and reflective thinking (Teasdale et al., 2002). This theoretical model is particularly relevant for young adults, a developmental stage marked by high cognitive plasticity and susceptibility to stress from academic, occupational, and social demands (Arnett, 2000).

Although high-frequency yoga breathing, stress modulation, and meta-cognitive enhancement theoretically align, the lack of empirical studies makes it difficult to establish this alignment. As mentioned earlier, previous studies mainly studied breathing practices coupled with other interventions, making it difficult to isolate the specific effect of breathing practices. The current study aims to fill this gap by examining the effects of *Kapalbhati* Pranayama practiced at 30 strokes per minute on

perceived stress and meta-cognitive functioning in a mixed-gender sample of young adults.

Therefore, the current study intends to understand the effect of hyper-ventilatory practices like *Kapalbhati* on metacognition and perceived stress in healthy individuals. The study does not incorporate any other intervention with these practices that helps in addressing the previous gap of understanding the isolated effect of hyperventilatory practice on cognitive and psychological processes.

Method

Study Design

This pilot study employed a pre-during-post experimental design to assess the effects of a structured controlled hyperventilation protocol termed High Frequency Yoga Breathing (HFYB) on non-mindfulness, meta-cognitive functions, and physiological regulation. The study was conducted over a period of two weeks, with daily interventions and three time-point assessments (baseline, during, and post-intervention).

Participants:

A total of 15 healthy adult participants (both male and female), aged between 18 and 30 years (mean age = 24.2 ± 3.2 years), were recruited from an educational institute in Bengaluru through institutional circulars and word-of-mouth. All participants provided voluntary informed consent after receiving a comprehensive explanation of the study's objectives and procedures. Inclusion criteria included adults aged 20–35 years with no history of psychiatric, cardiovascular, or respiratory disorders, and not currently taking medications that could influence cognitive or autonomic functions. Exclusion criteria included individuals with a regular practice of meditation or pranayama for more than one year, those who used alcohol, tobacco, or recreational drugs, and individuals with known cognitive impairments. Participants were randomly assigned to a single-arm experimental group using a simple

randomization method to reduce potential allocation bias.

Intervention Protocol:

Participants underwent a controlled hyperventilation intervention for a period of two weeks, with daily sessions of 30 minutes guided by a certified yoga instructor. The protocol incorporated the traditional yogic breathing technique: *Kapalbhati Pranayama*: A forceful exhalation followed by passive inhalation, performed in 3 rounds of 30 strokes each, with 60-second rest intervals. A digital Metronome at 30 BPM was used to maintain the strokes count.

Outcome Measures

Assessments were carried out in the lab with pre-intervention, during and post-intervention. The following standardized instruments were used to evaluate the cognitive, psychological, and physiological domains:

Working Memory & Meta-Cognition:

Sustained Attention to Response Task (SART): A computerized task assessing attentional control, cognitive flexibility, and inhibitory regulation, serving as an indirect measure of meta-cognitive functioning. Key metrics included reaction time variability and omission errors. Inquisit 4 from Millisecond Software, LLC was used for the acquisition. Concurrently, the Sustained Attention to Response Task (SART) provides insights into attentional control and cognitive flexibility, key components of meta-cognition (Robertson et al., 1997). By employing these tools, researchers can objectively evaluate the impact of controlled hyperventilation on both mindfulness and meta-cognitive functions.

Stress Perception:

The Perceived Stress Scale (PSS-10) was developed by Sheldon Cohen, A widely used psychological instrument assessing perceived stress levels and emotional coping mechanisms. Higher scores indicate greater perceived stress.

Autonomic Nervous System Regulation:

Heart Rate Variability (HRV): Recorded via 16/35 power lab AD Instruments, using Lead-II electrode placement system. Time-domain (SDRR and RMSSD) parameters were analysed to assess parasympathetic reflecting autonomic regulation.

Data Extraction and Analysis

Scoring of assessments and measurements of the study variables followed the stipulated manual instructions. Once both pre- and post-intervention data were scored, they were decoded, and statistical analysis was conducted using JASP (Version 0.19.1.0) for Windows. Data were checked for normality of variance using the Shapiro-Wilk ($p > 0.05$).

Statistical significance for the analysis was considered at $p < 0.05$, and all p -values were two-sided. Repeated measures analysis of variance (RM-ANOVA) was used to determine

statistically significant changes within groups. A 2x5 ANOVA for time-points (Variables*Baseline, Cognitive pre, during_intervention, Cognitive post, and Post) was conducted for two variables (RMSSD and SDRR). Further, a paired sample t -test was used to determine the changes within the group among cognitive functions and stress.

Results

Repeated measures ANOVA using post-hoc with Bonferroni adjustment showed that there were no significant changes in HRV variables State [$F(4,70) = 0.115$, $p > 0.05$; $\eta^2 p = 0.007$], and descriptive data is shown in Table 1. However, the paired sample t -test showed significant changes in cognitive parameters (Omission; [$t = 2.965$; $p < 0.01$, reaction time [$t = -0.117$, $p > 0.05$], and stress [$t = 3.244$, $p < 0.01$] and descriptive data is shown in Table 2. Additionally, Raincloud plot representation of cognition and stress before and after intervention is shown in Figures 1, 2, and 3.

Table 1:*Descriptive data*

<i>Descriptives</i>						
RM Factor 1	States	N	Mean	SD	SE	Coefficient of variation
RMSSD	1	15	101.933	77.515	20.014	0.760
	2	15	96.760	106.086	27.391	1.096
	3	15	128.377	115.397	29.795	0.899
	4	15	91.857	76.106	19.650	0.829
	5	15	91.857	76.106	19.650	0.829
SDRR	1	15	92.454	48.852	12.613	0.528
	2	15	100.537	72.329	18.675	0.719
	3	15	80.417	64.019	16.530	0.796
	4	15	99.294	75.486	19.490	0.760
	5	15	81.914	48.282	12.466	0.589

Table 2.

<i>Descriptives</i>					
	N	Mean	SD	SE	Coefficient of variation
Pre_RT	15	473.000	184.433	47.620	0.390
Post_RT	15	479.667	147.031	37.963	0.307
Pre_Omission	15	3.033	2.831	0.731	0.933
Post_Omission	15	1.000	1.500	0.387	1.500
Pre_PSS	15	1.700	0.726	0.187	0.427
Post_PSS	15	1.373	0.613	0.158	0.447

Figure 1

Raincloud plot representation of reaction time.

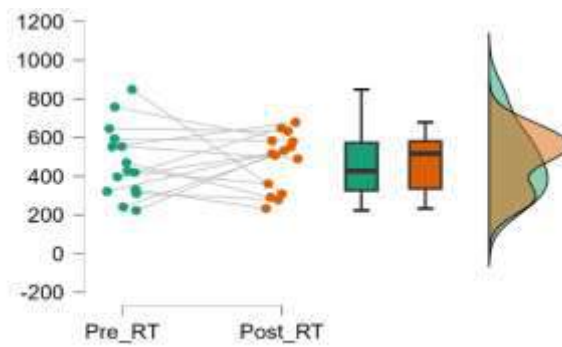


Figure 2:

Raincloud plot representation of Omission.

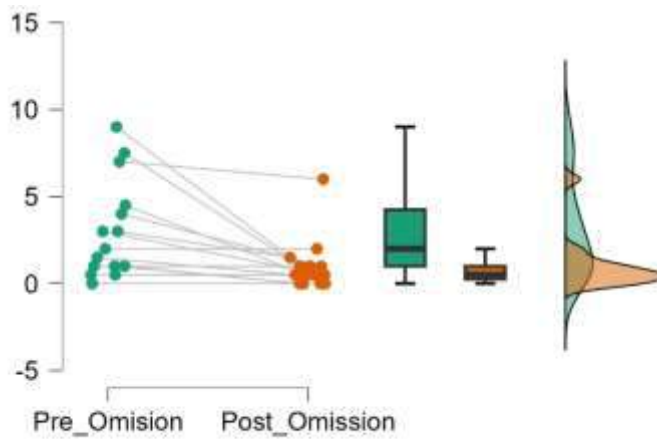
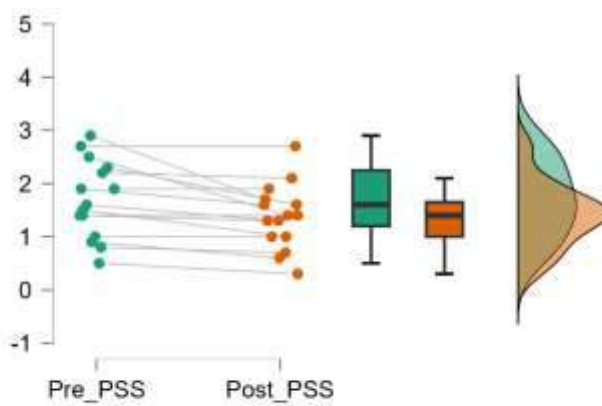


Figure 3:

Raincloud plot representation of stress.



Discussion

This pilot study set out to investigate the impact of controlled hyperventilation through high-frequency yogic breathing (HFYB) practices, specifically Kapalbhathi, on mindfulness and meta-cognition, operationalized via perceived stress and attentional control. The results provide preliminary yet meaningful evidence that such practices may enhance certain cognitive functions and psychological well-being in healthy adults.

Cognitive Improvements and Meta-Cognition

The significant reduction in omission errors on the SART task suggests enhanced sustained attention and inhibitory control post-intervention. This aligns with previous research indicating that breath regulation practices can improve executive functioning and attention networks (Thimmapuram et al., 2017). Another possible mechanism lies in the modulation of chemoreflex sensitivity and cortico-limbic integration during high-frequency breathing. Controlled hyperventilation induces transient hypocapnia (a reduction in arterial CO₂ levels), which has been shown to influence cerebral blood flow, particularly in regions associated with executive function and interoception, such as the anterior cingulate cortex and insula (Homma & Masaoka, 2008). These regions are critically involved in attentional control, self-awareness, and emotional regulation, core aspects of both mindfulness and meta-cognition. Additionally, the repetitive diaphragmatic stimulation in yogic breathing is thought to activate mechanoreceptors and baroreceptors, enhancing vagal afferent signalling to the nucleus tractus solitarius, which in turn modulates prefrontal cortical activity (Gerritsen & Band, 2018). This neurocardiac interplay may foster a state of relaxed alertness, which optimally supports sustained attention, emotional clarity, and cognitive monitoring. Thus, the physiological cascade initiated by high-frequency breathwork might underlie the observed improvements in both attentional performance and perceived stress regulation.

Although the change in reaction time was not statistically significant, the observed trends point toward improved response consistency, which may reflect a subtle improvement in cognitive processing efficiency.

These findings underscore the notion that controlled hyperventilation may serve as a metacognitive enhancer, potentially through its impact on prefrontal cortical activation. Previous EEG-based studies have indicated increased alpha and gamma activity following rapid yogic breathing, suggesting heightened alertness and integrative processing (Streeter et al., 2012).

Perceived Stress and Mindfulness

The study also found a statistically significant reduction in Perceived Stress Scale (PSS) scores post-intervention. This decrease highlights the potential of HFYB to modulate emotional reactivity and improve coping mechanisms, core facets of mindfulness. These findings are in line with work by Mettler et al. (2023), who reported moderate improvements in mindfulness-related outcomes through breathing-based interventions. The observed reduction in perceived stress following high-frequency yogic breathing may be attributed to the autonomic recalibration initiated by rhythmic respiratory activity. Practices like Kapalbhathi and Bhastrika, while initially activating the sympathetic nervous system, are often followed by a parasympathetic rebound, which contributes to emotional downregulation and recovery (Saoji et al., 2019). This bidirectional modulation helps regulate hypothalamic-pituitary-adrenal (HPA) axis activity, thereby reducing cortisol output and promoting a sense of calm and control. Additionally, these breathing techniques are thought to improve interoceptive accuracy, the ability to sense internal bodily signals, which has been linked to reduced emotional reactivity and greater mindfulness (Farb et al., 2013). By enhancing bodily awareness and respiratory rhythm synchrony, practitioners may gain more conscious access to their stress responses,

allowing for better emotional processing and non-reactivity, both hallmarks of mindfulness. This psychophysiological mechanism supports the notion that high-frequency breathing can act as a catalyst for cultivating present-moment awareness and adaptive emotional regulation.

Interestingly, the HRV results did not show significant changes across time points, as indicated by RM-ANOVA. Although HRV is a widely accepted biomarker for autonomic regulation and vagal tone, the lack of statistical significance could be attributed to the short intervention duration, limited sample size, or inter-individual variability. Nonetheless, paired t-test trends suggest a shift toward parasympathetic dominance, which may become more apparent with longer exposure or in a larger cohort. The trends observed in heart rate variability (HRV), although not statistically significant, suggest a shift toward parasympathetic dominance, indicating enhanced autonomic flexibility a crucial factor in stress resilience. This has meaningful implications for both clinical populations and student groups experiencing chronic stress or cognitive overload. In clinical settings, reduced HRV is a known predictor of anxiety, depression, and burnout (Kim et al., 2018), making high-frequency yogic breathing a potentially accessible and non-invasive adjunct therapy for improving autonomic balance and emotional regulation. Similarly, students facing academic pressures and attentional fatigue may benefit from these breathing practices, as enhanced HRV is associated with better cognitive control, improved emotional reactivity, and academic performance (Shaffer & Ginsberg, 2017). Incorporating such breath-based interventions into therapeutic protocols or educational wellness programs could thus foster not only psychological well-being but also greater resilience to stress-induced autonomic dysfunction.

Strength of the study

One of the key strengths of this research is its integrative approach, which combines subjective psychological assessments (such as the Perceived Stress Scale) with objective cognitive (SART) and physiological (HRV) indicators. This multimodal framework enhances the credibility of the results by offering a more comprehensive understanding of how controlled hyperventilation affects both mental and physical states. Furthermore, the study utilized established, widely recognized assessment tools, thereby ensuring consistency in measuring concepts like attentional control and stress perception. The implementation of structured high-frequency yogic breathing techniques, based on traditional practices such as Kapalhati and Bhastrika, adds cultural significance and reproducibility to the intervention. Additionally, conducting sessions with guided supervision improved adherence and safety, which is essential when engaging in breath-centred practices that influence autonomic function. Lastly, the presence of pre- and post-intervention data over a brief, concentrated period (two weeks) offers initial yet compelling evidence of the immediate cognitive and physiological advantages associated with controlled hyperventilation techniques.

Conclusion

This study contributes to the growing body of evidence suggesting that controlled hyperventilation through high-frequency yogic breathing may positively influence both mindfulness and meta-cognitive functioning. Through a two-week intervention, participants exhibited significant reductions in perceived stress and improvements in sustained attention and cognitive control, as evidenced by changes in PSS and SART metrics. While HRV measures did not show statistically significant changes across repeated measures, trends suggested potential autonomic benefits that warrant further exploration.

The results point to a promising, underutilized breathing modality that can serve as a bridge between physiological regulation and cognitive enhancement. Controlled hyperventilation practices may act not only as stress-reducing tools but also as mechanisms for enhancing self-monitoring, attentional clarity, and emotional regulation, all of which are crucial in today's fast-paced and cognitively demanding environments.

Future studies should employ larger sample sizes, incorporate randomized controlled designs, and explore neuroimaging or EEG-based correlates to further substantiate and clarify the mechanisms underlying these effects. In doing so, the field can move closer to integrating traditional yogic wisdom with contemporary cognitive science for the benefit of holistic mental health.

Controlled hyperventilation appears to create a physiological milieu that supports heightened self-regulation, both mentally and physiologically. It may work by stimulating respiratory-afferent signalling, influencing brainstem and limbic system pathways, and increasing baroreceptor sensitivity factors, which collectively contribute to greater cognitive-emotional balance (Zaccaro et al., 2018). Such practices might thus serve as viable adjuncts in programs focused on resilience, stress reduction, and attention training.

Limitations of the study

Although this study provides valuable insights, it has several limitations that need to be acknowledged. To begin with, the limited sample size ($n = 15$) restricts the applicability of the findings and diminishes the statistical power to identify more subtle effects, especially regarding HRV outcomes. Moreover, the research utilized a single-group pre-post design without a control group, which hinders causal conclusions and raises concerns that the observed changes might be affected by external factors or placebo effects. In addition, the brief intervention period of two weeks might not be adequate to observe more

significant or lasting physiological changes, particularly for complex variables such as HRV that are influenced by circadian rhythms, emotional states, and lifestyle factors. Furthermore, the absence of follow-up assessments prevents an evaluation of how sustainable the observed benefits might be. Finally, while validated tools were employed, self-report measures like the Perceived Stress Scale may be affected by response bias, and incorporating more neurophysiological markers (like EEG or cortisol) could have enriched the understanding of the underlying mechanisms.

Implications of the Study

The observed improvements in attentional performance and reductions in perceived stress following controlled hyperventilation practices may be underpinned by a range of physiological and neurocognitive mechanisms. Unlike traditional slow breathing, high-frequency yogic breathing (HFYB) like Kapalhati stimulates the sympathovagal balance in a rhythmic, regulated manner that may initially arouse the sympathetic system but ultimately enhances parasympathetic rebound.

From a neurobiological standpoint, the afferent signals from the respiratory tract during rapid breathing stimulate the nucleus tractus solitarius (NTS) in the brainstem, which interfaces with the amygdala and prefrontal cortex, key regions involved in emotional regulation and executive functioning (Zaccaro et al., 2018; Streeter et al., 2012). This interplay might explain the concurrent improvements in meta-cognition (measured through reduced omission errors) and mindfulness-related stress reduction.

Furthermore, the cyclical activation and downregulation through breathwork may serve as a real-time training mechanism for self-regulation, mirroring the cognitive processes involved in meta-cognition, such as monitoring, evaluating, and adjusting internal states. By promoting greater interoceptive awareness,

HFYB may also facilitate deeper bodily awareness, which is strongly linked to mindfulness and emotional clarity.

In broader terms, these findings highlight the practical potential of controlled hyperventilation as a cognitive-affective regulation tool. It may be integrated into therapeutic and educational settings for individuals facing high cognitive demands or chronic stress, such as students, healthcare workers, or individuals undergoing psychological rehabilitation. The simplicity, accessibility, and non-pharmacological nature of these techniques make them particularly appealing for preventive mental health programs.

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Exploring Caregiver Quality of Life Following Usage of Augmentative and Alternative Communication: A Mixed-Methods Approach

Dr. Sangeeta Bhamidipati* and Madhavi Jandhyala**

Abstract

Children who were diagnosed with autism spectrum disorder (ASD), apraxia, aphasia, and other kinds of complex communication needs (CCN) need to take the aid of augmentative and alternative communication (AAC) in order to express themselves better. The advent of artificial intelligence and its integration into AAC applications have bettered the quality, effectiveness, efficiency, and accessibility of communication. This study focuses on understanding the pre- and post-implementation of the AVAZ application in the lives of the caregivers, as the children showed a visible improvement in receptive and expressive language use and other communication skills. The study was set out to explore the caregiver's quality of life (QoL) following the implementation of AAC. A mixed methods approach was adopted, a non-probability purposive sampling approach was taken, and data was gathered from 32 primary caregivers of the children with CCNs. In the qualitative approach, the case of a 27-year-old woman diagnosed with ASD was considered for an in-depth case study analysis to delve deep into the functioning and daily caregiving experiences, the challenges faced, and the coping mechanisms adopted by the caregiver.

Results showed that gender and average age of the child with CCNs had a significance associated with perceived quality of life. Mothers who were the primary caregivers showed better perceptions of physical health after using the AVAZ application with their children. Regarding the child's age, there was a statistically significant association in terms of psychological health, social relations, and environment in caregivers whose child was 12 years or above. A qualitative narrative analysis of the case highlights the mother's dissatisfaction with the multiple AACs they had to switch to until they hit the comfort button with the AVAZ application. Despite the improved QoL for the child and for the mother, the mother expressed a few challenges related to finances and keeping updated with technological changes.

The study emphasizes the transformative potential of AAC, particularly apps like AVAZ, on the quality of life of the cared and the caregivers, contributing significantly to inclusive social development that advances health and wellness.

Keywords: Augmentative and alternative communication, AAC, Caregiver quality of life, QoL, AI and AAC

About authors:

*Associate Professor, Department of Applied Psychology, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam – 530045

**Research Scholar, Om Sterling University, Hisar, Chandigarh

Introduction

Parenting is a complex and extremely transformative experience that is fraught with incessant challenges and deep emotional investments (Bjorklund & Myers, 2019). The

investments get heavier and burdensome if the parents need to handle disabled children. In this study, the focus is on children with complex and communication needs (CCN) and their ability to adapt to the augmentative and alternative communication (AAC) for having smooth flow of

communication with all. The CCN children are diagnosed with various conditions like cerebral palsy, developmental disabilities, physical disabilities, autism spectrum disorder which curtail their capacity to effectively communicate by way of natural speech (Light & McNaughton, 2012). In such a scenario, these limitations do not just limit the child but also impacts the family dynamics, bringing in a set of demands that are unique on the parents or the caregivers (LaRouech, 2022).

The incapacity of the child to communicate effectively makes it detrimental for him to participate in social gatherings, access education like a normal child does, and have poor emotional wellbeing, all of which have a bearing on the extensive quality of life (Hockley et al., 2021). Furthermore, it significantly has an impact on the quality of life experienced by the parents or the primary caregivers who need to navigate through the logistical barriers, emotional stress and various other systemic inadequacies and insufficiencies to ensure the social inclusion and support for their child (Elliot & Shewchuk, 2001).

Advancements in technology, more so in the interventions and assistive technology, there are a plethora of options to support the children with complex communication needs. The augmentative and alternative communication which encompasses a gamut range of methods, the low tech tools to high tech tools, the picture exchange systems to speech generating devices, serve the purpose of replacing natural speech so as to make possible proper communication (Beukelman & Light, 2020). The use of AAC goes beyond giving a relief in the realm of communication alone. It impacts the physical, psychological, emotional, and social and various other practical dimensions of caregiving. Therefore, it becomes imperative to understand how these applications affect the quality of life of the caregivers in order to come up with interventions that are family centred (Laubscher et al., 2024).

Quality of life of caregivers is considered as a multidimensional construct which includes a wide array of aspects that are directly link to caregiving responsibilities and they include physical health, social relationships, emotional wellbeing, personal burden or fulfilment that is associated with the caregiving responsibilities (WHO, 1997). When we consider the quality of life of the caregivers of children with CCN, a lot depends on the severity of the condition the child is in, their socio economic status, awareness about supportive devices and services, and familiarity with the AAC system (Clarke et al., 2011). The significance of the study lies in the fact that there is only a surging prevalence of the condition which is leading to a surge in the adoption of assistive technology in the clinical settings as well as educational settings. Use of these devices also have a direct impact on the caregiver quality of life and satisfaction, whether they will exacerbate the parenting stress or alleviate the stress (Blackstone et al., 2012). With NEP 2020 too emphasising on social inclusion, the education systems and healthcare systems are coming up with models that are family centric. So, it is essential to understand how the interventions like AVAZ influence not just the CCN child but also the caregivers (Brady et al., 2016).

Review Of Literature

The literature that exists in the field of AAC systems emphasises the fact that they can have dual implications for the caregivers. They enhance the communication with the child, they mitigate frustration and also pave the way for improvement in the behaviour of the child. This can reduce parental stress and enhance satisfaction (Cohn et al., 2021). On the flip side, the technologies may offer a lot of challenges to the caregivers in terms of making training imperative, high financials, inconsistent usage and lack of adequate professional support when necessary. All these aspects may contribute further to the caregiver burden (Laubscher et al., 2024).

The opinions that caregivers have towards AAC usage is shaped by not just the device but also by various other contextual factors too. The attitude that prevails in the culture towards disability, the accessibility to healthcare infrastructure and the inclusive educational environment (McNaughton et al., 2008). In communities that are underserved or have low resources, caregivers experience additional barriers which impact their quality of life. Therefore, one cannot evaluate the impact of AAC on the quality of life of the caregiver. A mixed methods approach would definitely help capture the diverse experiences and enables the researchers to identify the unique challenges and common patterns.

Considering the theory that would underpin this study, WHO (2001) through its ICF (International Classification of Functioning, Disability and Health) emphasised the dynamic interactive nature between the personal influences, environmental influences, contextual factors and the individual's health condition. When this framework is applied in the assistive technology arena, one can understand that AAC usage is not merely a technological solution but also has various factors that play on the child and its functioning, the family and its functioning and the entire psychosocial ecosystem. Likewise, the quality of life of the caregiver is not a simple and single outcome but is an experience that is shaped by interactions between social support systems, caregiving demands, access to resources and most importantly emotional resilience.

Another theoretical support for this study can be drawn from the family systems theory which states that a change or impact on one member in the family would inevitably impact the overall dynamics of the complete family (Bowen, 1978). AAC would change the life of the child, steer the communication patterns in a new direction, ease out caregiving routines, and also impact parental roles. All of these may bring about better cohesion in the families and ease out the caregiver burden. Delving into the changes

that the technology brings in from the caregiver's perspective will open an avenue to fathom the multiple effects that communication interventions can bring along in the family context.

Objectives

- To assess the levels of quality of life among the caregivers of the children identified with complex communication needs using the AAC tools, and most importantly are on the AVAZ application.
- To find out if there was any difference on quality of life of the caregivers with regard to their age, gender and age of the child they had after using the AAC tool.
- To explore the psychological, emotional and social influence of AVAZ usage on the caregiver through a qualitative case study.
- To identify the challenges in caregiving before and after using the AVAZ app.

Method

Research Problem

The present research aims to explore caregiver quality of life following usage of augmentative and alternative communication especially in those parents who have children identified with complex communication needs. The focus of the study is on the children with CCNs using the AVAZ application and how it has bettered the quality of life of the caregivers.

Research Design

The current study takes a mixed-methods design, integrating the quantitative data with the qualitative data so as to arrive at an in-depth grasp of the influence of augmentative and alternative communication applications use on the perceived quality of life of the caregivers. A mixed methods approach facilitates triangulation, allowing for comparisons of results arrived at in the two approaches so as to enhance the quality of the findings that are arrived at (Creswell & Plano Clark, 2018). By analysing the responses through the numerical trends and also assessing the personal narratives of a user of the AVAZ

application, one can arrive at a robust understanding of the perceived quality of life of the caregivers.

Sample

On the quantitative front, a non-probable purposive sampling method was used and the researcher shared the link with 50 caregivers of children with CCNs. Out of the 50 only 42 responses were received and 32 were found complete in all aspects. On the qualitative front, as the study takes a case study narrative analysis approach, a special case of a mother aged 55 years was considered, keeping in mind the caregivers exposure to a variety of augmentative and alternative communication devices.

Inclusion criteria

Only those caregivers that had children with complex communications needs, were using AVAZ app for more than a period of six months, and were well-versed in reading and writing English were recruited into the study.

Tools

Table 1

Frequency distribution of the respondents

Demographic variable	Groups	N (32)
Age Of The Caregiver	42 years & lower	15
	43 years & higher	17
Gender	Male (Father)	10
	Female (Mother)	22
Age of the child with CCNs	11 years and below	24
	12 years and above	8

In the qualitative approach, a semi structured in-depth interview was gathered and all the information compiled as a case study. Interview was conducted through Google Meet and it had lasted for 75 minutes. The interview went around posing questions related to various

A structured questionnaire, the WHOQOL BREF scale was used to gather the quantitative data. The BREF scale consisted of 26 items, each of them falling under four major domains. The first one is physical health which consists of seven items, second one is psychological health consisting of six items and third one is social relationships comprising of three items and the last domain is environmental health comprising of eight items. There is one item on general quality of life and another on general health items. The items are scored on a Likert scale, 1 to 5. The raw scores are transformed to 0-100 or 4-20 (Skevington & Tucker, 1999; Vahedi, 2010). Higher scores indicate higher quality of life perceived in the specific domain.

Demographic information sheet: Information regarding age, gender and age of the child were gathered to get a better understanding of how these variables had any difference on the perception of quality of life and its domains.

and after the adoption of AVAZ and overall perception of the quality of life.

Procedure

Data was collected through the self-report through google forms as far as the quantitative data is concerned. Semi structured interview was conducted, audio recorded and transcribed for further analysis.

Data analysis

The quantitative data was analysed with the help of SPSS version 26. Descriptive statistics were used for representing the demographic data and inferential statistics, t-test was used to assess the differences across various subgroups of the demographic variables, age, gender and age of the child. Shapiro-Wilk test was run on the dependent variable to check for the normality of the distribution and as the results were found to be significant, non-normality was assumed and Mann-Whitney U test was used to find the significant differences among the subgroups on the domains of quality of life.

As far as the analysis of qualitative data is considered, thematic analysis was conducted following the six step process of Braun and Clarke (2006). It included familiarisation of the data that was shared by the caregiver, generating the initial codes, searching for themes, reviewing the themes and naming the themes and the final report. As it was a singular case study of one caregiver, coding was done manually.

Informed consent was collected in writing from the respondents for the quantitative part and verbal consent was sought from the mother of the 27 year old woman. With the consent of the caregiver, the interview was recorded and then transcribed verbatim.

Results And Discussion

Quantitative analysis

The descriptive statistics represented in Table 2 show the scores and frequencies on the four domains of quality of life. The minimum score on physical health domain was found to be 9 and the maximum score was 17, with a mean of 12.88 (SD=2.673). The frequencies show that there are 17 (53.1%), more than half of them having a score greater than the mean. Higher score on the domain means better physical health perceived. Similarly on the domain psychological health, the minimum score was found to be 7 and maximum 15, with a mean score of 11.59 (SD=2.650), where around 18 (56.3%) of the respondents are below the mean and are experiencing poor psychological health. On the social relationships domain, the minimum score was 4 and the maximum was 15 with a mean of 10.59 (SD=3.45). Around 53.1% (17) of the respondents are having better social quality of life. On the domain environmental wellbeing, the minimum score was found to be 10, the maximum 17, with a mean score of 14.06 (SD = 2.526), and 15 (53.1%) of them have reported better quality of life related to their environment. This domain also attracted the highest mean

Table 2

Descriptive statistics and frequency distributions on the domains of Quality of Life

Domains	Min	Max	Mean	S.D	Categories	Frequency	%
Physical health	9	17	12.88	2.673	13 & below	15	46.9
					14 & above	17	53.1
Psychological health	7	15	11.59	2.650	12 & below	18	56.3
					13 & above	14	43.8
Social relationships	4	15	10.59	3.453	11 & below	15	46.9
					12 & above	17	53.1
Environment	10	17	14.06	2.526	14 & below	15	46.9
					15 & above	17	53.1

Hypothesis 1: There will be a significant association between age of the parents and the quality of life perceived after using the AVAZ app.

The Mann-Whitney U test gave no significant differences between age of the parents or the caregivers and the quality of life perceived after using the application. The hypothesis were therefore not supported.

Hypothesis 2: There will be a significant association between gender of the parents and the quality of life perceived after using the AVAZ app.

On the demographic variable gender of the caregiver (Table 4) and the domains of quality of life, it was seen that a statistically significant difference was observed on the physical health domain. The results suggest that the female caregivers reported better physical health (Median = 14.00, n=22) when compared to the male caregivers (Median = 12.00, n=10), $U = 62.50$, $Z = -1.961$, $p = .050$, $r = .35$. The effect size was found to be medium. No other statistically significant differences were found on the rest of the three domains of quality of life. The hypotheses was supported only in the physical health domain.

Table 3

Results for Gender of the Caregiver

QoL Domain	Gender	N	Mean Rank	Median	U	Z	p	r
Phy Health	Father	10	11.75	12.00	62.50	-1.961*	.050	.35
	Mother	22	18.66	14.00				
Psy Health	Father	10	13.40	11.00	79.00	-1.275	.202	-.225
	Mother	22	17.91	12.50				
SR	Father	10	13.05	10.00	75.50	-1.426	.154	.252
	Mother	22	18.07	12.00				
Environment	Father	10	15.55	13.50	100.50	-0.392	.695	-.069
	Mother	22	16.93	15.00				

Hypothesis 3: There will be a significant association between age of the parents and the quality of life perceived after using the AVAZ app.

On the demographic variable age of the child with complex communication needs (Table 4), the Mann-Whitney U test reveals statistically significant differences on three domains out of the four domains of quality of life. No significant difference was found on physical health. On the domain psychological health, the caregivers of children who belonged to 12 years and above

category showed better psychological health (Median = 13.00, n = 8) when compared to the caregivers of children who belonged to 11 years and above category (Median = 10.50, n = 24), $U = 48.50$, $Z = -2.091$, $p = .037$ and $r = -.370$. Parents belonging to the 12 years and above category also scored higher medians on social relationships and environment domains (Median = 14 and 16 respectively, n=8) when compared to the parents belonging to the 11 years and below group (Median = 10 and 13 respectively, n = 24). The values for the social relationships domain are

$U = 19.00$, $Z = -3.407$, $p = .001$, $r = .602$ and for the environmental wellbeing domain are $U = 42.00$, $Z = -2.387$, $p = .017$, $r = -0.422$. The effect sizes are also found to be large and medium-large respectively. The hypothesis was accepted.

Table 4

Results for Age of Child with CCN

QoL Domain	Child Age	N	Mean Rank	Median	U	Z	p	r
Phy Health	11 yrs & <	24	15.65	12.50	75.50	-0.906	.380	.160
	12 yrs & >	8	19.06	14.00				
Psy Health	11 yrs & <	24	14.52	10.50	48.50	-2.091*	.037	-.370
	12 yrs & >	8	22.44	13.00				
SR	11 yrs & <	24	13.29	10.00	19.00	-3.407**	.001	.602
	12 yrs & >	8	26.13	14.00				
Environment	11 yrs & <	24	14.25	13.00	42.00	-2.387*	.017	.422
	12 yrs & >	8	23.25	16.00				

Discussion

The no significant results on the first case align with the research that was conducted earlier by Diener et al (2017) which suggests that age as a variable influences wellbeing but there may be a plethora of other factors that may have a more relevant impact while ascertaining various outcomes that are health related. Mothers have reported to have better physical health than the fathers of the children with complex communication needs. There is ample research which establishes that women are more proactive at health-seeking behaviours than men (Thompson et al., 2016; Mainuddin et al., 2015). It is understood that age of the child with complex communication needs plays a crucial role in the caregivers experiencing good or poor quality of life. The parents of the children belonging to the greater age group experience better psychological health, better social relationship wellbeing and better environmental wellbeing (Radu et al., 2022). Research has shown that when parents are able to communicate

effectively with their children, they are able to develop mutual understanding, build trust and also strengthen their bond. When the parents become aware of the benefits that early AAC interventions can bring along, they get trained in using the devices and communication tools, they can in turn equip their children to better the quality of life of their child as well as their own (Park, 2020).

Qualitative analysis

This is a case of a 55 year old caregiver, mother to a 27-year old daughter who was diagnosed with ASD at a very early age of 18 months. The primary caregiver, the mother recounts her daughter to be a creative, cheerful and emotional child displaying a wide variety of interests. The caregiver's experience with AVAZ was initiated by her daughter's special educator. Over a period of time, she became comfortable with the empowering and intuitive AAC device which aided smooth exchange of communication between the two of them. This had reduced her

caregiver burden greatly, given her a lot of emotional relief too as her daughter was using it extensively not just in learning environments but also in social contexts too. The caregiver also expressed reduced stress levels as the daughter was independently moving around

communicating through the device. She does express concern over the financials that the entire process entails and also the need to keep abreast of the developments that take place in the app. The themes and sub themes along with a few excerpts are tabulated below.

Table 5

Themes and sub themes regarding AAC and Quality of Life

Theme	Sub theme	Excerpts
Enhanced sense of empowerment	Empowerment for the child	“Uses AVAZ for expressing feelings and preferences”
	Increased independence in the child	
	Fostered autonomy	
Emotional wellbeing	Psychological relief for the caregiver	“Being heard was critical for my emotional wellbeing too”
	Ease in stress and guilt levels	
Community Integration	Shared learning	“A community that supports each other”
	Peer support	
Engagement and Adaptability	Multiple options in the app	“My child uses the app creatively and academically and is having enough cognitive stimulation and skill development”.
	Sustained engagement	
Positive Perception towards AAC & AI	Strong transformative potential	“AI will definitely be a boon”
	Caregiver Quality of Life enhancement	

The above case study does not only highlights the transformative potential that AAC tool like AVAZ brings forth for the children with complex communication needs but also enhances the quality of life of the caregiver. The narrative of the mother confirms the findings that have been arrived at through past literature which highlight the way AAC technologies have fostered independence, reduced stress in caregivers and have been successful in promoting social inclusion (McNaughton & Light, 2013). The emotional account accentuates the way

communication barriers have influenced the mental health of the caregiver and how now the barriers have been resolved through assistive technology, and AAC tools like AVAZ (Lund & Light, 2006). She exhibits openness to embracing technological innovations in the form of better AI features that would ease out the communication for the children with CCN and through that ease out the lives of the caregivers. This case study has focused on the social and emotional dimensions which have not been captured by the quantitative metrics.

Conclusion

This mixed-methods study on exploring caregiver quality of life following usage of augmentative and alternative communication revealed interesting quantitative and qualitative insights. The former revealed better quality of life perception of the caregiver after using the AVAZ app. Similarly, the latter narratives too offered a nuanced understanding through a case study that dealt with caregiving experience of a mother, capturing the emotional resilience shown by the duo, and enhanced interactions between the child and the caregiver.

There were many points of convergence of data than divergence and when this is appropriately introduced and bolstered one can serve as catalysts to improve the family dynamics at a macro level and enhance caregiver satisfaction. This empowerment of the primary caregiver will reduce frustration, generate a good sense of purpose and reap emotional gains in the long term. The findings arrived at through both the methods reiterate the salience of caregiver inclusive assistive technology interventions in any practice.

Implications

The study brings to the fore the pressing need to integrate caregivers into the training programs of AAC. They become the co-beneficiaries of the devices. The need for family centered models have never been more relevant considering the emotional wellbeing of the caregivers along with the communicative goals met for the special children. AVAZ is an application developed in India and was found to be especially very successful in rural schools. Such localised and affordable solutions can also bridge the gap in underserved areas and help promote equity and reduce caregiver burden. There could be more longitudinal research carried out to explore the sustained influence of AAC on the quality of life of the caregiver.

Limitations

The sample size for quantitative analysis was only 32 caregivers whose children were diagnosed with CCNs. A larger sample size would facilitate generalizability. The case study is about only one caregiver who has been handling her special child for 27 years. There is a shortfall in other caregiver experiences. A group of such caregivers could add more to the volume of understanding.

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Levels Of Perceived Stress Among Civil Service Aspirants: An Analytical Study

Dr. Hita Claudia Rao*, S. Supriya Araadhana** and S. Supraja Araaditha***

Abstract

Civil service jobs are highly sought-after professions in India as they symbolize power, position, and respect within society. However, becoming a civil servant is challenged by intense pressure, causing considerable stress to aspiring candidates. Despite evidence about the impact of stress in high-stakes exam environments, few studies have explored stress and its correlates among civil service aspirants. The present study investigated the levels of perceived stress among students preparing for civil service exams and assessed the influence of age, gender, and preparation time on stress. A total of 203 participants (male = 128; female = 75) with a mean age of 24.7 years were randomly selected for the study. The Perceived Stress Scale (PSS-10) was used to measure stress levels in the sample group. The data were analyzed using descriptive statistics, independent sample t-test, and one-way ANOVA. Results indicated that most participants reported moderate to high levels of perceived stress, with notable gender differences. While age did not affect stress levels, preparation time significantly influenced the perception of stress. The findings underline the need to implement effective stress-management interventions to mitigate stress and provide psychological support to this vulnerable population.

Keywords: *perceived stress, UPSC exams, civil service, stress correlates, mental health*

About authors:

¹Guest Faculty, Department of Studies in Psychology, University of Mysore, Mysuru, Karnataka, India.

²Student, Department of Studies in Psychology, University of Mysore, Mysuru, Karnataka, India.

³Student, Department of Studies in Psychology, University of Mysore, Mysuru, Karnataka, India

Introduction

The Civil Service Examination (CSE) is a prestigious exam held in India to recruit ideal candidates for various administrative positions within the Indian government system. The Union Public Service Commission (UPSC), located in the national capital, New Delhi, oversees and conducts this exam annually. The candidates who succeed in this exam occupy executive positions and are responsible for upholding law and order in the country. However, becoming a civil servant is easier said than done. That is because the CSE, which is considered one of the toughest competitive examinations in the world, has a rigorous framework and meticulous selection process. The exam progresses through a stage-wise assessment procedure consisting of a preliminary (objective) exam, the main (descriptive) exam, and a personal interview,

where aspirants are evaluated for their comprehensive understanding of current affairs, general knowledge, and proficiency in various core subjects. To find the best fit, candidates are not just assessed for their factual knowledge but also for their aptitude, ethics, and integrity before being selected for specific posts (Madalaimuthu, 2018). Clearing the CSE is thus a painstaking task. The compartmentalization of the exam is so rigid that if candidates fail in any one stage of the exam, they have to restart the entire process again, adding to the preparation time and the competitive nature of this exam. Records estimate that about one million candidates take this exam annually, of whom only a fraction achieve success (UPSC, 2023). The CSE demands sacrifice, dedication, and hard work at all stages of preparation, taking a toll on the health and well-being of those who venture into this career path.

Anyone who is 21 years or older and has a graduate degree can appear for the CSE. Given the prolonged preparation time and the challenging nature of this exam, most candidates begin their preparation quite early. Despite investing the most productive years of their lives into exam preparation, students have no guarantee of making it through to the top. The anxiety of potential failure, coupled with pressure from family, friends, and society, can adversely impact and demoralize the career aspirations of these youngsters. Added to this are factors such as extended study time, cognitive overload, fear of missing out, feelings of loneliness, emotional turmoil, financial difficulties, health issues, changes in routine, adjustment issues, and time management, which can all play a significant role in increasing stress levels, leading to fatigue and burnout. Since CSE is not merely an exam but a way to higher status and position, the inclination toward this exam is echoed in the broader societal interest where, apart from traditional graduates, candidates from management, engineering, and medical backgrounds also participate – so much so that people with stable employment often jump into CSE preparation. This diverse participant group from various academic backgrounds can breed unhealthy comparison and competition among aspiring candidates, straining their morale and motivation. Managing all these issues with other routine obligations can result in unwanted performance pressure that gradually reduces health-related quality of life (Pathak et al., 2022). The ongoing stress that civil service aspirants face thus creates a debilitating condition, provoking maladaptive coping behaviors that increase the risk of developing diseases and disorders (Emran et al., 2024).

Stress in a competitive exam environment has similar effects on new applicants, those who have devoted themselves to years of preparation, and those who have nearly missed their objectives. Research shows that increased stress levels can alter the functional abilities of the brain and activate the microglial

cells in the prefrontal cortex that regulate working memory, process emotional experience, and control impulses. Effects of stress on the critical circuits of the brain can cause depressive behaviors and decrease cognitive capacities (Ahmed et al., 2023; Ishikawa & Furuyashiki, 2021; Rajesh et al., 2022). Chronic stress can heighten negative emotional states, reduce emotional stability, and induce emotional tension and lethargy (Strizhitskaya et al., 2019). Stress can also diminish social intelligence and emotional competence, particularly in students obsessed with their studies, making them overlook or ignore other areas of concern (Bedi, 2023). If left unchecked, stress can result in a combination of physical and psychological complications, including metabolic dysfunctions, gastrointestinal complications, circulatory disturbances, respiratory disorders, weakened immune system, heightened inflammatory responses, disrupted sleep and appetite, and elevated levels of fear and anxiety, all of which significantly contribute to overall morbidity (Devi et al., 2019). Literature asserts that stress, over time, affects all organ systems of the body, causing irrevocable damage. It can cause dissociative experiences and make room for various forms of mental illness. All these findings on the potential impact of stress are particularly relevant for students in CSE preparation since their preoccupation with performance and perception of stress plays a crucial role in molding their health and well-being (Slimmen et al., 2022). It necessitates measures that mitigate the effects of stress to maintain student well-being, particularly for those in highly competitive exam environments like the UPSC.

Rationale of the Study

Although stress is universal and sometimes necessary, prolonged stress becomes unmanageable and difficult to cope with. Without proper support, chronic stress can hinder career growth, career involvement, and career opportunities. While it is known that those aspiring to join the civil service experience

significant stress at all stages of preparation, there remains a scarcity of research that substantiates these claims. The present study attempts to fill this research gap by providing empirical evidence regarding the levels of perceived stress among civil service aspirants. The study also investigated the influence of age, gender, and preparation time on levels of perceived stress. The insights gained from the study aim to encourage all stakeholders, policymakers, and coaching institutions to provide timely psychological support to those preparing for UPSC exams. Stress management programs tailored to build resilience in these aspirants can enhance their experience of becoming administrators capable of serving the nation.

Objectives

1. To assess the levels of perceived stress among civil service aspirants.
2. To examine the influence of age, gender, and preparation time on perceived stress.
3. To highlight the psychological impact of stress on aspirants' well-being and success and emphasize the need for effective stress management interventions.

Hypotheses

1. Levels of perceived stress will be significantly high among civil service aspirants.
2. Age, gender, and preparation time will significantly influence levels of perceived stress among civil service aspirants.

Method

Participants

The study sample consisted of 203 participants, including 128 male and 75 female participants. The participants were between 19

and 34 years old, with a mean age of 24.7 years. Participants residing in and around the cities of Bengaluru and Mysuru were included in the study. A random sampling technique was used for sample identification and selection.

Procedure

Data were collected from students preparing for civil service examinations at various coaching centers and libraries in and around Bengaluru and Mysuru. The Perceived Stress Scale (PSS-10) was used to measure levels of perceived stress in participants who volunteered for the study. Informed consent was obtained from the sample group, and the purpose of the research was clearly stated to each individual. Confidentiality was assured, and only those who met the study criteria were considered for the study. Individuals with impaired abilities, mental health issues, and those previously exposed to similar studies were excluded from the present research.

Instrument

The Perceived Stress Scale (PSS-10), developed by Cohen et al. (1983), was used to measure stress experienced by the participant group. PSS-10 is a classic self-report questionnaire that measures the extent to which an individual appraises their life situations as stressful. The test consists of 10 questions answered on a 5-point Likert scale. Each question on the scale is scored from 0 (never) to 4 (very often), with a total possible score ranging from 0 to 40. The overall score is calculated by reverse-coding the positive items and summing the scores for all the items. A higher score on the scale indicates high levels of stress. The author reports good internal consistency and test-retest reliability for the scale with a Cronbach's alpha of 0.79 and an intraclass correlation coefficient of 0.91, respectively. The test also reports criterion validity.

Results

Table 1

Shows the distribution of civil service aspirants by age, gender, and preparation time.

		F	%
Age	Below 25 years	107	52.7
	25 years and above	96	47.3
Gender	Male	128	63.1
	Female	75	36.9
Preparation time (in years)	1 year or less	83	40.9
	1-2 years	53	26.1
	3 years or more	67	33.0

In terms of age, 52.7% (n = 107) of participants in the study were below the age of 25, and 47.3% (n = 96) were aged 25 years and above, signifying a relatively balanced age distribution. A majority of the aspirants were younger than 25 years, reflecting the trend of early career entry into UPSC preparation.

In terms of gender, 63.1% (n = 128) of participants were male, while 36.9% (n = 75) were female, suggesting gender disparity in civil service preparation and participation.

Table 2:

Shows the distribution of perceived stress among civil service aspirants.

PSS	F	%
Low	32	15.8
Moderate	149	73.4
High	22	10.8

A majority of 73.4% of participants (n = 149) in the group reported moderate levels of stress, while 10.8% (n = 22) showed high stress. A small proportion of participants (15.8%, n = 32) reported low stress levels.

Table 3:

Shows the mean score of perceived stress by age, gender, preparation time, and the results of test statistics.

		M	SD	Test Statistics
Age	Below 25 years	18.74	5.83	t = -1.287
	25 years and above	19.89	6.87	p = .200
Gender	Male	18.35	6.01	t = -2.795
	Female	20.89	6.66	p = .006
Preparation time (in years)	1 year or less	16.93	5.13	F = 23.124 p = .001
	1-2 years	19.79	6.48	
	3 years or more	21.80	6.65	

While comparing the mean perceived stress score, no significant difference ($t = -1.287$; $p = .200$) was found in age groups, which showed that participants experienced similar levels of perceived stress regardless of age. However, in terms of gender, a significant difference was found ($t = -2.795$; $p = .006$), indicating that female aspirants had higher perceived stress scores than male aspirants. On preparation time, results of one-way ANOVA revealed a highly significant difference ($F = 23.124$; $p = .001$), suggesting that participants who spent a greater number of years preparing for UPSC exams had higher perceived stress scores.

Discussion

The present study assessed levels of perceived stress among civil service aspirants. The findings revealed that most participants, i.e., 73.4%, reported experiencing moderate levels of perceived stress, 10.8% reported experiencing high stress, and 15.8% reported low perceived stress. The results support previous research on stress caused by competitive exams for students preparing for them (Shrivastava & Rajan, 2018). While moderate stress can enhance productivity, continual low-grade stress can harm health and performance in the long run (Zafar et al., 2021). Apart from invoking poor health-related behaviors, chronic stress can trigger escape or avoidance behaviors that affect the academic efficiency of civil service aspirants, reducing their chances of success in the exam (Emran et al., 2024). Given these results, it is necessary to implement targeted interventions that help aspirants deal with stress immediately to buffer its impact on their academic activities and outcomes.

The study also examined the influence of age and gender on levels of perceived stress to understand if these factors contributed to stress appraisals in civil service aspirants. While age did not affect stress scores ($t = -1.287$; $p = .200$), gender appeared as a significant factor affecting the levels of perceived stress in the participant

group ($t = -2.795$; $p = .006$). Female aspirants reported higher perceived stress scores than their male counterparts, revealing the unique psychosocial challenges that women encounter in competitive settings. Moreover, the higher proportion of male (63.1%) than female (36.9%) participants in the study suggests gender disparity in civil service exam preparation and participation. The rationale behind such a difference lies in the stereotypical sociocultural beliefs that regard women as incompetent in traditional gender roles and hence discourage women from taking up such roles (Croson & Gneezy, 2019). The implicit bias and strong gender norms can impose a psychological burden that augments the experience of stress in women. The result of the study validates the findings of earlier research, which state that stress is a common occurrence across age groups (Saha et al., 2020), and the experience of stress is mediated by gender (Lim & Kim, 2021; Matud, 2017). It also emphasizes the importance of developing gender-sensitive counseling services that address the needs of women aspiring to be civil servants.

One of the main factors in the study that emerged as a strong influence on perceived stress was preparation time ($F = 23.124$; $p = .001$). That is, aspirants preparing for over three years reported significantly higher stress levels than those preparing for less than one year, indicating that prolonged efforts without assured success can accentuate levels of perceived stress. The findings align with past studies that state the association between the time taken for UPSC preparation and stress. The lengthy CSE preparation is typically linked to the extensive syllabus and repeated failures. According to records, it is highly unlikely that students pass CSE on their first attempt, and an average candidate requires a minimum of three to four attempts before clearing the exam. The success rate of candidates also declines after the third attempt, affecting their self-concept and self-esteem. The prolonged preparation time with

repeated failures increases uncertainty about the future and intensifies stress, creating a downward spiral that deters the candidate's resolve to be a civil servant. The study results thus emphasize the need for structured mental health support and resilience-building programs tailored for long-term civil service aspirants to protect them from the consequences of continual stress.

Conclusion

The journey of becoming a civil servant is not merely academic but deeply personal, shaping the lives of those who venture into this profession. Since civil service jobs promise power, prestige, and a quest to serve the nation all at once, millions of students opt for this strenuous career, enduring the physical struggles, mental hardships, and socioeconomic burdens it brings. With a hyped perception of elite executive roles, many students enter CSE without preparing for the demands that lie ahead. Effective UPSC preparation calls for a multi-faceted approach, combining academic skills with time management and active utilization of resources while maintaining optimal health and well-being. To emerge successfully from CSE, candidates must first do their homework and understand that UPS exams are inherently stressful. They should develop proactive behaviors to manage stress from the beginning of their exam preparation. Rather than making hasty decisions, they must learn to make informed choices, knowing that CSE calls for sacrifices and investments without guaranteed returns. Institutions where students are training for UPSC exams are also responsible for educating students about the essentials of CSE to equip them for the tough road and steep climb ahead. As a moral obligation, they should implement holistic, gender-sensitive, strategic stress management interventions that combine academic training with mental health support to protect students in high-risk, stressful exam environments. Only a collaborative effort between researchers, policymakers, educators, and coaching centers can ensure the psychosocial

safety of aspirants dreaming of becoming a part of India's administrative system. When candidates have access to timely guidance and are sure of proper support, they can handle failure and grow as potential people ready to intentionally navigate the challenging path of CSE to achieve their goals.

Limitations and Future Directions

The present study provides empirical evidence about the levels of perceived stress among civil service aspirants, adding valuable insights into the struggles of these cohorts. It demonstrates the pressing need for mental health support, resilience building, and realistic preparation guidance for UPSC aspirants. It also highlights gender gaps and prolonged preparation as stress amplifiers among candidates aspiring to be civil servants. However, the study has a few limitations that can guide further research. Being a cross-sectional survey research, the study assessed stress at a single point in time, limiting the temporal generalizability of the findings. The study is confined by the geographical location of the sample and the small sample size. It does not differentiate between students preparing for the exams themselves, those taking online coaching, and those coaching via various centers. Factors such as socioeconomic position, family support, educational background, and access to resources, which influence stress appraisals, have not been explored in depth. These limitations can be addressed in future research where longitudinal investigations with mixed methods can be used to understand stress trends over multiple exam attempts and in those preparing for the exam via various modes. A wider pan-Indian sample distribution can also be employed to discover relevant factors like personality type, coping styles, and resilience traits that mediate the experience of perceived stress in civil service aspirants.

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Conflict of Interest:

The authors declare no conflict of interest in this research.

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The Changing Landscape of Kirana Stores: Challenges, Adaptation, and Resilience of the Small Business Community

Satya Swarna Devi Jagatha*, Tanisha Hingar** and Dr. Sangeeta Bhamidipati***

Abstract

Objective: This study explores the 'why' and 'how' the kirana store owners got affected and the strategies they have used to adapt to the ever dynamic retail platform. The research focuses on the challenges faced by kirana store owners and their adaptive responses to maintain their relevance in the changing market. Methodology: With the qualitative design as the backdrop and semi-structured interviews as the method, the researchers conducted interviews with ten kirana store owners in Visakhapatnam, a tier two city in Andhra Pradesh. Results: Thematic analysis identified three key pressures: COVID-19, customer loss to supermarkets offering bulk discounts, and the shift to online shopping driven by convenience and fast delivery. A few showed resilience by adopting digital payment systems and home delivery services through platforms like WhatsApp to cater to changing customer preferences. However, many struggled with the resources and knowledge needed to compete with large platforms, facing barriers to long-term adaptation such as a lack of awareness of digital tools, financial constraints, and resistance to change. Conclusion: The findings of this study highlight the urgent need for digital enablement, policy support, and strategic innovation to ensure the continued relevance of Kirana stores in the modern retail ecosystem.

Keywords: Kirana stores, COVID-19, big retail stores, online grocery apps, small business resilience.

About authors:

*BA III Year, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.

**BA III Year, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.

***Associate Professor, Department of Applied Psychology, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India. (Corresponding Author)

Introduction

Kirana stores are treated as small neighborhood shops that occupy a very crucial place in the local economy and community, by way of offering essential goods and developing personal relationships with customers (Bansal & Kumar, 2018). During the past few years, it has been observed that these small scale stores are becoming obsolete owing to the challenges the retail landscape is posing (Dey & Rajkumar, 2021). The term "kirana store," has been since decades deeply ingrained into the Indian retail landscape, and refers to small, family-owned business that sells grocery items. These stores are

more than just retail outlets; they are integral parts of the community fabric. They often serve as social hubs and offer credit to regular customers (Bansal & Kumar, 2018). The concept of Kirana or Mom and Pop Store dates back years. In a country like India, a Kirana store not only sells goods like groceries or other essentials through stores but also maintains a relationship with its regular customers. This relationship between shopkeepers and customers is maintained by offering discounts, credit facilities, and home delivery facilities from the shopkeeper's end. They act as community hubs,

offering personalized service and intimate knowledge of their customer base.

The origins of kirana stores are difficult to pinpoint precisely, as they predate formal documentation. The origins of Kirana stores trace back to ancient and medieval India's trading systems, where local merchants and peddlers supplied essential goods. As urbanization increased, these systems evolved into familiar Kirana stores. These stores provided accessibility, flexibility, and personalized service. Before the rise of organized retail, they were the primary source of groceries and household items (Dey & Rajkumar, 2021). Before Kirana stores, there was the concept of haat bazaars in villages, then small stores came up, where all the family members engaged together in an economic activity of selling goods, which added convenience to the customers in terms of buying from their nearest point of dwellings (Bansal & Kumar, 2018). Thirty years back, department stores came up with more walk-in spaces where customers could select the products themselves and get the billing done. Ten years roughly after the advent of department stores, the concept of supermarkets, which were quite bigger than the departmental stores and where one could find a needle as well as a television, came up. As the name suggests, supermarkets were super or quite sizable, where great discounts and loyalty benefits were offered to the customers. The main objective of the supermarkets was the benefit of assorting every item under one roof.

The late 20th and early 21st centuries saw the emergence of large retail chains like Reliance Retail, Future Group (which included Big Bazaar), and Aditya Birla Retail (More) (Kumar et al., 2019). These stores brought about significant changes in the retail landscape, offering a wider range of products and competitive pricing. They changed the modern shopping experiences (Yadav et al., 2021). The traditional model, which is deeply rooted in India's trading history, has faced significant challenges in recent years. Negatively, kirana

stores faced competitive pressures due to the economies of scale and marketing budgets of big stores (Vartak et al., 2021). They also struggled with a technological disparity as big stores adopted advanced inventory and POS systems. Big stores achieved consistent product availability through efficient supply chains. The impact on kirana stores has been particularly pronounced in urban areas, where these big stores have a stronger presence. However, even in rural areas, the influence of these chains, through their supply networks, is being felt. Kirana stores, however, used traditional distribution channels that were often inefficient (Yadav et al., 2021). Financial constraints further limited their ability to invest in technology and expand offerings.

The grocery segment has undergone a significant transformation due to technological advancements (Kumar et al., 2019). The growth of e-commerce and q-commerce in India has been rapid, driven by increasing internet penetration and smartphone usage. Online grocery platforms like BigBasket, Blinkit, Zepto, and Swiggy Instamart have gained immense popularity, offering convenience, a wide range of products, and competitive pricing. Digital payment systems like Paytm, Google Pay, and PhonePe have further streamlined transactions. Modern inventory management and POS systems have optimized operations for larger retailers, providing real-time data on sales and inventory.

The COVID-19 pandemic profoundly impacted the Indian retail sector, particularly in Kirana stores. While they emerged as essential service providers during lockdowns (Tiwari & Singh, 2020), few stores suffered because of their lack of technological preparedness. But positively, a few remained open, providing essential goods, and their established local relationships helped maintain supply. They also saw a rapid increase in the adoption of digital payment systems.

On the other hand, the pandemic became a catalyst for a new trend of buying groceries

online. The pandemic accelerated the entry of big tech companies into the grocery retail sector. The emergence of quick online delivery services like Instamart, Blinkit, and Zepto, offering deliveries within no time have only exacerbated the competition. This has become a greater threat to the small stores as they had to live up to the swift deliveries, lucrative pricing and convenience shopping to their customers. The stores have realized their customer base, and have understood that they cannot hold the mercurial interest of the Gen Z population who are increasingly relying on quick delivery apps (Yadav et al., 2021).

While online shopping may gain popularity, there would still be many customers who would value the convenience and the personal touch in service that is offered by small stores (Tiwari & Singh, 2020). The current research is focused on exploring the lived experiences of the store owners, gathering information about how they handled their small businesses through the pandemic, and how they are able to sustain through the onslaught of technology. With claims that declare less than 10-minute delivery from the likes of BBNOW, Instamart, Blinkit, and Zepto, these store owners are definitely having to confront challenging times. Explorations through such challenges are prompting deeper investigations into the store owners' strategies for survival.

The research focuses on the below three domains:

1. The lived experiences of the store owners regarding the sales and store operations during the pandemic.
2. How the small stores are able to sustain through the competition they are facing from the big names in the retail world.
3. The impact of multiple grocery apps and quick delivery services in their day-to-day business.

Literature Review

This segment of the literature review combines and synthesizes findings from the existing studies and highlights the challenges that are being faced by these small stores, their

adaptation strategies, and the resilience strategies the stores have adhered to in the recent past.

Challenges Faced by Kirana Stores

The small stores grapple with multitude challenges in the face of heightened competition that is arising in the organized retail segment. Bansal and Kumar (2018) stated that the organized retails are only mushrooming now, posing a great threat to the retailers in the unorganized segment. This competition only fuels price sensitivity as the biggies are leveraging to declare huge price cuts and thereby luring the consumers that are cost-conscious.

Additionally, Ramana and Raman Kumar (2014) have identified extra challenges in the likes of having outdated business practices, poor inventory management and limited access to credit. These shortcomings hamper the small stores from entering into the competition fray, that too in the age of rapid technological progress and the dynamic consumer preferences. Majority of the unorganized retailers are struggling to expand their market reach and to adapt newer trends in consumer behavior but to no avail.

Influence of COVID-19

During the COVID-19 pandemic, kirana stores faced significant disruptions due to government regulations that imposed limited operating hours and mandated sanitation protocols (Aradhya, K, & Niveditha, 2021). Consumer behavior witnessed a seismic shift, with heightened panic buying and a major draw towards shopping online for essential items. This period also led to sharp decline in consumer spending, considerably impacting the livelihoods of small retailers reliant on local clients.

In such pressing contexts, these kinds of disruptions in supply chain only exacerbated the challenges faced by kirana stores, as their dependence on local distributors became troublesome during the time of lockdown. Regardless of such challenges, kirana stores exhibited adaptability, making the best use of

technology to incorporate home delivery services and also ensuring delivery of orders through WhatsApp.

Resilience through Adaptation Strategies

The resilience of kirana stores comes across clearly in the form of their ability to seamlessly adapt to changing circumstances. The digital shift has become more pronounced, with initiatives like JioMart creating an online platform to connect kirana stores. This latest move has acquired significance as kirana stores can now begin to harness their digital presence, and ameliorate access to consumers (Dey & Rajkumar, 2021).

Furthermore, these small stores enjoy something the large stores can never get to, in terms of consumer loyalty. This is possible only

because of the relationships the store owners have established years ago. Rani (2013) mentions the emotional bond people have developed with their local kirana stores.

To sum up, these small stores are confronted with multiple challenges amidst the changing retail landscape.

Method

Participants & Demographic Details

Ten kirana store owners who hailed from different neighborhoods in Visakhapatnam were made a part of this small research study. Personal information, including age, gender, family history, and business history, was collected from each participant to provide context for their experiences. And these are their particular shop names

STORE NUMBERS	GENDER	AGE
KS#1	Female	50 years
KS#2	Male	50 years
KS#3	Male	54 years
KS#4	Female	50 years
KS#5	Male	60 years
KS#6	Male	59 years
KS#7	Female	52 years
KS#8	Male	56 years
KS#9	Female	60 years
KS#10	Male	47 years

Data Collection

Semi-structured interviews were conducted in person, with each session lasting approximately 20 to 30 minutes. Informed consent was obtained from all participants for both video and voice recording of the interviews. The interview questions focused on the impact of COVID-19, competition from large retail stores, and the influence of online grocery apps.

Data Analysis

The interviews were manually transcribed to ensure accuracy. Thematic analysis was used to identify common themes and patterns related to the research variables. Quotes and responses were

coded to illustrate the main findings. Participants were assured of the confidentiality and anonymity of their responses. The data collected after securing their informed consent was securely stored and used solely for academic purposes.

Results And Discussion

This qualitative research sought to examine the experiences and challenges of kirana store owners in Visakhapatnam in the face of a rapidly changing retail environment. Based on thematic analysis of interviews with ten store owners, three major themes were identified, shedding light on the intricate dynamics involved: external pressures on business sustainability, adaptive strategies for survival, and barriers to long-term

adaptation. These themes give an exhaustive idea of the challenges and resilience of small-scale retail enterprises, especially in the context of economic and technological changes.

1. External Pressures to the Business's Sustainability:

A close analysis of the interviews unraveled certain aspects of the challenges, multiple ones, the owners are facing, questioning their very existence and sustainability. The challenges are in the form of dynamic consumer habits and entry of various competitive forces into the markets coupled with the latest economic shocks.

Influence of COVID-19: The pandemic left an indelible effect on the operations of these small stores. Most of them reported a dip in their business during the lockdown time, citing issues in the supply chain first and restricted operating hours next. They felt the pandemic was one major reason that pushed online shopping into existence.

As KS#1 had so eloquently put, "During COVID, sales fell drastically. We had to close at certain hours and had fewer customers coming in." The pandemic caused supply chains to be upset, resulting in erratic availability of stocks, thereby adding to the woes. One respondent recalled, "During COVID, there were days when I couldn't even get basic rice and dal. Customers went to supermarkets because they had more stock." This change underscores the susceptibility of small shops to supply chain disruptions and the loss of customer confidence that follows. Although some firms were able to reduce losses by diversifying their activities, the overall impact of the pandemic was unquestionably harsh.

Customer Loss to Supermarkets and Online Stores

The market has been largely disrupted by the increase in large retail outlets, for example, D-Mart and Vee Mart, and online grocery stores. Retailers continuously pointed to customer disloyalty as customers shifted towards

supermarkets selling at discounted prices in bulk and online stores that offered convenience. KS#3 elaborated, "Most people believe D-Mart is priced low, but it's all a deception. Well-educated individuals know this." This feeling reflects the assumed pricing tactics of large outlets, which tend to create a perception of cost-value. The inability of smaller outlets to offer these competitive prices has led to a decline in customer base. According to one of the interviewees KS#6,

"People these days like supermarkets since they are offered discounts on large brands. I cannot offer them such deals."

In addition, doorstep-delivery online sites have also changed purchasing behavior on a large scale.

Shift in Consumer Behavior: It is the purchasing behavior based completely on the convenience model that has brought about a huge challenge in terms of existence for the kirana store owners. Preference to doorstep delivery through online sites over direct visiting to the store has become passé. A huge drop in footfalls to the stores also led to dip in sales.

KS#5 said, *"The advent of online grocery apps and delivery services has taken a huge hit on my business."* KS#8 added, *"Earlier, people used to come daily for small items, but now they order online and get everything at once."*

This trend kind of highlighted the challenges that the small store owners are facing in terms of keeping up with the expectations of the consumers that are dynamic and fast evolving.

2. Survival Strategies That Adapt

The store owners have been able to come up with small survival strategies like offering tailored services, door deliveries and the trust they have built in the community over the years.

Fostering Personal Relationships: Kirana stores were the places where personal relationships between people brewed and

sustained. Trust and familiarity with the store owners and the people associated with the store was a major draw. One of the interviewee said,

"Customers know me personally. They trust me, and I offer them small credits when needed,"

Such kind of an association ignites feelings of loyalty and belongingness which is difficult to come by in the large retailers segment and non-existent in the online stores.

Flexible Credit Facilities

Most kirana store owners also provide informal credit facilities to their loyal customers, something that supermarkets and online stores do not, according to shopkeepers. "I know my customers; they pay later if they don't have money today. That's something big stores won't do," said one shopkeeper. Such flexibility offers an important service to customers, especially those who do not have money at the time of payment, and increases customer loyalty.

Digital Payment and Online Ordering Adoption: Others have tried to fit into the digital line by embracing digital payment options and casual delivery services through WhatsApp. "I began accepting Google Pay and Paytm. Also, customers send me a list on WhatsApp, and I deliver items with my helper," KS#7 explained. Yet, this fitting in is not consistent among all store owners and shows differences in digital literacy and adoption.

3. Barriers to Long-Term Adaptation

Although adaptive measures have ensured the survival of kirana shops, a number of impediments restrict their long-term adaptation and competitiveness in the changing market.

Lack of Digital Tools' Awareness: Most store owners mention being unable to grasp and harness digital technologies to rival online retail sites. Lack of training in digital marketing and e-commerce is an ongoing issue. KS#9 said,

"I don't know much about how to sell online. My son assists me with payments, but I don't know how to operate an app".

The digital rift is one of the greatest challenges the kirana stores have witnessed in their path to forced modernization and struggle to fit in the new business world.

Financial Constraints: Talking about how the transition in conducting business is taking place through apps, one of the owners stated,

—Large companies can spend money on apps and delivery. For us, even a minimal increase in expenditure impacts the business.¶

They opined that the financial boundaries restrict them to splurge as much on technological upgradations and various advertising campaigns.

Resistance to Change: A few of the Kirana store owners have tried to keep abreast with the changes in the way they conduct their business. A few of them would want to conduct it in a traditional manner. There is resistance in their minds owing to uncertainty and apprehension about technology and its value. One of the owners (KS#8) who showed resistance to change shared,

"I have owned my shop for 20 years doing it the same way. I do not know if selling online will be good for me,"

The outcomes of this study elucidate on the vulnerabilities that the kirana store owners are facing in the dynamic retail scenarios.

Discussion

The retail scenario in India has witnessed significant upheavals, chiefly highlighted during the pandemic. Kirana stores, which were the backbone of unorganized retail in our country, have exhibited a tremendous amount of adaptability while steering through the challenges posed by various crises and also increasing opposition from organized retail.

Resilience in the times of Crisis

An analysis of the survival of the Kirana stores during the COVID-19 pandemic showcases the resilience levels they have displayed despite huge challenges. While many organized retailers shut shop during the pandemic, kirana stores managed to operate, taking advantage of the already-established customer loyalty (Dey & Rajkumar, 2021). One could attribute such resilience to their operational flexibility and capacity to get into good interpersonal relationships with their customers — as highlighted by Rani (2013), where she emphasized customers' emotional connection towards their Kirana stores.

Navigating Challenges

Despite the adaptability shown to the diverse, challenging conditions, kirana stores still continue to face newer challenges from organized retailers, who draw huge benefits from better supply chain management (Bansal & Kumar, 2018). Ramana and Ramanakumar (2014) identified that retailers in the unorganized sector compete against challenges like limited access to credit and a few other outdated practices, which may compromise the competitive edge they could have in the constantly evolving marketplace. This situation compels many store owners to constantly innovate or risk to vegetate. As customer preferences are witnessing a huge shift towards branded goods, kirana stores too must come up with ways in which they could stand out tall amidst this competition. With solutions in the form of better inventory management and technological advancements, they can stay abreast of the competition.

The Future of Kirana Stores

Customers' emotional bonds with their kirana stores cannot be understated. Research indicates that these relationships foster customer loyalty, which is a critical advantage that larger retailers often lack (Rani, 2013). Future efforts should concentrate on enhancing the personal touch within the digital framework, giving an

unparalleled shopping experience which integrates comfort and convenience.

In summary, the interaction between resilience and evolution describes the existing plight of kirana stores. No doubt they do face formidable challenges from the organized retail sector, but the capacity to nurture consumer loyalty, embrace the latest technological advancements, and adapt to changing consumer demands puts the Kirana stores as integral players in the entire retail ecosystem.

Conclusion, Implications And Limitations

It's difficult to find large store owners to remember their consumers, who remember the names and how their customers like to shop for items or talk and share stories like in small stores. The Kirana store owners confessed about how tough things have been lately, especially with the pandemic, those supermarkets popping up, and people ordering groceries online. They are seeing fewer customers, feeling the squeeze, and trying to figure out how to keep their shops going. Despite all that, their interviews resonated a sense of determination. They have been part of their communities for years, building relationships and trust. People rely on them for little things, for credit when times are hard, and for that familiar face. Even though the big stores and apps are changing everything, these small shops, or "kiranas," are still really important, especially in smaller towns and villages. They are starting to use things like digital payments and better ways to get their supplies, trying to keep up.

It's like they are trying to mix the old ways, the personal touch and trust, with the new, like technology and modern supplies. It's a balancing act. Ways need to be shown to these small store owners as to how they could learn technology, use it, and stay competitive. They are a vital part of the community. But, with the new generation of kids who are glued to their phones and not really interested in running a tiny shop, the Kirana stores may soon lose their existence. They may become a thing of yore at least in the Tier I cities.

Implications and Future Research

The study underscores the importance of supporting small businesses in adapting to the digital economy. Future research could explore strategies for Kirana stores to leverage technology, such as adopting digital payment systems and online ordering platforms. Policymakers and community organizations should consider providing resources and training to help small businesses compete more effectively.

The study is based on a limited sample of interviews, which may not fully represent the experiences of all kirana store owners. Further research with a larger sample size and diverse geographic locations could provide a more comprehensive understanding of the challenges and opportunities faced by small businesses.

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Emotional Intelligence, Cultural Diversity and Relationship Stability among Heterosexual Couples

Mishi Mehta*, Dr. Sruthi Sivaraman**, and Megha D. Prasad***

Abstract

This study investigates the influence of each partner's cultural background and emotional intelligence on relationship stability. The study comprised 230 young adult participants (115 male and 115 female) residing in Bangalore, aged 18-25. Purposive sampling was utilized for gathering the data. The scales used were the Brief Emotional Intelligence Scale (BEIS), the Intercultural Sensitivity Index (ISI), and the Revised Dyadic Adjustment Scale (RDAS). Regarding the variables emotional intelligence, cultural diversity, and relationship stability, the analysis yielded the correlation value between emotional intelligence and cultural diversity was found to be ($r = .426, p < 0.05$), the correlation value between emotional intelligence and relationship stability was found to be ($r = .417, p < 0.05$) and the correlation value between cultural diversity and relationship stability was found to be ($r = .455, p < 0.05$). As all p -values exceed the conventional significance level of 0.05, none of the observed correlations are statistically significant. Despite the absence of a direct relationship, the statistical interaction of these variables indicates their potential importance to interpersonal dynamics. This research demonstrates a complex interplay between psychological attributes and social contexts in maintaining enduring relationships. Additional research is needed to thoroughly understand these interactions and their long-term consequences on relationship patterns for the overall well-being.

Keywords: *emotional intelligence, cultural diversity, relationship stability*

About authors:

*Student, Kristu Jayanti College Autonomous, Bengaluru, Kristu Jayanti College Autonomous, Bengaluru,

**Assistant Professor, Kristu Jayanti College Autonomous, Bengaluru, Kristu Jayanti College Autonomous, Bengaluru

***Assistant Professor, Kristu Jayanti College Autonomous, Bengaluru, Kristu Jayanti College Autonomous, Bengaluru

Introduction

In today's time with growing cultural diversity and complex emotions, it is important to understand the elements that play an important role in relationship stability.

Emotional intelligence is essentially about awareness of our own feelings and about knowing the emotional experiences of others (Salovey & Mayer, 1990). Many times, conversations center on a few elements such as self-awareness, emotional control, empathy, good relationship management (Goleman, 1995). Even

if they seem sometimes jagged, these components shape our daily contacts.

Cultural diversity is the presence of several cultural backgrounds inside any society. This covers many languages, customs, values, and social conventions that, taken as a whole, provide rich layers to our daily encounters (Hofstede, 2001). Though it might not always fit clearly defined categories, when we talk about relationship stability, it goes beyond simple longevity; it includes a wide range of elements including emotional control, open

communication, conflict resolution, and alignment of cultural values (Gottman, 1994). Even if conditions are always changing, when these elements work in concert the relationship may resist the ups and downs of life. To understand the concept better, think of a busy office where several cultures collide. Sometimes the diverse emotional displays of a couple from different origins cause them to struggle to connect. Potential misunderstandings could result from one spouse preferring to keep their emotions secret while the other is inclined to be open about them. I have found that people may negotiate these difficulties and progressively build a more stable connection over time when they take the time to listen in to each other's emotional cues.

Relationship stability seems to be much influenced by the interaction between emotional intelligence and cultural differences—a complicated combination that several research have tried to understand. Both emotional intelligence and cultural diversity play a crucial role in relationship stability. Cultural diversity might pose some challenges whereas emotional intelligence acts as an intermediary to help navigate those challenges. High emotional intelligence helps the partners to manage these differences by promoting empathy, understanding and adaptive communication (Brackett, Rivers, & Salovey, 2011). This helps in minimizing miscommunication, enhances emotional connection thus stabilizing the relationship.

It is important how cultural diversity is managed as it can either enhance or pose a greater challenge to relationship stability. Partners with low emotional intelligence along with cultural differences might engage in frequent misunderstandings and fights hence reducing the stability of their relationship (Ting-Toomey, 1999). However, in relationships where both partners have high emotional intelligence, cultural diversity can serve as an enhancing factor, promoting mutual learning, deeper connection, and resilience in the relationship (Matsumoto & Juang, 2016).

The existing research has independently studied emotional intelligence and cultural diversity in a variety of contexts, there is limited data about how the interplay of these factors would affect the relationship stability. This research aims to bridge this gap by examining whether emotional intelligence affects a partners ability to navigate through cultural diversities in relationships. This research addresses the question whether there is a relationship between emotional intelligence, cultural diversity and relationship stability. We assumed a null hypothesis that there is no significant relationship between emotional intelligence, cultural diversity, and relationship stability.

Understanding the interconnection between emotional intelligence and cultural diversity has become essential to determine stable and fulfilling relationships. By examining the various ways in which emotional intelligence can help in managing the challenges posed by cultural diversity, this research provides more insight into the ever-growing research on relationship stability. The results can help build practical implications for therapists, couples, education settings or the policymakers seeking to understand and promote healthy relationships in the diverse society. Future studies can further expand on this topic by inculcating additional variables such as personality traits and attachment styles along with social support systems.

Review of Literature

Schutte et al. (2001) investigated the role of emotional intelligence in enhancing relationship satisfaction. Using self-reported questionnaires and couple-based observational studies, they found that higher emotional awareness in one partner often contributes to reduced conflicts and fosters greater mutual support. These findings suggest that emotional understanding may play a critical role in simplifying the complexities of day-to-day interpersonal interactions.

Building on this, Matsumoto et al. (2005) explored how cultural norms influence relationship stability and communication. Through comprehensive surveys and interviews with cross-cultural couples, their study revealed that couples who actively engaged with and respected each other's cultural backgrounds tended to maintain stronger emotional bonds. This highlights the significant role that cultural sensitivity and mutual understanding play in sustaining healthy relationships.

Adding a more integrative perspective, Soares and Albrecht (2018) examined the intersection of emotional intelligence and cultural flexibility. Drawing on in-depth interviews with international couples and psychometric assessments, their findings indicated that a high level of emotional awareness, when paired with openness to cultural differences, effectively reduces conflict stemming from cultural misunderstandings. This underscores the importance of both intrapersonal emotional skills and intercultural empathy in navigating the complexities of diverse relationships.

Research Gap

While existing literature has thoroughly examined emotional intelligence and cultural diversity as independent factors influencing relationship quality, there is a notable lack of research that integrates these two constructs. The moderating role of emotional intelligence in managing emotional and cultural conflicts is yet to be fully understood. Most prior studies have treated emotional intelligence and cultural diversity as separate variables rather than examining their interactive effects within intimate relationships.

This research aims to address these gaps by investigating how emotional intelligence interacts with cultural diversity to influence relationship stability. By adopting a more integrative approach, this study seeks to offer a nuanced understanding of how emotional awareness and cultural sensitivity together

contribute to healthier, more resilient relationships.

Method

Research Design

The researcher has chosen a quantitative comparative and correlational research design for this study. The aim of quantitative research is to investigate, count or classify, and construct statistical models and figures to explain the observation. A correlational research study examines what exists between variables and systematically investigates the relationship between two or more variables. A comparative study is a type of research design that involves comparing two or more groups or conditions to determine the differences or similarities between them.

Participants

Sample Characteristics:

The sample included unmarried heterosexual pairs from various cultures. Key demographic info that was gathered includes age, sex, race and how long they've been together. Data was collected from 230 participants across India. (115 men and 115 women).

Sample

The purposive sampling technique was used as the participants were required to fulfil certain criteria's such as they come under the age range of 18-25 years of age. Partners need to have been together in a romantic relationship for at least 6 months and they should come from different cultures. Those who are not living together will not be included.

Tools and Instruments:

- **Screening Questions:** The questions were designed to spot those who may have certain psychological traits or conditions that are important. It acts as a first step assessment to screen participants based on set criteria before more detailed evaluation happened.

The questions check participant's sex, race and how long the relationship has lasted.

- **Emotional Intelligence:** The Brief Emotional Intelligence Scale (BEIS) made by Dr. Steve Joseph with Dr. Barbara Newbury. Consisting of around 16 items this scale gives an easy way to see how people understand and manage their own emotions as well as those of others. The scoring was done on a Likert scale.
- **Cultural Diversity:** The Intercultural Sensitivity Index (ISI) was made by Dr. Michael H. Bond and team as a measuring tool for evaluating how well someone interacts with various cultures in an informed manner. The scoring was done with the help of Likert scale where one being the minimum and 5 being the maximum.
- **Relationship Stability:** The Revised Dyadic Adjustment Scale (RDAS) made by Gary W. B McDonald along with his colleagues. It consists of 14 items assessing relevant areas like talk patterns closeness overall happiness in partnership providing short yet clear evaluations. The scoring was done with the help of Likert scale.

Procedure

Participants were gathered via online sites and colleges. Informed consent was obtained

Table 1

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V1	.076	231	.003	.986	231	.027
V2	.064	231	.021	.986	231	.020
V3	.094	231	.000	.979	231	.002

Table 1 shows the normality test that was conducted between the variables emotional intelligence, cultural diversity and relationship stability. The sample for the study was young adults between the ages 18 to 25. To check if the distributions for the variables emotional intelligence, cultural diversity, and relationship stability were normal, Kolmogorov-Smirnov and Shapiro-Wilk tests were used. The findings showed that all variables significantly deviated from normality, as seen

ensuring understanding study purpose methods rights. Participants were asked to complete the quantitative survey either online or in a face-to-face setting.

Procedure for Data Collection:

Data was collected through random sampling method after finalizing all the questionnaires which were valid and reliable. Printout of the questionnaires were taken. Rapport with every participant was built and then the research was introduced to them. Approximate time taken to respond to the items by everyone was twenty minutes. The procurement of data was thoroughly done offline. The obtained data was further used for statistical analysis.

Statistical Analysis: To test the proposed hypothesis the obtained data was analyzed in terms of mean, standard deviation, t-ratio and spearman product moment correlation with the help of SPSS.

Results

The study involved 230 participants (115 men and 115 women) from diverse localities in India. Results were calculated to get the values needed for analysis using SPSS to see how emotional intelligence and cultural diversity affect relationship stability.

in the table. Since all p-values were under 0.05, it was concluded that emotional intelligence, cultural diversity, and relationship stability did not follow a normal distribution.

Table 2

Correlation for Study Variables

		V1	V2	V3
V1	Correlation Coefficient	1.000	.053	.054
	Sig. (2-tailed)	.	.426	.417
N		231	231	231
Spearman's rho	Correlation Coefficient	.053	1.000	.049
	Sig. (2-tailed)	.426	.	.455
N		231	231	231
V3	Correlation Coefficient	.054	.049	1.000
	Sig. (2-tailed)	.417	.455	.
N		231	231	231

Table 2 displays weak positive correlations between emotional intelligence, cultural diversity, and relationship stability. Interpretations since non-normal data might limit how these results can be generalized.

Correlation value between emotional intelligence and cultural diversity was found to be ($r = .426$, $p < 0.05$), the correlation value between emotional intelligence and relationship stability was found to be ($r = .417$, $p < 0.05$) and the correlation value between cultural diversity and relationship stability was found to be ($r = .455$, $p < 0.05$). As all p-values exceed the conventional significance level of 0.05, none of the observed correlations are statistically significant.

The study investigated the relationship between emotional intelligence, cultural diversity and relationship stability, and how these two factors interact. The research question looked at how each partner's emotional intelligence and cultural diversity affects relationship stability and the interaction between emotional intelligence and cultural diversity. The significant deviations from normality for emotional intelligence, cultural diversity and relationship stability as shown by Kolmogorov-Smirnov and Shapiro-Wilk tests, indicate that these variables do not follow a normal distribution. With the normality assumption violated, the findings rely on strong statistical analyses, but care should be taken in

The lack of significant relationships among the variables as highlighted by the non-significant Spearman's rank correlation coefficients, indicates no direct relationships between emotional intelligence, cultural diversity, and relationship stability. This implies that the null hypothesis is accepted that there is no significant relationship among the variables. However, the absence of a straightforward relationship in this study suggests that emotional intelligence's influence on stability might be indirect or conditional, possibly linked to cultural compatibility.

Previous research on cultural diversity in relationships indicates that cultural differences can create challenges for stability, especially concerning values, communication styles, and conflict resolution. The notable effect of cultural diversity on stability backs this idea, indicating that cultural diversity can impact relationship dynamics, though it is complex and influenced by variables like emotional intelligence.

Discussion

The study investigated the relationship between emotional intelligence, cultural diversity and relationship stability, and how these two

factors interact. The research question looked at how each partner's emotional intelligence and cultural diversity affects relationship stability and the interaction between emotional intelligence and cultural diversity. The significant deviations from normality for emotional intelligence, cultural diversity and relationship stability as shown by Kolmogorov-Smirnov and Shapiro-Wilk tests, indicate that these variables do not follow a normal distribution. With the normality assumption violated, the findings rely on strong statistical analyses, but care should be taken in interpretations since non-normal data might limit how these results can be generalized.

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Previous research on cultural diversity in relationships indicates that cultural differences can create challenges for stability, especially concerning values, communication styles, and conflict resolution. These findings enrich the literature by highlighting the intricate, interactive effects of emotional intelligence and cultural diversity on relationship stability, thus furthering the understanding of relationship dynamics in varied cultural contexts.

Conclusion

This study investigated the influence of emotional intelligence and cultural diversity on relationship stability among heterosexual couples. Contrary to many previous findings that emphasize a direct positive impact of emotional intelligence on relationships (e.g., Salovey & Mayer, 1990; Brackett et al., 2006) this study did not find a direct relationship between the variables. However, a deeper analysis suggests that emotional intelligence may serve as a

mediating or moderating factor. This implies that while high emotional intelligence may not guarantee stability, it could help couples navigate intercultural dynamics more constructively, thereby contributing indirectly to a more stable relationship.

The findings from this study are particularly significant for couples therapy, premarital counselling, and relationship education programs. Counsellors and therapists should emphasize building emotional intelligence skills as tools to manage intercultural tensions. Educators and policymakers can also integrate emotional intelligence training and intercultural communication modules into school and college-level curricula to better prepare youth for future relationships in a multicultural society.

This study did not account for specific cultural variables or value systems (e.g., individualism vs collectivism, gender norms, family structures). This restricted the ability to understand which aspects of cultural diversity may affect relationship dynamics. Additionally, time constraints limited the scope of studying the variables in depth.

The field required more studies about a broader age range and diverse demographics (e.g., varying cultural backgrounds, socioeconomic statuses) to assess the generalizability of results. Along with this including qualitative methodologies (e.g., in-depth interviews, case studies) to capture nuanced relational experiences across cultures and conducting longitudinal studies to examine how emotional intelligence and cultural factors interact over time to influence long-term relationship stability.

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Mediating Role of Social Connectedness Between Phubbing and Online Disinhibition

Perna Singh* and Dr. Rabina Debbarma**

Abstract

With a focus on the mediating function of social connections and possible gender disparities, this study sought to examine the effect of phubbing on online disinhibition among young adults between the ages of 20 and 30. 391 participants in all were gathered through convenience sampling through email and social media. An online survey using Google Forms was used to gather data. It contained the Online Disinhibition Scale, the Social Connectedness Scale (SCS), and the Generic Scale of Phubbing (GSP). Using Jamovi 2.5.6, analyses were performed to evaluate multiple regression models and descriptive statistics. The results showed that phubbing and online disinhibition were significantly and favorably correlated. Additionally, this association was partially mediated by social connectedness, suggesting that higher phubbing levels were associated with lower social connectedness, which in turn predicted higher online disinhibition. Women outperformed men in terms of phubbing, social connectedness, and online disinhibition, indicating great disparities in how men and women perceive and control smartphone use. These findings emphasize how crucial it is to address phubbing behaviors in interventions meant to lessen detrimental impacts on social interactions and digital wellbeing. To lessen the propensity for online disinhibition, future initiatives should include tactics meant to improve social connectedness, like community-building and digital literacy initiatives.

Keywords: Phubbing, Social Connectedness, Online Disinhibition, Young Adults

About authors:

*Student, Kristu Jayanti College (Autonomous), Bangalore

**Assistant Professor, Kristu Jayanti College (Autonomous), Bangalore

Introduction

A combination of the words "phone" and "snubbing," the term "phubbing" refers to the way smartphones are taking precedence over in-person interactions, causing people to feel socially neglected and disconnected (Chotpitayasunondh, 2018). It is a serious issue since it degrades social interactions, which are essential for mental health. The growing usage of cellphones has made talking a major issue in modern social interactions. Prior studies have demonstrated its detrimental impacts on face-to-face interactions and social ties, prompting inquiries regarding its consequences for online conduct (Ang et al., 2019). This study intends to investigate the connection between young adults' online disinhibition and phubbing, highlighting the significance of gender disparities and social connectivity.

The word "disinhibition" refers to a broad range of behaviors, such as impulsivity, erratic behavior, emotional expression, and a diminished sense of social and moral norms. Generally speaking, disinhibition is a loss of self-control that results in the disintegration of learned behavioral restraints, which can be highly stimulative, aggressive, or sexual. Disinhibition frequently refers to actions like rudeness or hostility, divulging secrets, trolling, or other improper behavior in an online setting (Çikrikci et al., 2022). Being socially engaged and interacting with others in a meaningful way are essential for social and psychological wellbeing. At the heart of these interactions lies social connectedness—individuals' perception of closeness and belonging within their social networks (Lee & Robbins, 1995).

Grieve et al.'s (2013) research showed that

strong offline connections protect against impulsive online behavior. This suggests that the quality of relationships in real life has a big impact on how well people can control their digital selves. Complementing this view, Maftai and Măirean (2023) found that loneliness mediates the relationship between perceived phubbing and psychological distress, further explaining the centrality of social connectedness in mitigating adverse online outcomes.

The fundamental need for acceptance, love, and affection is satisfied by human connection. Perceptions and assessments of that need are what constitute connectedness (Maftai & Măirean, 2023). The widespread use of digital tools for communication has resulted in / has caused phubbing to become more common, raising worries about its potential social effects. In a time when technology frequently mediates interpersonal relationships, it is critical to comprehend how actions like phubbing affect online disinhibition. This study aims to close current gaps in the literature about these connections and aid in the creation of practical countermeasures to phubbing.

Objectives

- Determine how often and to what extent young adults aged 20-30 engage in phubbing behavior.
- Explore whether phubbing influences online disinhibition.
- Analyze whether social connectedness mediates the relationship between phubbing and online disinhibition.
- Identify significant gender differences in the relationships between phubbing, social connectedness, and online disinhibition.

Literature Review

According to the literature, phubbing and online disinhibition are directly related. Suler (2004) discovered the Online Disinhibition Effect,

which states that uninhibited behaviors result from digital interactions' anonymity and lack of social cues. Research shows that a key mediating element in this dynamic is social connectedness. Decreased social connections can worsen disinhibition tendencies because people may feel less restricted when interacting online. Capilla Garrido and colleagues (2021) provided a comprehensive review showing that phubbing-related detachment amplifies online disinhibition by creating psychological distance, thereby weakening internalized behavioral checks.

1.1 Phubbing and Online Disinhibition. It's been demonstrated that phoning has a detrimental effect on in-person social interactions, increasing feelings of loneliness and decreasing social connectedness. This disconnect can lead to online disinhibition, a phenomenon in which people express themselves in ways that may go against social norms because they feel safer online. Przybylski and Weinstein (2013) demonstrated that the mere presence of a mobile device during dialogue reduces empathetic responsiveness, leading participants to perceive interactions as less satisfying. Expanding beyond momentary exchanges, Karadağ et al. (2015) constructed a structural equation model showing that phubbing constitutes a multifaceted behavior driven by nomophobia, interpersonal conflict, and self-isolation, each of which predicts poorer social outcomes over time. More recently, Lalonde-Lefler and Barak (2012) emphasized that diminished eye contact and social cues foster a sense of invisibility, reinforcing phubbing as both cause and consequence of weakened social ties.

Subsequent work by Lapidot-Lefler and Barak (2012) isolated three critical mechanisms (anonymity, invisibility, and asynchronicity) that intensify disinhibited actions in online forums. Cebollero-Salinas, Orejudo-Hernández, and Cano-Escoriaza (2024) extended these findings by linking adolescents' online emotional expressions, including gossip and aggressive messaging, to deficits in offline social

competencies, suggesting that disinhibition is deeply rooted in broader socio-emotional skill sets.

1.2 Social Connectedness. Being socially connected is essential for building wholesome interpersonal bonds. Reduced social ties may make people feel more alone and disconnected, which will eventually encourage unruly behavior online. Increasing social connectedness may help mitigate the negative effects of phubbing on digital interactions, according to research.

1.3 Disparities by Gender. Gender differences in phubbing experiences are noted in a number of studies. While men may phubb for more utilitarian reasons, women are more likely to do so for relational maintenance. Evidence indicates gender-specific motivations for smartphone use: Roberts and David (2016) observed that partner-phubbing contextually differs, with women more likely to interpret phone interruptions as relational slights, whereas men view them as task-oriented distractions. Kushlev et al. (2019) further reported that women's phubbing is often driven by relational maintenance needs, which paradoxically may heighten online disinhibition when perceived inclusivity is threatened. Finding out more about these nuances and their precise effects on online disinhibition levels and the mediating role of social connectivity is the aim of this study.

In summary, the literature converges on the view that phubbing and online disinhibition are interrelated phenomena, with social connectedness functioning as a critical mediator and gender providing important contextual variation. The present study seeks to build on these insights by empirically testing these dynamics within an urban Indian young adult sample.

Method

Participants

391 young adults from urban India, ages 20 to 30, participated in the study. Convenience

sampling was used to find participants via social media sites like Facebook, Instagram, and WhatsApp. Participants had to be frequent users of social media and smartphones, which is defined as using these platforms at least a few times a week, in order to meet the inclusion requirements. Those who worked as researchers, industry experts, or internet or social media influencers were excluded, as were those who gave partial answers.

Materials

A Google Form was used to administer an online survey. Several validated scales were included in the questionnaire, such as:

Phubbing's Generic Scale (GSP): The GSP, created by Chotpitayasunondh and Douglas (2018), evaluates phubbing behavior in four areas: interpersonal conflict (IC), self-isolation (SI), nomophobia (NP), and relationship issues.

The Social Connectedness Scale (SCS) gauges a person's perceived sense of community and deep interpersonal relationships.

1.4 The Online Disinhibition Scale assesses the propensity for uncontrollable actions in online communication situations.

Procedure. An informed consent form explaining the study's goals, guaranteeing the confidentiality and anonymity of responses, and informing participants of their freedom to discontinue participation at any moment without repercussions was given to respondents prior to their involvement. The survey link was sent to participants who gave their consent and satisfied the age and user requirements. Pre-established inclusion and exclusion criteria were used to screen the data for validity and completeness.

Data Analysis. Data collected from the questionnaires were analyzed using Jamovi 2.5.6. Descriptive statistics were calculated for demographic variables and the primary study measures. An Analysis of Variance (ANOVA) was conducted to summarize key variables, and

regression analysis was used to assess the impact of phubbing behavior on social connectedness. Mediation analysis was performed to evaluate whether social connectedness mediates the relationship between phubbing and online disinhibition.

Descriptive Statistics. Descriptive statistics were computed to summarize the collected data, incorporating both numerical and graphical summaries. Univariate analyses and zero- order correlations were used to present key variable

distributions, while histograms provided visual representations. All analyses were conducted using Jamovi 2.5.6. The study examined phubbing, social connectedness, and online disinhibition among young adults aged 20–30. A total of 391 participants took part in the research. Remarkably, 76.2% of those surveyed said they frequently engaged in phubbing. Additionally, 32.5% of the participants achieved high scores on the social connectedness measure, and 38.9% exhibited disinhibited behavior online (Ang et al., 2019). Figure

1.1 presents a detailed summary of these variables.

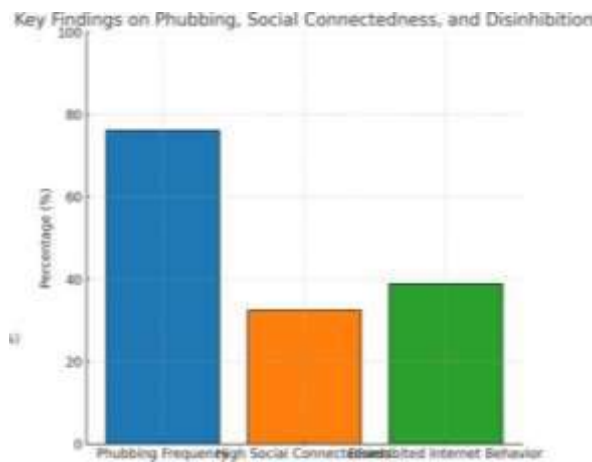


Fig1.1. A bar graph presenting key findings on phubbing, social connectedness, and disinhibition. It highlights that 76.2% frequently engage in phubbing, 32.5% have high social connectedness, and 38.9% exhibit disinhibited behavior online.

Results. Initial tests showed that phubbing and online disinhibition were strongly linked to each other in the group. Notably, the findings revealed that social connectedness acted as a partial mediator in this relationship, suggesting that

higher instances of phubbing are linked to reduced social connectedness, which subsequently predicts greater online disinhibition.

Table 01

Descriptive Statistics for Key Variables (N = 391)

Variable	Overall M	Female M	Male M	Overall SD	Female SD	Male SD	t-value	p-value
Phubbing	3.83	3.85	3.65	0.90	0.88	0.95	2.50	0.014
Social Connectedness	3.73	3.75	3.60	0.85	0.82	0.90	2.10	0.037
Online Disinhibition	3.23	3.25	3.10	0.80	0.78	0.83	2.00	0.046

Note. Overall means and standard deviations are derived from the female (n = 316) and male (n = 44) subsamples, weighted to provide the overall estimate (excluding the “others” category for gender comparisons). Higher scores indicate greater levels of the respective construct. Independent samples

t-tests revealed statistically significant differences between females and males for all variables.

Table 1 summarizes the means (M) and standard deviations (SD) for phubbing, social connectedness, and online disinhibition, along with t-test statistics comparing genders.

Phubbing: The overall mean is 3.83 (SD = 0.90), with females (M = 3.85, SD = 0.88) engaging in more phubbing than males (M = 3.65, SD = 0.95), statistically significant ($t(389)$

= 2.50, $p = .014$). This suggests that female participants are more likely to engage in phubbing, which may reflect social and relational motivations inherent in their smartphone use.

Social Connectedness: The overall mean is 3.73 (SD = 0.85); females (M = 3.75, SD = 0.82) report greater social connectedness than

males (M = 3.60, SD = 0.90), significant at ($t(389) = 2.10$, $p = .037$). This finding indicates that females may experience a stronger connection with their social networks, potentially facilitating better support among peers.

Online Disinhibition: Overall mean is 3.23 (SD = 0.80), with females (M = 3.25, SD

= 0.78) showing more disinhibition than males (M = 3.10, SD = 0.83), significant at ($t(389) = 2.00$, $p = .046$). This implies that females may exhibit more disinhibited behaviors in online environments, possibly due to the increased reliance on digital communication and the impact of phubbing, indicating a tendency to express oneself more freely when social cues are diminished.

Table 02

Regression Analysis Predicting Online Disinhibition (N = 391)

Predicting Variable	SE	β	t-value	p-value
Social Connectedness	0.05	-0.30	-6.00	< .001
Phubbing	0.06	0.35	5.83	<.001

Model summary: $R^2 = 0.22$, $F(2, 388) = 55.12$, $p < .001$.

Note. Higher levels of phubbing predicted increased online disinhibition, whereas greater social connectedness predicted lower online disinhibition. Together, these predictors explained 22% of the variance in online disinhibition.

Table 02 shows the results of a multiple regression analysis where online disinhibition is predicted by phubbing and social connectedness. The analysis revealed that:

Phubbing: With a standardized coefficient (β) of 0.35, a standard error (SE) of 0.06, and a t-value of 5.83 ($p < .001$), phubbing was found to be a significant positive predictor of online disinhibition. This implies that online disinhibition rises along with phubbing behavior.

Social Connectedness: It was a

significant negative predictor of online disinhibition, with a β of -0.30, SE of 0.05, and a t-value of -6.00 ($p < .001$). This implies that a lower degree of online disinhibition is linked to a higher degree of social connectedness.

Overall, the model explained 22% of the variance in online disinhibition ($R^2 = 0.22$), and the model was statistically significant ($F(2, 388) = 55.12$, $p < .001$). In summary, these findings indicate that while phubbing increases the likelihood of online disinhibited behavior, strong social connections can help mitigate that effect.

Table 03

Mediation Analysis: Social Connectedness as a Mediator Between Phubbing and Online Disinhibition (N = 391)

Effect	Estimate	SE	95% CI	p-value
Direct Effect (Phubbing → Online Disinhibition)	0.25	0.08	[0.09, 0.41]	0.003
Indirect Effect (via Social Connectedness)	0.10	0.03	[0.04, 0.16]	0.002
Total Effect	0.35	0.07	[0.21, 0.49]	<.001

Note. Bootstrapping (5,000 resamples) indicated that social connectedness significantly mediated the relationship between phubbing and online disinhibition. The indirect effect's confidence interval did not include zero, confirming its significance.

In table 03, the mediation analysis examines whether social connectedness mediates the relationship between phubbing and online disinhibition. The direct effect of phubbing on online disinhibition was estimated at 0.25 ($p = .003$), while the indirect effect via social connectedness was 0.10 ($p = .002$). The total effect of phubbing on online disinhibition, combining both direct and indirect effects, was 0.35 ($p < .001$). Bootstrapping (using 5,000 samples) was used to make 95% confidence intervals that did not include zero. This showed that social connection does have a statistically noteworthy mediating effect. These results imply that part of the effect of phubbing on online disinhibition occurs because increased phubbing is associated with lower social connectedness, which in turn contributes to greater online disinhibition.

Gender Disparities in Findings. Examining gender variations, the study confirmed that women reported higher levels of phubbing, social connectedness, and online disinhibition than their male counterparts. These variations highlight the complex ways in which gender may affect smartphone use and ensuing online conduct.

Discussion

Our results show that glancing at our phones during conversations is linked to saying things online that we might otherwise hold back (Suler, 2004). In other words, the shelter of a screen and the lack of real-world eyes make it easier to speak without thinking. We also found that feeling close to people in real life helps curb this impulse. When social bonds weaken (perhaps due to frequent phubbing) people lose a bit of their inner "pause button" and become more likely to post whatever comes to mind (Çikrikci et al., 2022). In our study, lower social connectedness explained part of why phubbing led to bolder online behavior.

This ties in with Ang et al.'s (2019) work showing that teens who phub more often feel left out and turn to the internet as a safe space to express themselves, sometimes without filters. The Online Disinhibition Effect, which states that distance and anonymity on digital platforms lower inhibitions (Joinson, 2007). The mediation analysis verified that phubbing lowers the quality of social interactions, compromising feelings of support and belonging, and has a direct impact on online disinhibition (Çikrikci et al., 2022). All

things considered; the findings demonstrate how diminished offline social bonds can result in heightened online disinhibition. Our data extend this by revealing that the loss of face-to-face support drives some of the online disinhibition we observed.

Personality factors may play a role too. Balta et al. (2020) showed that people with higher anxiety or a strong fear of missing out tend to phub more and struggle with managing their online selves. Our findings echo this: those who reached for their phones more often also reported greater freedom to say what they liked online.

We noticed gender differences as well. Women in our sample scored higher on phubbing, social connectedness, and online disinhibition. Kushlev et al. (2019) suggested that women often use their phones to keep relationships going, which might explain both the stronger sense of connection and the willingness to open up online. At the same time, Capilla Garrido et al. (2021) warned that this pattern can tax emotional well-being, making women more vulnerable to impulsive online acts.

Finally, our work supports Lee and Robbins (1995) in showing that solid friendships and family ties give us a kind of self-control. When those ties are strong, people pause before posting; when they falter, the brakes come off.

In essence, our study joins a growing chorus of research that links how we feel and relate to others with how we behave on screens. If we want kinder, more thoughtful online spaces, we need to build real-life connections, not just limit screen time. By fostering true belonging in both the physical and digital worlds, we can help people think twice before they type.

According to the study's findings, phubbing greatly increases online disinhibition, and social connectedness is a key component. In the context of a changing digital landscape, these findings provide theoretical perspectives as well as practical strategies for supporting healthy social connections in both digital and physical settings.

Theoretical and Practical Implications

Implications for theory. By presenting the idea of perception neglect in relation to youth phubbing, this study advances our knowledge of how phubbing affects social connectedness and disinhibition. It broadens the scope of the phubbing literature beyond general social media issues by exposing a new connection between social connectedness and disinhibition. By focusing on phubbing-related behaviors, it shows that study needs to be redirected to understand how young people who are becoming more and more involved with technology

Implications for Practice. The results show that phubbing increases online disinhibition by having an inverse effect on social connectedness. Risks like a damaged reputation, a tarnished personal image, and the dissemination of false information are increased by this. As a result, important figures such as college administrators and influencers should put young adults' welfare first by encouraging moderation in online sharing and putting in place device management techniques to improve in-person communication. Furthermore, there is a great need to create interventions that target excessive smartphone use and promote interpersonal relationships, as social connectedness acts as a protective factor against negative online behaviors. Programs that emphasize community involvement and communication skills can improve social ties, lower the risk of online disinhibition, and encourage young adults to adopt healthier digital habits.

Policy Recommendations In order to prevent phubbing, educational institutions should implement measures like "no-phone zones" and social media bans during events to promote real conversations. Parental and guardian awareness initiatives can help young adults become less reliant on smartphones and increase their social interaction.

Prospective Research Paths

The study found that women were more likely than men to engage in phubbing, social connectedness, and online disinhibition. These findings highlight the need for focused

interventions and awareness campaigns that take gender dynamics into account. In order to develop more successful strategies for encouraging healthy digital practices, it is crucial to comprehend the disparities in the reasons and effects of smartphone use between genders. In order to better understand these dynamics across the spectrum, future research should aim to balance gender representation in samples. As technology advances and social norms surrounding smartphone use change, longitudinal studies may be able to document changes in these relationships over time.

Limitations

Even though this study provides useful information, it has limitations. Because convenience sampling might not be fully representative, the results may not be as generalizable to a broader population of young adults. Not only this, using only self-report measures may introduce potential biases like social desirability that could affect accuracy. Larger, more varied sample sizes and mixed-method approaches, which incorporate qualitative data to enhance comprehension, could be advantageous for future research.

Conclusion

In summary, this study clarifies the intricate relationship between young adults' online disinhibition, social connectivity, and phubbing. It highlights how crucial it is to deal with phubbing behaviors in order to improve digital well-being and interpersonal relationships. Maintaining a healthy sense of connectedness in an increasingly digital world will depend on understanding how technology affects social interaction as it develops. According to the findings, there is an urgent need for interventions that promote social connectedness in order to lessen disinhibition in online environments. Stakeholders can help create a more positive social environment both in person and online by

comprehending and addressing phubbing.

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Mental Health on the Margins: LGBTQ+ Inclusion through Community and Tech-Enabled Interventions in Bengaluru

Hemalatha S.K* and Dr. I Madhavi**

Abstract

This paper explores how transgender communities in Bengaluru take care of their mental health through community support and digital tools. This study examines the mental health challenges faced by marginalized communities such as Lesbian, Gay, Bisexual, Transgender, and Queer, and also culturally specific persons such as Jogamma, Jogappa, Shiva-shakti, Kothi, and many others (LGBTQ+), using primary sources from community-based organizations such as Jeeva Trust and Ondede, their in-house publications, their official websites, and social media platforms. Together, these examples demonstrate how safe spaces, cultural expressions, and digital tools can help queers feel seen, supported, and mentally well. Bengaluru is a unique city that is progressive in some ways but conservative in others, creating both opportunities and challenges for transgender people. This study argues that combining traditional community support with newer technology-based tools can build stronger and more inclusive mental health support systems. It also highlights the importance of considering factors such as caste, class, language, and gender identity to fully understand the range of experiences within the queer community.

Keywords: LGBTQ+, transgender, mental health, Bengaluru, inclusive development, community trusts, tech-enabled care.

About authors:

**Research Scholar, Ph.D. Program, Department of English, GITAM (Deemed to be University), Bengaluru Campus, Karnataka, India.*

Corresponding Author

***Research Supervisor, Head & Associate Professor, Department of English, GITAM (Deemed to be University), Bengaluru Campus, Karnataka, India.*

Introduction

Bengaluru is considered India's tech capital with its rapid expansion and modern lifestyle, but beneath the surface, old ideas still hold strong, especially around gender and sexuality. There is a mix of progress and deep contradictions for transgender people to navigate life in this city. Visibility is improving, and there are pockets of growing acceptance. However, prejudice, social exclusion, and rejection have not disappeared; they remain in everyday interactions.

Mental health, although critical, hardly receives the attention it requires in this context. Even with landmark legal support like the

National Legal Services Authority (NALSA) V. Union of India, AIR 2014 SC 1863 judgment, and Karnataka's State Transgender Policy (2017), psychological well-being is pushed to the periphery of trans rights. Many transgender individuals continue to carry the burden of anxiety, loneliness, and emotional burnout, often shaken by being cut off from their family, constantly judged, or simply having no one to turn to. Sadly, established mental health system clinics, hospitals, and counsellors often do not meet them. Because of this gap, many have no choice but to turn to alternative sources of support. Community-run groups and digital platforms have stepped in to fill this gap by offering care that is more respectful, personal,

and better suited to the real-life struggles of transgender people. As discussed, in *Towards Gender Inclusivity: A Study on Contemporary Concerns Around Gender* (Mohan & Murthy, 2013), grassroots interventions that centre on empathy, lived experiences, and cultural relevance play a pivotal role in filling the void left by mainstream systems.

At the centre of this study is the Jeeva Trust, a Bengaluru-based organization run by transgender individuals. Jeeva offers mental health support, legal aid, and leadership training. It also connects directly with students and teachers through gender awareness programmes in government colleges. Because of this unique role, the Jeeva Trust and Ondede were chosen as representative community-based organizations in this study to offer a broader understanding of how Bengaluru's transgender community supports itself through performance, outreach, and public education.

This study is grounded in a combination of current theoretical frameworks that help explain the mental health experiences of transgender individuals living on the margins. Minority Stress Theory (Meyer, 2003) is used to understand how long-term exposure to stigma, discrimination, and rejection contributes to chronic stress and mental health issues. Finally, to explore how digital platforms may oversimplify or erase emotional complexity, this study draws on Lorenzo Bernini's affective critique from *The Sexual/Political: Freud with Marx, Fanon, Foucault* (2024), which emphasizes how queer and trans-emotional life is often misunderstood or silenced in state and digital systems.

Literature Review

Studies on transgender mental health show that the emotional struggles faced by many transgender people are deeply connected to how society and institutions treat them, primarily through medicine and psychology. In the past, medical professionals often described transgender

identity as a type of mental illness. For example, in *Psychopathia Transsexualis*, Cauldwell (2006) wrote about a transmasculine person whose family had rejected, faced homelessness, and wanted a gender-affirming surgery. Instead of understanding a person's gender identity in their terms, doctors labelled them mentally unwell. This reflects how early medical thinking ignored the impact of stigma and instead focused on blaming the individual (Cauldwell, 2006, pp. 40–44).

In *Mutilating Gender*, Dean Spade (2006) pointed out that transgender people are often forced to say they are mentally suffering just to get the care they need. Medical institutions still expect transgender people to fit into outdated ideas of gender and distress, which can cause harm. Spade argues that this system reinforces power imbalances and prevents trans individuals from defining their needs and experiences (Spade, 2006, pp. 315–332).

Susan Stryker (2006) offers another powerful view in her essay *My words to Victor Frankenstein*, above the village of Chamonix. She compares her own trans experience with Frankenstein's monster, someone rejected by the world to simply exist. Her concept of 'transgender rage' is not just about anger, but about standing up against a system that tries to erase your existence (Stryker, 2006, pp. 244–256).

A similar theme appears in Jordy Jones's (2006) analysis of the musical *Hedwig and the Angry Inch*. In *Gender Without Genitals: Hedwig's Six Inches*, Jones shows how childhood trauma, body dysphoria, and painful surgery can leave emotional wounds deeper than medical labels. Jones helps us see how deeply trauma and identity are connected in some trans lives (Jones, 2006, pp. 449–468).

Yarbrough (2018) points out something often missed: it is not transgender that causes emotional distress, but how others respond to it, families that turn away, society that marginalizes,

and a healthcare system that frequently fails to see the whole person. When someone walks into a clinic or therapy room only to feel unseen, judged, or dismissed, it can deepen the pain they come to address, anxiety sharpens, depression sinks in further, and shame takes root (pp. 109–124, 308–309). What makes a real difference, he suggests, is not always a formal treatment, but in community groups and peer circles, where people truly feel heard and accepted for who they are. Although he did not talk much about digital tools, his work supports the idea that mental health support does not always have to come from traditional clinics. Together, these texts demonstrate a significant shift in our thinking about mental health and transgender experiences.

Objectives

This study examined the mental health challenges faced by LGBTQ+ communities in Bengaluru, focusing on the impact of discrimination and social rejection.

This study explores the ways in which community-rooted groups such as Jeeva and Ondede are stepping in to care for the mental health of LGBTQ+ individuals in Bengaluru. It looks closely at how their efforts are not just supportive but often deeply holistic, addressing emotional, social, and structural needs all at once.

In addition, the research also considers where the technology fits. Can digital tools help close gaps in mental health access for queer and trans communities? Perhaps they come with their own set of hurdles. This study takes a closer look at both the possibilities and limitations of technology-driven support in these contexts.

Method

This study took a qualitative approach to understand how mental health support for transgender people can be made more inclusive, especially when compared to standardized digital mental health tools. The focus is primarily on the Jeeva Trust, a grassroots organization in Bengaluru led by transgender individuals. Other

organizations, such as Ondede, are included as supportive examples that help highlight similar community-based efforts. In addition, I conducted a phone interview with Uma P., a transgender activist and the director of Jeeva Trust, on April 22, 2025, to gain deeper insight into the mental health challenges faced by transgender individuals and the organization's contributions to community-based and digital interventions. This study was guided by a few important theoretical perspectives. One of the central ideas guiding this study comes from Lorenzo Bernini's *The Sexual/Political: Freud with Marx, Fanon, and Foucault* (2024). Bernini leans into psychoanalytic thought, particularly Freud's concept of the "drive", to suggest that sexuality is not only about identity or attraction. It is also associated with raw emotional currents such as longing, confusion, and trauma. These are not feelings that easily align with social expectations, but are deeply woven into how people, especially queer and trans individuals, experience mental and emotional life.

Bernini critiques how today's mental health systems, especially digital ones like apps or online counselling portals, often force a polished emotional state, calm, in control, clearly regulated. This may work for some people, but for many transgender people, it does not closely capture reality. Systematic tools and rigid checklists tend to overlook the messier parts of being trans, such as feeling invisible, boxed in, or left out of categories.

For clarity, this study draws on Meyer's (2003) minority stress theory. Meyer explains that when people are constantly undergoing stigma, rejection, and discrimination, the result is frustration and a kind of stress that builds over time, sometimes quietly, sometimes with shattering force. For transgender individuals, this means living with heightened levels of anxiety, depression, and unresolved trauma, especially when the systems surrounding them, whether medical or digital, fail to truly acknowledge what they are carrying. This research examines

materials created by Jeeva Trust, including personal reflections, workshop reports, and writings from the community. Additional materials from groups, such as Ondede, help support and extend this analysis.

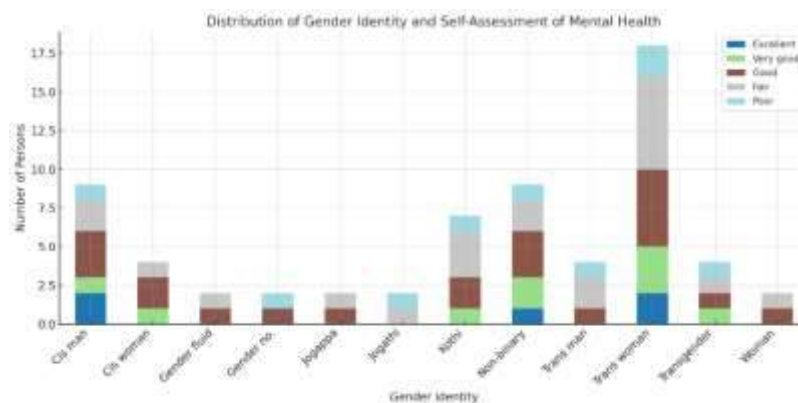
By combining Bernini and Meyer’s frameworks, this research highlights how community-led mental healthcare can better reflect the emotional realities of transgender individuals. This shows that healing always comes from control or structure but often from being seen, heard, and supported in a space that embraces emotional depth and shared experience.

Results

Figure 1 illustrates how individuals from diverse gender identities within the LGBTQI+ **Figure 1.**

community perceive their mental health. This is based on data from Jeeva Trust’s 2023 report, which gives us a glimpse into the emotional realities of individuals from communities like trans women, non-binary folks, Kothis, and Jogappas. Many described their mental health as “Fair” or “Good,” indicating a surface-level sense of steadiness. However, if observed closely, these responses carry the weight of deeper emotional layers shaped not only by personal experience but also by family tensions, social attitudes, and the volatile nature of institutional support. What seems like stability might, in some cases, be resilience, holding things together in the face of pressure.

Distribution of Gender Identity and Self-Assessment of Mental Health



Note. Understanding Mental Health, Stigma, and challenges of the LGBTQI+ community in Karnataka (p.51), by Jeeva Trust, 2023. Used with Permission.

As shown in Figure 1, the way individuals described their own mental health differed across gender identities, echoing what many community-based studies have found about resilience in the face of marginalization and exclusion. In Bengaluru, many LGBTQ+ individuals face ongoing challenges to their mental health, largely because of the discrimination and social rejection they encounter in everyday life. They might deal with harassment, be turned away by their families, or feel unsafe, expressing who they truly are. These painful experiences often lead to feelings of

anxiety, depression, isolation, and, in some cases, even suicidal thoughts. Revathi, a well-known trans-activist, captures many of these experiences in her solo performance, *Vellai Mozhi – Frankly Speaking*.

Discussion

An increasing number of studies have begun to explore what transgender individuals go through when it comes to mental health, the toll of systemic neglect, social isolation, and the weight of everyday stigma. Meyer’s (2003) Minority Stress Theory is among the most

frequently used frameworks in this field. Rather than viewing distress as internal or personal, this theory sheds light on the constant social pressures marginalized groups are forced to carry things such as rejection, discrimination, and the subtle belief that they do not belong. Over time, these stressors sink in, affecting not only mood but also overall mental health. For many transgender people in Bengaluru, this theory helps explain why healthcare, education, and employment often feel like uphill battles, because the barriers are not just personal; they are structural.

Building on this, Lorenzo Bernini's *The Sexual/Political: Freud with Marx, Fanon, Foucault* (2024) brings in a psychoanalytic and political view, suggesting that mainstream mental health systems and digital tools often overlook or erase the emotional depth and lived experiences of queer and transgender people. Bernini critiques how state and tech-enabled systems attempt to normalize or erase complex emotional experiences such as grief, trauma, and queer desire by framing mental health care within narrow, measurable norms. In contrast, community-based models, such as those of the Jeeva trust, which are centred on emotional expression, vulnerability, and lived experience, are valid forms of knowledge and care. Taken together, these frameworks offer a deeper and more layered understanding of the psychological struggles of transgender individuals. They highlight the need for mental health support systems that are not only inclusive and affirming but also sensitive to the specific social and cultural contexts in which people live. Their experiences are often deeper, more complex, and shaped by unique social and personal challenges that the standard categories may fail to capture. As Lorenzo Bernini (2024) explains, queer and trans-emotional life is often simplified or ignored in systems that want people to behave predictably and stably. He calls this the foreclosure of the sexual process, in which more profound emotional truths are pushed aside because they do

not fit into mainstream ways of understanding care or healing.

In contrast, Jeeva Trust allows space for these complex emotions. Through peer support, storytelling, performance, and community connections, Jeeva does not ask people to hide their pain or fit narrow medical terms. Instead, they encouraged emotional honesty and mutual care. This approach goes beyond treating symptoms. This validates the emotional experiences of people who are ignored or harmed by society.

The mental health experiences of Bengaluru's LGBTQ+ community, as shown through the work of trusts like Jeeva and Payana, reveal both widespread exclusion and strong community efforts to cope and recover. Jeeva's 2023 study found that about 40% of transgender and queer participants relied moderately on family or others for mental health support, and more than 20% were heavily dependent (Jeeva, 2023, p. 51). This shows that receiving mental healthcare is closely linked to whether families are accepting and whether services are accessible, both of which are often denied to LGBTQ+ people.

The community faced the most challenging situation during the COVID period. According to Uma P., "The COVID-19 pandemic made things worse; many in the community faced serious emotional struggles away from their family, unable to meet their community people, and the major threat was no begging, no sex work and no money. Moreover, a lack of access to required medicine for transgender persons who were undergoing sex change posed a serious threat to life. The community absolutely lacked resources" (personal communication, April 22, 2024).

In the aftermath, community groups began organizing their own responses. They trained more than 300 LGBTQ individuals to provide peer counselling and support, creating a different kind of help based on shared experience

and teamwork (Personal Communication, April 22, 2024).

Community-Centred Mental Health Research by Jeeva Trust

The Jeeva (2023) report stands out as a robust, community-led investigation of the mental health needs and challenges faced by LGBTQI+ individuals in Karnataka. Using mixed methods that combined digital surveys, in-person outreach, and field interviews, the report gathered data from 84 individuals across gender and sexual identities, including transgender women, Jogappas, Jogatis, and bisexual and non-binary persons.

What makes this research truly meaningful is that it is situated in real-life experiences and focuses on the cultural context. It draws directly from the voices and lived realities of transgender individuals. For example, more than 83 per cent of participants reported experiencing psychological distress, including feelings of anxiety, isolation, and suicidal thoughts. However, many of them were unable to complete their mental health treatment. This was often due to high costs, unwelcoming or biased attitudes from healthcare professionals, and discomfort within clinical environments, especially for those who were trans or did not identify with traditional gender norms.

Jeeva's research made it possible to include experiences from caste-based transgender communities like the Jogappas and Jogatis of Gadag. These stories show the spiritual and social aspects of mental distress, which are hardly accepted in major psychological models. The report also looked into mental health awareness, access to services, and people's trust in public healthcare systems, pointing to major gaps in how the Transgender Persons (Protection of Rights) Act 2019 is being implemented on the ground.

Marginalised Further

The case studies featured in *Marginalized Further Through Mental Agony* (2022) shed light on the deep psychological impact of the systemic

oppression experienced by working-class sexual and gender minorities. People recount being shamed in public, cast aside by the family, pushed into silence, or simply erased by those around them. These are not just passing moments; they leave a deep, unbearable negative impact. For many, the emotional fallout is heavy: constant worry, deep sadness, a sense of going numb, and, for some, the recurring suicidal thoughts. Moreover, formal mental health services are often out of reach. They are too expensive, too rigid, or simply not made for those they claim to help. Sometimes, due to a lack of specific training or learning, they bring their own prejudice into the room or lean on outdated ideas that pathologize queer and trans lives.

Without a safe and affirming place to turn to, emotional pain tends to fester. That is where community support steps in, not as an alternative but as a necessity. It is raw, grounded, and often the only thing that works.

These platforms not only help extend care and build networks, but also affirm queer identities through approaches that are culturally relevant, easy to access, and grounded in everyday realities rather than clinical models.

Ondede's Work on Mental Health

Ondede has played an important role in supporting the mental health of transgender, intersex, and queer people in Karnataka. With support from the Mariwala Health Initiative (a grant-making organization focused on community-based, rights-oriented mental health care), Ondede offers a range of services that closely align with the real needs of the community. Their efforts included peer-based interactive avenues and awareness-building programs, all combined in the everyday realities of the communities they serve. One of their essential contributions came in 2015 when they joined hands with NIMHANS and Jeeva to co-host a national seminar that focused on the mental health burdens faced by sexual minorities, which are often pushed aside in mainstream discourse.

They have also worked to spotlight health issues that are frequently ignored, such as the presence of breast cancer in transgender populations, a concern that has hardly been addressed in hitherto practised healthcare. Ondede's efforts lie in bringing queer voices into rooms, where they are usually missing. They do not just demand space, but build it. Whether engaging with police departments, hospital staff, or government agencies, they ensure that these conversations include the truth of queer and trans lived experiences.

Limitations and the Absence of Digital Mental Health Integration

While Jeeva's research is notable in scope and methodology, a significant gap has emerged in its engagement with digital or technology-enabled mental health interventions. Despite the rise of teletherapy platforms and wellness applications across India, the report only references the internet as a mental health resource. Approximately 20% of the respondents mentioned using the Internet for information, but digital platforms were not identified as part of any formal mental health support, treatment, or recovery process.

What we see here is not just a technological shortfall but a reflection of something deeper. Many LGBTQI+ individuals, particularly those from rural backgrounds or caste-oppressed communities, struggle to use digital mental health tools simply because of real-world barriers, limited internet access, unfamiliarity with online platforms, financial constraints, and the absence of support in their own languages. These challenges point to a larger issue, like a growing mismatch between the clean, structured world of digital wellness apps and the complex, grounded ways in which queer and transgender people experience and care for their mental health. Bernini's (2024) critique of normative mental health frameworks is valid here. In *The Sexual/Political: Freud with Marx, Fanon, Foucault*, he argues that digital systems often

reduce emotional life to quantifiable metrics, overlooking the layered and often contradictory experiences of queer and transgender individuals. As a result, digital platforms tend to invisibilize or neutralize the affective intensity, trauma, and resistance that characterize queer life at the margins.

The findings of this study show that transgender mental health in India is shaped not only by individual psychological struggles but also by structural, familial, and institutional violence. Mohan and Murthy (2013) documented in *Towards Gender Inclusivity* that, for many female-born gender and sexual minorities, mental distress originates within the family, where practices such as house arrest, forced heterosexual marriage, emotional blackmail, and physical abuse are justified in the name of care or honour (pp. 36–39, 60–62). These experiences often lead to anxiety, depression, trauma, self-harm, and in some cases, suicide (pp. 43–44). Their work validated the assertion that family spaces frequently operate as zones of psychological harm, rather than support.

Community-based interventions have become the most reliable source of care in the absence of inclusive health care systems. As Mohan and Murthy (2013) point out, grassroots collectives, such as LesBiT and Sahayatrika, offer emotional support, emergency shelter, and informal counselling, especially in times of crisis (pp. 10–12, 60–65). These models mirror the work of organizations like Jeeva and Ondede in Bengaluru, which this paper also documents as being instrumental in providing safe spaces, queer-affirming counselling, and peer-led healing practices. Such practices are culturally grounded and emotionally resonant, and offer more support than clinical systems.

Public spaces, educational institutions, and law enforcement are also described as sites of gendered harassment and ridicule, further compounding psychological distress (Mohan & Murthy, 2013, pp. 45–46). Digital technologies

have emerged as tools for safety and connections in hostile environments. Mohan and Murthy noted how survivors in confinement or social surveillance were able to reach out to community groups via phone or messaging platforms (pp. 39–40, 61–63). This aligns with the present study's finding that technology-enabled tools, such as WhatsApp peer groups, online therapy, and streamed performances, are becoming key components of emotional resilience and mental health outreach, particularly for those unable to access public or clinical spaces.

Mohan and Murthy also bring critical attention to internalized trauma, particularly among FTMs and lesbians, who face not only external violence but also internalized guilt, self-blame, and suicidal ideation (pp. 43–44). Their documentation of over 30 lesbian suicides recorded by Sahayatrika in Kerala alone and additional cases in Tamil Nadu points to the devastating consequences of emotional erasure and social rejection (pp. 38–39). These findings reinforce the urgent need for mental health frameworks that center on queer voices and recognize systemic oppression as a determinant of mental well-being. Together, the data from this research and Mohan and Murthy's (2013) analysis point toward the need for a hybrid model of transgender mental health care, intersectional, localized, and tech-supported, grounded in both lived experiences and collective care.

Lorenzo Bernini's book *The Sexual/Political: Freud with Marx, Fanon, Foucault* (2024) offers an important framework for understanding the deeper political and emotional aspects of queer and transgender life. Bernini argues that sexuality is not just about identity or sexual preference but is a powerful and unpredictable force (what Freud called the "drive") that often challenges the rules of society. He warns that even well-meaning systems, such as mental health apps or digital counselling platforms, may unintentionally push queer and trans people to "fit in" rather than allowing space

for their real emotions, traumas, and experiences (Bernini, 2024).

According to Bernini (2024), Laplanche believed that early emotional experiences with others shape sexuality and that it can never be fully understood or controlled. This creates problems when mental health services assume that everyone is a stable, logical individual who needs the appropriate advice or tools. According to Bernini, these systems can ignore messy, complicated parts of being queer or trans, especially the pain, confusion, or shame that often comes from living in a society that does not fully accept differences.

This perspective is especially useful when we compare it to the work of community organizations such as Jeeva and Ondede in Bengaluru. These collectives do not try to "fix" queers or trans-people. Instead, they offer spaces for storytelling, care, performance, and support in healing that accept emotional intensity and bodily experience, rather than reducing people to symptoms or statistics.

Conclusion

Bengaluru is laying the groundwork for a new model of queer mental health, one built not only on clinics or policies, but also on community connections, creativity, and digital reach. The works of Jeeva, Ondede, and A. Revathi demonstrate what is possible. However, institutions must listen to, support, and scale up these models. Jeeva and Ondede found creative ways to use digital platforms to support the mental health of LGBTQ+ people in Karnataka. Jeeva reaches mental wellness knowledge through both printed materials and digital content, conducts awareness drives via platforms like Instagram and Facebook, and actively engages with individuals through WhatsApp chats. During the COVID-19 lockdowns, the organization facilitated access to virtual therapy and distributed practical emotional health tools. They also hosted interactive webinars to highlight the specific

hurdles faced by both trans and cisgender individuals during the pandemic.

In collaboration with groups such as the Mariwala Health Initiative, Jeeva co-organized training workshops and online symposiums involving healthcare professionals and government bodies. These initiatives proved especially helpful for those unable to attend physical sessions, people who may be closeted or residing in under-connected regions. To truly support LGBTQ+ mental health, policies, technology, and institutions that listen to and learn from these community-led models are needed. Bengaluru has already laid its foundation, and it is time to build on it.

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Enhancing Social Skills in Students Through Yoga: A Holistic Narrative Review

Dr. Satyaprakash Purohit*

Abstract

In today's fast-moving world, students face various emotional and social challenges which influence their overall development and academic performance. The preliminary social skills such as communication skills, emotional coping skills, empathy and interpersonal skills are the core social skills are closely associated academic success and overall well-being. However, growing levels of stress, anxiety, and emotional dysregulation among students often delay the development of these essential social skills.

Yoga, a time-tested ancient practice assimilating physical postures, breathing techniques, meditation, and various other activities has gained increasing recognition for its role in enhancing mental and emotional health and as coping skills among adolescents. This narrative review examines the role of yoga in enhancing social skills among students. Yoga-based interventions such as Transcendental Meditation (TM), Cyclic Meditation (CM), Nadis Dhana Pranayama, Surya Namaskar, and Mind Sound Resonance Technique (MSRT) have demonstrated significant improvements in various dimensions of social skills such as communication, empathy, teamwork, conflict resolution and interpersonal skills among adolescents.

Integrating yoga into school curricula may present an opportunity to cultivate lifelong social competencies in students' growth. In the current scenario of an interconnected and emotionally demanding world, yoga provides a holistic and accessible approach to enhancing students' social skills.

Key words: Yoga, Adolescents, Social Skills, Communication skills, Empathy, Interpersonal Skills.

About authors:

Assistant Professor, S-VYASA University, Bangalore, drsatyaprakashpurohit@gmail.com

Introduction

Adolescence, the age between 10 and 19 years, is considered as significant biological, psychological, and social changes (World Health Organization, 2003). Generally, in this span of life marks a critical developmental stage, which typically begins with the onset of puberty and concludes with the social transition into adulthood (Sawyer et al., 2018). This period is obvious to sharp emotional and cognitive changes, making it a sensitive and formative phase in human development (WHO, 2014). Globally, adolescents represent around 20% of the population (WHO, 2012), where India alone accounting for 253.2 million (Census, 2011).

While adolescence presents immense potential for learning and personality

development, it also offers several challenges. The growing mental health issues such as depression, suicide, social phobias, and panic disorders, which are prevalent in this age group, remains a matter of concern for all. In addition, adolescents often engage in risky behaviours like tobacco use, which carry long-term health implications. The heightened sensitivity and compliance during this phase make them vulnerable to various psycho-social stressors and developmental challenges (Kessler & Wang, 2008; Roberts & Chan, 2009).

In the evolving educational system where, academic success alone is no longer a comprehensive measure of students' achievement. It is equally important that social skills such as communication, empathy, teamwork, and

interpretational relationship etc. promote positive behaviours, and increase classroom engagement; and are seen as the core aspects in adolescents' development. With increasing academic pressure, peer influence, and technological distractions, it has become vital for students to develop strong interpersonal skills to address daily challenges effectively (Prajapati & Sharma, 2017). Social skills as a fundamental part of life skills critical for fostering health and well-being, especially in children and adolescents (WHO,1994). WHO defines life skills as “abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life” (San Cassiani et al., 2015). WHO precises social skills through core abilities such as effective communication, building and maintaining relationships, demonstrating empathy, cooperating with others. Social skills help individuals connect with others, resolve conflicts peacefully, and adapt appropriately to various social situations. In the context of adolescents, strong social skills support emotional expression, relationship-building, and help-seeking behaviours (Tetep, & Dahlena, 2024).. which reduces risks of mental health issues like anxiety, depression, and loneliness and helps in empowering youth to resist peer pressure and avoid risky behaviours such as substance abuse and unsafe sex. Moreover, social skills play a vital role in preventing various serious problems, including HIV/AIDS (Daka, 2018), violence, child abuse, suicide, and the misuse of substances such as alcohol, tobacco, and other psychoactive drugs. These skills empower individuals to communicate clearly, work cooperatively, and handle social difficulties, equipping them for success in both academic and professional settings. Social competencies like empathy and assertiveness promote emotional awareness and expression, aiding young people in managing stress and developing resilience. For school-age children, social skills support key functions like problem-solving, emotional regulation, adaptability, and conflict resolution (Anastasov et al., 2022). However, many students today struggle

with stress, anxiety, poor focus, and emotional difficulties, which hinder healthy social interactions. The current education system seriously in need of interventions that cultivate calmness, emotional intelligence, and inner well-being.

One effective way to support social skill development is through Yoga. This ancient practice from India is well-known for its physical and mental health benefits but beyond that, it also helps students grow emotionally and socially (Brahmi et al.,2024). In this article, we explore how yoga supports social skills in school students by looking at real-world programs, research findings, and classroom experiences.

Aim and Objectives

With the above background, this study aims to explore the theoretical basis of yoga for on social skills and further to explore the impact of some specific yogic interventions on the improvement of social skills of adolescents in different settings. It also aims to identify gaps in the current literature and propose future directions for the researches designed to improve social competencies and psychosocial health in youth.

Design

This study adopts a narrative review design, aiming to synthesize the existing literature on the effectiveness of yogic interventions in enhancing social skills among adolescents.

Basis of Yogic Principles in improving social skills

Yoga brings the body, mind, and soul together. Yogic practices include physical postures (asanas), breathing exercises (pranayama), meditation (dhyana), and moral values (Yamas and Niyamas) together, help build self-awareness, control over emotions, and mindfulness. Research shows that yoga doesn't just benefit individuals (Nagendra & Nagarathana, 2008), also helps to improve how one relates to others by calming the mind and improving focus and become more empathetic, patient, and cooperative (Sridhar & Purohit,

2024). Unlike other conventional teaching approaches, Yoga nurtures the development of social skills through an integrated framework that engages the body, breath, mind, intellect, and deeper self. This multi-dimensional growth aligns with the Pancha Kosha model (*Taittiriya Upanishad, Brahmananda Valli, Verses 1–5*), which addresses different layers of human existence, making it an ideal medium for cultivating essential social skills.

1. *Annamaya Kosha* (Physical Layer): Asanas enhances physical strength, stamina, balance, endurance, and flexibility. On a physiological level, it improves cardio-respiratory fitness, promotes autonomic and hormonal balance, and helps reduce the body's metabolic rate and oxygen consumption, contributing to better physical health and emotional regulation (Wiese et al., 2019)

2. *Pranamaya Kosha* (Energy Layer): Breathwork (*Pranayama*) helps in reducing the breath rate per minute, balancing the flow of prana (vital energy), and creating a sense of inner calm. This regulation of energy supports emotional stability and focus, the key components of life skills such as self-awareness and stress management (Betal C, 2015; Chaudhary et al., 2024).

3. *Manomaya Kosha* (Mental Layer): Yoga practices like emotion culture (*Bhajan, devotional practices, Meditation*) bring awareness to one's thoughts and emotions, encouraging mindfulness and emotional intelligence. Being present in the moment and learning to harness emotions are essential for decision-making, conflict resolution, empathy, and interpersonal relationships (Joseph & Kamath, 2019; Kumari & Sahu, 2018; Surana et al., 2025).

4. *Vijnanamaya Kosha* (Wisdom Layer): Self-study (*Swadhyaya*), contemplation, and engaging in meaningful dialogue (*Satsang*) are the important Yogic activities which corrects the basic notion about the happiness and self by transforming restrictive beliefs and fostering clarity of thought. Which further deepens understanding, critical thinking, and value-based decision-making.

5. *Anandamaya Kosha* (Bliss Layer): Meditation and Karma Yoga (selfless action) are the main

practices for this layer. By practicing these, one experiences cultivate resilience, contentment, and a spirit of service, qualities that are vital for building strong character and community values; finally attain a sense of inner peace and purpose (Dhiman, 2019).

Various components of Yoga like Yama and Niyama, the ethical and personal disciplines that form the foundation of character and values. Asana, the physical postures that promote health, stability, and body awareness. Pranayama, the breath regulation techniques that enhance vitality and emotional control. Pratyahara, the technique of withdrawal of the senses, helping in internal focus. Dharana and Dhyana, the concentration and meditation practices that cultivate mindfulness and clarity. Samadhi – A state of deep meditative absorption and self-realization.

Ultimately, Yoga offers a path beyond the five koshas and the three gunas (Tamas, Rajas, and Sattva), guiding the individual towards the realization of universal Consciousness, which characterized Sat (truth), Chit (consciousness), and Ananda (bliss). Understanding and establishing in this spiritual dimension enriches the learner's journey, encouraging a life of balance, compassion, and self-mastery. Hence, integrating Yoga into education may help in being competent, conscious and compassionate.

Yoga offers practical and time-tested methods for the holistic transformation of one's personality, integrating physical, mental, emotional, and spiritual dimensions. Unlike isolated interventions, Yoga provides a structured path for self-development through its eight-fold path (Ashtanga Yoga), which includes:

Yogic techniques for Social Development

In addition to the classical practices, Yoga includes a variety of modern, evidence-based techniques that enhance life skills: Relaxation Techniques such as Instant Relaxation Technique (IRT), Quick Relaxation Technique (QRT), Deep Relaxation Technique (DRT), and Yoga Nidra, which promote stress reduction, emotional balance, and mental clarity. Cleansing Practices (Kriyas) like Kapalabhati, Neti, Trataka, Vamana Dhauti, Laghu Shankha Prakshalana

(LSP), and Nauli, which help detoxify the body and harmonize internal systems, contributing to greater self-discipline and body-mind awareness (Nagendra, & Nagarathna, 2008). Yogic Games develop key life skills such as decision-making, team coordination, creativity, and problem-solving in a playful and engaging manner (Pol, 2012; Bharat & Purohit, 2018). Yogic Counselling, which involves introspection and understanding the nature of the Chitta (mind-stuff), helps individuals gain deeper insight into their emotions, behaviors, and thought patterns. Storytelling, an integral aspect of yogic pedagogy, is used to convey values, ethics, and real-life applications of yogic principles in a relatable and impactful way (Rao, Purohit, & Agrawal, 2024; Ramsahaye et al., 2023). Advanced Yoga Techniques like Cyclic Meditation (CM), Mind Sound Resonance Technique (MSRT), Pranic Energization Technique (PET), Mind Imagery Relaxation Technique (MIRT), Vijnana Sadhana Kausal (VISAK),

These practices form a comprehensive integrated system for personality development and life skills enhancement, making Yoga a uniquely powerful and Anandamaya Sadhana (ANAMS) offer deeper experiences in emotional regulation, cognitive clarity, and inner peace (Nagendra, & Nagarathna, 2008). and holistic educational tool for students and individuals of all ages (Reddy & Purohit, 2019).

Effectiveness of Yogic interventions on Social Skills among adolescents

The following mentioned studies, where yogic interventions are applied in different settings to access the social skills by using a Life Skills Questionnaire, developed by Dr. Vranda in 2009, using a 5-point Likert scale. The questionnaire has demonstrated strong reliability, with an overall reliability coefficient of 0.96, as reported by Vranda in 2009. This high level of reliability indicates that the tool is consistent and dependable for measuring life skills (Vranda, 2009).

Table 1

Studies on Yoga based interventions on social skills of adolescents.

Study	Sample & Setting	Intervention	Key Findings	Reference
1	400 students practicing Transcendental Meditation (TM) vs 400 students non-practicing peers in three schools in Madhya Pradesh	TM practice	Significant improvement ($p < 0.001$) in communication, empathy, cooperation, conflict resolution, reduced stress, emotional balance, better peer relationships	Rajani & Purohit, 2019; Purohit, 2019
2	1,000 students (500 Gurukul system, 500 English medium schools) from Siddha Ganga Ashram, Karnataka	Prayer and Karma Yoga in Gurukul students	Highly significant difference ($p < 0.001$) in life skills domains favouring Gurukul students compared to English medium (Macaulay system) students	Anand & Purohit, 2019
3	123 adolescents divided into Yoga Group (YG) and Control Group (CG)	40 minutes daily Cyclic Meditation (CM) & Nadi Suddhi Pranayama (NSP) for 1 month	Significant improvement ($p < 0.001$) in 9 of 10 life skills domains in YG	Reddy & Purohit, 2019
4	134 rural adolescents (Yoga Group $n=67$; Control Group $n=67$) from Andhra Pradesh	Cyclic Meditation (CM) and Nadisuddhi Pranayama (NSP) intervention	Yoga Group showed significant gains in communication (6.17%), interpersonal relationships (2.08%), decision-making, empathy, problem-solving; CG showed minimal gains	Gunapati & Purohit, 2019
5	30 HIV-positive adolescent boys (12-19 years) from an orphanage at Jaipur, Rajasthan	Integrated Approach of Yoga Therapy (IAYT)	Significant improvements ($p < 0.001$) across all life skills domains: self-awareness, empathy, decision-making, stress coping	Goyal & Purohit, 2019
6	419 adolescents (Yoga Group=229, Control=190) from Bangalore summer camp	Yoga-based personality development program and Non-Yoga Summer Camp	YG showed significant improvements ($p < 0.001$) in problem-solving, creative thinking, critical thinking, self-awareness, emotion coping, stress; CG improved only in stress coping	Bharat & Purohit, 2018
7	63 adolescents (Intervention $n=32$, Control $n=31$)	Mind Sound Resonance Technique (MSRT) daily 30 mins for 21 sessions	Significant improvements in mindfulness, creative & critical thinking, interpersonal relationships, emotion regulation; significant reductions in aggression & impulsivity	Saha & Purohit, 2023

These studies collectively demonstrate that yogic and meditation-based interventions, including Transcendental Meditation, Cyclic Meditation, Nadi Suddhi Pranayama, Integrated Approach of Yoga Therapy, and Mind Sound Resonance Technique, significantly enhance various social skills among adolescents. Improvements were consistently observed in communication, empathy, interpersonal relationships, along with improvement in self-awareness and coping of stress and emotions across diverse settings among adolescents, including vulnerable groups such as HIV-positive youth. Their strengths include the use of diverse methodologies such as randomized controlled trials, cross-sectional surveys, and pre-post intervention designs, which enhance the robustness and generalizability of the findings. The inclusion of varied populations, from school children to adolescents living with HIV, adds to the breadth of applicability across different contexts. Additionally, the consistent demonstration of statistically significant improvements across multiple social and emotional domains reinforces the efficacy of these interventions. However, the major limitations found were that studies rely on self-reported questionnaires, which could introduce response bias. There is also a lack of long-term follow-up data to assess the sustainability of the observed benefits. Furthermore, variations in intervention duration, intensity, and implementation reliability make it challenging to establish standardized protocols. Some studies also lack control groups or randomization, which limits causal inferences. Addressing these limitations in future research would strengthen the evidence base and support broader implementation.

Conclusion

Yoga based interventions have constantly shown that their effectiveness in improving the social skills and psychological well-being in adolescents. When integrated into school settings, these practices foster the social skills like

empathy, communication skills and strengthen interpersonal relationships, contributing to overall well-being of adolescents. Schools that embrace yoga not merely as physical exercise but as a holistic tool for developing emotional and social skills account positive behavioural changes and improved classroom dynamics. The key approaches for building social skills through yoga include relaxation techniques, pranayama, and meditation techniques that boost focus, calmness, trust, and cooperation; yoga-based games that promote teamwork, awareness, coordination, and collaboration; and additional practices such as gratitude journaling, storytelling from epics, and yogic counselling, which nurture empathy and communication. These engaging, value-driven activities promote respect, kindness, and a spirit of collaboration.

However, teacher training may play a crucial role in sustaining these programs. Many schools conduct workshops to equip educators with yoga techniques and emotional support strategies. Reflective sessions may enable teachers to deepen their connection with students and foster safer and more nurturing learning environments. Long-term implementations of the Yoga interventions in school communities may bring noticeable benefits which may reduce bullying, heightened empathy, and build stronger teacher-student relationships. Overall, yoga in schools may cultivate a peaceful and cooperative atmosphere, laying a strong foundation for adolescents to flourish socially, emotionally, and academically.

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Decoding the Importance of Occupational Health: An Umbrella Review

*Sandra Vinoj, Avany Jijo** and Dr. Sannet Thomas***

Abstract

Occupational health seeks to promote and preserve workers' physical, mental, and social well-being in all vocations. Occupational health has evolved from focusing on workplace hazards to medical aspects of sickness absence, chronic disease management, and workplace health promotion. Occupational health is an important but undervalued field that needs a global approach and development of emerging issues. Occupational health is a public health policy issue relevant to overall health. An umbrella review was conducted in March 2025, as per the JBI Manual for Evidence Synthesis. The following databases will be searched from the start: PsychINFO, ProQuest, ResearchGate, PubMed, Google Scholar, ScienceDirect, and The Cochrane Library. Systematic reviews with or without meta-analysis published before the search date will be considered. Reviews that include psychological interventions addressing occupational health, determinants of occupational health, and the effectiveness/role of occupational health were screened for eligibility. The study uses a narrative synthesis, which includes content analysis, to determine the components and dimensions. Each stage of the evaluation is conducted by two independent reviewers, with a third reviewer's viewpoint considered to resolve conflicts. The methodological quality of the included reviews will be evaluated with AMSTAR 2. A total of 7081 records were screened, with 18 review articles included. The results are presented in the following sections: function of occupational health, interventions for occupational health, and determinates/factors of occupational health, for a total of 12 themes. Nearly all of the included themes yielded mixed results, emphasizing the importance of taking individual and environmental factors into account when examining this specific construct. This study is considered as first of its kind to umbrella review research on occupational health. In summary, the study's findings can provide a detailed understanding of current picture of occupational health and also provide a theoretical framework to the future researchers.

Keywords: Occupational Health, Umbrella Review, Occupation

About authors:

*Sandra Vinoj, department of clinical psychology, (Yenepoya Deemed to be University), Karnataka,

**Avany Jijo, department of clinical psychology, (Yenepoya Deemed to be University, Karnataka

***Dr. Sannet Thomas, Department of Clinical Psychology, Yenepoya (Deemed to be University), Karnataka

Introduction

Occupational Health (OH) is a vital branch of public health dedicated to ensuring the physical, mental, and social well-being of workers across all occupations. By focusing on the prevention, management, and improvement of workplace-related health issues, OH aims to create environments where employees can perform their duties safely and effectively (Saha, 2018).

Occupational health is important to ensure a safe and healthy workplace for employees. It involves identifying and addressing potential health hazards and risks from work-related activities, such as exposure to harmful chemicals, physical strain, or psychological stress. It also plays a critical role in preventing work-related injuries and illnesses. By implementing appropriate measures, such as risk assessments, training, and proper use of personal protective equipment,

employers can reduce the likelihood of accidents and injuries occurring in the workplace. In addition to physical health, occupational health also encompasses mental health and well-being. Work-related stress, anxiety, and depression significantly impact employee productivity and overall well-being. Employers can create a more positive and productive work environment by promoting a healthy work-life balance and providing support for mental health concerns (Islam et al., 2023).

Various elements within the workplace and beyond that influence workers physical and mental health. These factors are interconnected and can promote well-being or contribute to work related illness and injuries, which includes, Physical Environment (Workplace Design, Workplace Hazards, Chemical Exposure, Biological Factors), Work Organization (Workload and job demands, shift work and working hours, Job role and Autonomy, Job security and Employment stability), Psychosocial factors (Social support, Workplace culture, Job stress), Health and safety policies (Safety regulation and standards, Risk assessments and Preventive measures, Access to health service), Lifestyle and personal factors (Employee health behaviour, Work-life balance), Legal and regulatory factors (Occupational health laws, Workers rights and protection), Economic and societal factors (Economic pressure, Social inequalities, Global trends), Workplace equipment and technology (Ergonomics, technology and automation), Environmental and External factors (Climate and weather conditions, Pandemic and health crisis) (Russo et al., 2019; Benson et al., 2023).

Theoretical models in occupational health offer various perspectives on how work-related factors (e.g., job demands, control, social support, rewards, resources) influence employees' health and well-being. By understanding these theories,

organizations can develop better workplace interventions, policies, and practices that promote worker health, reduce stress, and increase productivity. Each theory provides valuable insights into different aspects of occupational health, from job design to social and psychological factors.

Job Demand-Control (JDC) Model-Robert Karasek (1979) {JDC model examines the impact of job demands (workload, time pressure, complexity) and control (autonomy, decision-making, flexibility) on employees' stress and health. Effort-Reward Imbalance (ERI) Model-Johannes Siegrist (1996) which focuses on the imbalance between effort put into work and the rewards received. It emphasizes that work-related stress and health problems arise when employees perceive a disproportionate effort-reward ratio. The Biopsychosocial Model of Health-George Engel (1977), the biopsychosocial model emphasizes that occupational health can be affected by various factors such as physical, psychological, and social factors. It suggests that interventions should address all these aspects to improve workers' overall health (De Jonge et al., 2000; Notelaers et al., 2019; Barajas et al., 2021).

To guarantee the safety, wellness, and productivity of the workforce occupational health is considered as a major component. It aims to prevent work-related injuries and illnesses by identifying, evaluating, and controlling hazards in the workplace. The importance of occupational health extends beyond individual employee welfare; it also contributes to organizational efficiency, reduces absenteeism, and minimizes the financial burden associated with workplace accidents and health-related compensation (Tan et al., 2023). Moreover, adherence to occupational health standards is a legal and ethical responsibility for employers, promoting a culture of safety and respect. As the nature of work

continues to evolve with technological and industrial advancements, the need for robust occupational health systems becomes increasingly essential to safeguard both workers and the organizations they serve (Claxton et al., 2022).

Method

Study design

An umbrella review is a compilation of systematic reviews and/or meta-analyses that seeks to compare findings from various reviews, frequently to assess the consistency, strength, and quality of evidence on a wide topic.

This type of review synthesizes findings from multiple systematic reviews and meta-analyses to assess the overall evidence on a specific topic (Gondivkar et al., 2023). An umbrella review (UR) is a methodological approach that synthesizes findings from multiple systematic reviews, aiding evidence-based decision-making in clinical settings. URs organize and summarize extensive information, addressing challenges in determining evidence certainty and enhancing healthcare management. It aims to critically assess the accumulating evidence in clinical research, providing a comprehensive overview of findings. The present study adopted the structure of a systematic review analysis. The total number of studies collected was 57 out of which 18 studies was selected.

Literature search

Electronic databases searched included, PsychINFO, ProQuest, ResearchGate, PubMed, Google Scholar, ScienceDirect and Cochrane Library from January 2015 to March 2025 (refer table 1). There was no restriction on study design or, but studies only related with the systematic review research in Occupational Health around the Globe. The search strategy from Lee and Cummings (2008) was adapted after consultation

with an academic librarian, as MeSH terms and databases available had changed since the original search was conducted. Team members all searched in the database to include a deeper understanding of the study.

Inclusion criteria and Exclusion criteria

The studies were selected based on the proposed theme. The studies which were published between 1st January 2015 and 31st March 2025 on the proposed theme were selected for the review. This study consists of only peer-reviewed articles.

Screening

Three reviewers (ST, SV, AJ) initially screened the title and abstract of each record to identify relevant papers and subsequently screened full text of those relevant papers (Devarapalli et al., 2020). Consensus meetings were held between reviewers to discuss the discrepancies and the third reviewer decided whether an article was included or excluded. Any disagreement between the reviewers were resolved by discussion or by consulting with an adjudicator (ST). From each study, data was extracted specifying Author's name, sample description and Major findings. Quality of the included studies was assessed, independently by three researchers (ST), using Critical Appraisal AMSTAR 2. After a thorough qualitative assessment, all quantitative assessment, all quantitative data were generated and tabulated. A narrative description of the studies is provided in Table 1 using some broad categories (Devarapalli et al., 2020).

Quality review

The included studies were further reviewed and analysed.

Data Extraction

The following data items were retrieved from the included studies: the study title, the author's name and year, and the primary findings.

Data synthesis

The included studies were heterogeneous in design. The researcher made them homogeneous through content analysis.

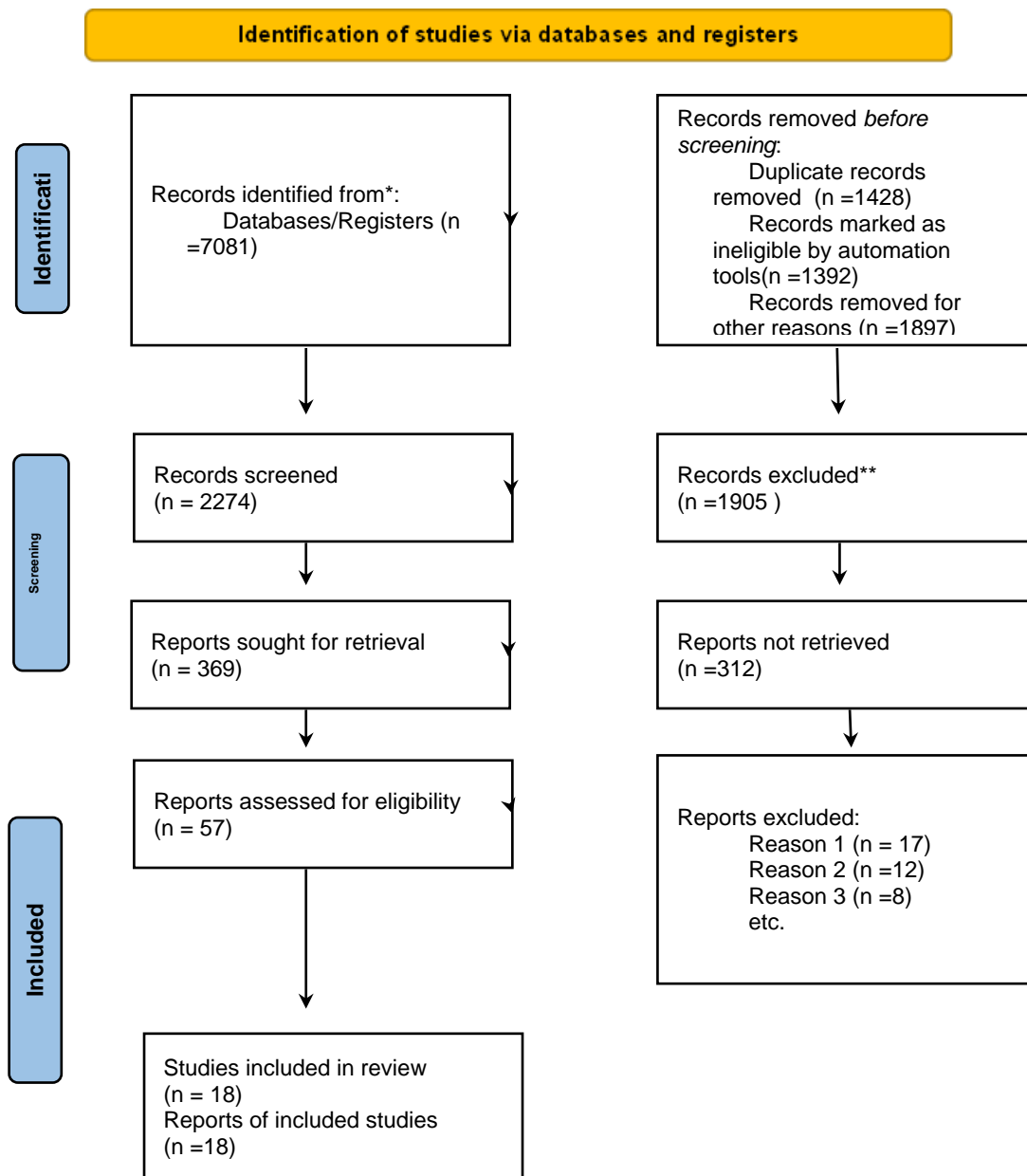


Figure 1: Flowchart showing search result

RESULTS

Search results

Online searches yielded 7081 results on this topic. In that, 57 studies were selected for full text screening. After screening, 18 studies were selected. (Refer figure 1)

Elements of included studies

Only Systematic Review on Occupational Health

Results and Discussion**Table 1 – Studies related to Occupational Health**

Sl.NO	TITLE OF THE STUDY	AUTHOR & YEAR	MAJOR FINDINGS
1.	Occupational health in the Gulf Cooperation Council (GCC): A systematic review and call for comprehensive policy development	Authors: Muhammad A. Masood, Raghad Khaled, Ahmad Bin-Ismail, Lucy Semerjian, Khaled Abass Year: 2024	The study found four significant occupational dangers in GCC countries: ergonomic, physical, chemical, and biological. Ergonomic hazards can lead to musculoskeletal problems, determined by occupational roles and work environments. Physical dangers included needlestick injuries, eye safety problems, high temperatures, and radiation exposure. Chemical hazards involved risks from pesticides, cement, and petrochemicals. Biological hazards highlighted infectious agents and parasites. The review emphasized the need for comprehensive health policies tailored to GCC-specific emphasised challenges. Collaborative efforts are necessary to address ergonomic issues, improve safety measures for chemical and biological exposures, and mitigate physical hazards effectively.
2.	The occupational safety, health, and well-being risks associated with industry 4.0 application: A systematic literature review	Rasha Ali Abdelrahima, Konstantinos Katzis, Georgios Boustras, Klea Panayidou Year: 2024	The review demonstrates that, while automation in Industry 4.0 decreases manual labour and complex physical duties, it also complicates management and problem solving, affecting workers' well-being, safety, and health, particularly among the elderly. The extent and mechanism of how Industry 4.0 affects workers' health, safety, and well-being remain unknown.
3.	Digital technology in occupational health of manufacturing industries: a systematic literature review	Luping Jiang, Jingdong Zhang, and Yiik Diew Wong Year: 2024	This analysis identifies common digital technologies and application modes, implementation enablers and challenges, and a research agenda for digital technologies in occupational health in manufacturing industries. It emphasizes the growing usage of digital technologies such as wearable devices and sensors, human-robot collaboration, and deep learning analytics. The report also identifies enablers like smart manufacturing and data-driven decision-making, as well as impediments like technological gaps and privacy concerns.
4.	A Systematic Review of Occupational Health and Safety in Mining Sector in Pakistan	Authors: Maqsooda Barozai and Sanaullah Panezai Year: 2024	The study concludes that occupational health and safety (OH&S) is a major concern in Pakistan's mining sector. Factors such as roof falls, gases, dust, lack of training, outdated methods, and inadequate safety equipment contribute to accidents and casualties. Demographic factors like age and work experience also play a role. The study emphasizes the need for improved safety measures to protect workers and increase production
5.	Effects of interventions implemented by occupational health professionals to prevent work-related stress	Suzanne Orhan Pees, Sandra van Oostrom, Hanneke Lettinga, Frederieke Schaafsma, and Karin Proper Year: 2024	A study of nine research found inconsistent results on the effectiveness of occupational health experts' interventions to prevent work-related stress. Five studies found mixed effects on stress outcomes, either short-term good effects or favorable effects only in subgroups with strong intervention adherence. The authors stated that more study is required due to the varied findings, significant risk of bias, and limited number of studies.

	complaints: a systematic review		
6.	Effectiveness of interventions on occupational stress, health and well-being, performance, and job satisfaction for midwives: A systematic mixed methods review	Zoe G. Anchors, Rachel Arnold, Sara D. Burnard, Catherine A. Bressington, Annette E. Moreton, Lee J. Moore Year:2024	The review analyzed 30 studies (18 on individual-level interventions and 12 on organization-level interventions) addressing stress management interventions (SMIs) for midwives. Individual-level (e.g., mindfulness, simulation training) and organizational-level (e.g., reflective groups, midwifery care models) SMIs improved job satisfaction and performance. Organizational-level SMIs revealed a better trend for lowering work-related stress and enhancing health and well-being than individual-level interventions. The findings suggest that combining individual- and organization-level approaches optimally supports midwives' occupational stress management, health, well-being, and job performance. Methodological quality varied across studies; eight were deemed low quality, emphasizing the need for better-designed interventions in future research.
7.	Global Systematic Review of Occupational Health and Safety Outcomes Among Sanitation and Hygiene Workers	Authors: Sina Temesgen Tolera, Shibiru Temesgen, Salie Mulat Endalew, Tamagnu Sintie Alamirew, and Liku Muche Temesgen Year: 2023	The review analyzed 51 studies from 23 countries, focusing on occupational health and safety (OHS) outcomes among sanitation workers. Respiratory problems were the most common occupational health issue, accounting for 52% of the reported outcomes. Other issues included gastrointestinal problems (27%) and mental health conditions (11%). Sanitation workers face significant risks due to exposure to hazardous materials, lack of proper safety equipment, and poor working conditions. The study highlighted the need for improved occupational health practices and further research to quantify the burden of diseases among sanitation workers globally.
8.	Digital Technologies in Construction: A Systematic Mapping Review of Evidence for Improved Occupational Health and Safety	Authors: Catherine Trask and Henrik C.J. Linderoth Year: 2023	The study examined 24 primary research publications (~6% of 392 assessed) on digital OHS interventions in construction. It divided interventions into three categories: Hazard identification during construction planning (e.g., rule-checking via Building Information Modeling [BIM]). Hazard mitigation during construction execution (e.g., real-time worker tracking, heat stress alerts, harmful gas detection). Worker health and safety training (e.g., VR-based training, QR code-based onsite video instructions). Most research concentrated on technology development rather than giving convincing proof of better working conditions or fewer injuries/illnesses. This study highlighted gaps in evidence maturity, emphasizing the need for real-world effectiveness evaluations before widespread adoption of digital solutions in construction safety.
9.	Assessing the Occupational and Environmental Health Hazards among Rag-Pickers: A Systematic Review	Authors: Usha Rani, Bindhy Wasini Pandey, Daman Saluja, Subhash Anand, Harish Kumar Year: 2023	Most studies on ragpickers' health hazards have been conducted in Asia, followed by Africa, South America, and Europe. India accounts for the highest number of studies on this topic, followed by Brazil, South Africa, Bangladesh, and Ghana. Chemical and biological workplace hazards are significant environmental risks in ragpickers' occupations. Ragpickers in Asian countries, particularly in India, face substantial occupational health hazards. Studies in India often focus on major urban centers.
10.	Interventions on Well-being, Occupational Health, and Aging of	Authors: Marc Fadel, Yves Roquelaure, and Alexis Descatha	The study includes ten systematic reviews, the majority of which had been published after 2019. Nurses were the most frequently targeted for interventions, with mental health being the most reported outcome. The overall quality of the reviews varied from high to mediocre. Workers' mental health well-

	Healthcare Workers: A Scoping Review of Systematic Reviews	Year: 2022	being was the primary outcome sought by the intervention, with various degrees of evidence. Further research with integrated approaches to global health and life course perspectives is needed, with a focus on varied contexts, worker kinds, and women.
11.	Occupational health outcomes among sanitation workers: A systematic review and meta-analysis	Authors: Hemali Harish Oza, Madison Gabriella Lee, Sophie Boisson, Frank Pega, Kate Medlicott, Thomas Clasen Year: 2021	Sanitation workers are at a higher risk of developing gastroenteritis and respiratory ailments. They may also have a higher risk of musculoskeletal problems and mental/social health issues. The pooled odds ratio for hepatitis A was 2.09 (95% Predicted Interval: 1.39-3.00; 12 studies). There is little research on the health dangers experienced by sanitation workers, especially women, informal workers, and those in low-income nations. More research is needed to determine the illness burden in this occupational category.
12.	A systematic review of working conditions and occupational health in home office	Authors: Milena Sina Wütschert, Diana Romano-Pereira, Livia Suter, Hartmut Schulze and Achim Elfering Year: 2021	Teleworkers who work from home do not have ergonomic working conditions. Organizations' lack of awareness about home-based regulations, ergonomics programs, and the health effects of not having ergonomic support. Home-based teleworkers face greater health hazards, as evidenced by reports of musculoskeletal difficulties. Implementing ergonomic design advice is essential, especially when working from home. More research is needed to better understand the impact of ergonomics programs and workplace design on working from home.
13.	Maintenance, occupational health and safety: a systematic review of the literature	Authors: Marcelo Fabiano Costella, Francieli Dalcanton, Scheyla Maria Cardinal, Sandra Salete Vilbert, Graciela Aparecida Pelegrini Year: 2020	There are essential links between occupational safety and health (OSH), maintenance, and asset management. Maintenance plays an important role in these connections. The effects of safety on maintenance activities occur at all phases of the process. The maintenance sector views OSH standards as a function of the safety of those doing maintenance and running equipment. Maintenance and safety are crucial in diverse organizational cultures, as are management methods, maintenance initiatives, and safety standards.
14.	Evidence-based occupational health and safety interventions: a comprehensive overview of reviews	Authors: Birgit Teufer, Agnes Ebenberger, Lisa Affengruber, Christina Kien, Irma Klerings, Monika Szelag, Ludwig Grillich, Ursula Griebler Year: 2019	The review comprised 25 systematic reviews with minimal risk of bias that focused on behavioural, relational, and mixed therapies. There were systematic studies on the prevention of occupational injuries, musculoskeletal, skin, and lung diseases, occupational hearing impairment, and interventions without a defined target disease. Several strategies produced consistently beneficial results for individual conditions, while others produced no effect or conflicting findings. The study helps policymakers make evidence-based decisions on workplace health and safety improvements.
15.	Occupational health and safety in the palm oil industry: A systematic review	Authors: Nuruly Myzabella, Lin Fritschi, Nick Merdith, Sonia El-Zaemey, HuiJun Chih, Alison Reid Year: 2019	Workers on oil palm plantations are at risk for musculoskeletal ailments, injuries, mental disorders, and infectious diseases such as malaria and leptospirosis. They may have been exposed to pesticides such as paraquat. The palm oil business is labour-intensive, generally unmechanized, and dependent on low-wage labour. Few studies have investigated the workplace safety and health of oil palm plantation workers.

16.	Occupational health outcomes among international migrant workers: a systematic review and meta-analysis	Authors: Sally Hargreaves, Kieran Rustage, Laura B Nellums, Alys McAlpine, Nicola Pocock, Delan Devakumar, Robert W Aldridge, Ibrahim Abubakar, Kristina L Kristensen, Jan W Himmels, Jon S Friedland, Cathy Zimmerman Year: 2019	Migrant workers face a high risk of work-related illness and injury. The pooled prevalence of having at least one occupational morbidity was 47% (95% CI 29-64; I ² =99.7%). The prevalence of at least one injury or accident, including falls from heights, fractures and dislocations, ocular injuries and cuts, was 22% (7-37; I ² =99.35%). Their health needs are largely disregarded in research and policy. Governments, legislators, and corporations must enact and enhance workplace health and safety regulations.
17.	A systematic review of working conditions and occupational health among immigrants in Europe and Canada.	Authors are T. Sterud, T. Tynes, I. Sivesind Mehlum, K. B. Veiersted, B. Bergbom, A. Airila, B. Johansson, M. Brendler-Lindqvist, K. Hviid, and M-A Flyvholm. Year: 2018	Work injuries were repeatedly reported to be higher among immigrants in studies from various countries and designs. Immigrant workers regularly reported more perceived discrimination or bullying than native workers. In general, there is very little evidence that immigrant workers are more likely to face physical or chemical hazards, as well as bad psychological working circumstances. A few Scandinavian research suggest that employment characteristics may contribute to immigrants' higher risk of sick leave or disability pension. However, the evidence regarding working conditions as a potential mediator of the relationships between immigrant status, poor overall health, and mental distress was very weak.
18.	Systems Supporting Occupational Health Behavior Change: A Systematic Literature Review.	Authors are Markku Kekkonen, Harri Oinas-Kukkonen, and Piiastiina Tikka. Year: 2018	The authors examined scholarly papers on interventions in occupational health settings, with a focus on behaviour change. The authors thought that there were few scientific studies on occupational health interventions for behaviour modification involving traditional information systems, web information systems, and native mobile information systems. The assumption was somewhat right, however the number of articles included in the systematic literature review was adequate. The authors applied the Persuasive Systems Design (PSD) approach to identify persuasive software characteristics. These can be used to build and develop an occupational health support system that focuses on behavioural change.

Table 2: Literature search in electronic databases (Indexes)

Database	Search Terms	Number
PubMed	Occupational health	1397
Research Gate	Effectiveness of occupational health	1180
Google Scholar	Role of occupational health	1780
PsychINFO	Interventions for occupational health	143
ProQuest	Occupational health	1064
ScienceDirect	Occupational health	1492
Cochrane Library	Interventions for occupational health	25

Table 3: Quality assessment of the studies

SL.No	Author & year	Instrument used	Score	Reason
1.	Authors: Muhammad A. Masood, Raghad Khaled, Ahmad Bin-Ismail, Lucy Semerjian, Khaled Abass Year: 2024	AMSTAR 2	Zero critical weakness	High Quality
2.	Rasha Ali Abdelrahima, Konstantinos Katzis, Georgios Boustras, Klea Panayidou Year: 2024	AMSTAR 2	One Critical Weakness	High Quality
3.	Luping Jiang, Jingdong Zhang, and Yiik Diew Wong Year: 2024	AMSTAR 2	Zero critical weakness	High Quality
4.	Authors: Maqsooda Barozai and Sanauallah Panezai Year: 2024	AMSTAR 2	Zero critical weakness	High Quality
5.	Suzanne Orhan Pees, Sandra van Oostrom, Hanneke Lettinga, Frederieke Schaafsma, and Karin Proper Year: 2024	AMSTAR 2	One Critical Weakness	High Quality
6.	Zoe G. Anchors, Rachel Arnold, Sara D. Burnard, Catherine A. Bressington, Annette E. Moreton, Lee J. Moore Year:2024	AMSTAR 2	One Critical Weakness	High Quality
7.	Authors: Sina Temesgen Tolera, Shibiru Temesgen, Salie Mulat Endalew, Tamagnu Sintie Alamirew, and Liku Muche Temesgen Year: 2023	AMSTAR 2	Zero critical weakness	High Quality
8.	Authors: Catherine Trask and Henrik C.J. Linderoth Year: 2023	AMSTAR 2	Zero critical weakness	High Quality
9.	Authors: Usha Rani, Bindhy Wasini Pandey, Daman Saluja, Subhash Anand, Harish Kumar Year: 2023	AMSTAR 2	One Critical Weakness	High Quality
10.	Authors: Marc Fadel, Yves Roquelaure, and Alexis Descatha Year: 2022	AMSTAR 2	Zero critical weakness	High Quality
11.	Authors: Hemali Harish Oza, Madison Gabriella Lee, Sophie Boisson, Frank Pega, Kate Medlicott, Thomas Clasen Year: 2021	AMSTAR 2	Zero critical weakness	High Quality
12.	Authors: Milena Sina Wütschert, Diana Romano-Pereira, Livia Suter, Hartmut Schulze and Achim Elfering Year: 2021	AMSTAR 2	One Critical Weakness	High Quality
13.	Authors: Marcelo Fabiano Costella, Francieli Dalcanton, Scheyla Maria	AMSTAR 2	Zero critical weakness	High Quality

	Cardinal, Sandra Salete Vilbert, Graciela Aparecida Pelegrini Year: 2020			
14.	Authors: Birgit Teufer, Agnes Ebenberger, Lisa Affengruber, Christina Kien, Irma Klerings, Monika Szelag, Ludwig Grillich, Ursula Griebler Year: 2019	AMSTAR 2	One Critical Weakness	High Quality
15.	Authors: Nuruly Myzabella, Lin Fritschi, Nick Merdith, Sonia El-Zaemey, HuiJun Chih, Alison Reid Year: 2019	AMSTAR 2	Zero critical weakness	High Quality
16.	Authors: Sally Hargreaves, Kieran Rustage, Laura B Nellums, Alys McAlpine, Nicola Pocock, Delan Devakumar, Robert W Aldridge, Ibrahim Abubakar, Kristina L Kristensen, Jan W Himmels, Jon S Friedland, Cathy Zimmerman Year: 2019	AMSTAR 2	One Critical Weakness	High Quality
17.	Authors are T. Sterud, T. Tynes, I. Sivesind Mehlum, K. B. Veiersted, B. Bergbom, A. Airila, B. Johansson, M. Brendler-Lindqvist, K. Hviid, and M-A Flyvholm. Year: 2018	AMSTAR 2	One Critical Weakness	High Quality
18.	Authors are Markku Kekkonen, Harri Oinas-Kukkonen, and Piiastiina Tikka. Year : 2018	AMSTAR 2	One Critical Weakness	High Quality

Role of Occupational Health

Occupational health plays a crucial role in ensuring the physical, mental, and emotional well-being of workers. It involves implementing safety procedures and policies to create a risk-free workplace, ultimately saving lives, and reducing costs for organizations (Asad et al., 2023). Occupational health involves preventing work-related diseases and maintaining the physical and mental health of employees. It plays a crucial role in creating a safe work environment, ultimately contributing to improved employee performance and overall organizational productivity. It plays a crucial role in identifying and managing occupational diseases, educating physicians, conducting workplace investigations, and developing surveillance case criteria, thereby enhancing state-based occupational disease

surveillance, and contributing to a national surveillance system (Diniz e Silva, 2022).

Interventions for occupational health

Interventions in occupational health psychology (OHP) aim to treat or prevent employee health and well-being issues. These interventions can target the employee, their workplace relationships, job characteristics, or organizational climate. Studies often utilize random assignment to enhance internal validity. Outcomes may include reduced work-nonwork conflict and stigma surrounding mental illness. The effectiveness of these interventions can vary based on individual, situational, and temporal factors, and they may be geographically concentrated rather than evenly distributed globally (Beehr, 2019). Interventions for occupational health focus on behaviour change to reduce health risks, such as absenteeism. Successful interventions addressed issues like

stress, physical activity, and mental health, employing persuasive software features based on the Persuasive Systems Design Model. Examples include personalized feedback and goal-setting strategies, which can enhance health management and promote healthier behaviours among workers (Kekkonen et al., 2018).

Determinates/factors of occupational health

Occupational health determinants include workplace factors such as biological and chemical hazards, along with socioeconomic influences. These elements significantly impact individuals' physical, mental, and social well-being, highlighting the complex relationship between occupation and overall health (Adetunji & Obeng-Gyasi, 2024). The determinants of occupational health include social conditions such as economic status, education, and access to resources, which shape opportunities for health-promoting occupations. Inequitable distribution of these determinants leads to occupational injustices affecting individuals' health and well-being (Adetunji & Obeng-Gyasi, 2024). Occupational health factors include physical, chemical, and biological elements of the production environment, along with the severity and intensity of labour processes. These factors significantly contribute to health deterioration and mechanisms of premature aging in workers (Savchenko et al., 2024). Factors affecting occupational health include air pollutants, coal dust, heat, noise, humidity, and vibration. These environmental elements significantly correlate with employees' health and well-being, leading to high levels of illnesses, accidents, and injuries, particularly in coal and iron-steel industries (Rajak et al., 2023).

Conclusion

Systematic reviews in occupational health and safety (OHS) provide evidence-based findings for practice guidelines and policy decisions. These reviews aim to synthesise available evidence, reduce bias, and address important OHS questions. The process involves identifying a

topic, assessing the need for review, and defining target users. Systematic reviews have been instrumental in changing traditional beliefs, such as the effectiveness of back schools in preventing back pain. In firefighting, for example, Reviews have emphasized the occupational health concerns linked with exposure to harmful chemicals and pollutants. To conduct a systematic review in OHS, Researchers should take certain processes, such as a comprehensive literature search, data extraction, and quality assessment. These reviews are crucial for developing effective measures to prevent and manage occupational health risks.

Limitations of the Study

This umbrella review compiles evidence regarding the impacts of occupational health, especially in a general sense. Various other factors are linked to occupational health depending on differing contexts and populations. Since this study did not focus on a specific area, it will not provide detailed conclusions based on specificity. This limitation is one of the constraints of this study. Furthermore, this umbrella review did not investigate sustainable solutions for the challenges associated with occupational health, including their effectiveness, cost, feasibility, and environmental consequences. Future studies should aim to fill these gaps and contribute to evidence-based policies and practices in occupational health.

Implications of the Study

This umbrella review highlights the significance of occupational health and presents several implications. In developing nations, research often depends on cross-sectional designs and frequently lacks quantitative measures of exposure. Although epidemiology plays a vital role in occupational health, its improper application can result in misconceptions and misguided policy choices. The increase in occupational health and safety experts has redirected attention toward policy and practice, leading to a deficiency in academic research,

particularly in management disciplines. This review stresses the necessity for further conceptual advancement, empirical research, and theoretical contemplation in OHS studies. Future research should incorporate a variety of methodological strategies, including in-depth case studies that explore OHS in particular workplace settings over extended periods.

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Perceived Parenting Style and Quality Of Life Among Emerging Adults

Varunavi CH* and Sona TM**

Abstract

Perceived parenting style refers to how individuals view the parenting style adopted by their parents. Quality of life pertains to the subjective perception of an individual's wellbeing across various realms of life. This study explores the relationship between Perceived parenting styles and Quality of life among Emerging adults. The study focuses on the parenting styles given by Diana Baumrind i.e., Authoritative, Authoritarian and Permissive Parenting style and their influence on the overall wellbeing of individuals. The study assesses the various domains of wellbeing of an individual such as physical health, psychological health, social and environment. The population of the study is emerging adults. The study includes 55 individuals aged 18 – 25 from different colleges of Bangalore. The data was collected using google forms and sampling method used is convenient and purposive sampling. The tools used for the study include Perceived Parenting Style Scale [(PPS)K&TV,2013] and World Health Organization Quality of Life brief [(WHOQOL-BREF) WHO,1998]. The data were analyzed using SPSS software. The results of the study indicate that there is significant relationship between perceived parenting styles and quality of life. Authoritative parenting style demonstrated a strong positive correlation with qol, while authoritarian and permissive approaches showed negative links. Authoritative parenting scores are higher among females than males whereas authoritarian and permissive parenting scores are higher among males than females, though the difference is not statistically significant. Similarly, qol scores were slightly higher among females than males, but the difference was not statistically significant. Overall, the findings of the study emphasize the significant role of parenting styles in shaping the overall wellbeing of emerging adults.

Key words: Perceived parenting style, quality of life, emerging adults

About authors:

*Student, MSc Clinical Psychology, Yenepoya Deemed to be University, Bengaluru,

**HOD & Assistant Professor, Nirmala Arts & Science College, Mulanthuruthy, affiliated to MG University, Kottayam

Introduction

“Emerging Adulthood” refers to the stage of growth that most individuals in their twenties go through in Westernized societies and other regions of the world. It was first described in 2000 by Clark University's Jeffrey Jensen Arnett, PhD. The transition from reliance in infancy to independence in adulthood is lengthier and more difficult than ever before. Emerging adults are frequently reliant during the start of this era, between the age of 17 and 18. They live with their parents or guardians, begin romantic relationships, take on greater responsibilities and attend high school. By their mid to late twenties,

most emerging adults are self-sufficient, in long term relationships and have clear career aspirations. (Wood et al., 2018)

Parenting style has impact on how children develop into adults and there are certain important implications for their future success. (Savitha K & Venkatachalam J, 2016) Diana Baumrind was a prominent psychologist known for her influential research in developmental psychology, particularly regarding parenting styles. Baumrind's seminal work identified three primary parenting styles – authoritarian, permissive and authoritative – each characterized by different balances of

demandingness and responsiveness.(Baumrind, 1991)

Theoretical Framework:

The various parenting styles adopted by parents has gained extensive research consideration from various scientific areas. There are many theories that highlight the vital role of parenting in the development of child. Several theorists have classified parenting styles into parental control, parental support, demandingness, authoritative, authoritarian etc. Diana Baumrind was a prominent psychologist known for her influential research in developmental psychology, particularly regarding parenting styles. Diana Baumrind's Pillar theory emphasizes a child's behavior is associated with parenting styles as they grow and interact with new people.(Williams & Ciarrochi, 2020)

Baumrind's Parenting Styles:

Baumrind is a pioneer in the research involving parenting styles. She proposed 3 parenting styles to describe the typical parenting behaviors: Authoritative, Authoritarian, and Permissive. She later introduced an additional parenting style: Neglectful Parenting style.(Sanvictores Terrence & Mendez.D., Magda, 2022)

Authoritarian Parenting Style:

Authoritarian Parenting style is sometimes compared to a 'rigid ruler' and is characterized by low levels of support and firm expectations of obedience. They require children to adhere to clear rules but do not give explanation for their instructions. Children brought up in such environment are usually compliant and competent, but often have difficulty with happiness, social competence and self-worth. This approach is sometimes described as authoritarian and coercive, with parents typically responding to questions with 'because I said so' without giving any explanation. Rules are strict and unyielding, with severe penalties for disobedience. Children are seldom allowed to

make choices or express opinions and affection is restricted. The long-term effects of this style of parenting are detrimental and can lead to a follower mindset where kids have a hard time making independent decisions and moral judgements. They can also have low self esteem and go looking for approval outside of themselves.(Lari, 2023)

Authoritative Parenting Style:

Children develop best when parents employ an authoritative parenting style, which involves high but reasonable expectations, effective communication, warmth and responsiveness. This approach is sometimes referred to as the "tender teacher" approach, is commonly identified as being the most effective in Western cultures. Authoritative parents are warm, interested in their children's interests and allow them to learn from constructive mistakes without being excessively controlling. This parenting style which is considered one of Diana Baumrind's best, aims for a balance between rigidity and autonomy. It provides children with the freedom to master their skills within reasonable limits, ensuring a happy, competent and successful childhood.(Li et al., 2024)

Baumrind finds that authoritative parents are firm but not intrusive, employ supportive instead of harsh discipline methods. They socialize their children to be assertive, socially responsible, self-sufficient and cooperative. This approach helps children build self-confidence, manage responsibilities effectively, overcome challenges and trust their own judgment balancing structure and emotional support, authoritative parenting equips children for a confident and successful life.(Bolghan-Abadi et al., 2011)

Permissive Parenting Style:

Permissive or indulgent parents offer high levels of support and low expectations for their children's behavior. This approach often results in children who have difficulty with happiness, self-regulation and can have problems

with authoritative adults. Permissive parents are indulgent, do not establish boundaries or enforce rules and avoid confrontation. They often attempt to be more of a friend or peer to their children, readily conceding their desires to not disappoint them. Such behavior is the opposite of authoritarian parenting and could be a response to one's own strict upbringing. While meeting a child's needs is valuable, too little discipline and constraints could have negative effects in the long run. Excessively permissive parenting has the potential to result in severe consequences. Poor emotional regulation leads to trouble with controlling feelings and behaviors. When children are not given their way, they display overly rebellious and defiant behavior. In general, while permissive parents try to create a supportive environment, lack of structure can hinder a child's development and lead to severe behavioral disorders. (Jessup, 2024)

Neglectful Parenting Style:

These parents are often inattentive or rejecting, not doing the minimal parenting duties and denying their children the essential guidance or nurturing. The inattentive type of parenting is characterized by the absence of child engagement, without rules, order or lovingness. Children are left to fend for themselves, which can result in hazardous situations and in extreme instances, removal from the home. Neglectful parents do not spend much time with their children, miss important events, and put forth little effort to emotionally bond. Even in the absence of physical damage, the psychological impact of this method can be disastrous.

The long-term effects on children can be catastrophic such as: Lack of early connection make sit difficult to build intimate relationships. Employing delinquent or aggressive conduct as a means of handling emotional pain. They withdraw themselves from others because they have difficulty connecting with other people. All in all, inattentive parenting may have significant and long terms harmful effects on the emotional

and social development of a child. (Amanda Tintor, 2023)

Maccoby and Martin: Demandingness and Responsiveness

In the 1980s, Maccoby and Martin (1983) broadened Baumrind's research by including her parenting styles with the aspects of demandingness and responsiveness. Their research involved around classifying parenting styles according to these two dimensions, resulting in four different types: authoritative (high demandingness and high responsiveness), authoritarian (high demandingness and low responsiveness), indulgent or permissive (Low demandingness and low responsiveness) and neglectful or uninvolved (low demandingness and low responsiveness). These dimensions closely match parental support and behavioral control. Baumrind later incorporated the neglectful style of parenting into her model between 1989 and 1991. (Kuppens & Ceulemans, 2019)

Quality of Life:

The world Health Organization defines quality of life (QoL) as 'a subjective assessment of one's experience of reality in relation to one's goals as seen through the lens of one's cultural and value system' (WHO, 2012). Quality of life is a highly subjective concept that is specific to each individual. It's a multidimensional construct which integrates social, physical, emotional wellbeing and functioning. Quality of life refers to the degree of overall life satisfaction that is influenced by an individual's perception. It depends on many factors and is different for each individual. Four domains common to QOL in health include: physical health, mental health, social health and functional health. Quality of life is a concept including various aspects of individuals lives such as: health, material comforts, Personal safety, relationships, learning, Creative expression, leisure, socializing, participation in public affairs etc. The principal characteristic of QOL is its multidimensionality

i.e.; QOL has multiple ingredients. (kagan J, 2024; Teoli & Bhardwaj, 2025).

Researchers rarely pause to reflect on why certain life domains are included and which are left out. Deciding which domains are in and out involves presuming some general theory of what the quality of life is, what constitutes a good life and what life is about. The lack of a theoretical background is a determining flaw with much of the empirical work on the quality of life. (kagan J, 2024)

This study focuses on exploring whether the parenting styles as perceived by individuals have an influence on their quality of life. The study explores quality of life across the various domains such as: Physical health, Psychological Health, Social relationships and Environmental health. There are several studies investigating the relationship between perceived parenting styles and life satisfaction, subjective wellbeing etc but the relationship between perceived parenting styles and quality of life is lacking. This study focuses on studying the relationship and their influence on quality of life.

Review Of Literature:

Martinez et al (2022) conducted a study on Perceived Parenting Style and quality of life related to health among Adolescents. This Spanish study of 253 adolescents (aged 11 – 18) used the ENE- H scale and SF-36 to examine links between parenting style and health -related quality of life. The findings indicate that inductive parenting is positively associated with emotional well-being, vitality and social functioning, while strict (rigid) parenting - especially from fathers -negatively impacts these domains. The study underscores the importance of parental respect and guidance in fostering adolescent health and emotional equilibrium.

Huang et al. (2022) studies the impact of parenting style and self-efficacy (SE) on subjective wellbeing (SWB) among Chinese nursing students. Surveying 665 nursing undergraduates, this research found that positive

parenting styles correlate with higher subjective well-being. Self-efficacy was a significant mediator, partially explaining the relationship between parenting style and well-being. Notably, female students well-being was more influenced by perceived parenting style than males, highlighting gender differences in the impact of parental behaviors.

Chaudhury et al. (2021) investigated the relationship between parenting style, psychological wellbeing, and emotional intelligence in teenagers. The study involved 150 teenagers (75boys and 75 girls) between the ages of 15 and 18. This cross-sectional study of 150 teenagers in Uttar Pradesh revealed that parenting style significantly predicts psychological well being and emotional intelligence. Authoritarian parenting was linked to environmental mastery, while permissive parenting fostered positive relationships. Authoritative parenting correlate dwith higher emotional intelligence and well-being, supporting the role of balanced parental control and warmth in adolescent adjustment.

Francis et al. (2021)studied the relationship between psychological well being and perceived parenting style among teenagers. Among 554 adolescents, the majority perceived their parents as authoritative. The study found a positive correlation between psychological well-being and both authoritarian and permissive styles, but a negative association with neglectful parenting. Authoritative parenting emerged as most beneficial, supporting adolescent psychological growth and well-being.

Singh and Behami's (2018) review examined how parenting styles affect teenagers' life satisfaction. Correlational research indicates that parental style influences teenagers' life satisfaction. Authoritarian parenting lowers satisfaction, but authoritative, supportive and permissive parenting promotes it. Adolescents' life happiness declines when their parents are indulgent or inattentive.

Abubakar et al. (2015) studied the relationship between maternal and paternal parenting styles and psychological well being among Indonesian adolescents. With 500 adolescent participants, this study found that mothers were more often perceived as authoritative, while fathers were more authoritarian. Authoritative parenting (from both parents) was linked to better psychological outcomes, but authoritarian parenting showed no significant negative effects contrasting with some western findings. The authors call for more nuanced, culturally sensitive research on parenting styles and adolescent psychological well-being.

Research Question

1. How do perceived parenting style influence the quality of life among emerging adults?
2. Is there a difference between perceived parenting style and quality of life scores on the basis of gender?

Hypothesis

Null Hypothesis (H_0):

1. There is no significant relationship between Perceived parenting style and quality of life among emerging adults.
2. There is no significant difference between perceived parenting style and quality of life scores on the basis of gender.

Aim:

The aim of this research is to examine the relationship between Perceived parenting style and quality of life of emerging adults.

Objective:

1. To examine the relationship between Perceived parenting style and quality of life among emerging adults

2. To explore the difference between Perceived parenting style and quality of life among emerging adults on the basis of gender.

Method

Tools:

1) The Perceived Parenting Style Scale:

The Perceived Parenting style scale, developed by Divya and Manikandan (2013), measure children's assessment of their parent's behavior. The questionnaire assesses the subjects parenting style across three dimensions: authoritarian, authoritative and permissive. The perceived parenting style measure has 30 close -ended items and is self-administered. The Likert scale has five response categories: strongly agree (5), agree (4), neutral (3), disagree (2) and strongly disagree (1). The scales items are all positively worded and rated from 5 to 1. The three perceived parenting styles are scored independently. The items of authoritative are: 1,4,7,10,13,16,19,22,25,28; authoritarian- 2,5,8,11,14,17,20,23,26,29 and permissive type -3 ,6,9,12,15,18,21,24,27,30. The questionnaire is provided through online platforms(Manikandan K, 2020).

2) WHOQOL-BREF-Quality of Life:

The WHO developed the WHOQOL-BREF (World Health Organization Quality of life Instruments) in 1995. The WHOQOL-BREF is a self-administered questionnaire with 26 questions, which is shorter than the WHOQOL-100 and has close ended questions. The WHOQOL-BREF is a 26-item measure divided into 4 domains: physical health (7items), psychological health (6 items), social connections (3 items) and environmental health (8 items); it also contains QOL and general health items. Each individual item of the WHOQOL-BREF is scored from 1 to 5 on a response scale. The scores are then transformed linearly to a 0 –

100 scale (THE WORLD HEALTH ORGANIZATION QUALITY OF LIFE (WHOQOL)-BREF, 2004)

- Individuals unable to understand or complete the survey due to language barriers or cognitive impairments.

Participants:

The variables of the study include Perceived Parenting Styles and Quality of life. Data for each variable will be collected using standardized questionnaires on Google forms. The research included emerging adults aged 18 – 25. The sample size for the research is roughly 54 people. The sampling method is convenient and purposive sampling. This approach collects samples depending on age specific characteristics. Data will be collected from the sample using google forms.

Inclusion Criteria:

- Individuals aged between 18 – 25
- Individuals should have access to the internet to complete the online survey

Exclusion Criteria:

Results and Discussion:

Table 1

Pearson Correlation among Quality of life and Perceived Parenting Styles (N= 54)

Variable	QOL		
QOL	Sig (2 tailed)		-
Authoritative	Sig (2 tailed)	1	.554**
Permissive	Sig (2 tailed)	1	-.301*
Authoritarian	Sig (2 tailed)	1	-.426**

$p < .05$, ** $p < .01$ (2 tailed)

The current study examines the relationship between different perceived parenting styles: authoritative, authoritarian, permissive and the quality of life of individuals. The results revealed a significant positive correlation between QOL and the authoritative parenting style, $r(54) = .554$, $p < .01$, suggesting that individuals exposed to authoritative

Procedure:

The study includes a sample of 54 individuals within the age group 18 – 25. The data was collected from students of different colleges of Bangalore. The questionnaire was shared in google forms to collect data. The informed consent was taken and the privacy and confidentiality of the data was conveyed. Clear instructions of each questionnaire were provided. The data was then collected from 27 females and 27 males.

The data was analyzed using SPSS software. Pearson correlation was used to assess the relationship between parenting styles and quality of life. An independent sample t test was conducted to examine gender differences in parenting styles and quality of life. (QOL)

parenting tend to report higher quality of life. This finding aligns with the existing literature that associates authoritative parenting with better life satisfaction and well-being. (Francis et al., 2021)

On the contrary, both permissive ($r = -.301$, $p < .05$) and authoritarian parenting styles ($r = -.426$, $p < .01$) showed significant negative

correlations with QOL, suggesting that these parenting styles may be detrimental to perceived life satisfaction. The authoritarian style demonstrated the strongest negative relationship with QOL among the three, emphasizing its potential harmful impact on individual wellbeing.

The findings of the study emphasize the adaptive nature of authoritative parenting style and its positive influence on quality of life. Hence the hypothesis; There is no significant relationship between perceived parenting styles and quality of life among emerging adults is rejected.

Table 2

Comparison of variables among male and female emerging adults

Variables	Male		Female		t-value
	Mean	Std. deviation	Mean	Std. deviation	
Authoritative	37.40	6.20	40.55	6.58	.076
Authoritarian	24.22	5.64	21.11	7.33	.087
Permissive	24.03	7.10	19.37	6.92	.018
QOL	82.77	11.34	85.77	12.05	.351

$p < .05$

The independent samples t test was conducted to examine gender differences in parenting styles and quality of life (QOL). The results revealed a significant gender difference in permissive parenting style, $t(51.97) = 2.44$, $p = .018$, with males ($M = 24.04$, $SD = 7.11$) scoring higher than females ($M = 19.37$, $SD = 6.92$). This suggests that males in the sample perceived their parents as more permissive as compared to the females.

No statistically significant gender differences were found in authoritative parenting styles, $t(51.81) = -1.81$, $p = .076$, or authoritarian parenting, $t(48.80) = 1.75$, $p = .087$, although the trends indicated slightly higher authoritative scores for females and higher authoritarian scores for males.

Similarly, no significant difference was observed in quality-of-life scores between males and females, $t(51.81) = -0.94$, $p = .351$. Both genders reported comparable levels of QOL, with females scoring slightly higher on average.

These findings suggest that gender plays a more distinct role in perceptions of permissive parentings but may not significantly impact perceived quality of life or experiences with authoritative and authoritarian parenting styles. Hence the hypothesis: There is no significant difference between Perceived parenting styles and quality of life on the basis of gender is partially rejected.

Conclusion:

The results of the study indicate that there is significant relationship between perceived parenting styles and quality of life. Authoritative parenting style demonstrated a strong positive correlation with qol, while authoritarian and permissive approaches showed negative links. Authoritative parenting scores are higher among females than males whereas authoritarian and permissive parenting scores are higher among males than females, though the difference is not statistically significant. Similarly, qol scores were slightly higher among

females than males, but the difference was not statistically significant. Overall, the findings of the study emphasize the significant role of parenting styles in shaping the overall wellbeing of emerging adults.

Implications:

The study highlights that parenting styles continue to influence well being during emerging adulthood, a stage marked by financial dependence and prolonged cohabitation with parents. Parenting styles shape emerging adults' self-esteem, resilience, career adaptability and ability to navigate social environments. The results of the study can be utilized for enhancing mental healthcare, tailored interventions, improved parental practices, fostering stronger family bonds etc. The study's results have several other practical implications including Policy development for youth and family services, guidance for educational institutions and career counselors, informed clinical practice and facilitating parent and emerging adult communication.

Limitations:

The study focuses on individuals aged 18 to 25 from Bangalore, Karnataka. This limits the generalizability of findings to other cultural contexts where family dynamics may differ significantly. The study lacks longitudinal observations to understand the long-term impact of parenting styles on career outcomes or psychological well-being across different stages of adulthood. The reliance on the perceptions of emerging adults of the parenting styles may introduce subjective biases that may not accurately reflect actual parental behaviors. The small sample size of 54 also limits the study's statistical power and generalizability, increasing the risk of inconclusive results that may not represent the broader population. Moreover, reliance on self-reported perceptions introduces measurement bias, as participants subjective views may not accurately reflect actual parenting

behaviors, further compromising the validity of the findings.

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Orphanages...Home to Hopelessness, Vulnerabilities or Resilience? Through Community Lens

Oliviya N*, Vennela R** and Dr. Sangeeta Bhamidipati***

Abstract

Background: This study attempts to explore realities of orphanage life through the lens of community, whether it fosters resilience, hopelessness or vulnerability in the orphan and vulnerable children residing at PAPA Homes and advocating for policy changes that strengthen child protection systems. The study was conducted at an orphanage, PAPA (Public and Police Association) Homes for Girls, Seethammadara, Visakhapatnam. The present study seeks to contribute to the growing body of research on orphan community by showcasing the importance of the role of community in social development.

Method: A qualitative research approach was used for this study. A semi-structured interview was taken from the President and the Caretaker of the orphanage. To dive into the children's direct experiences, a focus-group discussion was conducted with 30 orphaned girl children, age ranging from 8-18 years, facilitating a collaborative exploration of their perceptions, challenges, and aspirations.

Results: The thematic analysis for this study finds its themes from two interviews and a focus group discussion and interaction with the children. The analyses identifies key themes: themes of community support, self-reliance, hopefulness and optimism. The finding of the study is that resilience won in the face of adversity for these young girl children.

Implications: Additionally, future efforts can be directed towards offering these children mental health services to treat trauma and provide counselling. Researchers can further study on how community service develops vulnerable communities to become resilient.

Conclusion: It can be concluded that the well-being of orphaned children is not an individual or an institutional concern but it is of the community.

Keywords: Orphans, Orphanage, Community, Vulnerability, Resilience

About authors:

**BA III Year Student, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.*

***BA III Year Student, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.*

Corresponding Author

****Associate Professor, Department of Applied Psychology, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.*

Introduction

The current study explores the need for community-based interventions that foster resilience for orphan and vulnerable children. By analyzing the role of community-driven initiatives, like those undertaken by Public and

Police Association for Street Children (PAPA) Homes, and advocating for policy changes that strengthen child protection systems, this study aims to illustrate how the inclusive social development framework can contribute to creating more supportive and nurturing

environments for orphaned children, ultimately fostering their healthy development and integration into society.

Orphans

Children below the age of eighteen who have lost one or both of their parents to death, desertion, or disappearance are typically referred to as orphans (Mission Eurasia, 2024).

Vulnerable child

A child is considered vulnerable if they are at a higher risk of damage because of a number of reasons, including poverty, abuse, neglect, or exposure to disasters and violence. These children may have one or both parents, yet they still don't have access to protection or basic necessities (Mission Eurasia, 2024)

Street Children

Children who are abandoned by both society and their own parents are known as street children. On the streets, train platforms, and in public areas, they try to live by themselves. Their shelters are dangerous and devoid of medical attention, education, or care. They are referred to as "street children," and like any other child, they require love, care, food, and education.

Orphanages

Orphanages are institutions that house children whose parents have died or whose origins are not known (O'Ayotunde, 2013).

In India, there are around 55 million orphans aged 0 - 12 years, making up nearly 47% and more of the total global orphan population of 150 million (UNICEF, 2005). The majority of children in India are either living or working on the streets, with a significant portion engaged in criminal activities, prostitution, drug trafficking and gang violence. Nonetheless, most of the children are orphans (Srivastava, Bharti, 2007).

A significant number of children have become orphans for a variety of reasons, including parental deaths, abandonment, and circumstances in which parents are unable to care

for them. These kids, who are frequently introduced to the harsh realities of life at young ages, deal with a variety of challenges, such as psychological trauma, extreme poverty, starvation, and illiteracy.

The Indian government has introduced several policies and programs aimed at orphan welfare. Ensuring the care of orphans requires strict enforcement of child protection laws and effective policymaking.

A home for street children was established in 1999 by members of 14 non-governmental organizations (both domestic and foreign), including the Mahila Action Help Society, Y's Men, JC's, Waltair Round Table 92, Lions, Rotarians, and others, as well as the Visakha Police Department. The home was founded under the direction of Sri K Durga Prasad, an IPS officer, who was the Commissioner of Police of the district of Visakhapatnam at the time. They recognized the urgent need for corrective action to reduce street juvenile criminality. Innocent youngsters are frequently discovered falling into the hands of Mafia gangs, and there is a pressing need to rehabilitate them. The Public and Police Association for Street Children (PAPA) Homes was established with a goal to integrate the orphans into the society. (Savant, n.d.)

Communities are essential for providing orphans with loving surroundings. In order to keep orphaned children from becoming victims of child labor, human trafficking, or other types of exploitation, community awareness initiatives can aid in the early detection and reporting of these children (Narayan Seva Sansthan, 2023).

Review Of Literature

Orphanhood in India is a pressing issue, as millions of children face the challenge of growing up without parental care, often due to parental death caused by illness, accidents, or violence. Orphans' living conditions and welfare significantly affect their educational and nutritional outcomes. This section synthesizes

already existing research work on the living conditions of orphans in India.

As per the recent UNICEF report, there are 140 million orphans globally. India's population is growing and so is its number of orphans and children who are abandoned.

Living Arrangements of Orphans in Institutions

Institutions can develop risk of physical, emotional and social harm of institutionalized children as they are characterized to be harmful for living as children may experience fixed routines that do not meet individual needs, forced cohabitation, they may also be deprived of the freedom to choose what suits their interest (*Children in Alternative Care*, n.d.).

Orphans and their Educational Status in India

According to Ministry of Human Resource Development, nearly 40% of orphans are not enrolled in schools. This deprives them of knowledge and skills required for a brighter future. (Admin & Admin, 2024).

Li (2024) proposed strategies to improve the psychological well-being and development of institutionalized children. According to the study, creating such supportive environments promotes more stability and fosters positive early life experiences, builds strong social support network systems, and fosters greater cultural identity and better connectivity. The findings of Lee et al.'s (2025) study show that education benefits and social, psychological, and physiological outcomes have positive effects on orphans' happiness, with strong emphasis placed on psychological assistance and emotional recovery.

Role of Resilience in Orphans' Psychological Well-being

Resilience is the ability to recover from adversity or trauma and adapt positively to challenging circumstances. For orphaned children, resilience is a pivotal trait that ascertains the way in which they will cope with the loss of their primary caregivers. Several studies have

researched the nexus between resilience and social support. The findings suggest that the orphans who have experienced support through social support networks reported better resilience in times of adversity. It was found that there is also a significant association between the resilience displayed and the care environment in which the orphan is a part. Every child reported a strong association with social and peer support, along with volunteer activity. Such findings reiterated the fact that resilience can be nurtured by way of targeted support for such vulnerable groups.

Several factors can influence the relationship that exists amidst social support and resilience among orphans. Jameel et al. (2015) discusses that emotional support, such as empathy and understanding, is more beneficial for emotional well-being, while instrumental support, such as financial assistance or access to resources, can alleviate stressors related to basic survival (Thoits, 1995). Jameel et al. (2015) argues that a combination of emotional and practical support is most effective in enhancing resilience among orphaned children.

In India, there is a significant gap in the number of studies that have been done on the psychological well-being of orphans. Adolescents and orphans should be viewed as a significant segment of society since they should receive the same consideration, resources, and supportive surroundings as other kids—things that orphans were never able to receive throughout their lifetimes (Kalpana, 2020).

The institutional upbringing of orphans and underprivileged children, especially in third-world nations and developing countries, has been associated with mental illness. A study by Dar et al. (2015) focused on the prevalence and pattern of psychiatric morbidity was sought to find out among the children residing in orphanages in Srinagar, Kashmir. The findings were 40.52% prevalence, with the highest being separation anxiety disorder, followed by conditions like

depression, OCD, ADHD (attention deficit hyperactivity disorder), and specific phobias, and PTSD. This research established that psychiatric morbidity is very high among children residing in orphanages and that early detection and intervention can enhance their lives. .

Mahanta et al. (2022) examined the physical and mental well-being of orphaned children in three orphanages in Assam's Sonitpur District. Among the 65 children from ages 10-19, 18.5% manifested behaviour and mental distress. Boys' adolescents suffered greatly. The research found that orphaned children, especially those in orphanages, are malnourished and have behavioural and psychosocial issues. Regular checks are advised to detect and prevent problems early with prompt intervention.

The findings of Kumar et al, (2017) study indicated no significant difference in the emotional intelligence of students who are orphans and those who are not. It was shown that the emotional intelligence of orphan and non-orphan girl pupils differed considerably, with orphan girls having higher emotional intelligence than non-orphan girls.

Orphans who are placed in institutional care or foster care settings may face challenges in forming strong emotional bonds with caregivers, which can hinder the development of resilience (Zeanah, 2000). As per findings arrived at in other studies, one of the major problem that confronted the orphans was social stigma. The orphans are discriminated against other children. Orphans that dwell in such orphanages have greater proclivity to develop conditions like depression, anxiety and various other behavioral issues as compared their counterparts (Bano, Fatima, & Naz, 2019).

However, when caregivers are emotionally supportive and provide a stable environment, children can still develop strong resilience, despite the loss of their biological parents (Smith, 2005). According to Jameel et al. (2015), fostering positive relationships with

caregivers and other family members can buffer against the negative effects of orphanhood, contributing to emotional stability and improved coping mechanisms.

Institutionalization of the orphans seemingly better their daily quality of life as well as experiences. A study done by (Moyo, Susa, Gudyanga, 2015) on institutionalization of orphaned children and its impact on their well-being showed that the orphans learned to create their own family within those walls.

Objectives of the study:

Bearing in mind the kind of literature that is available in the area, the following objectives have been drawn out for this qualitative study:

1. To explore the lived experiences of the orphan girls in PAPA Homes.
2. To examine their psychological, emotional, and social challenges if faced.
3. To also understand how the routines, caregiving practices, and institutions are influencing the development of the girls at the orphanage.

Method

Research design

This study on orphans used the qualitative research approach in order to meet the objectives that have been laid out earlier. It delves deep into the lived experiences of the girls, the challenges they face and faced, and the resilience they have shown thus far confronting various aspects in life. Qualitative approach was found to be the most valid method as it provides an in-depth understanding for all the questions that have been laid out.

Study area

The study was conducted at PAPA Homes for Girls, which is located at Seethammadara, a place in Visakhapatnam. It was created to bring the delinquent children into mainstream society. Initially established with nine

children, PAPA has grown to 100 children and has a registration under the Societies Act with Registered No. 971/99. The home was later moved to a closed police school in Police Lines, Visakhapatnam, provided by the Commissioner of Police, Visakhapatnam city.

Study population

The study population was the OVC living in PAPA homes for girls. The children who were 8 to 18 years old, lived for at least a year in the orphanage and were active beneficiaries of the services at the time of the research were considered for sample selection. The administrative personnel also were interviewed to gather their perspective on the orphan girls. Purposive sampling was used to select the participants so as to ensure that only those who had lived experiences of such an institutional life were a part of the study.

Sample Representation

Duration of stay: Most children are taken when they were 5, some of them were recently joined by guardians, as they lacked resources to provide

Size: The study's sample size was 30 girls aged 8 to 18. The children were receiving active education during the research.

Background information: Some children are orphaned due to death of parents, some by single parents, some by guardians, and a few of them due to financial burden.

Data collection

Data was gathered mainly through interviews with the caretakers and the president of the institution. They offered a lot of information in the form of operational challenges they were facing. In-depth group discussions or focus group discussions were conducted with the girls in PAPA Homes. Through this interaction, the researchers gathered collective narratives related to their daily routines, relationships with one another, and their aspirations, emotional and psychological well-being. Discussions were

initiated through open-ended questions so that the girls could express freely. The interviews and the discussion were conducted in the local language. The interviews were recorded first and transcribed later to facilitate analysis.

Data analysis

The data that was transcribed was subjected to thematic analysis using the six-phase framework of Braun and Clarke. After the data was familiarized by the researchers, initial coding was done, and themes were searched for. After which there was a review of the themes, and naming of themes which was then followed by coming up with the report. In keeping with the title of the study, themes were generated in such a manner that they reflected the core experiences in terms of hopelessness, vulnerabilities and resilience.

Procedure

Before the start of the study, consent and permission for the study to be conducted were obtained from the organisation's president. Before data collection, each participant was informed and asked to leave the premises in case of discomfort before the study began. From the beginning of the study, the participants were made aware that their involvement was entirely voluntary and that they might leave at any time without facing any repercussions. For further safety, the participants' caretaker was present on the site during the discussions, which could have led to potential bias as children might hesitate to share negative experiences in the presence of caretakers or other group members.

Ethical considerations:

A signed consent form was taken from the president of PAPA Homes. The permission for documenting was also approved. Participants were informed at the beginning that if they were in any uncomfortable situation during the interview, they could leave at that moment.

The caretakers, guardians, and most importantly, the participants were informed about

the major objective of the discussion and were reassured that the information shared would be used only for academic purposes. Taking part in the discussions and interviews was completely voluntary.

Results

Based on the thematic analysis of the interviews and the focus group discussions, six major themes were identified. They are discussed under six headings. The themes have been able to capture the nuanced narratives which shift from the initial days of helplessness and trauma to resilience as well as positive transformation that is community-enabled.

Support through the community

The PAPA Homes ensures that all its operations are compliant with the child protection laws. There are regular government inspections that are conducted to maintain absolute transparency and accountability. The health of the children, their education, and overall well-being are given utmost importance. Furthermore, funds, public donations, and charities play a crucial role in running the organization. Many individuals and organizations contribute money, food, clothing and stationery. Volunteers, including doctors and teachers, offer their services to help these children grow in a holistic and well-supported environment.

President: *"Every few months, government officials conduct surprise inspections. They check our records, food quality, and child welfare compliance. Donations are given almost every day on the occasion of birth or death anniversaries or sometimes even as charities."*

Participant 9: *"people celebrate their birthdays, anniversaries, any special occasions or festivals by donating money whose name will be written on the board over here and we all thank them together."*

Self-reliance

Education is a key focus of the institution. Every child is enrolled in school, and efforts are made to ensure they complete their studies. For those who may not be academically inclined, a

tutor takes care of them to manage their academic growth.

Success stories include children who graduated their 10th and 12th standard exams and even pursued higher education in fields like chartered accountancy, engineering, and nursing. The institution helps them gain employment and become self-reliant.

President: *"One of our boys, who joined us at the age of 7, is now a chartered accountant working in a reputed firm. He still visits us and sponsors two younger children."* *"One of the girls grew up to be a nurse and works now in the local government hospital"*.

Participant 16: *"we all study well. I get first to third rank in my class. I love maths a lot. I want to do btech and become an engineer."*

Hopefulness & Optimism

Many children have successfully transitioned from being homeless and abandoned to leading stable and respectable lives. Some former residents have become doctors, nurses, engineers, and accountants. Others have pursued careers in sports, with special training and coaching provided by the institution. The organization continues to support children's dreams and aspirations by guiding them toward higher education, government exams, and vocational careers. Many former students return to help younger children, creating a cycle of empowerment.

President: *"A girl who once had no home is now working as a nurse. She sends a part of her salary to support younger children here."*

Participant 4: *"I am very ambitious, I want to go for higher education, like MBBS, and become a doctor"*

Emotional Bonding

The children weren't just living together but growing together as one big family. They are comfortable enough to share their emotions, whether it be happiness, sadness, or frustration,

knowing that someone will always listen. When things get tough, they lean on each other, talking through their stress or just simply drinking a glass of water to calm down. When asked about happy memories, neither came forward to share them but explained them in a way that achievements, either big or small, ranged from getting good grades to winning a simple game. And when sadness creeps in, they comfort each other, offering support and reassurance. It's more than just a home; it's a space where emotions are understood, shared, and embraced.

Participant 1: *"We fight often but we resolve our disputes after every fight, we hug each other and become friends again"*

Participant 5: *"she laughs at me when I cry but at the same time she cheers me up. I guess that's how friends are."*

Cognitive discipline

The children in the orphanage had this strict schedule, which they followed. They wake up at 4 am, freshen up, and a tutor comes at 5, making them study till 7. Then they have breakfast and go to school. After returning from school and having snacks, they have another study session with the tutor from 5 to 7:30 pm, have dinner at 8, and go to sleep by 9:30 pm.

A strict and consistent routine helps the children form their cognitive development, self-regulation, and adaptive behaviors. Following a fixed schedule from early childhood encourages discipline and focus, as well as resilience, instilling routine and its psychological benefits in the development of executive functioning skills. The predictability of their daily structure gives children a sense of control and stability in their life, making learning, responsibility, and time-management skills become something they do automatically.

Participant 2: *"I wake up every day at 4 am, we fresh up by 5 am, our tutor comes, and we study till 7 am. We go to school, and return at 4 pm, our*

tutor comes again at 5 pm, and we study till 7 pm, have dinner, and sleep by 9:30 pm."

Caretaker: *"Morning, they wake up, get ready, they go to tuition. They have breakfast at like at 7:30. Then they leave for school. They come back from school at 5. After coming at 5, they have snacks and till 7:30 three tuition teachers come and teach them. After that they'll have dinner and they go up. There's a warden there and she takes care."*

Non-stereotypical-ness

Orphan homes are generally typecast as being strict, cold, and emotionally demanding. But the children in this orphanage displayed remarkable cooperation, positivity, and a sense of belongingness. They have structured lives, wear uniforms, and support each other, defying expectations. However, their lack of discussion about discomfort raises questions about whether their experiences are entirely positive or if certain struggles remain unspoken. It seemed they did not want to talk about their feelings; the children's positivity may be due to the common stereotype of dull and restricting orphanages, but this specific orphanage can prove it wrong. They have their uniforms, own limited belongings, and help each other when in need

Caretaker: *"We don't have any problem with these kids. Nothing at all. For us, even if there a slight concern, we immediately send them to the hospital. We have this doctor called Aarif. He stays at Ramnagar. He treats us free of cost and even provides the medicine for free for us. He takes care of everything. So they're all very healthy. There won't be any problems."*

Participant 17: *"we are all happy here. we don't have any problems. We all play together, eat together and study together as well. We also get to play games on computer. We also play games outside as well. We all love kabbadi and kho-kho."*

Participant 20: *"In school, nobody treats us any differently. We all wear the same uniform, we all*

have friends at school, there is no discrimination from within or outside”.

Discussion

The institutionalized orphaned children are often prone to the risk of experiencing emotional or psychological harm. The results are contradictory to previous research on institutionalized children. The support of local community, volunteers, caregivers, and more importantly, the government and the public has made this institution and its children, resilient.

Research (Dahlan, Wyandini, Hasanah, 2019) shows that life satisfaction and happiness of orphans who live in girls' (homogenous) orphanages are more satisfied with their living environment than those who live in boys and girls (heterogeneous) homes.

There were no observable challenges faced by the girl children as there were enumerate necessities and sufficient provision of all the basic amenities. However, there could be challenges that are not observable, such as, emotional and mental problems they face due to past trauma. These girls are taught to be self-reliant from their childhood, they are intrinsically or extrinsically motivated to pursue achievements in academics or sports and spend their energy towards these goals. Past success stories are show these children, that people like them can be successful and work towards their bright future.

The rules implied that all the children must attend school and are provided with a tutor that manages their academic difficulties. The necessities are provided through donations and various funds, for example, on the occasion of birthdays, death anniversaries, or charities provide the children with lunch. There are also people who engage with these children for the sake of their school or research projects. This implies to them that they are taken care of by the community as a whole.

This study reveals that these girls have formed healthy attachments amongst themselves,

and are socially active with their friends and classmates at school. They seem to enjoy their time together rather than being the “vulnerable” children these orphans are often stereotyped to be. Hence, programs focusing on social development should involve other communities to do their part in providing, protecting and promoting development of orphanages.

They engage in free time watching movies, dancing, singing and spending time with each other. The environment is happy, although most children do not spend their childhood like this, the girls here are grateful for their present circumstances. They are rather resilient than hopeless about their future, with big dreams and ambitions, they rewrite the stereotype of orphans as a “vulnerable community” to one of the “resilient communities”.

Conclusion

This study attempted to explore the realities of orphanage life, whether it fosters resilience, hopelessness, or vulnerability in the orphan and vulnerable children residing in PAPA Homes. The major outcome of the study is that resilience won in the face of adversity for these young girl children. It can be concluded that the well-being of orphaned children is not an individual or an institutional concern but it is of the community.

Children who enter into such kind of institutional care generally have a lot of psychological baggage in terms of abandonment, family dysfunction or trauma. Regardless of these origins, the institution PAPA Homes, which is deeply rooted in moral commitment and community engagement, has facilitated many of the girl orphans to pursue their education, build aspirations, develop self-worth, and achieve success. There have been stories narrated of transformation from the pathetic lives on the streets to professional careers.

There is no doubt that the strict policies in adoption, the stigma involved around ‘institutional children’, but the collective efforts

of the teachers, volunteers, donors, police personnel and the administrators have paved the path for an ecosystem that is supportive and nurtures psychological, emotional and social growth of the girl children.

Implications

The study brings to the fore the kind of psychosocial support the institutional homes are providing to the orphan and vulnerable children. While meeting their basic needs, there need to be more efforts towards offering mental health interventions, more so for cases that have been through a lot of trauma. Additionally, the caregivers at such institutions also need to be trained in areas of behavior management and trauma care so that they are able to extend the right kind of help to these children.

The success stories of the alumni underscore the need to have scholarships and mentorship

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programs to encourage higher studies in these children. Efforts towards reducing stigma and normalising institutional life becomes even more essential.

In terms of policy development, perhaps there need to be less rigid adoption policies that could facilitate flexible pathways for care and also social integration.

Limitations

Findings from one orphanage may not be generalizable to others, due to variations in size, resources, staffing, and cultural context. This can limit the external validity of research findings and also has only limited generalizability. Presence of caretaker during focus group discussions could have led to potential bias.

This orphanage was home to girl children alone. A similar study replicated in the boy's orphanage could unravel different aspects.

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Promoting a supportive work environment: Examining the Link between Faculty Mental Health and work engagement in Higher Education

Dr. Surjeet Singh* and Mrs. Rekha Rani**

Abstract

Human resource is considered as one of the most important asset of any organization. There is growing acknowledgment that employees' mental well-being plays a vital role in their overall ability to function effectively. As decent work is good for mental health similarly poor mental health and stressors at the workplace can be a contributory factor for negative outcomes (WHO, 2005). It is essential in every organization, including in higher education settings. It is assumed that the higher employee engagement or work engagement leads to better mental health at work place. If educators are low in work engagement and have poor mental health then what will they taught to their students. The present study was planned to examine the association or connection between mental health and employee engagement among faculty in Higher Education. A purposive sample of 100 college faculty of both the gender (males and females) were taken in present study. Masse, Poulin & Battaglini (1998) s' The Psychological Distress Manifestation Scale (PDMS) and Schaufeli and Bakker's (2006) Work Engagement Scale were used to assess mental health and work engagement respectively. A correlational research design was adopted to study the association between mental health and work engagement. Correlation coefficient results of the study revealed that mental health complaints e.g. Self-depreciation, Irritability, Anxiety/ depression and Social disengagement were negatively associated with vigor, dedication, absorption and overall employee engagement of the faculty of higher education institutions. Teachers who possess higher degree of these mental health complaints were less engaged in their work. Present study suggested that employees as well institutions should understand that better status of mental health so that their employees can engage more in their work. Employees who are emotionally well and free from psychological distress tend to experience higher job satisfaction, show greater engagement and motivation, participate more actively in their work and organizational life, demonstrate increased productivity, and are more likely to exceed expectations to support their organization's success and growth.

Keywords: Mental health at work place, Work engagement and higher education Faculty.

About authors:

*Assistant Professor, Ch. Bansi Lal Government College for Women, Tosham, Haryana.

**Mrs. Rekha Rani, Student of M. A Psychology, IGNOU, New Delhi.

Introduction

The term "work environment" combines two words—"work" and "environment"—and typically describes the physical and social setting in which individuals or teams perform their professional duties for an organization, whether it's a business, enterprise, or government institution. It encompasses a broad range of components that collectively define the conditions under which work takes place. A healthy work environment plays a significant role

in encouraging employees to perform at their best. Beyond just the physical space, it includes aspects such as relationships with colleagues, air quality, ergonomic furniture, management practices, availability of parking, ambient noise, and even the size and comfort of one's personal workspace. Various frameworks have been proposed to classify the work environment based on psychological, health-related, social, and organizational factors. Despite the diversity in these theories, they all emphasize a common principle: aligning an individual with the most

suitable work environment can significantly improve job performance, satisfaction, and mental well-being.

There is growing awareness that employees' mental health is a key factor in their ability to function effectively. Just as a positive work experience can enhance mental health, workplace stress and poor conditions can contribute to psychological issues (WHO, 2005). This holds true across all sectors, including higher education. It's believed that higher levels of employee engagement are linked to improved mental health. On the other hand, if educators suffer from low engagement and poor mental health, it raises concerns about the quality of education and support they can provide to their students.

Mental health: The World Health Organization (WHO) highlights that mental health goes beyond merely being free of mental illnesses or disorders. Optimal mental health involves maintaining a state of emotional well-being, promoting overall happiness, and managing one's wellness consistently. WHO also underscores the importance of protecting and improving mental health not only at the personal level but also within broader communities and societies at worldwide level.

The World Health Organization WHO (2013) defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”.

Mental health at work place: The workplace is a major factor influencing mental health and well-being. There is increasing recognition of how work conditions can either support or undermine mental wellness, potentially contributing to mental health challenges. When examining the elements that affect mental health, many professionals in the field agree that the work environment plays a critical role in shaping an individual's psychological well-being. As a consequence, employee performances, rates of illness, absenteeism, accidents and staff turnover are all affected by employees' mental health

status (Conti & Burton, 1994). There are so many factors affecting mental health at work place such as; Workplace pressures have a significant impact on employees' mental health. Jobs with a high degree of stress can have a negative impact on employees' mental health, which can, in turn, damage the quality of their work. Increasing negative emotions, decreasing work accuracy, creating excessive fatigue effects that can affect the physical health of employees (Roe and Zilijsatra, 2019; Demerouti, Bakker and Bulters (2004), Kundi, Sardar, and Badar (2021). Employees with strong emotional stability will also view job pressure as a challenge, which will affect their commitment to remaining involved in the business (Kundi, Sardar & Badar, 2021). A work safety climate is positively associated with can be the best intervention to prevent and enhance employees' physical and mental health. Even in the face of organizational change and uncertainty, the work safety climate can preserve the emotional stability of employees (Bronkhorst, 2019). The number of hours employees work can contribute to stress and negatively influence their emotional well-being. Research by Schiller, Lekander, Rajaleid, Hellgren, Åkerstedt, Barck-Holst and Kecklund (2017) indicates that extended working hours are linked to increased fatigue and reduced sleep quality, both of which can negatively impact mental health. Therefore, the duration of work plays a significant role in shaping employees' psychological well-being. This is also supported by research by Shields (2019) which suggests that women who work too long are more likely to develop depression. The consequences of mental health problems in the workplace can be summarized as Absenteeism, Poor Work performance, Loss of motivation and commitment, Tension and conflicts between colleagues (Crown, 1995).

Conversely, quality employment offers five key psychological experiences that support mental well-being: a structured use of time, opportunities for social interaction, a sense of shared purpose and effort, a sense of belonging or social identity, and engagement in regular activities. Likewise, various personal and organizational elements within the workplace can contribute positively to employees' psychosocial

well-being and overall mental health. Employee's emotional connection towards his organization influences his behavior and level of effort that he invests in work related activities. Employee engagement and organizational output are directly proportional. More the engagement – more the effort the employee puts forth.

Work Engagement: Employee engagement plays a crucial role in determining an organization's success, as it reflects the level of voluntary effort and genuine commitment an employee contributes to their work. When employees are highly engaged, they invest their physical, emotional, and mental energy into their tasks and responsibilities, resulting in better organizational outcomes.

Schmidt (2004) defines “engagement as bringing satisfaction and commitment together. Whilst satisfaction addresses more of an emotional or attitudinal element, commitment brings in the motivational and physical elements”.

Harter et al. (2009) define employee engagement as “the individual's involvement and satisfaction as well as enthusiasm for work”.

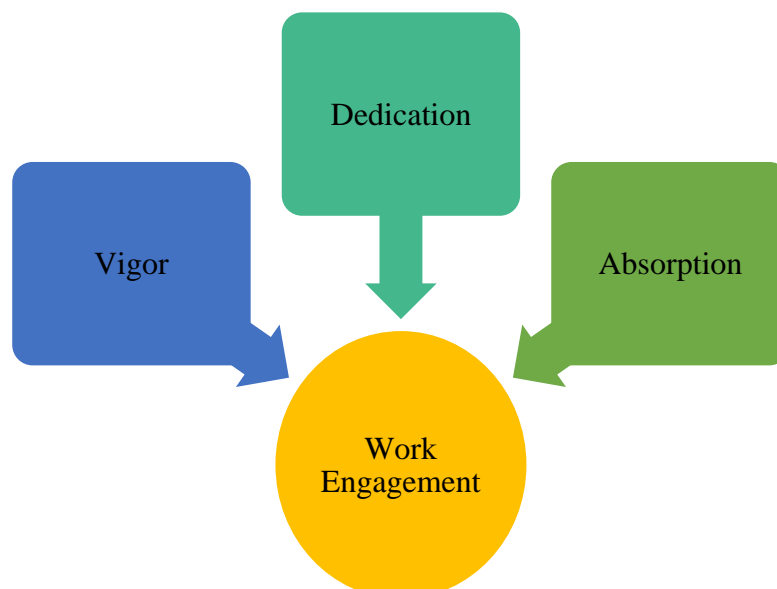
Schaufeli, Salanova, González-Romá and Bakker (2002) defined “Work Engagement is a positive, fulfilling, and work-related state of mind that is characterized by vigor, commitment and

dedication”. Their work engagement model in detail as follow:

- **Vigor** refers to the high levels of energy, resilience, and persistence that employees demonstrate in their work. It includes the willingness to put in effort and to keep going even when facing challenges (Schaufeli & Bakker, 2004). Research supports that vigor positively influences job performance (Jaya & Dawood, 2020; Winowoda, 2018).
- **Dedication** reflects an emotional connection to one's job, involving enthusiasm, pride, and a strong sense of purpose in the work being done and the organization itself (Schaufeli & Bakker, 2004). Studies have shown a significant positive relationship between dedication and employee performance (Al-Dalahmeh, Khalaf, & Obeidat, 2018; Fan & Cai, 2017).
- **Absorption** refers to being fully focused and deeply engaged in one's work activities. Employees who are absorbed in their work often lose track of time and find it difficult to disengage from their responsibilities (Schaufeli & Bakker, 2004). Like vigor and dedication, absorption has also been found to positively impact employee performance (Meilia & Setyowati, 2016; Meswantri & Awaludin, 2018).

Figure I

Three components of Work engagement (Schaufeli & Bakker, 2004)



Work/employee engagement and mental health: There is a strong link between employee engagement and mental health, both of which play a crucial role in driving productivity, job satisfaction, and organizational success. Employees who are highly engaged tend to have better mental health, which can lead to lower absenteeism and improved job performance. Shuck and Reio (2013) revealed that employees with high engagement experienced higher levels of psychological well-being and personal achievement, while those in the low engagement group showed signs of emotional exhaustion and depersonalization. Ronald and Ghada (2010) highlighted that engagement, especially commitment, was a predictor of various psychological well-being outcomes. According to research by Schaufeli, Taris, and Van Rhenen (2008), employees who were highly engaged exhibited lower levels of anxiety, stress, and psychosomatic health issues, contributing to better overall health. Innstrand, Langballe, and Falkum (2012) found that the vigor component of work involvement was linked to lower levels of depression and anxiety. Chauhan (2009) reported that job involvement negatively correlated with derealization and emotional exhaustion but was positively associated with personal achievement. Durán, Extremera, and Rey (2004) identified positive correlations between personal accomplishment and engagement dimensions, such as vigor, absorption, and dedication. In a study on teachers, Hakanen, Bakker and Schaufeli (2006) concluded that job involvement helped moderate the effects of job resources on organizational commitment, while burnout influenced the relationship between resource shortages and low involvement. Santhanam and Srinivas (2019) highlighted that engagement plays a crucial role in reducing burnout and turnover intentions, with a positive impact on employees' well-being. Additionally, the research

by Skurak, Malinen, Naswall, and Kuntz (2018) supports this view. The connection between employee engagement and mental health has become a focal point for both researchers and practitioners, as healthy, engaged, and satisfied employees are more motivated, involved, and productive, going beyond expectations to help their organizations succeed.

To keeping in view this idea, present study tries to focus on the Following research problem:

Research Problem: Promoting a supportive work environment: Examining the Link between Faculty Mental Health and work engagement in Higher Education

Objective: To solve the research problem following objective was formulated in the present study:

- To assess and examine the relationship between work engagement and mental health among Higher Education Faculty

Hypothesis: Following hypothesis was framed in present research

- There would be positive relationship between work engagement and mental health among Higher Education Faculty.

Method

Research Design

A correlation research design was used to examine the relationship between work engagement and mental health among Higher Education Faculty.

Sample

A purposive sample of 100 higher education faculty from Government colleges (50 males and 50 females) was taken in present study on the basis of availability.

Tools

Following tools were used in present study to fulfill the purpose of the study.

- **Work Engagement Scale:** The short version of the Work Engagement Scale developed by Schaufeli and Bakker (2006), consisting of 9 items, was used to evaluate work engagement. This scale assesses engagement across three dimensions: vigor, dedication, and absorption, with each dimension measured by three items. Responses are recorded on a 7-point scale ranging from 0 (never) to 6 (always). These three components consistently show strong intercorrelations: $r=0.90$ (Schaufeli, Bakker & Salanova, 2006). This test has good reliability and validity.
- **The Psychological Distress Manifestation Scale (PDMS):** Masse et al.'s 23-item The Psychological Distress Manifestation Scale (PDMS) was used to assess mental health at work place in present study. It assesses mental health on four dimensions: Self-

depreciation (6 items), Irritability (6 items), Anxiety/ depression, (6 items), Social disengagement (5 Items). This scale measures psychological discomfort (Higher score shows mental health issues). This scale has internal consistency reliability of .81.93; in the original validation research (Masse' et al. 1998). Cronbach's Alphas are satisfactory in this investigation (scale: $\alpha = .94$ (Desmarais & Savoie, 2012).

Procedure: Participants were contacted by face to face and online settings and clearly informed about the purpose of the study. After the consent of the participants a set of both the questionnaire was given to the participants. During the data collection a proper and continue communication was maintained with the participant. The subject(s) were asked to answer each and every item of all the administered questionnaires, and ensured that their responses are only for research purpose and would be kept confidential.

Result and Discussion:

Table 1

Descriptive Statistics Mean and SD of higher education Faculty on Work engagement among Higher Education Faculty

Variable	Mean	SD
Vigor	10.88	4.34
Dedication	13.05	4.20
Absorption	11.50	4.24
Overall Work engagement	35.45	10.18

Note (N= 100)

Table 1 exhibits the mean scores on vigor of higher education faculty in which obtained mean value of college teachers is 10.88 (SD = 4.34). Next college teachers obtained mean value of 13.05 (SD = 4.20) on second component i.e. dedication and scored a mean value of 11.50 (SD = 4.24) on the

absorption components. Likewise, on the overall employee engagement college teachers obtained a mean value 35.45 (SD = 10.18).

Table 2

Descriptive Statistics Mean and SD of higher education Faculty on The Psychological Distress Manifestation Scale (PDMS) among Higher Education Faculty

Variable	Mean	SD
Self-depreciation	17.03	6.35
Irritability	11.80	4.19
Anxiety/ depression	13.43	4.26
Social disengagement	15.31	4.79
Overall Mental health (PDMS)	57.57	17.90

Note (N= 100)

Table 2 shows the obtained values of mean value (17.03) and SD (6.35) of college teachers on first construct of Mental health that is Self-depreciation, research participants derived a mean value of 11.80 & (SD = 4.19) on irritability; a mean value of 13.43 & (SD = 4.26) on Anxiety/ depression, whereas obtained a mean value of 15.31 & (SD = 4.79) on Social disengagement. Next, on overall Mental health college teachers acquired a mean of 57.57 & (SD = 17.90).

Table 3

Intercorrelation Matrices showing correlation between work Engagement and Mental Health among Higher Education Faculty

Variables	Self-depreciation	Irritability	Anxiety/ depression	Social disengagement	Mental health
Vigor	-.507**	-.405**	-.532**	-.461**	-.525**
Dedication	-.441**	-.423**	-.346**	-.452**	-.459**
Absorption	-.195*	-.231**	-.236**	-.323**	-.266**
Employee engagement	-.479**	-.444**	-.468**	-.518**	-.524**

Correlation is significant at the 0.05 level (2tailed)*

Correlation is significant at the 0.01 level (2tailed)**

The correlation results from the table 3 shows that anxiety/depression ($r = -.532$, $p \leq .01$), social vigor, is statistically negatively significantly disengagement ($r = -.461$, $p \leq .01$) and the overall correlated with self-depreciation ($r = -.507$, $p \leq .01$) mental health score ($r = -.525$, $p \leq .01$). It means .01), irritability ($r = -.405$, $p \leq .01$), the results shows that as the level of vigor,

dedication, absorption and overall work engagement increases, the level of self-depreciation, irritability, anxiety/depression, social disengagement and mental health complaints decreases among teaching faculties of higher education. As the teachers in higher education sector experience higher level of vigor means elevated energy levels of vitality and mental fortitude and readiness to contribute to assignments, they also experience less self-depreciation, irritability, anxiety/depression, social disengagement and overall mental health complaints. The results of the present study show that, college teachers who experience high level of enthusiasm or lot of vitality and endurance at workplace also have fewer mental health problems e.g. lack of self-defamation, bad temper, anxiousness/depressive mood and loneliness

The correlation results shows that dedication, is statistically significantly correlated with self-depreciation ($r = -.441, p \leq .01$), irritability ($r = -.423, p \leq .01$), anxiety/depression ($r = -.346, p \leq .01$), social disengagement ($r = -.452, p \leq .01$) and the overall mental health score ($r = -.459, p \leq .01$) in a negative manner. Dedication, which relates to a strong sense of purpose, excitement, motivation, pride, and challenge involved in one's work. Correlational finding showed that college teachers, who have more dedication which is characterizes enthusiasm and inspiration are reported low on self-depreciation, irritability, anxiety/depression, social disengagement and overall mental health complaints

The correlation results shows that absorption, is statistically significantly correlated with self-depreciation ($r = -.195, p \leq .05$), irritability ($r = -.231, p \leq .01$), anxiety/depression ($r = -.236, p \leq .01$), social disengagement ($r = -.323, p \leq .01$) and the overall mental health score ($r = -.266, p \leq .01$) in a negative manner. Absorption, which corresponds to being fully attentive and completely engaged into whatever one is doing, where time passes swiftly and one finds it hard to disengage himself/herself is also negatively associated with mental health and related

complaints e. g. self-depreciation, irritability, anxiety/depression, social disengagement and general mental health among college teachers. Overall employee engagement, found to be statistically significantly correlated with self-depreciation ($r = -.478, p \leq .01$), irritability ($r = -.441, p \leq .01$), anxiety/depression ($r = -.468, p \leq .01$), social disengagement ($r = -.518, p \leq .01$) and the overall mental health score ($r = -.524, p \leq .01$) in a negative manner. Likewise, these findings also suggests that when college teachers who experience overall work engagement are found to be low on mental health complaints e. g. self-depreciation, irritability, anxiety/depression, social disengagement and overall mental health complaints

The findings of the present study are consistent with previous researches. For instance, the vigor component of work involvement has been shown to have a negative relationship with symptoms of despair and anxiety (Innstrand et al., 2012). In line with this, Schaufeli et al. (2006) have discussed the impact of burnout. Dedication has been identified as a protective factor against negative mental health outcomes in the workplace (Durán et al., 2004; Schaufeli & Bakker, Hoogduin, Schaap & Kladler, 2001). Vigor and dedication are considered to be opposites of the core burnout dimensions of exhaustion and cynicism (Maslach et al., 2001). Consequently, vigor and dedication are viewed as complete counterforces to exhaustion and cynicism (García-Iglesias, Gómez-Salgado, Ortega-Moreno & Navarro-Abal, 2021). In a similar vein, Kumar and Rajendran (2019) found a significant positive relationship between job involvement and the mental health of higher secondary teachers.

Thus similar to previous review present study found that work/employee engagement has a greater impact on the enjoyment aspect of psychological well-being at work place

Conclusion and Implications

Present Study highlights the importance of work-engagement and mental health of

teachers working in higher education sector. Education department should develop or create a healthy environment which increase teachers work engagement and uplift their mental health at work place because teachers are vital to society; they educate future generations; instill values; foster critical thinking and ultimately shaping individuals who contribute to a more informed and progressive society. Teachers should be assign duties or job according. to their skill, aptitude and interest so that they can be fully engaged in their work and give outstanding performance and this will be ultimately enhance their mental health.

Future Directions

Some other employee's personal variables job satisfaction, personality, working style; emotional intelligence, affect etc. and organization's variables like work environment and culture, structure and relationship with colleagues etc. were also can be studied. Employee's demographic variables e.g. age, gender, job duration & working shifting, income, nature of job & appointment were also can be studied.

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Music Performance Anxiety and Perfectionism: A study of Indian Musicians from Musical and Non-Musical Family Backgrounds

Sai Rasikaa R N* and Dr.Soumya R R**

Abstract

Music Performance Anxiety (MPA) is a pervasive psychological concern affecting musicians worldwide, characterized by intense fear and nervousness during performances. This study investigates the relationship between perfectionism traits and MPA symptoms among Indian musicians from diverse family backgrounds (musical and non-musical). Employing a quantitative research design, data were collected using the Kenny Music Performance Anxiety Inventory (K-MPAI) and the Frost Multidimensional Perfectionism Scale (FMPS). The results reveal a significant positive correlation between MPA and perfectionism ($r = 0.590$, $p < .001$), suggesting that perfectionistic tendencies exacerbate performance anxiety. Notably, female musicians reported higher MPA levels than males ($t(109) = 2.44$, $p = 0.016$), highlighting potential gender-specific factors in MPA experiences. Family background, however, did not significantly impact MPA or perfectionism levels. This research contributes to a deeper understanding of the complex interplay between perfectionism and MPA in Indian musicians, emphasizing the need for targeted interventions and tailored support systems to enhance musicians' mental well-being and artistic performance. Future qualitative research is warranted to gain richer insights into the experiences of musicians with MPA.

Keywords: Music Performance Anxiety, Perfectionism, Family Background, Musicians, Gender Differences

About authors:

*Msc Clinical Psychology Student, School of Psychological Sciences, CHRIST (Deemed to be University)

**Dr. Soumya RR, Assistant Professor, School of Psychological Sciences CHRIST (Deemed to be University)

Introduction

Music Performance Anxiety (MPA) is a pervasive challenge that affects musicians of all levels—cognitive, physiological, and emotional responses to performance stress. It is often categorized as a subtype of social anxiety disorder in the DSM-5 (American Psychiatric Association, 2013), MPA involves intense fear of public evaluation regarding performance. Osborne and Kirsner (2022) describe it as a multifaceted phenomenon consisting of biological, psychological, and social vulnerabilities. Its prevalence among musicians ranges between 15–25%, with severity rates varying from 16.5% to

60% across studies (Fishbein et al., 1988; Krawehl & Altenmüller, 2000; Modeiros Barbar et al., 2014; Middlestadt, 1990; Sousa et al., 2016; van Kemenade et al., 1995; Wesner et al., 1990). About one-third of musicians identify their MPA as severe, with symptoms such as tachycardia, trembling, and self-doubt (Fernholz et al., 2019).

MPA affects musicians across the lifespan, regardless of experience or expertise. While moderate anxiety can enhance focus and energy, high MPA impairs performance quality and may affect career in the long run (Osborne & Kirsner, 2022). Younger musicians often report higher anxiety levels, as MPA correlates negatively with

age (Butković et al., 2022). Female musicians consistently report higher MPA levels than males (Coşkun-Şentürk & Çırakoğlu, 2017; Dews & Williams, 1989; Kenny & Osborne, 2006; Papageorgi, 2008; Wesner et al., 1990). Findings among children and adolescents remain mixed (Allen, 2013; Fehm & Schmidt, 2006).

The complexity of MPA can be understood through Barlow's model of anxiety, which outlines three vulnerabilities: generalized biological, generalized psychological, and specific psychological (Kenny, 2006). Generalized biological vulnerability involves genetic predispositions to heightened anxiety responses, such as increased heart rate and sweating. Generalized psychological vulnerability stems from early experiences of criticism and high expectations, while specific psychological vulnerability arises from negative feedback or performance failures that directly associate specific contexts with anxiety (Kenny, 2006). These vulnerabilities interact with environmental triggers to influence MPA's onset and severity.

Perfectionism plays a critical role in MPA, particularly maladaptive forms characterized by concern over mistakes and external evaluations. Such traits are significant predictors of MPA severity (Dobos et al., 2018; Hewitt & Flett, 2002; Donohoe & Kenny, 2015). Perfectionism manifests in two forms: self-oriented, driven by internal pressure, and socially prescribed, shaped by external judgments (Lim & Kenny, 2016). While maladaptive perfectionism consistently correlates positively with MPA, adaptive perfectionism does not exhibit the same effects (Dobos et al., 2018). Younger individuals and females with higher maladaptive perfectionism are particularly susceptible to MPA (Araújo et al., 2017).

Despite substantial research, several gaps remain. Despite the country's rich musical heritage, Indian studies on MPA are limited. Research has

primarily focused on specific genres or instruments, leaving vocalists and diverse age groups underrepresented. Additionally, the influence of family background on MPA—whether from musical or non-musical families—remains underexplored, though it may significantly shape performance anxiety. This study aims to address these gaps by investigating MPA prevalence, perfectionism traits, and the role of family background among musicians.

The quantitative phase of the study hypothesized the following:

1. H0: There is no significant difference in MPA and perfectionism levels between musicians from musical and non-musical families.
H1: Significant differences exist between these groups.
2. H0: There is no significant gender difference in MPA levels among musicians.
H2: Significant gender differences exist in MPA levels.
3. H0: There is no significant relationship between perfectionism dimensions and MPA severity.
H3: Significant relationships exist between perfectionism dimensions and MPA severity.

Through this investigation, the study aims to provide insights into how individual and contextual factors contribute to MPA, with a focus on perfectionism and familial influences, to inform interventions for musicians' mental well-being.

Method

Research Design

The study uses quantitative research design to investigate the association between Music Performance Anxiety (MPA) and perfectionism

characteristics of musicians. The research analyzes gender differences in the levels of MPA, seeking to determine any considerable differences between female and male musicians and the research also seeks to examine the effect of family background (musical and non-musical), specifically how their backgrounds may influence the genesis of MPA and perfectionism characteristics. Lastly, the study investigates the relationship between MPA and perfectionism in different dimensions to understand how self-oriented, socially prescribed, and other-oriented perfectionism are associated with the severity of MPA among musicians.

Sampling

The quantitative phase of the study included 111 musicians, comprising 56 females and 55 males. The participants were categorized based on their primary musical focus: 26 were instrumentalists, 47 were singers, and 38 engaged in both singing and playing instruments. Regarding family background, 44 musicians came from musical families, while 67 were from non-musical families. All participants were above 18 years of age and had a minimum of three years of formal musical training. They were recruited through

Results

Descriptives

Table 1

Descriptives of MPA and FMPS

	Total MPA	Total FMPS
Mean	116	113
Median	115	113
Standard deviation	39.9	23.4
Shapiro-Wilk W	0.988	0.982
Shapiro-Wilk p	0.459	0.149

Descriptive statistics of Music Performance Anxiety (MPA) and Frost Multidimensional Perfectionism Scale (FMPS) present the overall view of central tendencies and distribution

purposive sampling from music schools, colleges, and bands, ensuring a diverse representation of musicians from both musical and non-musical family backgrounds.

Instruments

Kenny Music Performance Anxiety Inventory-Revised (K-MPAI-R): A 40-item scale assessing emotional, cognitive, and physiological dimensions of music performance anxiety. Higher scores indicate greater levels of MPA (Kenny, 2023).

Frost Multidimensional Perfectionism Scale (FMPS): A 35-item tool measuring perfectionism across four subscales: concern over mistakes, parental expectations, personal standards, and order/organization (Franco-Paredes et al., 2014).

Procedure

Data were collected via Google Forms and distributed through email and social media. Participants completed the surveys at their convenience, and anonymity was maintained throughout the process. The data collected was then analysed using the JAMOVI software.

properties of the measures. The mean scores of MPA (116) and FMPS (113) are highly consistent, suggesting that the average levels of both performance anxiety and perfectionism are equivalent within the sample. Median values are also consistent in this aspect, where MPA is 115 and FMPS is 113, indicating that central tendencies of both variables are symmetrical.

But the standard deviation indicates a significant discrepancy in variability between the two measures. The standard deviation for MPA is 39.9, a figure far greater than the 23.4 for FMPS. This suggests higher variability in scores for Music Performance Anxiety than for the Frost

Independent Samples T-Test

Table 2

Independent Samples T-Test between gender, Male and Female

		Statistic	df	p
Total MPA	Student's t	2.44	109	0.016

Note. $H_a \mu_1 \neq \mu_2$

The independent samples t-test was conducted to compare the mean scores of Music Performance Anxiety (MPA) between gender (male and female). The t-test statistic is 2.44 with 109 degrees of freedom, and the p-value is 0.016. This p-value is less than the conventional alpha level of 0.05, indicating that there is a statistically significant

Multidimensional Perfectionism Scale. The higher variability in MPA implies that while some people have high levels of performance anxiety, other people might have much lower levels.

Lastly, the Shapiro-Wilk test for normality results wherein both MPA ($W = 0.988$, $p = 0.459$) and FMPS ($W = 0.982$, $p = 0.149$) indicate that their respective p-values are larger than the standard alpha level of 0.05, implying that neither variable significantly differs from normality of distribution. This means parametric statistical procedures can be used in these data with due appropriatenes

difference in the mean MPA scores between the two groups . Thus, we reject the null hypothesis ($H_0: \mu_1 = \mu_2$) in favor of the alternative hypothesis ($H_a: \mu_1 \neq \mu_2$), suggesting that the levels of MPA differ significantly between the groups under comparison. This result suggests that females tend to have more performance anxiety than males.

Table 3

Independent Samples T-Test between musicians from Musical and Non-Musical Family Backgrounds

		Statistic	df	p
Total MPA	Student's t	-0.488	109	0.626
Total FMPS	Student's t	-1.188	109	0.237

Note. $H_a \mu_0 \neq \mu_1$

The t-test was conducted to compare the levels of MPA and Perfectionism (FMPS) between musicians from Musical and Non-Musical Family backgrounds. The t-statistic for Total MPA is -0.488 with a p-value of 0.626. Since this p-value is well above the conventional significance level of 0.05, there is no statistically significant difference in MPA scores between the two groups. Thus, we fail to reject the null hypothesis ($H_0: \mu_1 = \mu_2$), indicating that the mean levels of MPA do not

differ significantly between the groups under comparison.

For the Total FMPS, the t-statistic is -1.188 with a p-value of 0.237. This p-value is also above the 0.05 threshold, suggesting that there is no significant difference in FMPS scores between the two groups. Consequently, we fail to reject the null hypothesis ($H_0: \mu_1 = \mu_2$) for FMPS, indicating that the mean levels of perfectionism do not differ significantly between the groups.

Correlation Matrix

Table 4
Correlation between MPA and FMPS

		Total MPA
Total FMPS	Pearson's r	0.590
	df	109
	p-value	<.001

The correlation matrix displays the relationship between Total Music Performance Anxiety (MPA) and Total Frost Multidimensional Perfectionism Scale (FMPS) scores.

indicates that higher levels of perfectionism are associated with higher levels of music performance anxiety. The p-value is less than 0.001, suggesting that this correlation is statistically significant. This finding aligns with the understanding that individuals with higher levels of perfectionism may experience greater anxiety related to their performance.

The correlation coefficient between Total MPA and Total FMPS is 0.590, which is a moderate to strong positive correlation. This

Table 5
Correlation between dimensions of MPA and FMPS

		Somatic Anxiety	Worry	Depression	Parental-empathy	Memory	Trait Anxiety	Apprehension	Bio Vulnerability
Concern (Mistakes)	Pearson's r	0.64	0.673	0.542	0.396	0.131	0.568	0.403	0.332
	df	109	109	109	109	109	109	109	109
	p-value	<.001	<.001	<.001	<.001	0.171	<.001	<.001	<.001

Parental Expectations	Pearson's r	0.371	0.304	0.385	0.454	0.187	0.342	0.209	0.156
	df	109	109	109	109	109	109	109	109
	p-value	<.001	0.001	<.001	<.001	0.049	<.001	0.028	0.101
High standards	Pearson's r	0.226	0.228	0.114	0.118	-0.135	0.159	0.031	0.195
	df	109	109	109	109	109	109	109	109
	p-value	0.017	0.016	0.233	0.217	0.156	0.096	0.747	0.04
Precision, order, organization	Pearson's r	0.025	0.172	-0.045	-0.057	-0.113	-0.068	-0.058	-0.035
	df	109	109	109	109	109	109	109	109
	p-value	0.795	0.071	0.641	0.55	0.236	0.476	0.542	0.713

The correlation matrix examines the relationships between Dimensions of MPA (Somatic Anxiety, Worry, Depression, Parental Empathy, Memory, Trait Anxiety, Apprehension, Bio Vulnerability) and different dimensions of FMPS (Concern with Mistakes, Parental Expectations, High Standards, Precision/Order/Organization).

The dimension of Concern with Mistakes shows significant positive correlations with Somatic Anxiety, Worry, Depression, Trait Anxiety, Apprehension, and Bio Vulnerability. This suggests that individuals who are highly concerned with making mistakes are likely to experience higher levels of anxiety and depression and perceive greater biological vulnerability. However, the correlation with Memory is not significant, indicating that memory concerns are less related to the anxiety associated with making mistakes.

Parental Expectations are positively correlated with Somatic Anxiety, Worry, Depression, Parental Empathy, Trait Anxiety, and Apprehension, suggesting that higher parental expectations are associated with increased anxiety and worry, as well as heightened perceptions of parental empathy. The correlation with Memory is modest but significant, indicating a slight impact of parental expectations on memory-related concerns. The non-significant correlation with Bio Vulnerability implies less direct influence on perceived biological risk.

High Standards positively correlate with Somatic Anxiety and Worry, indicating that individuals with higher personal standards tend to experience greater anxiety and worry. The correlations with Depression and Parental Empathy are not significant, suggesting these aspects are less influenced by high personal standards. The correlation with Bio Vulnerability is significant,

pointing to a moderate association between high standards and perceived biological risk.

The dimension of Precision, Order, and Organization shows mostly non-significant correlations with the other variables. This suggests that this aspect of perfectionism is less related to anxiety, worry, depression, or perceived vulnerability in this sample. The lack of significant correlations indicates that while precision and organization are important, they may not strongly influence or be influenced by these psychological factors.

Discussions

Gender Differences in Music Performance Anxiety (MPA)

Female artists reported higher levels of MPA than males. This finding is consistent with research like that of Butković, Vukojević, and Carević (2021), who discovered that gender was an important predictor of higher levels of MPA, which disproportionately affect females. This result could be attributed to gender-based differences in emotional management and societal expectations, as similarly observed by Cornett and Urhan (2021). Nevertheless, Spahn et al. (2023) provided a more subtle view, proposing that coping mechanisms and self-efficacy are important in mediating gender effects on MPA. These differences emphasize the intricate relationship between demographic and psychological variables in shaping MPA.

Family Background and Its Impact on MPA and Perfectionism

There were no significant differences in levels of MPA or perfectionism as a function of family background, which supported the results from Markussen and Røed (2023). According to these researchers, individual psychological dispositions tend to override family factors in the determination of MPA and perfectionist propensities. Likewise, Lee, Cortes, and Joo (2021) highlighted the moderating effects of individual

characteristics, including entrepreneurial passion, at the expense of family influences. However, Butković et al. (2021) had posited that musicians from musical backgrounds may be exposed to performance environments early on, which could minimize anxiety. On the other hand, Sickert et al. (2022) believed that unfamiliarity in non-musical families could further stress related to performance. These opposing results point towards the contextual dependence of family factors in influencing MPA.

Correlation Between MPA and Perfectionism

The strong positive correlation between MPA and perfectionism aligns with findings by Butković et al. (2021), who identified maladaptive perfectionism as a significant predictor of MPA. Similarly, Curran and Hill (2022) showed how rising parental expectations exacerbate socially prescribed perfectionism, indirectly fueling MPA. The association between cognitive and somatic anxiety dimensions of MPA and perfectionistic traits such as concern over mistakes was underscored by Bellinger et al. (2023). However, Cornett and Urhan (2021) observed that some musicians manage to offset the adverse effects of perfectionism through adaptive coping strategies. These findings emphasize the importance of addressing maladaptive perfectionism and promoting resilience to mitigate MPA among musicians.

Conclusion

This study investigated the relationships between Music Performance Anxiety (MPA), perfectionism traits, and demographic factors such as gender and family background among musicians. The findings revealed that female musicians experience significantly higher MPA levels than males, highlighting gender-specific psychological challenges in performance contexts. Additionally, no significant differences in MPA or perfectionism levels were observed between musicians from

musical and non-musical family backgrounds, suggesting that familial environment may have a limited direct influence. A strong positive correlation was found between MPA and maladaptive perfectionism traits, such as concern over mistakes, indicating the critical role of perfectionistic tendencies in exacerbating performance anxiety. These results underscore the importance of addressing maladaptive perfectionism and gender-specific vulnerabilities through targeted interventions to enhance musicians' mental well-being and performance outcomes. Future research should incorporate longitudinal designs and consider broader contextual factors, such as cultural influences and performance environments, to deepen understanding and inform effective intervention strategies.

Limitations

Although the sample size of 111 musicians provides some diversity, it might not be large enough for generalization to a wide population. Second, the sample had 44 musicians from musical families and 67 from non-musical families, which could not capture the nuances of family factors. The cross-sectional design places constraints on the understanding of how MPA and perfectionism develop over time or with treatment. Dependence on self-reporting data brings the risk of bias since responses can be influenced by individual impressions or social desirability. In addition, although family background was the pivotal variable, other determining factors, including cultural milieus, performance situations, and coping styles, were not extensively examined. Therefore, there is a need for a qualitative inquiry to better understand the lived experiences, cultural settings, and ways of coping among musicians, providing an

in-depth understanding of the determinants of MPA and perfectionism.

Implications

- **Intervention Development:** Targeted interventions focusing on managing maladaptive perfectionism, relaxation and mindfulness based techniques could help reduce MPA levels.
- **Gender-Specific Approaches:** Addressing the unique needs of female musicians through confidence-building and emotional regulation strategies is critical.
- **Performance Education:** Incorporating psychological skills training into music curricula can equip musicians with effective coping mechanisms.
- **Assessments:** Developing more culture specific assessments to assess the MPA levels in Indian Musicians.
- **Future Research Directions:** Longitudinal studies exploring causal links and including broader contextual factors (music genres, cultural background) are essential for a deeper understanding of MPA.

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The Role of Leader-Member Exchange in Fostering Psychological Safety

Kanaada Bhat*, Dhanyatha S** and Dr.Sindhu B Vasanth***

Abstract

The following study examines the relationship between Leader-Member-Exchange quality and Psychological safety at a workplace in the Indian context. The study utilizes a quantitative correlational design and the data was collected from 236 working professionals. Standardized tools were used - the LMX-7 Scale (Graen & Uhl-Bien, 1995) and Edmondson's 7-item Psychological Safety Scale (1999). Descriptive analysis indicated moderate variability in both LMX and psychological safety scores. Although normality tests suggested slight deviations, Spearman's correlation was employed due to the large sample size. This confirms the alternative hypothesis and is consistent with international research, pointing to the worth of high-quality leader-member relations in forming open, trust-based work environments. Nonetheless, the cross-sectional design of the study and dependency on self-report data constrain causal inferences. These limitations are acknowledged by the study while calling for longitudinal designs in future research. Overall, the results provide an insight into leadership behaviors that might facilitate psychological well-being at work, especially in Indian organizational settings where power distance and hierarchical conventions tend to influence employee experiences.

Keywords: Leader-Member Exchange, Psychological Safety, Workspace, Communication.

Author Details

*Student, Department of Psychology, PES University, Bengaluru—560085,

**Student, Department of Psychology, PES University, Bengaluru – 560085

***Assistant Professor, Department of Psychology, PES University, Bengaluru, Karnataka, India.

Introduction

In the modern world of complex and ever-changing work environments, leadership quality plays a vital role in influencing team performance along with shaping the psychological experience of employees. Among various theories that investigate leadership dynamics, the Leader-Member Exchange (LMX) theory provides a greater grasp of the interactional nature of workplace settings. LMX theory explains the concept of leaders developing relationships with their subordinates in varying levels of trust, communication, mutual respect, and support (Graen & Uhl-Bien, 1995). These varying exchanges have a profound impact on employees' work attitudes, motivation, and overall engagement.

Along with leadership dynamics, the concept of psychological safety has become popular in recent years. It refers to an individual's perception of their ability to express themselves without fear of negative implications to their self-image, status, or career (Edmondson, 1999). This includes speaking up, asking for help, or admitting mistakes without the fear of ridicule or punishment. A psychologically safe work environment encourages openness, fosters creativity, and strengthens team learning outcomes, which benefits an organisation.

Since the COVID-19 pandemic, instances of organisational disruptions have increased, heightening the importance of both LMX and psychological safety. Workplaces have seen a growing focus on mental health due to sudden changes like transitions to hybrid and remote

models, uncertainty, and misplaced organisational support. Leaders are facing a growing strain to maintain connection, trust, and morale among employees. In this context, the quality of the leader-member relationship and its impact on psychological safety warrants closer investigation.

Even after global recognition of both constructs, empirical research examining the link between LMX and psychological safety remains relatively limited in the Indian context. Most Indian workplaces continue to operate within harsh hierarchical structures, where employees are often expected to conform to authority even at the cost of personal distress. The comfort and safety an employee feels to voice their thoughts may be influenced by cultural expectations around power distance and deference to leadership.

Moreover, professionals today are facing psychosocial challenges like job insecurity, role ambiguity, and rapid technological shifts, alongside pressure to perform. The nature of interaction subordinates have with their supervisors can play a large role in influencing their confidence, sense of belonging, and professional growth. Due to these reasons, psychological safety has become a foundational need and not just a desirable attribute.

Very few Indian studies have directly explored the relationship between LMX and psychological safety among young working populations. This gap leaves unaddressed relations between interactional factors in the workplace. Addressing this gap is important to improve leadership development practices and organisational policies that are culturally relevant and adjusted to the needs of working professionals. This study thus aims to investigate the correlation between Leader-Member Exchange and Psychological Safety among working individuals in India.

Review of Literature

Reinwald, Weiss, and Hoch (2023) reported a meta-analytic review through a study to see the nature and the connection between the

kind of relationship Leader-Member Exchange (LMX) and similar concepts. The aim was to find the degree of this relationship in various work approaches, the areas where it can be applied, the population to which it can be generalized to, and the size of the extent to which it will be applicable. The authors used a quantitative meta-analysis, to examine the influence of Leader-Member Exchange (LMX) over psychological safety. Instrumental case studies suggested that there is a significant correlation between LMX and psychological safety. The link was found to be the highest when individual rather than team regarded safety. Research found that building mutually respecting LMX relationships results in psychological safety, which is important for the well-being and efficiency of employees.

In their study, Choi and colleagues (2021) provide empirical research that reveals the paths of LMX to innovation behavior. A mediating factor of self-efficacy and a moderating role of POS. A study was carried out based on conservation of the resource theory and utilization of a two-wave, time-lagged design approach. The study showed that transformational leadership (LMX) has a positive impact on innovative behavior, and the factor of self-efficacy plays a mediating role in this relationship, although only partially. In addition, the scales strongly bridged the gap by fostering a positive connection between LMX and self-efficacy. The researchers concluded that job relations created by advanced leadership are beneficial for employees' confidence and creativity. Consequently, those who are fully supported by their workplaces produce the best results.

Gauvin (2023) explored the qualitative investigation to ascertain the relation between Leader-Member Exchange (LMX) and the levels of the perceived organizational support (POS) through the adjusted variables (Psychological Safety (PS) and Self-Efficacy (SE)). These are mostly driven by internal (SE) and external (PS) factors. LMX (upward) and POS had independent as well as mediating effects. It was found that

LMX had a significant positive relationship with POS and that PS partially mediated this relationship. In contrast, SE was not positioned as a key mechanism. The researchers emphasized that the role of the leader regarding the followers is utilized effortlessly in organizational settings so that their employees will perceive the organization as supporting them through psychological safety.

These studies, on the other hand, help in understanding the mechanism of LMX affecting the psychological safety and organizational results by establishing the theoretical and empirical basis. Leaders are also found to focus on trust, support, and open communication with their employees in such interactions. Despite the splendid features of the study hence, there is still a gap in literature that reveals the specific effects of a strong LMX on psychological safety under different cultural and organizational settings. Considers psychological safety as a secondary outcome of employee well-being, which again underscores the void in studies focusing on well-being because of LMX. Moreover, the relative lack of experimental and longitudinal evidence reflects direct association in relationships acting as the last obstacle to better understanding. Methodologically, cross-sectional or correlational studies were mostly used; therefore, this is thought also demanding for a more appropriate design.

Objective

The main objective of this study is to measure the relation between Leader-Member Exchange (LMX) quality and psychological safety in the workplace among working individuals. This can be further broken down into the following specific sub-sections:

1. Explore how varying qualities of LMX relationships influence perceived psychological safety in workplace settings—observable in an individual's sense of safety in expressing ideas, concerns, or mistakes.

2. Verify whether higher scores of LMX correlate with more open communication and stronger perceptions of emotional and interpersonal safety.
3. Use Spearman's correlation coefficient to statistically determine the strength and direction of the relationship between LMX and psychological safety among working individuals.

Method

This research deals with the comparative study of the relationship between the role of Leader-Member Exchange (LMX) in nurturing psychological safety in the workplace. This chapter lays out the methods that were employed to study the effect of leadership styles on well-being for employees, namely by way of the mediating role of Leader-Member Exchange (LMX). This research was conducted for the goal of understanding the interconnections between the leadership patterns, the quality of the workgroup leader-member relations, and the work area psychological safety.

The study was guided by the following research questions

1. How do varying qualities of leader-member exchange (LMX) relationships influence employees perceived psychological safety in workplace settings?
2. Is there a statistically significant correlation between higher LMX scores and employees' emotional safety, and interpersonal risk-taking?
3. What is the strength and direction of the relationship between leader-member exchange and psychological safety, as measured by Spearman's correlation coefficient?
4. How can leadership practices, through high-quality LMX relationships, contribute to nurturing a psychologically supportive work environment?

The study's primary aim was to research how leadership styles affect employees' well-being, with LMX being an interceding variable. The specific objectives included rating employee perceptions of psychological safety based on Edmondson's 7-item Psychological Safety Scale and an assessment of the degree of constancy in leadership-subordinate relationship by means of the LMX-7 scale. On the basis of these aims there are a few hypotheses:

- H₀₁: There is no statistically significant positive relationship between LMX and psychological safety.
- H₀₂: There is a statistically significant positive relationship between LMX and psychological safety.

Both the hypotheses were chosen from the existing literature, which suggested that a higher quality of leader-member exchange is positively associated with psychological safety and a supportive leadership style created a more motivating environment. For us, our choice of a correlational study restricted us from classifying the variables into the different forms of independent and dependent types. Regarding the leader-member exchange, the questionnaire was adapted from the LMX-7 Short Form developed by Graen and Uhl-Bien (1995), which was used to assess the quality of the leadership-subordinate relationship. Whereas psychological safety simply is the extent of emotional comfort employees feel while at work, and it was tested by the 7-item scale of Edmondson (1999). This research used a quantitative correlational design. This method was chosen because it allowed the experimenter to explore the relationships among naturally occurring variables in a meaningful setting, without experimenting with adjustable depictions. The sample comprised 236 workers, with the number of females being 105 and males 131.

Inclusion criteria- Currently employed individuals aged above 18 years with a work experience of more than 6 months.

Exclusion criteria- Unemployed individuals, students, freelancers, or entrepreneurs without a direct reporting leader.

Procedure:

Data were obtained by the means of an online constructed questionnaire that used Google Forms. At the very beginning, participants got acquainted with the goals of the research and gave their approval. The LMX-7, developed by Graen and Uhl-Bien (1995), composed of 7 single scoring items with no sub-scales for use as a perception scale of leader-member relationship quality. The LMX-7 Short Form scale maintained high internal consistency with a reported reliability coefficient of $\alpha = 0.89$ and strong construct validity. The next instrument was the 7-item's Edmondson's (1999) Psychological Safety Scale. Like the relational ship believed in Emotional Chirality, there were no sub-scales in this scale. It inquired how team members felt psychological safety in a team, and Cronbach's alpha is established as $\rho = 0.82$ and was applied due to it being a face, operational, and constructional validated questionnaire. Study goals were disclosed for research participants; the confidentiality and anonymity of the study were assured as well. The participants were encouraged that they could walk away from the study at any time, having no impact on them, and no action would be taken for their early withdrawal from the study. Also, no identifying information was asked of the participants. Informed consent was gathered from all the participants that were a part of this study. The Ethical review was done and completed before the data collection phase. Hypothesis testing was used to examine the possible relationships among variables by using inferential statistics, including Spearman's correlation and regression analysis. Normality tests were also performed to determine whether the statistical tests for hypothesis testing were appropriate.

Results

The research was aimed at understanding the connection between Leader-Member Exchange (LMX) and Psychological Safety in the workspace among employees. These objectives were met through the use of two psychometric tests: The LMX-7 Scale designed by Graen and Uhl-Bien (1995) led to the measurement of the quality of the superior-subordinate relationship, and the 7-item Psychological Safety Scale constructed by Edmondson (1999). Descriptive Statistics and Normality Testing The analysis of LMX (Variable A) eventually disclosed a mean of 24.0 with a moderately large standard deviation of 5.82, while in the case of Psychological Safety (Variable B), it was 29.7, with a standard deviance of 6.57. The measure scale for LMX was 7 to 35, whereas for Psychological Safety it ranged from 10 to 43, indicating moderate variability in both dimensions. Skewness values were -0.799 for LMX and -0.607 for Psychological Safety, and kurtosis values were 0.778 and 0.482, respectively. This means that these values are slightly above or below the nominal value of 0 for skewness and kurtosis, with acceptable values to detect the deviations from normality in terms of these particular data. In order to check for the assumption of normality, the Shapiro-Wilk test was conducted. For LMX, the test gave $W = 0.950$ and $p < .001$, while for Psychological Safety, W was at 0.970 and $p = .019$. Both p -values are (<0.05), thus the null assumption of control group distribution (normal) is rejected. In this regard, due to non-normality assumption violations and also as far as the sample size ($N = 103$) is wise, the non-parametric analysis was the method chosen to analyse the data.

Table 1:

Shapiro-Wilk Test Normality

Variable	W	p-value	Interpretation
A	0.950	< .001	Not normally distributed
B	0.970	0.019	Not normally distributed

Note. The Shapiro-Wilk test was used to assess normality. A significant p -value ($p < .05$) indicates deviation from normality.

Correlation Analysis A Spearman's rank-order correlation was performed to determine the interrelation between LMX and Psychological Safety. The statistical analysis identified an assertive, positive relation with Spearman's $\rho = 0.397$ ($if = 236, p < .001, 95\% CI [0.324, 0.536]$) as a result. Hence, employees who experience better leader-employee relationships are more likely to report higher levels of psychological safety than their counterparts who are not. This establishes the influential personality of a leader in the employees throughout the system. People who gain the perception of connectedness with their supervisors, those that appreciate trust, mutual assistance, and transparent communication, are more likely to find themselves in a psychologically safe environment. This confirms the viewpoint of Edmondson (1999) that the essence of psychological safety lays in people's confirmed knowledge that taking interpersonal risks is safe while working in the team context. In addition to this, the results agree with the theoretical assumptions of Leader-Member Exchange Theory, which holds that the positive side of LMX could be hidden in stronger positive emotions and better psychological outcomes, for instance, less anxiety, more engagement, and better job satisfaction. Our findings have referred back to previous studies (e.g., Graen and Uhl-Bien 1995; Carmeli et al. 2009) that have supported the significant association between LMX and the organizational as well as the social outcomes. So, the work has helped to consolidate the ideas asserting that relationship-based leadership is one of the approaches that should be explored in a growing body of research.

Table 2:*Spearman Correlation Between Variable A and B*

Variables	r	df	p-value	95% CI Lower	95% CI Upper
A - B	0.431	236	< .001	0.367	0.651

Note. Spearman's r was calculated to assess the linear relationship between variables A and B.

Discussion

Through this, the implications of leadership and psychological stimuli for an employee are comprehensively defined. As LMX and psychological safety are two factors that strongly interconnect, the hypothesis is confirmed by demonstrating that this connection, which is based on trust, enables employees to feel relaxed and at home in a good working environment. This also accords with the theory suggesting that application of LMX can be used to address the current era's challenges of managing emotions at workplaces, with the essence of strength resting on improving relationships between leaders and subordinates. The estimates of correlation coefficient $r = 0.431$ illustrate a moderate positive relationship, in other words, as related workers feel high about their managers in terms of the mutual appreciation, mutual support, and mutual trust, you are more likely to be safe to be open for the job. On a subsequent note, this conforms to Edmondson's (1999) concept of safety as a "shared perception that it is safe socially to lean out of the comfort zone and expose oneself to personal risk-taking." The significance level of $p < 0.05$ allied with the results, pointing towards the empirical existence of the alternative hypothesis (H_1) and thus disapproving the null hypothesis, which stated the presence of no positive connection between LMX and psychological safety. The outcome also complements the theoretical framework of Leader-Member Exchange Theory, which posits that high-quality leader-member relationships are marked by greater support, communication, and loyalty—all of which contribute to positive psychological outcomes such as reduced anxiety, higher

engagement, and improved job satisfaction. Theoretical and Practical Implications

The results are consistent with the previous work (e.g., Graen & Uhl-Bien, 1995; Carmeli et al., 2009) that underlines LMX quality as a crucial element of social and organizational outcomes. Being concentrated on the aspect that depicts one's approach towards leadership from a personal or inner-directed standpoint, the current endeavor adds to the body of work of overall emotional/social aspects of organizational life.

Conclusion

This study found a moderate positive correlation between Leader-Member-Exchange (LMX) quality and psychological safety in Indian workplaces, highlighting the importance of high-quality leadership in fostering a safe work environment. These findings align with global research, suggesting that better LMX can enhance employee engagement and organizational resilience. Organizations can use this insight to implement leadership training that focuses on trust, communication, and support, policies that promote transparency and constructive feedback, as well as the establishment of open and respectful communication in the workplace that helps other staff members to feel at-home within the organization. The key to propelling psychological safety is most pronounced in industries where creativity, adaptability, and team-orientedness are the tools in tackling challenges. Good leaders can foster a safe environment within the company where employees are able to express their creative ideas, raise concerns, and, of course, provide more opportunities for taking part in decision-making

in order to engage better and, as a result, to make the organization more resilient.

A limitation of the cross-sectional design is that it does not yield firm conclusions regarding the causal relationship between the two variables. It is difficult to decide whether LMX and psychological safety are associated or which one influences the other. Indeed, the self-report measures are to be utilized that might be affected by the response bias, eventually the social desirability effect. A sampling bias towards a particular industry can lead to a generalization error, thus the results may not necessarily mirror the experience of employees from all industries around.

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Investigating the Associations Between Nomophobia and Personality Dimensions among Smartphone Users

Aishwarya Anand*, Aini Zeba Ali** and Dr Madhu Karnat S***

Abstract

The rise of mobile information and communication technology, particularly smartphones, has significantly influenced human interaction, work, education, entertainment, and lifestyle in recent years. While smartphones offer numerous advantages, concerns about excessive usage have grown. Nomophobia, or the severe anxiety of being unable to access or use one's smartphone, has become increasingly prevalent. This study investigates the prevalence of nomophobia among smartphone users and examines its relationship with the Big Five Personality Traits. 228 smartphone users aged 13–65 participated in this study, selected using a convenience sampling method. Data were collected using the Nomophobia Questionnaire (NMP-Q) and a Big Five Personality Inventory. The results show that Unmarried individuals reported higher nomophobia (mean score: 76.8) than married individuals (mean score: 63.3), suggesting greater reliance on smartphones for social interaction and emotional connectivity. The highest nomophobia scores were observed among younger individuals (14–27 years), particularly those aged 18–27, indicating a greater dependency on smartphones in this age group. Nomophobia was highest among 12th pass individuals (76.4), undergraduate students (73.7), and PhD holders (73.3), whereas postgraduates reported lower levels (62.3), suggesting that advanced education may be linked to greater self-regulation. Unemployed individuals exhibited the highest nomophobia levels (75.8), followed by employed individuals (65.8) and entrepreneurs (65.5), possibly reflecting differences in screen time and emotional reliance on devices. Regression analysis revealed that negative emotionality (+0.13) had a weak positive correlation with nomophobia, likely due to anxiety and emotional instability. Agreeableness (-0.16), conscientiousness (-0.11), and openness (-0.11) showed weak negative correlations, suggesting that individuals with these traits may have better self-regulation and social support. Extraversion (+0.05) had little to no impact on nomophobia. While personality traits influence nomophobia, other external factors may play a more substantial role, warranting further research. Including effect sizes and confidence intervals in future studies could enhance the interpretation of findings.

Keywords: *Nomophobia, Smartphone, and Personality Dimensions*

About Author

*Student, BSc Psychology, School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka.

**Student, BSc Psychology, School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka.

***Assistant Professor (Psychology), School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka (Corresponding Author).

Introduction

The rapid use of smartphones in mobile information and communication technology has reshaped how people work, interact, learn, and

engage with entertainment and daily activities. The integration of smartphones into daily life has blurred the line between convenience and dependence. As smartphones provide a range of benefits like instant connectivity, social

interactions, and access to information, the excessive use of smartphones has become a major problem. One such problem is nomophobia word derived from “no mobile phobia”-which is distress or anxiety one gets to experience when they have no access to their mobile phones/smartphones (Yildirim & Correia, 2015).

Nomophobia has been growing over the past few decades, especially in young individuals, as its increasing prevalence highlights not only the dependence on technology but also on the psychological and behavioural tendencies. (King et al., 2013)As digital engagement continues to deepen, it is increasingly important to investigate the underlying factors contributing to nomophobia, including individual personality characteristics. The Big Five Personality Traits-openness, conscientiousness, extraversion, agreeableness, and neuroticism (also known as negative emotionality-offer a well-established framework for understanding differences in behavior, emotional regulation, and coping mechanisms.

Even though the studies have previously explored smartphone addiction and its psychological effects, the research showing the relationship between nomophobia and personality traits is limited.(Gezgin, 2018; Sharma et al., 2019) This lack of research needs a better understanding of how personality traits influence susceptibility to nomophobia. For example, people with high neuroticism traits, like emotionally reactive and anxious, and likely to have more chances of having nomophobia.

The present study seeks to investigate the prevalence of nomophobia among smartphone users and explore its relationship with the Big Five Personality Traits in an age-diverse sample population. (McCrae & Costa, 1999) Through the exploration of the correlations between personality dimensions and nomophobia scores, the study strives to determine possible psychological predictors of technology-induced anxiety. The results may be of great help to

mental health workers, educators, and policymakers with an interest in mitigating the increasing psychological effects of digital addiction.

Other demographic variables such as marital status, age, employment status, etc, appear to affect the nomophobic tendencies seen. Emerging adults, especially university students and adolescents have shown higher vulnerability towards nomophobia, frequently ascribed to developmental factors and digital interaction and socialisation (Samaha & Hawi, 2016)Respectively, unemployed and unmarried personnel are inclined to demonstrate higher levels of dependency with mobile phones, indicating unmet emotional needs and social needs resolved through virtual connections (Kaur et al., 2020). Recent studies show a connection between excessive smartphone use and several psychological problems. In 2020, research from Bhattacharya plus colleagues found that people with a lot of stress and anxiety often have higher nomophobia scores. This suggests that phones may help ease bad feelings - this supports the idea that personality traits, like neuroticism, matter. Individuals with this trait often lean on outside reassurance and also show less emotional stability. Besides neuroticism, other traits from the Big Five add to nomophobic actions. People who score high in extraversion tend to use their smartphones often; they are social and look for outside stimulation, so they connect with others this way (Rozgonjuk et al., 2018).

People with high conscientiousness show less nomophobia. They have self-discipline and control their impulses, which means they manage their smartphone use better. Agreeableness connects to a moderate amount of nomophobia. A person with a high score on this trait may use a smartphone to keep good relationships and avoid arguments by always being available. (Chotpitayasunondh & Douglas, 2016). There has also been ample research on gender differences and homophobia (Pavithra and Madhukumar

2015), where they found out that females suffer from higher levels of nomophobia compared to men due to their stronger emotional attachment to social platforms like Instagram. From this research, we could conclude that it is indeed important to take into account the socio-cultural differences and the gender patterns when we look at smartphone dependency. Academic performances and sleep disruptions have also been found to be negatively correlated to nomophobia (Al-Khlaiwi et al. 2020). This research emphasised that smartphone usage right before bedtime resulted in poor academic performance and bad sleeping habits. This concludes that nomophobia does not just affect our psychological well-being but also our behavioural well-being.

Method

The present study aims to investigate the association between nomophobia and personality dimensions (McCrae & Costa, 1999; Yildirim & Correia, 2015). The objective of the study is to understand what kind of people are more likely to have nomophobia. This study consists of 228 participants who were regular smartphone users, varying in age from 13 to 65 years, and were all selected through a convenience sampling method (Gezgin, 2018). The only inclusion criteria present were that participants had to be active mobile phone users. They were approached through community settings, university settings, and various online platforms, ensuring voluntary participation. Our demographic data collection included age, gender, marital status, educational background, and employment status. All these domains were collected for our subgroup analysis. Our data for this research were collected using two standardized self-report instruments: the Nomophobia Questionnaire (NMP-Q) and the Big Five Personality Inventory. The NMP-Q consisted of a validated 20-item scale measuring the four main dimensions of nomophobia, namely: losing connectedness (items 16, 17, 18, 19), not being able to communicate (items 10, 11,

12, 13, 14, 15), giving up convenience (items 4, 5, 6, 7, 8, 9, 20) and lastly not being able to access information (items 1, 2, 3). These responses were recorded using a Likert scale ranging from 1 (i.e., Strongly Disagree) to 7 (i.e., Strongly Agree).

High scores on the questionnaire show high nomophobia. Yildirim, in addition to Correia (2015), first created this survey, and it has high internal consistency. Cronbach's alpha was 0.94, and values for each dimension stayed above 0.80, which means the survey works well. The questionnaire relates to problematic cell phone use or anxiety, so we understand it measures what it intends to. A psychometric tool, the Big Five Personality Inventory, assesses the five main personality dimensions. People call these the OCEAN theory - neuroticism, extraversion, openness, agreeableness, along conscientiousness. McCrae, besides Costa (1999), describes this theory. This questionnaire also uses a Likert scale, which goes from strongly disagree (1) to strongly agree (2). The scale reveals solid internal consistency with Cronbach's alpha values that range from 0.95 to 0.90 for the individual traits (Bhayangkara et al., 2024). By cross-cultural replication, it supports good discriminant and convergent validity (Molu et al., 2023). Both of these instruments together provide a valid and reliable underpinning for assessing the various relations between nomophobia and personality traits. In this study, we employed a cross-sectional correlational design. The study was conducted on an online platform (Google Forms). The ethical considerations were followed, including providing the participants with informed consent, confidentiality, and the right to withdraw from the study at any point in time. No incentives were provided for participation in this study (Samaha & Hawi, 2016). The variables included in this study consist of both the continuous and categorical predictors, as well as a single criterion variable. The independent variables (i.e., predictors) comprise the Big Five Personality Traits, i.e.,

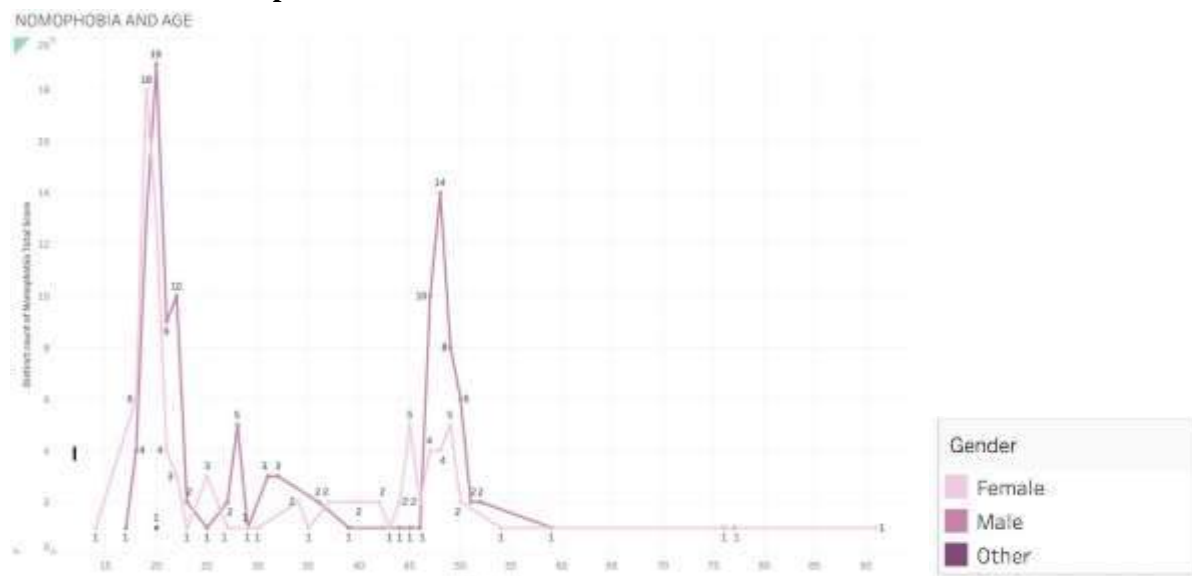
extraversion, agreeableness, conscientiousness, neuroticism, and openness, which were measured as continuous variables. To add on, demographic factors such as age, educational qualification, employment status, gender, and marital status were included as the categorical variables to ensure the exploration of their potential influence (Kaur et al., 2020). The dependent variable (i.e., criterion) in this study is the total nomophobia score, which was assessed using the nomophobia questionnaire (NMP-Q), providing a continuous measure of participants' level of smartphone-related anxiety and dependence (Yildirim & Correia, 2015).

scores and characteristics across the various subgroups. Pearson's Correlation Coefficients were used to understand the interlaced relationships between nomophobia and personality traits (Arpaci et al., 2019). We also conducted Multiple Regression Analysis to identify the predictive capacity of each personality trait while accounting for demographic variables. Effect sizes were presented using standardized beta coefficients. Statistical analyses were conducted utilizing SPSS version 26, with significance established at $p < 0.05$. The visualizations were produced using Tableau Public software.

The data was analyzed using descriptive statistics to sum up the participants' mean nomophobia

Results

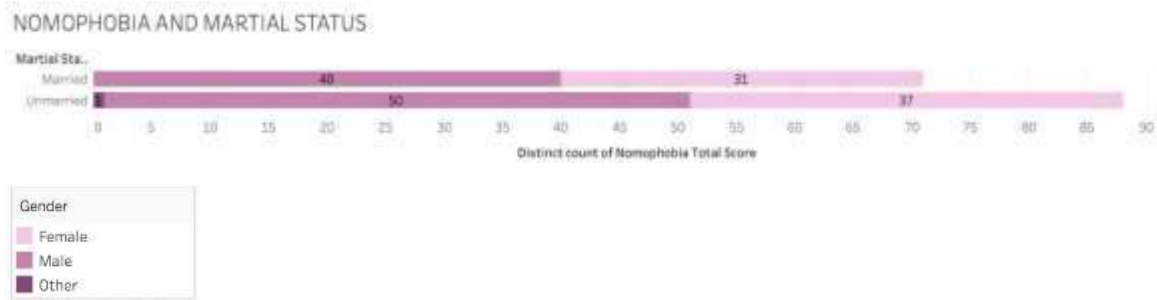
Table 1 Shows Nomophobia Prevalence.



Nomophobia seems to be a fairly ubiquitous phenomenon, and its prevalence appears to affect smartphone users from almost every demographic. Nomophobia seems to be especially ubiquitous in younger individuals ranging in age from 14 to 27, with the most significant amounts of dependence being found among the slightly older individuals (18-27). Young people are typically more engaged on smartphones for social situations (communicating

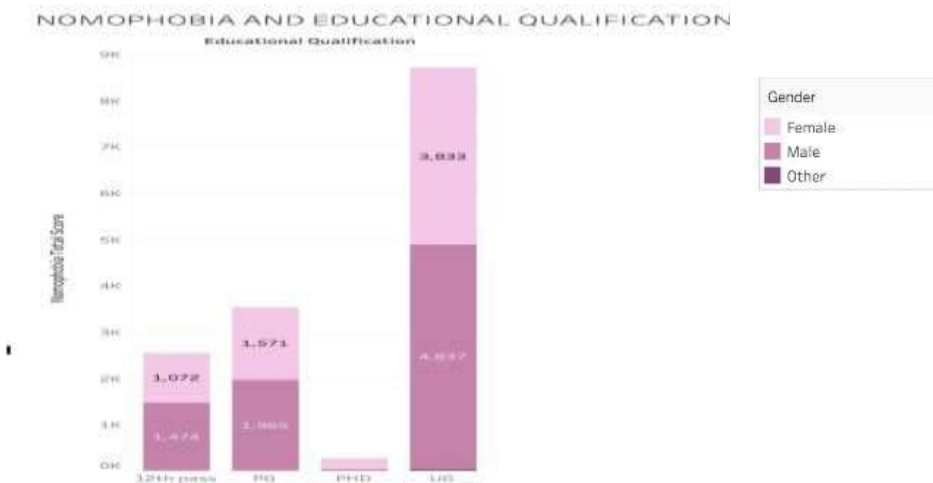
or connecting), leisure and entertainment (e.g., gaming or social media), and fast information acquisition (researching something or looking something up) than all other age demographics. Young people are also typically more susceptible to feeling anxiety as a consequence of losing that digital connectivity, and younger people psychological and social functioning seems to hinge more upon that connectivity, with issues arising when having to be disconnected.

Table 1.1 Shows Marital Status



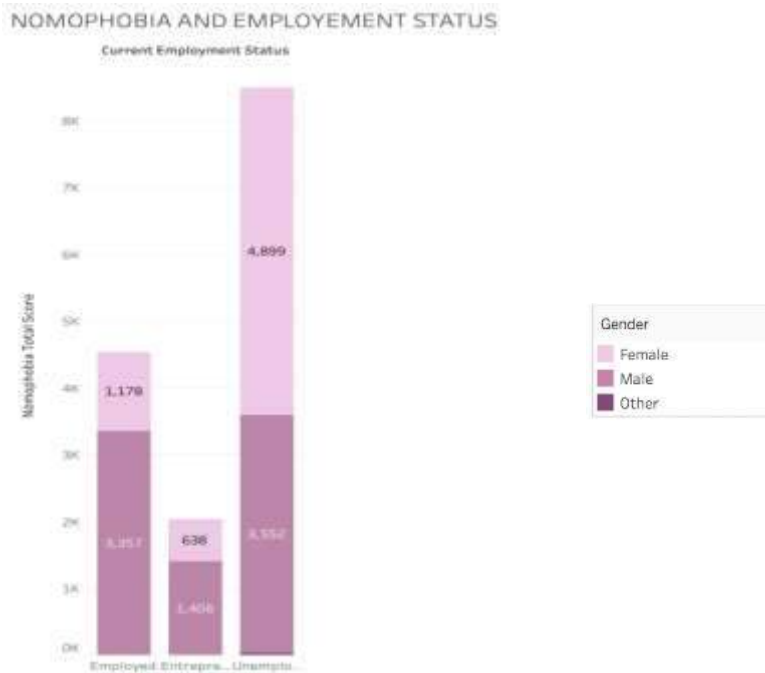
The study indicates a significant difference in nomophobia levels based on marital status. Unmarried individuals reported higher nomophobia scores (mean: 76.8) compared to their married counterparts (mean: 63.3). This disparity suggests that unmarried individuals may rely more heavily on smartphones for emotional support, companionship, and social interaction. Without the consistent interpersonal connections that marriage often provides, unmarried individuals might turn to their mobile devices to fulfill social and emotional needs, leading to increased dependence and higher nomophobia levels.

Table 1.2 Shows the Education Level.



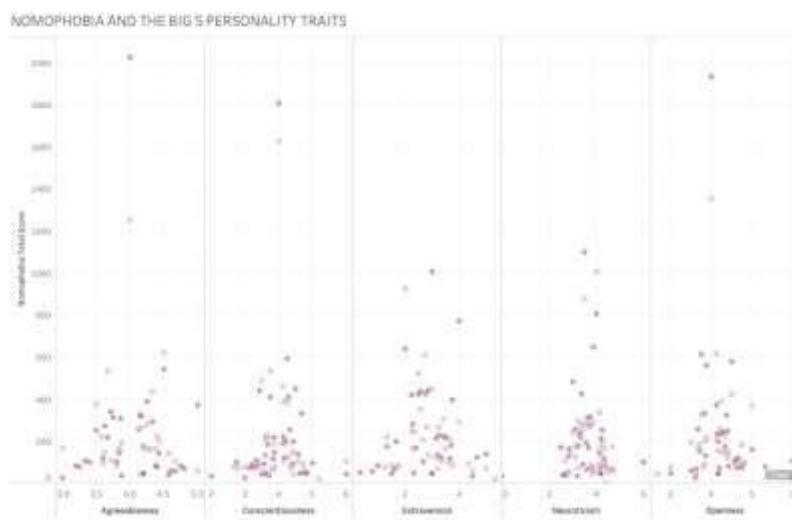
The research provided evidence to demonstrate that nomophobia levels differed significantly for varying educational levels. The group with the highest degree of nomophobia was the high school completion level (12th grade) (mean = 76.4), followed by undergraduates (mean = 73.7) and PhD holders (mean = 73.3). The group with the lowest level of nomophobia (mean = 62.3) was at the postgraduate level. The research indicated that higher levels of education, especially postgraduate education, are associated with high self-regulatory capabilities and emotion regulation as well as more appropriate smartphone use. Having received advanced education would also afford an individual a greater repertoire of coping mechanisms along with a reasonable critical perspective of their smartphone excessive habits, making them more open to change as a means to disengage themselves from their dependence on mobile devices.

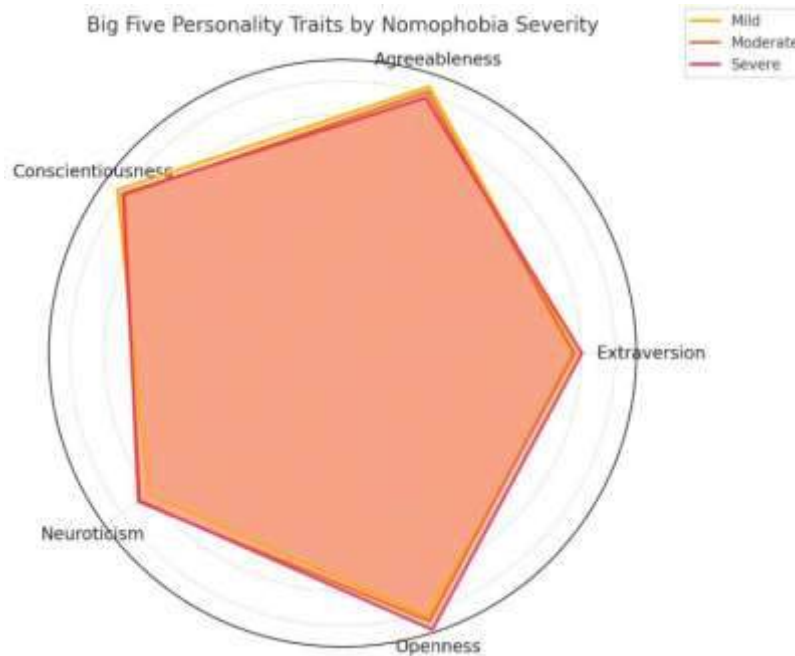
Table 1.3 Shows the Employment Status



The findings reveal that employment status plays a notable role in the levels of nomophobia experienced by individuals. Unemployed participants reported the highest nomophobia scores, with a mean of 75.8, followed by employed individuals at 65.8 and entrepreneurs at 65.5. This pattern suggests that those without structured work routines may be more prone to excessive smartphone use, potentially using their devices as a way to pass time or cope with feelings of uncertainty, boredom, or emotional distress. The lack of daily structure and social engagement associated with employment could lead to greater reliance on smartphones for entertainment, social interaction, or emotional support, thereby increasing the risk of nomophobia.

Table 1.4 Shows Nomophobia and Personality Traits (Big Five Model)





The examination of the Big Five Personality Traits discovered several weak but meaningful relationships with nomophobia. Negative emotionality revealed weak positive relationships (+0.13), implying that people who score higher on instances of being emotionally unstable or anxious are slightly more likely to report higher nomophobia. The following traits were found to have weak negative relationships with nomophobia: agreeableness (-0.16), conscientiousness (-0.11), and openness to experience (-0.11). These traits may serve as protective factors against nomophobia, as traits of agreeableness, conscientiousness, and openness to experience are often associated with better emotional regulation, self-discipline, and a greater tendency to engage in meaningful offline activities. Extraversion exhibited minimal correlation (+0.05), suggesting that sociability and outgoingness appear largely irrelevant to smartphone dependence in the context of nomophobia. Overall, personality traits seemed to play some role, but not a prominent one, emphasizing the need to consider factors beyond personality and examine external and contextual factors.

Discussion

The current study investigated the prevalence of nomophobia and its relation to the Big Five Personality Traits in a heterogeneous sample of smartphone users. The results indicate salient demographic trends and psychological predictors of smartphone dependence, providing evidence of the intricate relationship between personality and technology use.

Interestingly, unmarried respondents had significantly higher scores on nomophobia than their married counterparts. This implies that smartphones can potentially be an essential platform for social contact and emotional support, particularly among individuals lacking a stable partner or family setting. Moreover, younger respondents, specifically those aged 18–27, demonstrated the highest rates of nomophobia. This supports the existing body of literature where younger people are shown to be more engaged with virtual environments and increasingly dependent on smartphones for communication, entertainment, and everyday functionality.

Educational history also proved to be a contributing factor. The lowest nomophobia among 12th pass, undergraduate, and PhD

individuals could depict various forms of dependence: scholastic application, social communication, or search-related dependency. Surprisingly enough, postgraduates presented with relatively lower rates of nomophobia, perhaps explained by more well-established self-control abilities or a proper device usage routine developed through age and experience.

Employment status revealed another layer of insight. Unemployed individuals showed the greatest nomophobia, which may reflect both increased available screen time and the emotional support derived from digital engagement during periods of uncertainty. In contrast, employed individuals and entrepreneurs may have more structured routines and social obligations that limit excessive smartphone use.

The regression analysis of the Big Five Personality Traits indicates that personality does have a role, if small, in levels of nomophobia. Negative emotionality had a weak positive correlation, supporting the theory that those who are anxious and emotionally unstable might use their smartphones as a source of reassurance or distraction. On the other hand, agreeableness, conscientiousness, and openness were inversely related to nomophobia, although weakly, suggesting that those with these personality traits might have more effective coping strategies and greater offline social support. Extraversion did not have a significant effect on nomophobia, which is somewhat unexpected, since one would expect extraverts to be more dependent on digital communication. Nevertheless, extraverts might prefer face-to-face communication, thus moderating their digital dependence.

While personality traits yield some predictive power, the overall weak correlations indicate that other external and contextual factors—e.g., social environment, digital literacy, mental health status, and screen time habits—could play a more significant role in nomophobia. These results highlight the multidimensional character of

smartphone dependence and call for a more encompassing framework in future studies.

Conclusion

The current research sheds insights into the ongoing problem of nomophobia and its associations with personality and demographic variables. Results indicate that unmarried, younger, unemployed persons are more vulnerable to nomophobia and that certain dimensions of personality, such as agreeableness and negative emotionality, can play a minor role in influencing such dependency. As there were weak associations of nomophobia with the Big Five personality traits, it can be seen that personality itself is unable to capture smartphone dependence variance to a complete degree. Extraneous influences, including cultural practices, screen exposure, mental wellbeing, and internet-using behavior habits, tend to be equally important. Subsequent research needs to use more holistic models, integrate longitudinal designs, and use other variables like screen time measures, mental health markers, and patterns of social media use. Additionally, the documentation of effect sizes and confidence intervals would make subsequent findings more interpretable and reliable. The findings of this study have implications for educators, mental health clinicians, and policymakers seeking to create interventions that can decrease digital dependency and enhance healthier use of technology. Promoting digital literacy, emotional resilience, and self-regulation can be important strategies in countering the impact of nomophobia in an increasingly digitized world.

Building on these consequences, the use of focused interventions aiming at public safety should give preventative mental health measures addressing the psychological and behavioral aspects of nomophobia top priority. Places like work, colleges, and universities can combine planned initiatives encouraging digital cleanliness, sensible screen time, and awareness of cell phone-related anxiety. Training in

emotional regulation, mindfulness-based stress reduction, and digital well-being seminars, for example, can give people, especially vulnerable groups like teenagers and young adults, the tools to regulate digital reliance. More generally, public health campaigns headed by mental health specialists under policy support can serve to normalize talks on the psychological effects of technology, reduce stigma around smartphone-related anxiety, and increase community-wide digital literacy. Moreover, practical elements of community mental health models can be support groups for digital detox, early screening procedures in clinical environments, and smartphone use tracking apps. These multifarious treatments not only help to reduce nomophobia but also support improved public safety, mental health, and balanced use of technology in a society growingly linked.

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Neuroplasticity In The Aging Brain : A Review Paper

Harshini Nalam* & Prof. Srishti Muralidharan**

Abstract

This study explores neuroplasticity in aging brain, highlighting the adaptation and structural changes in the brain that occur due to loss of cognitive function. Through neuroplasticity, the brain is capable of creating new neural circuits, which can compensate for age-related cognitive decline, such as slow processing of information, memory loss, and impaired decisions. The paper uses secondary sources of data through reviews literature and analyses experimental and longitudinal studies on physical activity, cognitive training, and environmental factors. It highlights the positive impact of maintaining an active lifestyle, engaging in mentally stimulating activities, and adopting brain training practices on enhancing neuroplasticity and cognitive function in older adults. Physical exercise and cognitive training are the two most effective ways to decrease the possibility of facing age-related neurological disorders and to increase cognitive function. Additionally, technology, such as AI-driven cognitive training platforms, wearable devices, and other cognitive training platforms, contribute to a high level of personalization, track the movement of the brain, and further enhance neuroplasticity. It is clear from literature review that focused efforts, such as supporting physical exercise activities and offering cognitive training therapies, to promote healthy aging and preserve brain function in older adults.

Keywords: Neuroplasticity, Aging Brain, Cognitive Function, Cognitive Decline, Neural Connectivity.

*Student, Department of Psychology, PES University, Bengaluru, Karnataka, India.

**Assistant Professor, Department of Psychology, PES University, Bengaluru, Karnataka, India.

Introduction

Aging humans have an increased risk of cognitive decline and neurodegenerative diseases such as Alzheimer's and Parkinson's, which is very common due to the brain getting slower in cognitive functions and weakening of neural connections. This progressive loss of neurons in brain regions is linked to memory, cognition, and body movements (Harada et al., 2013). However, the brain retains a remarkable ability to adapt through neuroplasticity, which is the capacity to reorganize and form new connections, enabling learning, adaptation, and recovery (Pascual-Leone et al., 2005).

Objectives

This review aims to:

1. Investigate the functional underpinning of neuroplasticity in the aging brain.

2. Explore lifestyle and technical interventions that enhance neuroplasticity.
3. Describe the relevance of neuroplasticity to cognitive health and future research directions.

Mechanisms of Neuroplasticity

Neuroplasticity is the brain's ability to restructure and reconfigure itself by forming new synaptic connections. Synaptic plasticity is the theoretical basis for memory, through which the strength of a neuron's synapse is changed by its activity and communication between neurons occurs. The process is that after the neurons are repeatedly activated, those pathways will be reinforced and thus memory will be formed in compliance with the Hebb rule: "*neurons that fire together, wire together*" (Hebb, 1949).

Contrary to the previously held belief, the formation of new neurons, neurogenesis continues throughout life, especially in the hippocampus

region which is the centre of learning and memory in the brain (Gage, 2002). There is still a nearly linear decrease in neurogenesis with age, but this can be overstated by the simple fact that such activities as physical exercise, brain training, and a stimulating environment can boost it (Kempermann et al., 2015).

Compensatory neuroplasticity refers to the brain being able to shift the undamaged parts of the brain to perform the functions which the damaged parts used to do as a result of injury, stroke, or illness. Neuronal examples can be used as a model. The stroke rehabilitation initiative helps the patient to regain lost abilities through reorganization.

At the cellular stage, long-term potentiation (LTP) and long-term depression (LTD) are two types of synaptic plasticity that form and commercialize, the synaptic strength. It happens in LTP where memory is structured through the use of enhanced synaptic connections. However, the inhibition of synaptic connections not in use, which in the presence of LTD occurs, is also the mechanism that civilization uses for staying flexible (Bliss & Collingridge, 1993).

Method

This paper uses a qualitative literature review methodology. The research is supported by secondary data, collected from published peer-reviewed journals, books, and systematic reviews published in the past two decades. The review explored topics such as the role of neuroplasticity in aging, cognitive reserve, and interventions that promote neuroplasticity to mitigate cognitive decline. The review utilized already published research that was dependent on the main keywords from the list of relevant neuroplasticity and neurodegenerative diseases. Searches were conducted through databases such as PubMed, Google Scholar and Scopus. Inclusion criteria required English language publications from 2000–2024 and a total of 30 papers and texts were reviewed.

Neuroplasticity, reflecting brains' lifelong capability for generating new neurons and restructuring synaptic connections in response to experience, is emerging as a leading concept in the field of aging neuroscience. This interplay is particularly pertinent as individuals age, and influences cognitive resilience and vulnerability to disease. This review draws on and synthesises current knowledge across a wide range of disciplines, including: psychological, biological and technological, to offer an overview of the phenomenon of neuroplasticity throughout the lifespan. It will cover the intrinsic alterations of brain plasticity with age, the numerous factors modulating its trajectory, its immense relevance in clinical applications, and the most advanced technological frontiers ready to unleash its potential for an aging society.

The Aging Brain

Despite the neural deterioration, including synaptic loss and changes in neuronal structure, brain function still has remarkable capacity (Park & Bischof, 2013). This persisting ability allows for compensatory processes such as increased brain activity and the building of neural scaffolding, where the brain engages alternate neural paths to maintain function. Although cognitive decline (including speed of processing, working memory, long-term memory, decision-making, and other) is typical, not only is there variation in the individual rate of such decline, but also in its severity. This variation is modulated by a complicated interaction among genetic predispositions, life-long lifestyle, environmental exposures, and general health status.

Individual experiences and environments that challenge cognition are vital for building cognitive reserve, representing brain's ability to withstand age-related changes and pathological damage without the manifestation of overt clinical symptoms (Stern, 2012). This reserve enables the aged brain to adapt, using additional neuronal networks to support the less efficient

networks, and to mediate structural and functional changes in older adults. Cognitive training strengthens adaptive brain responses, enhancing neuroplasticity even in later life.

The aging brain undergoes significant transformations, impacting both its molecular and structural integrity. The concept of molecular aging reflects the ideas of biological aging of the genes. The activity of some specific genes also changes as the brain gets older while other cellular functions and genes remain stable. Therefore, these gene expressions are selectively changing. These changes are accompanied by structural and functional alterations, including cortical thinning and a decrease in neural volume. As we age, the cortex gets thinner and we may lose several neurons which might get smaller in size as well. When we are young, the brain has an excellent ability to recover and repair itself, which diminishes with age. This vulnerability is compounded by the accumulation of cellular damage and oxidative stress (harmful by-products of oxygen metabolism). (Kramer & Erickson, 2007; Sibille, 2013). While genetic and molecular changes are evident, the precise cascade of events linking this micro-level to macro-level alterations of cognitive and functional decline remains a complex area, necessitating further longitudinal studies to establish causal pathways.

However, aging is a static process, and individual differences in cognitive and motor performance play significant roles. Some older adults showed better performance in motor tasks than others, indicating a higher level of brain activation in specific brain regions suggesting a compensatory mechanism for age-related cognitive decline. It includes factors beyond chronological age such as the lifestyle, diet, habits, and social engagement. For instance, an increase in the superior parietal cortex is responsible for the sensory and spatial aspects that enhance an older individual's motor skills and movements. Some older adults who performed well relied on external information

like auditory input to help them guide the motor tasks. These auditory cues guide motor tasks, demonstrating improved accuracy, precision, and stability, a benefit particularly salient for this demographic (Heuninckx et al., 2008).

Factors Influencing Neuroplasticity

A cornerstone of promoting neuroplasticity is regular physical activity (PA). Exercise increases blood flow to the brain and promotes the release of neurotrophic factors, such as brain-derived neurotrophic factor (BDNF), that support survival and growth of neurons and promote the formation of new synapses. Research indicates that regular exercise can help maintain or even increase hippocampal volume, which is involved in memory and is known to shrink with age (Erickson et al., 2011). The benefits of BDNF are well established, yet the appropriate dosage, exercise intensity, or even the best type of exercise to optimize neuroplasticity in the aging human brain are not accurately known, and are subjects of ongoing research.

Participating in cognitively engaging activities, such as solving puzzles, learning a new skill, or attending social events, also supports neuroplasticity. Cognitive intervention programs focused on memory, reasoning, and problem-solving have shown to lead to improvements in cognitive transfer in older adults, and may delay the onset of dementia (Lampit et al., 2014). Exercising leads to rapid growth in the growth of new brain cells as well as forming connections between them in the hippocampus region. It also increases the blood supply to different parts of the brain and prevents brain shrinkage. The volume of the hippocampal region also increases which decreases the chance of memory problems in older adults. Staying active is not only good for the mind but also for the body, as it makes the individual fit and helps improve one's mood (Eriksson et al., 1998). Cognitive training studies show improvements in closely related tasks, but deficits in generalizing these gains to untrained cognitive tasks. This suggests that the

interventions used in training studies do not have widespread, or at least, a sufficiently robust effect in untrained tasks that might be ecologically more valid.

PA can slow down cognitive decline and has several positive effects on both brain health and overall cognitive performance. People who start exercising might see improvements like increased learning, memory, and improved executive function, which can lower the risk of dementia in the elderly even in midlife. Additionally, PA can lessen age-related losses in cortical tissue density in older individuals. It can affect elements that affect the health of the brain, such as neurotrophic signalling, neurogenesis, inflammation regulation, and stress response (Erickson et al., 2013).

Regular PA has been linked to increased neurogenesis in the hippocampus, even in older adults. It has anti-inflammatory effects and can help reduce chronic inflammation, and these effects can preserve and enhance neuroplasticity in older adults. Mindfulness meditation also promotes neuroplastic changes in the brain. In the anterior cingulate cortex and prefrontal cortex regions, these changes can be observed which enhances focusing abilities, decision-making, and regulation of emotions. Chronic exercises can also prevent physiological deterioration in the brain (Eriksson et al., 1998).

The interplay between neuroplasticity and functional mobility is very crucial. Various physical exercises, especially aerobic exercises can increase the neurons in different brain areas like the hippocampus, prefrontal cortex, and orbital cortex. It also increases learning and memory capacity along with spatial memory. activities that require a lot of movement such as dancing, running, and climbing have shown results in improved cognition which has been proven by various cognitive tests. Both in humans and animals, it reduces anxiety and depression levels, even in stressful settings. the effects of physical activities can be compared to

the effect similar to when serotonin is released (De Sousa Fernandes et al., 2020).

Aerobic exercises and strength training increase alpha serine/threonine kinase (AKT), cyclic adenosine monophosphate-responsive element-binding protein (CREB), and cyclic adenosine monophosphate (cAMP) which are cellular signaling factors responsible for various neurological and cognitive processes present mainly in the hippocampus region.

Experiencing new and stimulating environments encourages neuroplasticity. Studies in animals show that rodents raised in enriched environments with access to toys, social interaction, and exercise, show more synaptic plasticity and neurogenesis than rodents raised in standard environments (Kempermann et al., 2018). Studies on human studies have shown similar findings that show socially, intellectually, and physically enriched environments protect against cognitive decline with aging (Fratiglioni et al., 2004).

Brain Plasticity and Rehabilitation

Chollet (2013) found that recovery from a stroke, that is, even after an individual suffers from it, their brain can still recover and function normally. Neuroplasticity does not only occur when there is some neurological dysfunction but also when a person gains knowledge, adapts to a new environment, and learns new skills. It also helps in enhancing these newly learned abilities. A critical aspect of stroke rehabilitation research involves understanding the factors that predict the extent of neuroplastic recovery, as individual outcomes vary significantly and many patients still experience significant residual deficits.

Various drugs can help promote neuroplasticity in patients which can help in recovery. The neuroplastic changes include the formation of new neural connections as well as cell deaths and metabolic changes. Pharmacological treatments and medications help in the recovery of stroke patients as they promote cerebral and neural plasticity. When a patient is

recovering from any neurological damage, the brain changes help in functional body recovery and healing. The rate at which an individual recovers varies and is specific therefore the result is not the same for everyone.

Aron et al. (2022) discuss how cognitive functions can be preserved through metabolic and neural changes. Reducing the levels of neural excitation also plays a significant role. It reduces electrical activities which then decreases the intercommunication between neurons and prevents neurodegenerative diseases. Excessive neural excitation can lead to inflammation in the brain which can lead to damage in neurons. Release of harmful proteins can also happen thus provoking diseases like Alzheimer's. The brain can also focus on strengthening other regions and pathways if there is a decrease in these neural excitations and maintain or improve cognitive functions. Individuals who spend long years learning and maintaining physical health develop cognitive reserves that can protect against cognitive decline and brain aging and reduce the chances of neurological diseases.

Leung et al. (2015), in their experiment, randomly the participants (aged above 60) assigned into two groups which were the Cognitive Training (CT) group and the Active Control (AC) group. Participants in the CT group demonstrated significant improvements in attention and working memory after completing the training. These improvements were specific to the trained domains, suggesting that specific cognitive training leads to specific changes in these cognitive functions. The brain goes through changes as it gets older, but cognitive training in domain-specific regions can lead to neuroplastic changes which proves the ability of the brain to adapt in response to different needs and requirements. This challenge is frequently framed within cognitive transfer theory, which posits that the degree of transfer depends on how similar tasks that have been trained are to the sorts of real-world activities in various contexts.

Older adults who are at risk of cognitive decline can be helped through cognitive training, despite what their current cognitive abilities are. High-performing older adults can reduce neural decline by using different parts, and reorganizing the brain tasks to function more effectively.

The Impact of Languages on Neuroplasticity

Bubbico et al. (2019) conducted their study on thirty participants who were randomly assigned to one of two groups: the intervention group (language learning program) and the control group (no training). There was an increase in cognitive performance and the brain scans showed growth in language learning and thinking in specific areas of the brain. Better connectivity between the right inferior frontal gyrus (rIFG) and the right superior frontal gyrus (rSFG) was also seen, which implies that attention span, ability to switch from one language to another, and impulse controls have improved. Engaging in mentally challenging activities along with a dynamic lifestyle can promote higher intellectual abilities as well as good cognitive health in older individuals.

Del Maschio et al. (2018), found how lifelong bilingualism can be helpful in neuroplasticity, neural reserve, and maintaining brain health. There is a reduction in grey matter volume (GMV) which is made up of cell bodies, dendrites, and synapses of neurons which leads to shrinkage in brain tissue. Its decrease is also evident in various neurological and psychiatric conditions. Grey matter volume differences are more apparent in older adults, and there was no difference in the GMV of monolingual and bilingual young participants. GMV is present in various brain regions, and its decrease can cause multiple problems. In the hippocampus and amygdala, emotion and memory processing could be hampered. There could be language processing and analysis difficulties as the left hemisphere of the brain has grey matter.

Bilingualism has been shown to induce neuroplastic changes in the brain, increasing

neural reserve at an early age, and maintaining this effect lifelong. Multilingual experience seems to prevent neural deterioration associated with age. Knowing two languages can improve neuroplasticity from an early age and maintain this effect throughout one's life and being bilingual may serve as an environmental factor that helps reduce neural decline during aging, resulting in better cognitive health as one grows older. Most individuals are bilingual without too much trouble because they constantly moving back and forth between two language systems.

Neuroplasticity and Neurodegenerative Diseases

Neurodegenerative diseases, including Alzheimer's disease (AD), lead to significant cognitive deficits, in particular, problems with memory, learning, and problem-solving, due to the gradual deterioration of neurons and synapses. Neuroplasticity is critically important because it permits the brain to accommodate neuron degeneration and damaged neural networks and, as a consequence, could lessen the effects of neurodegeneration on cognitive symptoms.

Cognitive reserve is the brain's ability to tolerate age-related changes and pathological damage without obvious clinical symptoms (Stern, 2012). Individuals who have higher cognitive reserve often show fewer symptoms of cognitive decline despite having the same amount of pathology in the brain as someone with lower cognitive reserve. Cognitive reserve may also be facilitated through a number of different avenues, such as increased education, higher complexity jobs, or mentally engaged hobbies (Stern, 2009). Certain studies show that individuals at higher levels of cognitive reserve may have slower cognitive decline even if they have changes in the brain associated with neurodegenerative diseases, like the accumulation of amyloid plaques or tau tangles (Soldan et al., 2017).

Neuroplasticity and Technology

Wearable devices have come to play an important role in the field of continuously

monitoring the brain, which also provides immediate feedback on cognitive performance. For example, wearables that make use of EEG can monitor the electrical activity of the brain and thus, enabling users to enhance attention and reduce cognitive stress. (Anguera et al., 2013). In addition, neurofeedback technology makes it possible for users to get instant feedback on their brainwaves leading to the desired optimal states whether it will be increased focus or relaxation that will promote cognitive change in the long run.

Along with BCIs, there is a brain in direct interaction with the external technology giving the opportunity to manipulate the brain's activities, using the techniques like transcranial magnetic stimulation (TMS) or transcranial direct current stimulation (tDCS). Additionally, the insights of the human brain on memory and attention that have been gained through the study of brain-computer interfaces and research into cognitive neuroscience have been thoroughly applied in the development of BCIs as a promising method to improve cognitive function (Z. Zhang et al., 2024). The utilization of the brain's inherent capability to reorganize its neural pathways which leads to the development of a functional super-network is an equally crucial factor in maintaining cognitive health, that is, particularly affecting those who are facing cognitive impairments or neurodegenerative situations (Bestmann & Krakauer, 2015).

Even more so, AI technologies have utilized the power of AI in designing personalized training for cognitive abilities through the AI-driven cognitive training platforms. The interventions provided are based on the individual's performance and the optimizing of challenges is done in real-time to make sure that the individual's cognitive ability is enhanced (Yeo et al., 2018). This is the essence of the brain's adaptability. It still remains a fact that the use of the principle of "use it or lose it" is relevant in case the mental condition of the person remains in

the state of being exercised through personalized exercises.

New brain-computer interfaces and cognitive training systems such as BCIs and AI-based cognitive training systems can expose neuroplasticity to the targeted level, transforming the brain to make it accommodate and rewire with the new learning activities. This characteristic is vital because it leads to the prevention of the onset and slowing down of such ailments as Alzheimer's disease and other neurodegenerative disorders, as well as it enables to keep cognitive function even at a later stage in life.

Discussion

A fundamental and dynamic characteristic of the mammal's brain is neuroplasticity, which allows it to remold itself entirely. This results in formation of new neural connections in response to learning or experience, or prunes those that no longer serve a useful function following injury. Individual experiences alter the brain's organization, and importantly, its effects can have harmful as well as beneficial impact on brain chemistry and health. Positive neuroplasticity also underlies the brain's capacity to make beneficial changes that are necessary for normal cognitive development and recovery from injury or disease, while maladaptive plasticity can result in states of poor functioning, contributing to dysfunctional states such as chronic pain, substance use disorders, or post-traumatic stress disorder, underscoring the necessity of understanding the factors that guide its direction.

The strategies which promote a beneficial neuroplasticity are diverse and often interconnected. Engaging in a variety of cognitively stimulating, intellectual and diversification activities such as mastering a new language, learning an instrument or solving complex puzzles, is a direct challenge to the neural networks, thereby promoting new synapses to grow and strengthening old ones. Equally vital are lifestyle factors, including

regular exercise which increases neurogenesis and synaptic plasticity as well consuming a balanced diet rich in neuroprotective nutrients. Moreover, regular social interactions contribute to cognitive reserve and emotional well-being, both of which are critical for maintaining brain health and facilitating adaptive neuroplastic changes.

Although aging is associated in many instances with some cognitive and neural decay and neuronal loss, decreased neurogenesis, and white matter changes, it is important to acknowledge that the aging brain still remains very much neuroplastic. One of the most frequently cited concerns in aging is decline in cognition, including processing speed, working and long-term memory, and reasoning. However, the course and degree of this decline is incredibly individualized and influenced by a complex interplay of genetic predispositions, lifetime habits, environmental considerations, and overall health.

Significantly, a number of older adults maintain a high level of cognitive functioning well into late life, reflecting a demonstrating exceptional cognitive resilience. Despite an overall decline in intellectual capacity, it is still very capable of absorbing new knowledge, enhancing thought processing and memory storing and formations, often by reactivating neural circuits or increasing activity in certain brain regions, a phenomenon known as "neural scaffolding." This potential for continued learning and adaptation provides a hopeful path for interventions to support healthy brain aging.

Conclusion

Neuroplasticity is not limited to the young brain; it remains active as powerful mechanism that enables the brain to reorganize and adapt well even in late old age. Although the cognitive decline with age is now considered as a natural learning process, this review shows that different types of interventions (physical, cognitive, social and computer-based programs)

are able to induce marked plastic changes. The literature confirms that aging does not eliminate the brain's capacity to learn or reorganize, but instead highlights the importance of consistent mental and physical stimulation to maintain cognitive vitality. Through the proactive pursuit of brain health, people can enjoy improved memory, attention, and quality of life well into old age. Future research could involve longitudinal studies with diverse populations to explore personalized interventions and the molecular mechanisms of neuroplasticity in aging, also including experimental studies to validate intervention outcomes in real-world aging contexts.

Limitations

This review is based solely on secondary data, without primary empirical testing or participant observation. This can create researcher's biases including Cultural and regional biases, as most reviewed studies are from Western populations, limiting generalizability. Additionally, papers exploring individual variability in neuroplastic response, due to genetics, education, health conditions, and lifestyle were not controlled for in the literature reviewed.

Implications

This review reveals that geriatric care could benefit from embedding evidence-based cognitive health interventions such as structured physical activity and individualized brain training protocols. These interventions, when widely disseminated through public health initiatives have the potential to transform public understanding about lifelong plasticity of the brain and encourage initiation of preventive strategies from youth. To promote good cognitive aging, it is crucial that older adults, especially those in low-resource populations to gain access to technological innovations. This includes tools like wearable EEGs and AI-driven technologies which can support and personalize their cognitive health management.

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Building Mental Health Resilience in First Responders: Challenges, Risk Factors, and Psychological Models for Coping

Ayushi Prajapati* and Dr. Sindhu Vasanth B**

Abstract

First responders include emergency medical personnel, firefighters, police officers and disaster relief workers that often operate in high stress environments. This profession exposes individuals to trauma which leads to require psychological resilience to maintain their well-being and ensure operational effectiveness. The research aims to examine the mental health resilience of first responders by identifying key challenges, risk factors, and coping strategies they encounter in high stress circumstances through the analysis of five globally significant case studies such as the 9/11 attacks, the Chicago wildfires, the COVID-19 pandemic, Hurricane Katrina, and the Las Vegas mass shooting incident. The study incorporates theoretical frameworks such as Cognitive Behavioural Therapy (CBT), Psychological First Aid (PFA), Stress-Inoculation Training (SIT), the Job Demands-Resources (JD-R) Model, and the Resilience Training Framework (RTF) to provide a comprehensive understanding of first responders' psychological struggles. The research questions address the psychological challenges faced by first responders in high-stress situations, the risk factors contributing to their mental health issues, and the effectiveness of psychological coping models in building resilience. The study adopts a qualitative research design, incorporating thematic analysis, content analysis, case study analysis, and a literature review to identify key themes and recurring patterns. These themes include trauma exposure, post-traumatic stress disorder (PTSD), burnout, emotional exhaustion, institutional support, peer networks, coping strategies, training models, and barriers to mental health care. This study suggests coping strategies and interventions that have shown the most success in mitigating psychological distress among first responders.

Keywords: *Mental Health Resilience, First Responders, Psychological Coping Models, Risk Factors*

Student, Department of Psychology, PES University, Bengaluru, Karnataka, India.

Assistant Professor, Department of Psychology, PES University, Bengaluru, Karnataka, India.

Introduction

First responders such as emergency medical personnel, firefighters, police officers and disaster relief workers are employed in high-stress situations where they often encounter disturbing events that substantially impact their mental well-being (Regehr & Bober, 2005). First responders experience great emotional distress through exposure to significant events like the 9/11 attacks, Chicago wildfires, the COVID-19 pandemic, Hurricane Katrina, and the Las Vegas mass shooting. 9/11 emergency responders experienced prolonged trauma and loss of exposure as per Benedek, Fullerton, and Ursano (2007). Chicago resident firefighters encountered

dangerous situations and struggled with scarce resources and prolonged recovery needs for their communities (Benedek et al., 2007). Emergency responders and healthcare professionals endured chronic burnout along with moral harm as a result of the COVID-19 pandemic (Restauri & Sheridan, 2020), while the Las Vegas shooting subjected them to immediate exposure to violent mayhem. Each tragic incident reinforces the immediate need to establish psychological resilience-developing techniques for first responders.

This study analyses first responder ways of coping with their issues using various psychological theories. Using Cognitive

Behavioural Therapy (CBT) scholars analyse the ways through which individuals can change their harmful psychological tendencies in order to improve their mental health (Beck, 2011). The research investigates Psychological First Aid (PFA) since it serves as a crisis response system that provides instantaneous emotional support (Brymer et al., 2006). The psychological and behavioural training techniques of Stress-Inoculation Training (SIT) developed by Meichenbaum (2007) enable responders to acquire skills that insulate them against future emotional trauma. Stress and burnout reactions in the workplace are accounted for through the Job Demands-Resources (JD-R) model which relates job demands to accessible support systems (Bakker & Demerouti, 2007). The Resilience Training Framework (RTF) is an important program since it targets adaptive ability building while creating long-lasting mental resilience in individuals working in highly demanding professions (Newman, 2005).

Research Questions

1. What are the psychological challenges faced by first responders in high-stress situations?
2. What are the risk factors contributing to their mental health issues?
3. What is the effectiveness of psychological coping models in building resilience?

Mental Health Challenges Among First Responders

The first responder field exposes its personnel to multiple traumatic experiences which increases their risk of developing psychological disorders including Post-Traumatic Stress Disorder together with depression and anxiety. The affected mental health results from personal coping skill inadequacies together with

unsupportive organizational systems and professional stigma perceptions regarding mental illness. According to Kleim and Westphal (2011) first responder organizations need to implement mental health support programs combined with organizational backing and resilience training. According to Alshahrani et al. (2022) in their systematic review PFA together with CBT and stress management approaches demonstrated moderate success for decreasing PTSD symptoms among first responders and their experienced psychological distress levels.

Cognitive Behavioural Therapy (CBT) and Intervention Efficacy

The study by Papazoglou (2017) points out that there are still unknown psychophysiological consequences of CBT treatment for first responder PTSD cases. Bryant et al. (2019) advocate for scientifically designed studies with controlled random allocation to particular occupational groups. The research on 9/11 and Hurricane Katrina by Bills et al. (2008) and Osofsky et al. (2011) and Smith, Holmes, and Burkle (2019) has documented extensive psychological consequences which Adams et al. (2011) believes require resilience training and coping strategy development. Healthcare providers experienced emotional distress as a result of the Las Vegas mass shooting alongside other similar incidents (Choi et al., 2023; Guldner et al., 2022).

Psychological First Aid (PFA) and Its Limitations

The widespread recognition of PFA as necessary disaster response tool remains in question because extensive training is inconsistent and there are no accepted standardized assessment tools. According to Fox et al. (2012) and Wang et al. (2021) the assessment of PFA long-term outcomes proves to be difficult. Prolonged mental health

consequences emerged as a result of disasters such as 9/11 and Hurricane Katrina according to investigations conducted by Bills et al. (2008) Smith et al. (2019) and Osofsky et al. (2011). Skarbek (2014) along with Boda and Johnson (2017) conduct research to assess social recovery approaches as alternative and effective alternatives to traditional disaster response models.

Stress Inoculation Training (SIT) and Adaptive Coping

Stress Inoculation Training (SIT) operates as a preventive method which successfully boosts resilience among personnel working under high-stress conditions. Research by McParland and Hicks (2018) and Heath (2015) demonstrates that SIT produces reduced anxiety which enhances performance yet the study's general applications remain restricted. Research on major emergency situations calls for prompt interventions to promote mental health according to Bills et al. (2008) as well as Smith et al. (2019). Anxiety levels along with substance consumption and attachment security roles for coping have risen according to pandemic research by Vujanovic et al., 2021 and Carbajal et al., 2022. Hurricane Katrina emergency personnel showed resilience alongside support networks to be vital factors influencing their response (Osofsky et al., 2011; Adams et al., 2011).

Job Demands-Resources (JD-R) Model: Balancing Stress and Support

The complete assessment of first responder mental health considers active environmental hazards alongside their supporting factors. According to Wolter et al. (2019) and Smith and Dyal (2016) in their discussion of the Job Demands-Resources (JD-R) model we discover how job resources including autonomy alongside social support create burnout reduction while strengthening resilience. Research studies

related to disasters about 9/11 and COVID-19 (Bills et al., 2008; Smith et al., 2019; Vujanovic et al., 2021; Carbajal et al., 2022) demonstrate continuous PTSD and anxiety symptoms in first responders. According to Adams et al. (2011) proper preparedness training coupled with peer support strategies help protect against long lasting negative effects.

Resilience Theory and Organizational Culture

According to Resilience theory the process of recovery together with adaptation depends on both personal protective elements and systemic protective factors. The essential elements for building resilience include positive personality traits which Pietrantonio and Prati (2008) describe as optimism together with emotional control capabilities and meaningful social relationships. The authors in Crane et al. (2022) recommend individualized psychological training but organizational stigma continues to block this path. Trauma causes enduring effects on physical health along with psychological anxiety and substance abuse patterns according to studies involving 9/11 survivors, Hurricane Katrina victims, and individuals subjected to COVID-19 as demonstrated by Bills et al. (2008), Smith et al. (2019), Vujanovic et al. (2021), Carbajal et al. (2022) and Osofsky et al. (2011) and Adams et al. (2011). The Las Vegas shooting together with other incidents urge the development of mental health leadership alongside systemic support systems (Guldner et al., 2022; Choi et al., 2023).

Conclusion and Future Directions

First responders experience mental health deterioration from their frequent exposure to traumatic experiences throughout the analysis of 9/11 attacks, Hurricane Katrina, Las Vegas shooting, Great Chicago Fire, and the COVID-19 pandemic. Early intervention and systemic support gain importance through five essential

interventions including Cognitive Behavioral Therapy (CBT), Psychological First Aid (PFA) and Stress Inoculation Training (SIT) and the Job Demands-Resources (JD-R) model as well as Resilience Theory. The research needs more attention regarding PFA's sustained evaluation and standardized practices as well as culturally adjusted crisis response methods. Additional research needs to focus on extended studies which examine first responder experiences along with developing united support networks and adaptable evidence-driven approaches that serve various first responder populations.

Method

Research Design

A qualitative approach was used in this study to examine mental health resilience among first responders. The research team used thematic analysis, content analysis, literature review and case study methods in the design. The study looked at how documented psychological frameworks help first responders process and respond to extreme events. These incidents included the globally important September 11 attacks (9/11), the Chicago wildfires, the COVID-19 pandemic, Hurricane Katrina and the Las Vegas mass shooting. Because of this approach, researchers could examine resilience factors and assess the usefulness of psychological models including Cognitive Behavioral Therapy (CBT), Psychological First Aid (PFA), Stress-Inoculation Training (SIT), the Job Demands-Resources (JD-R) Model and the Resilience Training Framework (RTF).

Data Collection and Analysis

The research exclusively used secondary data from peer reviewed journal articles, published reports and scholarly sources. Databases such as Google Scholar, PubMed, ResearchGate and institutional access tools were

used to select relevant literature. They included 'first responders', 'mental health', 'resilience', 'coping models', 'trauma' and 'burnout'. English language sources published between 2005 and 2023 was used as an inclusion criteria on mental health resilience, psychological challenges and models of intervention on first responders. The recurring concepts across the case studies and literature were extracted using thematic analysis. The identified themes included trauma exposure, PTSD, burnout, institutional support, coping strategies and barriers for care. Through repeated examination the codes were coded and refined to capture nuanced relationships between psychological challenges and applied coping mechanisms for each theme.

Ethical Considerations

The only secondary sources which have been used in this study are available publicly and from ethically published academic forums. No primary data collection or human participant involvement took place so institutional ethical clearance was not required. All sources were properly referenced according to the academic integrity to provide proper acknowledgment of contributions of original research. The content of the research has been kept objective at all times, distorting the original context of any study, consistent with ethical requirements for literature based psychological inquiry.

Results and Discussion

First responders face the responsibility to be the first defenders in critical situations because they routinely enter perilous situations that generate substantial psychological distress. This review examines first responder mental health issues which include traumatic exposure along with PTSD manifestations and burnout symptoms alongside emotional exhaustion. The analysis reviews the five psychological frameworks consisting of CBT and JDR and SIT in addition

to RTF and PFA to understand their effectiveness and evaluates their methods based on case studies involving 9/11, Chicago Wildfires, COVID-19 pandemic, Hurricane Katrina, and Las Vegas mass shooting.

Theme 1: Trauma Exposure and Post-Traumatic Stress Disorder (PTSD)

The study demonstrates that emergency professionals regularly encounter trauma-induced situations that heavily influence their development of PTSD. Emergency personnel displayed acute trauma during both the 9/11 attacks and the Las Vegas mass shooting incidents of emergency response. The psychological technique of Cognitive Behavioral Therapy (CBT) demonstrates effectiveness for PTSD treatment through its methods to change unwanted reaction patterns as well as teaching beneficial trauma responses (Beck, 2011). PTSD symptoms that persist after disasters are the main concern regarding long-term health effects for first responders who work in major emergencies. Research findings from 9/11 and Hurricane Katrina demonstrate that when people are exposed to prolonged stress while not receiving appropriate psychological assistance this can create lasting PTSD symptoms according to Benedek et al. (2007) and Osofsky et al. (2011). According to the Job Demands-Resources (JD-R) model high job demands which surpass available resources lead responders to develop burnout symptoms and PTSD. Vujanovic et al (2021) and Carbajal et al (2022) found that first responders experienced substantial PTSD symptoms because of the prolonged COVID-19 pandemic exposure which generated high job demands. According to the JD-R model more job resources including emotional support combined with resilience training normally reduce negative impacts (Bakker and Demerouti, 2007).

Theme 2: Burnout and Emotional Exhaustion

First responders in both healthcare and other emergency response duties face persistent exhaustion because their work demands high levels of attention and heavy emotional responsibilities. Healthcare workers obtained burnout during COVID-19 pandemic due to prolonged work shifts alongside patient care emotional strain and moral distress (Restauri & Sheridan, 2020). First responders experienced similar stress during both the Las Vegas shooting event and the subsequent disaster relief operations management. The effectiveness of burnout prevention depends on implementing two essential training methods which include the Resilience Training Framework (RTF) and Stress-Inoculation Training (SIT). RTF teaches responders to develop adaptable ways to handle stress together with emotional regulation techniques necessary to manage lasting workplace stress (Newman, 2005). SIT provides high-stress situation preparation for responders through trauma reduction teaching that implements coping mechanisms (McParland & Hicks, 2018; Heath, 2015). Through these models first responders can improve both their emotional endurance and their response performance when faced with stress and also increase their capacity to manage stress.

Theme 3: Institutional Support and Peer Networks

The development of resilience in first responders depends heavily on the support which institutions provide. Opportunity for effective support exists through organizational networks together with camaraderie among peers which aids first responders in dealing with psychological stress from their work. The research undergoes analysis of peer networks because these relationships contribute to decreasing feelings of isolation while offering

emotional support based on studies from Hurricane Katrina and Chicago wildfires (Osofsky et al., 2011; Benedek et al., 2007). First responders show increased susceptibility to mental health issues when their organizations fail to support them since mental healthcare systems were seriously deficient at the beginning of the COVID-19 crisis (Vujanovic et al., 2021). Psychological First Aid (PFA) stands as the essential intervention for disaster responses because it enables prompt emotional care. Studies show that PFA fails to function properly because practicing teams are not using it consistently and there are no standard ways to measure its effectiveness (Fox et al., 2012). The short-term benefits of Psychological First Aid have been documented through 9/11 and Hurricane Katrina analysis yet these beneficial effects fail to provide sustained mental health care to first responders (Bills et al., 2008; Smith et al., 2019). The development of substantial institutional and peer support systems which integrate for extended resilience development represents an essential requirement.

Theme 4: Coping Strategies and Training Models

First responders achieve better mental fitness through their ability to implement effective coping strategies. First responders benefit significantly from the two standard psychological methods which are Cognitive Behavioral Therapy (CBT) and Stress-Inoculation Training (SIT). CBT helps individuals understand traumatic thought patterns to process challenges more effectively but SIT enables first responders to develop practical techniques for stress management. The combination of Cognitive Behavioral Therapy and Stress-Inoculation Training successfully decreases PTSD symptoms together with depression and anxiety in first responders dealing

with traumatic incidents from the Las Vegas shooting and 9/11 disasters (Beck 2011, Meichenbaum 2007). The successful nature of mental health care access faces substantial obstacles in achieving its goals. Public prejudice against mental illness prevents first responder employees from receiving necessary treatment that worsens their psychological condition. According to the Job Demands-Resources model institutions must create changes that reduce stigma and enhance mental healthcare access through confidential programs and peer-based mental health programs (Bakker & Demerouti, 2007).

Theme 5: Barriers to Mental Health Care

First responders continue to face major hurdles in accessing mental health care because of stigma combined with inadequate care access. A significant number of first responders avoid mental health assistance through institutional stigma because they view emotional problems as weakness according to Pietrantonio and Prati (2008). Professional concerns about job impacts following the 9/11 attacks led many responders to avoid psychological care according to Benedek et al. (2007). Standardized mental health tests along with insufficient PFA training standards reduce the effectiveness of crisis-related psychological treatments. The case studies including COVID-19 pandemic demonstrate that inconsistent training methods and limited resource distribution create problems with providing proper mental health care (Brymer et al., 2006). The mental health of first responders requires systematic improvements which include improved education for psychological professionals and stigmas elimination to make progress possible.

The research from five different case studies and scientific theories demonstrates that first responder mental resilience exhibits numerous difficult elements. Lack of trauma

exposure coupled with post-traumatic stress disorder (PTSD), burnout and emotional exhaustion remains a crucial issue that affects first responder personnel. The effective tools for managing psychological challenges experienced by first responders in the field are Cognitive Behavioral Therapy (CBT) along with Psychological First Aid (PFA), Stress Inoculation Training (SIT) and the Job Demands-Resources (JD-R) model and the Road to Mental Readiness (RTF) program. First responders experience

better recognition of their mental health needs but ongoing barriers to proper mental health treatment persist which includes institutional support inadequacy and insufficient access to care. Research in the future should investigate sustained intervention effects on first responders while standardizing mental health evaluations alongside developing an extensive system for their full support which addresses their continually changing and diverse needs.

Table 1

This table illustrates the multifaceted approach to building mental health resilience in first responders, encompassing stressors, coping mechanisms, and barriers to care.

Building Mental Health Resilience in First Responders: Challenges, Risk Factors, and Psychological Models for Coping		
Theme Name	Models Discussed	Case Studies Referenced
Theme 1: Trauma Exposure and PTSD	Cognitive Behavioural Therapy (CBT), Job Demands-Resources (JD-R)	9/11 attacks, Las Vegas mass shooting, Hurricane Katrina, COVID-19 pandemic
Theme 2: Burnout and Emotional Exhaustion	Resilience Training Framework (RTF), Stress-Inoculation Training (SIT)	COVID-19 pandemic, Las Vegas shooting and disaster relief operations
Theme 3: Institutional Support and Peer Networks	Psychological First Aid (PFA)	Hurricane Katrina, Chicago wildfires, COVID-19 pandemic
Theme 4: Coping Strategies and Training Models	Cognitive Behavioural Therapy (CBT), Stress-Inoculation Training (SIT), Job Demands-Resources (JD-R)	Las Vegas shooting, 9/11 attacks
Theme 5: Barriers to Mental Health Care	Psychological First Aid (PFA) (not standardized), Job Demands-Resources (JD-R) (stigma focus)	9/11 attacks, COVID-19 pandemic

Conclusion

The psychological resilience of first responders was critically examined in this study using synthesis of five major case studies and theorized models including CBT, PFA, SIT, JDR and RTF. It reinforces pervasive problems of mental health troubles—PTSD, burnout, emotional exhaustion—among first responders as well as structural and cultural impediments to getting the psychological help these difficult environments should compel. Existing models provide base strategy for coping and resilience,

though the models can often be in effective due to a lack of standard implementation and contextualization. The study employs a qualitative, theory based approach that provides nuanced insights into how the first responders might bear a psychological burden and how systemically, evidence based and culturally sensitive interventions should be designed to attend to this burden. Future research should use mixed-methods designs or longitudinal study to understand the long term impact of these interventions and gauge their malleability across

numerous emergency contexts and populations of responders.

Implications

This research has implications beyond just theoretical contributions and practical significance for clinical, organizational and policy-level interventions. Second, the study provides a framework to which mental health professionals can adapt their training to create evidence informed and first responder specific resilience training programs. Second, it highlights the importance of emergency response organizations in institutionalizing the supporting psychological system such as peer mentoring, confidential counseling services and stigma reduction. Third, policymakers are given insight to the importance in investing in bringing mental health preparedness into disaster management planning. Further, the study emphasizes the need for cross cultural validation of psychological models and interventions, in order to make the model and interventions relevant and effective with various populations. In order to bolster long term resilience, future efforts should focus on scalable interventions, providing mental health literacy within emergency professions and promoting an interdisciplinary approach to mental health specialists, first responder agencies and government bodies.

Limitations

A qualitative study design includes thematic analysis and both case studies and a literature review as its research methods. The multi-method approach delivers comprehensive findings but reduces its ability to apply findings generally because it is non-statistical and operates within specific contexts. Nine of the chosen case studies include the events of 9/11 in addition to Chicago wildfires and COVID-19 outbreaks and Hurricane Katrina and the Las Vegas shooting but they do not fully display complete first responder experiences beyond major events. Retrospective data research depends on subjective memories which leads to potential

recall bias and the analysis through particular psychological models (CBT, PFA, SIT, JD-R, and RTF) provides conceptual restrictions. No information is provided about measures to minimize researcher bias that did not include triangulation or member checking.

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Self-Representation in the Digital Age: An Investigation of the Links Between Selfie-Taking Behaviour, Body Image and Personality

Niyati Aravind*, Srishti HS** Dr Madhu Karnat S***

Abstract

We are living in a world where two worlds coexist. The reality we live in and the digital world we are grown so close to. In this world, Selfies have transformed from just casual photographs into a tool so powerful which is used for self-representation, impacting how people perceive themselves and how they are perceived by others. This study dives deep into the idea regarding the relationship between selfie-taking behavior, body image issues, and personality traits based on the Big Five model amongst vibrant adults of our generation.

While using a quantitative, cross-sectional research design, data was collected through self-report surveys online from individuals aged 15 to 68 with a total of 150 responses across diverse regions of India. With the usage of statistical analyses, including the independent t-tests and Pearson correlations it was revealed that there are significant gender differences in selfie behavior, with women engaging in it more frequently than men did. ($t = -2.473$, $p = .0148$). Marital status and education qualification also showed strong associations with body image and personality. Notably, correlation was seen in the negative factor of age with selfie behavior ($r = -0.273$), body image ($r = -0.318$), and personality traits connecting to self-expression ($r = -0.273$), showing higher interaction amongst the younger individuals.

The results conclude that factors like age, background, and personality are important for how people perceive and show themselves and manage their emotions and personality through selfies. The study adds to our understanding of social media and how it impacts people, especially in terms of identity, self-esteem, identity and wanting validation from others.

Keywords: *Selfie behaviour, Body image, Personality traits, Social media, Identity.*

**Student, BSc Psychology, School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka*

***Student, BSc Psychology, School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka*

****Assistant Professor (Psychology), School of Liberal Arts and Sciences, RV University, Bangalore, Karnataka. (Corresponding Author)*

Introduction

In the digital age taking and sharing selfies has become very prominent and common in social media culture, especially among young adults. A selfie is a self-captured photograph that is usually clicked using a smartphone camera and is shared or posted on various social media platforms. What used to be a simple form of self-expression has evolved into a medium of branding, social validation and identity

construction - a single selfie can make or break someone. The habit of constantly taking selfies is interconnected to an individual's personality traits and their perception of their body, which makes it a very important and essential area of psychological inquiry in the 21st century which is the golden age of technology.

Recent numbers show that selfie-taking behaviour has become very common globally. According to a Samsung Galaxy Camera Study

done in 2013, almost 30% of the photos taken by people aged 18-24 are selfies. A survey done by Now Sourcing (2020) reported that an average millennial is likely to take more than 25,000 selfies in their lifetime - showing how this practice of taking a selfie is so important to the youth culture. As per Google Statistics (2017), 93 million selfies are worldwide, which highlights that people pay so much importance to their personas online and keep thinking about how to make their visual self-representation better.

The rising popularity of selfies has deep relations with psychological well-being, specifically concerning body image satisfaction and self-esteem. Multiple studies have found a correlation between selfie-taking and increased body dissatisfaction which is driven by the need to conform to the beauty standards that are portrayed on social media platforms. Communication and attention-seeking were identified as the biggest motivators for selfie-taking behaviour (Patil, S. S., Kamat, S. S., & Kamat, M. S, 2019).

Fardouly and Vartanian (2016) found that if there was more engagement with that, mainly appearance-focused media which included selfies - was associated with more appearance comparisons and dissatisfaction about their bodies among young women.

Kleemans et al., (2018) revealed that more exposure to manipulated selfies i.e., enhanced through filters and edits, which increases attractiveness, leads to lower body satisfaction among teenage girls. Social comparison, idealized images and feedback can largely affect the self-esteem and body satisfaction of many adults; this study also aims to attain a more gender-balanced view opposing the female-focused norm (Franchina, V., & Lo Coco, G, 2018).

Selfie-taking behaviour is also influenced by each individual's personality trait. The Big Five describes personality traits along five common dimensions: Openness,

Conscientiousness, Extraversion, Agreeableness and Neuroticism. According to studies, those who tend to score high extraversion or narcissistic tendencies (low agreeableness) tend to post selfies (Sorokowski et al., 2015). Extraverted individuals usually tend to seek approval and enjoy social interaction, and they are more likely to post selfies to get social validation. Individuals who are high on neuroticism may be very self-critical and may use selfies as a tool to manage their insecurities and seek assurance from others. Other studies also confirmed this idea that High neuroticism was associated with higher levels of body dissatisfaction and poorer mental health because of their insecurities. At the same time, extraversion and conscientiousness were positively correlated with better mental health and a more positive body image perception. Body image discrepancy and appearance were significant mediators (Jackson, C. J., & Louw, J, 2018). Those who have lower self-esteem and body satisfaction are more prone to editing their selfies to look attractive for validation (Borah, P, 2020).

The amount of time invested in taking and editing selfies has a correlation with a spike in appearance-related anxieties and tendencies toward perfectionism (McLean et al., 2015). Those who are highly perfectionists are associated with higher body dissatisfaction and body image discrepancies (Marco, J. H., Perpiñá, C., & Botella, C, 2013).

Personality traits and self-esteem also predict travel selfie-taking. Travel selfies are more associated with emotional feelings, societal expectations, and the motives of showing status (Paris, B., & Pietschnig, J, 2015). Since these individuals strive to create the idealized version of themselves, it also increases the pressure to get positive feedback by receiving likes and comments - which can result in dependency on external validation, which is a major contributor to mood fluctuations and decreasing self-esteem.

There is a heavy reliance on cross-sectional studies, which limits causal inference. Since most of the studies focus on female adolescents and female adults, the study is not gender diverse, which can skew the results. Personality traits are usually studied in isolation which does not account for the digital contexts or the lack of study of digital metrics, such as the frequency of using social media and how many likes and comments there are, which can limit our contextual understanding; even the cultural perspective is not taken into consideration. (Balakrishnan & Griffiths, 2018). Very few longitudinal studies have been conducted, which reduces our insight into long-term effects on mental health and self-concept. (Diefenbach & Christoforakos, 2017). The bidirectional relationship between an individual's online representation and their offline self-perception isn't examined.

Method

This study aims to examine the relationship between selfie-taking behaviour, body image issues, personality, and the big five personality traits among smartphone users. This research examines selfie-taking frequency, editing time, and emotional response to feedback. It explores validation, appearance concerns and the influence of social media trends on self-representation. A quantitative, cross-sectional survey analyses the relationship between selfie-taking, body image, and personality to understand how digital behaviour shapes self-perception in Indian youth. It also contributed to the unexplored areas of psychological effects social media has in a non-Western context.

The study included participants aged 15-68, covering a wide span from adolescence to seniority, to see identity development. With the help of convenience sampling through online platforms, we included individuals from Bengaluru City, Karnataka, India. Most participants were female, reflecting higher engagement from women. Educational

backgrounds ranged from senior secondary and higher, with the majority of Undergraduates. Informed consent, confidentiality, and voluntary participation were strictly maintained.

The data collection was done using Google Forms, which is easily accessible to all. The participants received clear instructions, were informed about the purpose of the study, and were assured that the participation was purely voluntary, that their responses would remain confidential and that their identities would be anonymous. After obtaining informed consent from participants, data collection was done. The data was then exported to Excel, pre-processed and analysed using Python libraries. Any incomplete responses were removed using listwise deletion to maintain the integrity of the data and to minimize any bias.

The data were analysed using descriptive statistics, which summarized the demographic details and selfie behaviour trends focusing on age and gender. Correlational analysis was done to examine the relationship between selfie-taking behaviour, personality and body image. Regression analysis was used to predict selfie behaviour based on prominent personality traits. Overall, the analysis aimed to identify the patterns that support or challenge the theories of self-representation in the online world.

Tools

1. Socio-Demographic Profile: This section gathered all the key background information such as age, gender, educational qualification, domicile, state (residence) and marital status. All these variables help confirm eligibility, assist in analysing trends, and examine potential moderators in the relationship between the variables.

2. Selfie-Taking Behaviour Scale developed by Borah p, Karnat M S and Rai, P (2020): This scale is a 20-item tool that was developed to examine young adults' selfie-taking-related frequency and expectations. A pilot study with 60 participants confirmed its feasibility. A

factor analysis revealed a 5-factor model, which was rated on a 5-point Likert scale and showed strong reliability - Cronbach's Alpha = 0.92 (pre-test) and; 0.90 (post-test). (Borah, P, 2020). This

information was derived from the master's dissertation. As it was not standardised and published once again, reliability was checked, and the scores are:

Form	Cronbach's alpha	95 % CI	Interpretation
Survey 1 TV	0.85	[0.82, 0.88]	Good Internal Consistency
Survey 2 TV	0.87	[0.84, 0.89]	Good Internal Consistency

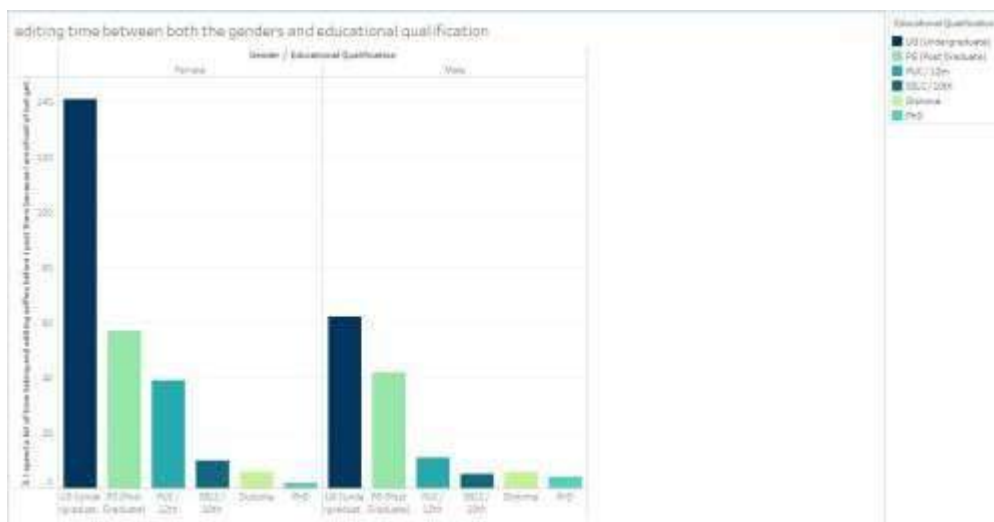
3. The Dresden Body Image Questionnaire (DBIQ): The DBIQ (Scheffers, M., Van Duijn, M. a. J., Bosscher, R. J., Wiersma, D., Schoevers, R. A., & Van Busschbach, J. T. (2017). is a 35-item scale with five subscales - body acceptance, vitality, physical contact, sexual fulfilment and self-aggrandizement which is then rated on a 5 point Likert scale. Higher scores reflect a positive body image, while lower scores reflect a lower body image. The Cronbach's Alpha ranges from 0.77 to 0.90, with the Dutch sample showing 0.83 to 0.92. The subscale correlations range from $r = .13$ to $r = .65$. (Borah, P, 2020).

4. The Big Five-2 inventory was developed by Soto, C. J., & John, O. P. (2017): The Big Five personality test, or the five-factor model, was developed by Robert McCrae and Paul Costa in 1987. The Big Five personality traits are Extraversion, Neuroticism, Openness, Conscientiousness and Agreeableness. All these responses were measured on a 5-point Likert scale (1- strongly disagree, 5 - strongly agree). The Cronbach Alpha's coefficients for the five domain scales exceed 0.80, which indicates that there is high internal consistency. It also establishes strong correlations with other established personality measures, which confirms predictive and convergent validity.

Results and Discussions

Table 1

Emotional Response and Validation statistics amongst both male and female



The statistical visualisation was derived from Tableau. As we can see, emotional response and importance regarding feedback on selfies can be seen evidently in females more than males, and

females who are pursuing undergraduate studies tend to put more importance on editing than men with the same educational qualification.

Table 2

Editing time invested by both male and female combining male and female individuals

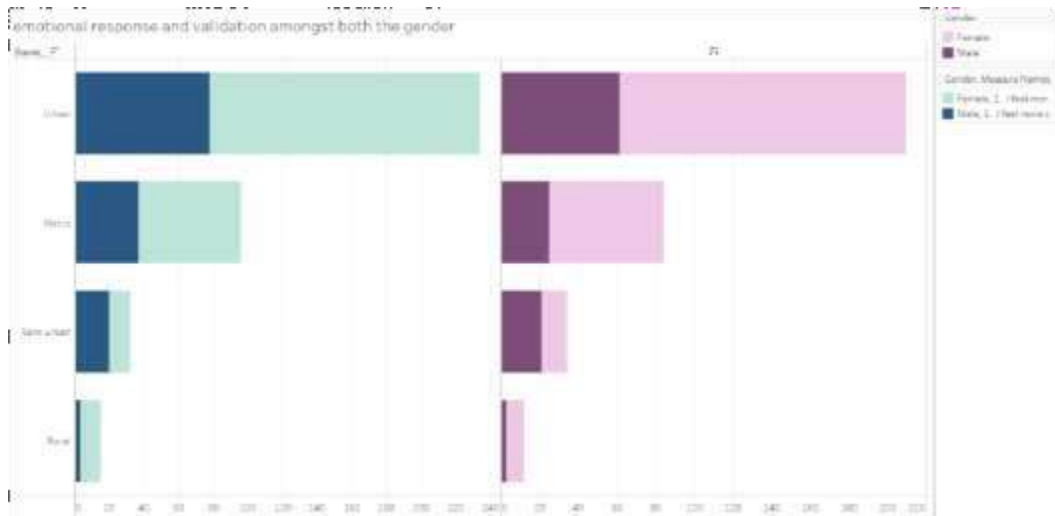
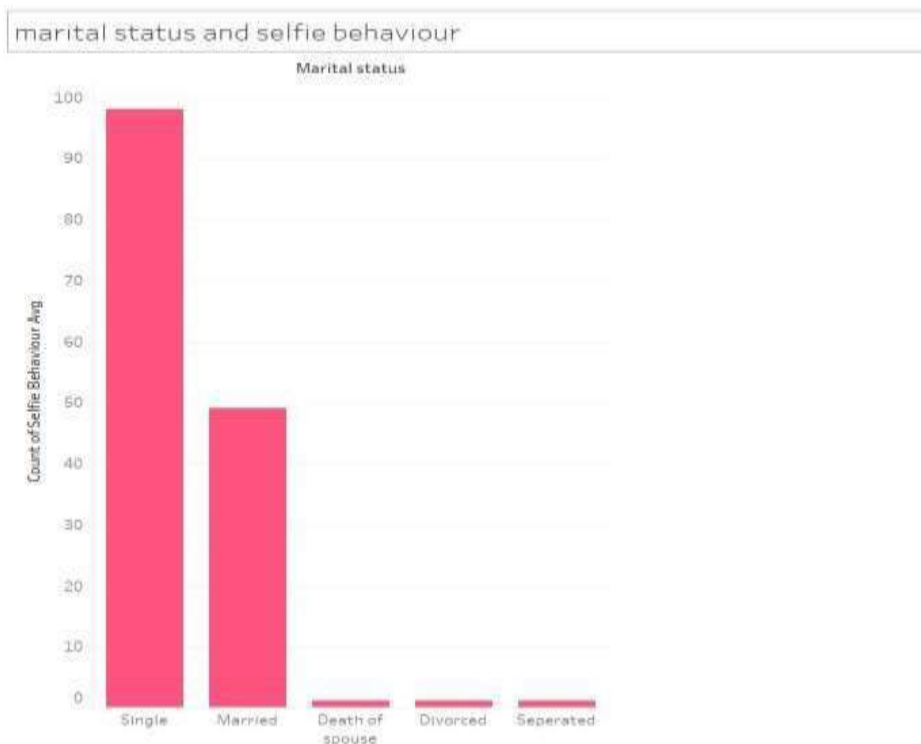


Table 3

Difference between the investment in selfie behaviour between single and married individuals.



While understanding how we see evident differences which we see within the distinct factors. We also found how marital status of an individual also plays a very significant role within the selfie behaviour, while it shows evident differences between the married and the unmarried or single.

Making sure that our tool works well and qualifies, we demonstrated Cronbach's alpha and it revealed high internal consistency of 0.95, which indicates that the scales used for measuring selfie behaviour was highly reliable. The correlation matrix revealed to us, strong positive relationships between all three variables those being, selfie and body image being ($r=0.82$) selfie

and personality being ($r=0.80$) and body image and personality being ($r=.80$) this indicates that individuals who focus more on body image and personality concerns tend to be more engaging and have active selfie behaviours. The regression models supported the claim with R squared values of 0.677, .674, and 0.751 For the three models showing a significant portion of the variance in selfie behaviour is explainable through personality and body image factors.

Comparative study of the results with other research can give us a holistic understanding of the topic. Social media effects on young women's bodies - research on how mass media influences body image but there is limited study on how social media affects young women's body perspective. This article links social media use, vulnerabilities and self-perception and other mediators like social comparison and peer norms and how it can lead to BDD and eating disorders. It also touches upon the male body perspective issues and how social media trends can affect it (Perloff, R. M., (2014).

Social media trends and influencers promote certain standards which can influence eating disorders and wanting to look a certain way and when they don't it can affect their self esteem and they can start from puberty and may affect college aged women the most. Traditional media also influences this ideal - this research highlights how social media can be more harmful than traditional media because of its constant engagement. "Why don't I look like her" - shows how much social media can put a strain on having a healthy relationship with the body. (Klein, K. M.,(2013)

Studies also investigate how there is a strong relationship between self esteem - Big Five personality and selfie taking and posting. This research addresses the importance of distinguishing between selfie taking and selfie posting as very different underpinnings. Their findings also emphasize how low self-esteem is associated with higher selfie taking and posting

and extraversion correlated with positive posting and selfie taking especially for women under 25. They also address the significance of considering age and gender demographics(Martínez-Mármol, et al.,(2023).

"Active and passive selfie taking behaviour iImplications for body image, self-esteem and mental health" distinguishes between selfie presentation and physical appearance comparison. Upward comparison with others' selfies is linked to negative body image, lower well being and poor mental health. Selfie presentation and preoccupation deals with the fear of negative appearance evaluation and how women and younger individuals are more engaged in selfie related behaviour and comparisons than other older adults. (Bodroža, B., Obradović, V., & Ivanović, S. (2022).

Discussion

This study shows the strong correlation between selfie taking, body image and personality traits, with significant gender differences moulded by cultural norms and expectations. The marital status influences the self representation aspect as it reveals that unmarried individuals show greater need of validation. We can see that academic levels also have a significant impact as we see that undergraduates tend to exhibit more selfie activity as it shows the need for identity development for them and for the people around them. Hence, we can see that the younger range of participants are more entangled in selfie behaviours which is driven by the need of getting peer feedback and constructing an identity for themselves online.

Conclusion

This study highlights the close relationship between selfie-taking behaviour, personality traits and body image dissatisfaction among young adults in India. The findings show that individuals who scored high in extraversion and agreeableness engage in selfie-posting for social validation, peer validation, attention seeking and communication and those who scored

high on neuroticism tend to avoid taking selfies or they heavily edit selfies because they are very critical about their appearance and have many insecurities about themselves. Body image dissatisfaction emerges as an important factor which influences these behaviors among the younger generation which shows that they are highly influenced by social media and have a higher involvement in digital representation. Social media trends and beauty standards also impact how people perceive themselves and their emotional responses linked to online feedback. Like every study it also has some limitations regarding the cross-sectional design, gender imbalance and self-reporting bias which reduces its generalizability. Nonetheless, it offers a deeper understanding how personality and body image issues shape online self-representation in a non-western context which highlight the need for more diverse, gender balanced and longitudinal research in this area. This needs to be shortened. it is discussion implication limitation and conclusion

Implications

Social media education is a very necessary topic/subject to focus upon. Universities can help the students by having workshops that help with healthier digital habits and understanding many sides of it while marketing departments from many brands can focus on youth to promote self expression and digital identity within their campus environment. Future researchers can explore how the social media identity grows with age and relationship identities in depth.

Limitations

The sample scope is limited to the Indian youth which restricts cross cultural generalizability of the study. Platform differences (Instagram vs. Snapchat vs. Tiktok vs. Facebook) were not considered because each of these platforms may have different engagement features which can influence the behaviour. The study is limited by the lack of longitudinal or experimental methods which restricts exploration of causal

mechanisms which helps us observe how these personality habits and media influence act over a period of time and not solely rely on the statistical information.

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Interactions of Child Psychologists with Parents of Children with ASD & ADHD

Shailja*, Dr. Sruthi Sivaraman** and Megha D. Prasad***

Abstract

The research investigates how child psychologists aid parents whose children receive ASD and ADHD diagnoses. The research explored child psychologist experiences as ten professionals participated in this study through semi-structured interviews that were examined using an interpretive phenomenological approach. The study adhered strongly to theoretical frameworks, such as Family Centred Care (FCC) Model and Sameroff's Transactional Model of Child Development. The analysis uncovered eight main domains which were collaborative approaches and psychoeducation alongside evidence-based methods and therapeutic characteristics as well as institutional obstacles. The analysis proves that parents need to actively participate with their children in treatment while also showing the importance of custom-made psychoeducation which addresses their specific understanding needs as well as the financial barriers combined with institutional hurdles and stigma. The emphasis is on using patient-specific intervention approaches that create ideal treatment results. The study also offers insights for psychologists, educators, and policymakers in enhancing child-parent-therapist collaboration. This study explores ways to improve parent-therapist partnerships in pediatric mental health.

Keywords: child psychologists, ASD, ADHD, parental involvement, thematic analysis

*Student, Department of Psychology, Kristu Jayanti College (Autonomous), Bengaluru, Karnataka, India, Mobile No: 9815174400

**Assistant Professor, Department of Psychology, Kristu Jayanti College (Autonomous), Bengaluru, Karnataka, India.

***Student, Department of Psychology, Kristu Jayanti College (Autonomous), Bengaluru, Karnataka, India.

Introduction

Neurodevelopmental disorders have experienced a worldwide increase with specific growth of ASD and ADHD so personalized treatment approaches become essential (National Institute of Mental Health, 2024). The prevalence rate of ASD in India stands at 1 in 68 children and primary school children show a 11.32% rate of ADHD as reported by Venkata & Panicker (2013, 2017). Research demonstrates that ADHD together with ASD share common characteristics of social impairment in interaction and communication skills. People usually experience challenges to interpret social signals and build interpersonal connections and perform usual social dialogue patterns (APA, 2016). Child psychologists assist parents both in the diagnostic process and therapeutic procedures plus extended

support operations because these conditions affect children and their families profoundly. The effectiveness of managing neurodevelopmental conditions through psychoeducation together with early intervention leads to lasting improvements while parental space-patronizing ability depends on their own understanding and willingness coupled with their mental and emotional state.

A theoretical framework helps provide a structure to analyze qualitative data and enhance rigor and validity by grounding interpretations in established concepts. Family centered Care (FCC) promotes a collaborative partnership between families and healthcare providers, with components like open communication, respect for diversity, and shared decision making. This approach is supported by organizations such as

the AAP and MCHB, ensuring medical decisions match the child's needs while also fitting their family and community contexts.

The Transactional Model of Child Development proposed by Sameroff reinforces FCC by highlighting the dynamic interplay between a child and its caregiving environment. It highlights the importance of the parent-child relationship, acknowledging the influence of neurological, psychological, and social factors on the child's development. Both models promote holistic care that considers the child in a broader context, emphasizing the importance of family centred intervention and support.

Objectives

- The assessment of unique case needs would be performed collaboratively with the child psychologist and child alongside their parents.
- To understand the challenges faced by parents of children with ADHD and ASD from the perspective of a child psychologist.
- To explore the subjective experiences of parents as perceived by child psychologists

Significance

This research examines the effects of family-centered neurodevelopmental care through professional interviews to provide usable information about parent-therapist collaboration and parent-child engagement. This research focuses on a specific field of study to discover essential themes which will improve pediatric mental health care and family intervention approaches in India as well as benefit practices across the industry.

Review Of Literature

Parental Experience and Challenges

The studies conducted by Battanta et al. (2024) along with Robinson and Yong (2021) demonstrate the difficulties which parents

encounter during ASD child care. The diagnostic processes tend to be drawn out and both parents and children must deal with high levels of fatigue and extreme emotional hardship. Research done by Sher-Censor and Shahar-Lahav (2022), talks about the importance of understanding parents' perspectives and their emotional needs. There is a connection between unresolved parental narratives to negative child outcomes.

Therapeutic Interventions and Family Dynamics

The study by Sohn et al. (2024) explores family therapy integration and Ghalonee et al. (2020) focuses on behaviour management training for its effects on parent-child relationships. These papers explain therapeutic interventions alongside discussions about techniques which strengthen families and increase parenting power along with mental wellness promotion.

Legal, Ethical, and Contextual Considerations

Etscheidt et al. (2012) addressed the legal and ethical complexities surrounding parental consent for child evaluation, with greater need for collaboration of multidisciplinary teams. Maternal and paternal coping strategies in India serve as the subject of investigation in Sinha and Rajan (2024). Stoll et al. (2021) and Bölte et al. (2024) pointed to the lack of research on multicultural perspectives of ASD and career development of neurodivergent individuals, respectively.

Gaps and Future Directions

Research identifies an important literary deficiency regarding experiences of child psychologists who assist neurodivergent families and children specifically in India. The field demands research to identify methods for supporting families together as well as applicable guidance for future child psychologists. Future research must develop extensive time-spanning multicultural studies and create evidence-based intervention methods to treat families who deal with these conditions.

Method

The study explored the experiences of professionals working with the families of children with ADHD and ASD in India. A purposive sampling approach was used to interview ten psychologists who held relevant qualifications and practice experience between two to fifteen years while ensuring participation from clinical psychologists and speech therapists and special educators. The team only stopped recruiting new participants once data saturation occurred. All participants in this research needed to hold a Master's degree in Psychology or higher alongside two years of professional experience serving neurodivergent patients. Conversely, the exclusion criteria specified that working professionals who do not work with children and psychologists who do not involve parents in the therapy setup were not eligible to participate. All participants granted consent before the researcher conducted interviews between 60 minutes using a semi-structured format which were recorded. The transcribed interviews received thematic analysis according to Braun and Clarke's method as well as descriptive statistics assessment. Expert validated semi-structured interview questions combined with informed consent enabled both demographic acquisitions and participant qualitative findings. All ethical protocols related to confidentiality together with data management were maintained consistently throughout research activities

Results & Discussion

Eight themes, followed by 31 subthemes, were identified: parental involvement, psychoeducation, challenges to therapeutic practice, dynamics of parenting, evidence-based practices and holistic approaches, therapeutic characteristics, digitalization of child psychology, and short- and long-term goals.

Parental Involvement, the framework demonstrates how parents remain essential for total development of children who have ASD and ADHD. The theme divides into three

subcategories including "Collaborative Approach" that emphasizes how child-parent-therapist unity produces complete care and detects patterns with adverse effects.; "Active Parental Participation," explains the significance of parent involvement in real-time while highlighting their special knowledge of their child's actions; and "Mapping Progress," emphasizing tracking of goals through progress sheets and check-ins to provide continual parental support and measurable results. . A child's therapeutic success and overall development becomes confirmed through consistent active involvement of parents.

Psychoeducation, offers accessible education to parents about their child's neurodevelopmental disorders using understandable language for higher understanding and supportive involvement. Awareness acts as a subtheme that focuses educational methods on the parents' current knowledge while "Explaining concepts with rationale" emphasizes the need to explain scientific purposes behind interventions. Therapists aim to strengthen parents by showing the real life benefits of therapy and utilizing different educational methods, such as workshops, success stories and lectures to ensure understanding and active participation.

Challenges to Therapeutic Practice, highlights various external factors that impact the delivery of effective therapy for children with ASD and ADHD in the Indian context. Subthemes include the "Dichotomy of working with children," Working with both children and their families requires professionals to manage the dual dimensions of early intervention benefits against time-intensive assistance delivery. "Managing unrealistic expectations" discusses difficulties of setting the groundwork of reality between what the parents are expecting and what the child's abilities truly are.

Financial Constraints continue to present itself as a challenge in terms of therapy

affordability even though because healthcare coverage improves. Prices remain fixed even if the client clearly needs it the most. There are no regulatory bodies or set protocols which point us towards the “*Institutional Limitations*” that creates a distance between effective care and the population in need. Lastly, “*Addressing Social Stigma and Normalizing Differences*” addresses cultural differences and their understanding and extent of acceptance of neurodevelopmental conditions.

It is quite a toll to be a parent, let alone to a child with special needs. This is what we discussed in the theme of “*Dynamics of Parenting*”. Childhood emotional security depends on how the parents raise them together with differences at play based on the SES and home environment. Every parent responds to their child's diagnosis differently while also feeling guilty about their diagnosis and dealing with caregiver fatigue which comes from a sense of unsaid responsibility. Child psychologists have considered therapy rooms as a space for expression, for not just the child but also the parent. If required, they are also suggested for individual therapy which provides them with additional support and helps them with their burnout which will in turn make the home environment healthier.

Evidence Based Practices and Holistic Approach, sheds light on the importance of making use of frameworks and comprehensive evaluations that have been long established methodologies for effective intervention. . The accuracy of diagnosis depends on a detailed case history and conceptualization of the patients which typically serves as the groundwork for multiple sessions over several days. Individualized care requires a personalized approach. The proper implementation of corrective feedback requires child psychologists to train parents well into implementing appropriate practices, not just in the therapy room, but also back in the home environment for consistent strength building.

Therapeutic Characteristics, reminds us of the skills necessary to be a therapist, even more so when working with children with ASD and ADHD and their families. Working with children means gaining their trust by being your most authentic self, someone they would confide in. Clear age appropriate communication along with transparency provides a sense of comfort to the child and sense of control to the parent, keeping them in the loop and not just being behind closed doors. Maintaining confidentiality and empathy in Language that maintains confidentiality as well as empathy is supreme and requires the therapists to communicate diagnoses and progress in an understandable and sensitive manner. Working with children and families is not everyone's cup of tea, only through the amalgamation of professional education and direct clinical work experience, can you be properly equipped and have the necessary competence to work with this population.

Digitalisation in Child Psychology, explores the complicated role of technology in therapy for children with ASD and ADHD. Psychologists choose to use digital tools such as AVAZ and Autism 360 along with several auditory-visual learning apps are used as supplemental resources that support their practice of traditional human-based interactions. These therapeutic interactions often include occasional use of virtual reality and sensory integration tools. Therapists systematically manage screen time because excessive stimulation from screens is one of the central concerns from the parents. Therapists find it challenging when parents use Internet searches and not listen to expert guidance and what works for their child. Child psychologists promote DIY projects as well as creative activities that cater specifically to the needs of children with ASD & ADHD because they provoke sensory experiences that help children interact beyond screen usage.

Strategic planning stands crucial for therapy of children with ASD and ADHD according to *Short- and Long-Term Goals*

because it addresses current and upcoming requirements. Therapists offer initial support through hand holding and being ever present soon leading to phasing out as the confidence grows. Children's treatment needs realistic targets while parents being aware about their child's capabilities and limitations. Parents take the role of second therapists, since they cannot forever depend on the therapist services, delivering steady help, as well as make the children more independent. For adolescents and pre-adults, vocational, skill-based, and occupational training has become a prime concern, focusing on working on strengths for future independence. Students need both planning and support while shifting to school environments because they typically operate through typical settings aided by Individualized Education Plans to promote smooth participation.

FCC and Transactional Models complement each other in research because they highlight the essential nature of supporting families and recognizing child-targeted development and caregiver health outcomes for whole-person healthcare. The findings reiterates the need of a family centered care approach that includes parents as co-therapists. The removal of financial and institutional challenges forms an essential priority. The work to establish awareness about ASD and ADHD and decrease related stigmas in India continues to advance. The research findings support previous academic work which recommends individualized multidisciplinary therapeutic methods (Sameroff, 2009).

Conclusion, Implications & Recommendations For Future Research

Child psychologists play an essential function to establish connections between professional therapy services and family-oriented support. The research themes demonstrate all kinds of mental health pros and cons that occur during therapeutic interactions when treating diverse families in Indian social settings.

Involving parents in the therapy setup not only improves the child's future outcomes, but also helps parents, giving them all that they need to support their child's progress outside of therapy sessions. Alongside, it also recognizes some major obstacles that present themselves including unrealistic expectations, financial difficulties and institutional limitations that delay the therapeutic intervention. The analysis elaborates on how child psychology needs enhanced structures and support systems in order to provide enhanced family-oriented therapy. The study demonstrates how child psychologists require flexibility to balance individual child requirements along with parental expectations in their professional practice. The findings will provide future psychologists with tested ways of improving parent-therapist partnerships, strengthening parent-child relationships, and fostering a long-lasting effect on the future of these families. This examination seeks to discover important themes that will help enhance pediatric mental health as well as establish research-focused ideas to promote healthcare system support for family-oriented interventions.

The field requires more studies about how therapist-parent partnerships shape patient development over time with focus on therapeutic methods suitable for different social economic groups. Additional funding for neurodevelopmental therapy combined with standardized training programs for child psychologists should be part of the policy recommendations.

Research should progress through studies about single father family dynamics as well as separate examination of autism spectrum disorder and attention deficit hyperactivity disorder effects during parent-child interactions while evaluating how parental techniques combined with technology influence Indian neurodivergent children during multiple time points and assessing autism's pandemic-related developments and school transition obstacles. Research needs to analyze the implications of

discovered findings about parents of children with neurodevelopmental conditions on child life integration and clinical decision-making practices as well as emotional distress management.

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Technological Innovations Transforming Mental Healthcare: A Global Perspective with an Indian Focus

Rachana Nagaraj*, Dr. Madhu Karnat S**, Dr. Swasthika Jain*** and Siri K.S****

Abstract

The article looks at how technology can help to address the growing challenges of mental health in the world and especially in India with several tech solutions like mobile apps, virtual reality, artificial intelligence and teletherapy that come out how well they're working, how easy they are to access and how they play out in different cultures

Taking inspiration from a range of research, government reports, and the experience of thousands of Indians, the authors look at what these technologies have brought in every country and seen how they're impacting individuals, communities and society. The findings provide compelling evidence that if proactively using digital tools help people with symptoms of depression and anxiety, they can feel better than when they didn't and can access better treatment through data-driven algorithms.

We are seeing in India great projects like Tele-MANAS, and many new mental health start-ups that are working very hard in making the infrastructure and social awareness more inclusive, but still there are some other issues that you need to address like digital literacy among people, reaching out to rural areas.

Finally, it concludes by saying that although technology can and should not replace face-to-face interaction and care, it can provide an excellent complement to the traditional mental health services. Ethical issues and cultural differences will need to be taken into account, and ongoing research is needed to make sure that these new technologies work, are inclusive and will last for the long term.

Keywords: *Mental Health, Technology, Digital Interventions, Artificial Intelligence, Accessibility, India*

**BSc Psychology Student, School of Liberal Arts and Sciences, RV University, Bengaluru – 560059, Karnataka, India.*

***Assistant Professor (Psychology), School of Liberal Arts and Sciences, RV University, Bengaluru - 560059, Karnataka, India. (Corresponding Author)*

****Assistant Professor, Department of Computer Science Engineering, School of Technology, GITAM (Deemed to be University), Bengaluru Rural District – 562163, Karnataka, India.*

*****Student (Psychology), School of Liberal Arts and Sciences, RV University, Bengaluru – 560059, Karnataka, India.*

Introduction

Mental health is of extremely high significance to well being and it affects social functioning, productivity and the quality of life. The public health impact of mental disorders is of international concern. The WHO estimates the 900 million individuals have mental disorders, mainly depression and anxiety. Low and middle

income nations, where quality care is unavailable, carry the highest burden of the mental disorder.

This crisis has an impact on the burden of disease and illness globally, not for an individual alone. Poor mental health professionals, stigma, and poor-quality services provide a treatment gap to millions with poor care (Kakuma et al., 2011).

The Evolution of Technology in Mental Health Technological Interventions in Mental Health

In spite of such challenges, technology has provided a silver lining by providing new concepts pertaining to accessibility and delivery of mental care. Ranging from virtual reality and mobile apps to artificial intelligence and wearables, there has been greater usage and deployment of digital technologies in greater numbers today. Such technology can make treatment more personalized by collating real-time data, diminish stigma, and enhance accessibility (Torous et al., 2020; Firth et al., 2017).

Review's Scope and Purposes

With particular reference to India, this review paper is a detailed report on the application of technology in mental health interventions across the world. It tries to answer the following significant questions:

1. What are the primary types of technology used in global mental health interventions?
2. What is evidence that these interventions are effective and cost effective?
3. How widely available are these technology tools globally, especially in LMICs such as India?
4. What are cultural and contextual determinants of technology adoption and implementation of mental health technology in India?
5. What are the most significant ethical concerns in applying technology in mental health care?
6. How best can technology be integrated into current mental health systems, globally and in India?
7. What are those innovations that will define the technological future of mental health? This is a systematic review, which looks for databases like PubMed and Scopus and critically evaluates the literature. It includes studies of the effectiveness, availability, cultural adaptation, and ethical issues of technology-delivered mental health treatments in India and other LMICs.

Technology is revolutionizing mental health by increasing convenience and efficiency in care. The subsequent section highlights some of the major technological trends transforming mental health around the world.

Mobile Apps Mental health treatments, including self-monitoring, mood management, cognitive behavior therapy, and mindfulness, have been made ubiquitous as a result of smartphones. By providing individuals with personal goals, monitoring, and psychoeducation, they allow individuals to be in charge of their mental health independently (Donker et al., 2013). There is also evidence that the utilization of mental health apps decreases depression and anxiety symptoms (Firth et al., 2017; Donker et al., 2013). Data privacy concerns, legislation, and app quality are a concern and must be considered along with advice gained (Donker et al., 2013).

AR and VR Virtual reality and augmented reality provide experiential immersion through simulation or augmentation of reality. They have tremendous potential in psychiatry to treat phobias and anxiety with exposure treatment, allowing the subjects to expose themselves to their feared objects in a safe environment (Freeman et al., 2017). VR/AR has been promising in therapy by allowing pain management, skill acquisition, and cognitive rehabilitation. Research has shown that VR/AR can enhance social functioning, reduce anxiety, and enhance cognitive functioning (Parsons & Rizzo, 2008; Freeman et al., 2017). They provide new and novel lines of alternative therapy.

AI and Machine Learning

Machine learning and AI are applicable to mental health because they analyse data to identify patterns. Chatbots provide talk therapy and provide easy access to therapists especially in the places where therapists are absent (Vaidyam et al., 2019). Early intervention is established by applying AI to identify individuals most likely to experience a decline in their mental health

(Torous et al., 2016). Machine learning, as Insel (2017) points out, can provide treatment recommendations based on the specific needs of the patients.

Mental health AI holds promise but needs to be dealt with sensibly so that it does not suffer from issues like algorithmic bias, data privacy, and overreliance. Technological innovation and people-oriented care need to go together.

Wearable Technology and Biosensors

Wearable sensors and biosensors monitor physiological indicators like heart rate and sleep. Physical and mental well-being is linked by relating these to self-reported mental well-being data (Faurholt Jepsen et al., 2019). They can be used to initiate early intervention and identify early warning signs of worsening mental well-being.

Wearables' potential in a clinical setting remains to be established. In order to convert the interpretation of the signals' meaning in mental health into practice, one must address challenges in information validity, user compliance, and signal interpretation.

Remote Care and Teletherapy employs internet and video technology to offer mental health services, extending access to rural and remote areas (Bashshur et al., 2016). The COVID-19 pandemic has also hastened the application of teletherapy, which illustrates its significance under crisis continuity care. Teletherapy has been found to be potentially effective for the treatment of mental disorders such as PTSD, depression, and anxiety based on research (Bashshur et al., 2016). There needs to be equal access to technology, as well as the capacity to overcome barriers such as the absence of nonverbal cues.

Global Views of Mental Health Technology

While its impact is varied geographically, technology has revolutionized mental health care as we understand it. Technology's application in mental health care in various places can be

explained in the context of culture, infrastructure, and expense. Allow us to further elaborate on the application and availability of technology in mental health care.

Adoption and Access to Technology

Internationally, the digital divide is a gigantic problem for the full use of technology in mental health. In low- and middle-income nations, access is restricted by sluggish internet, expense, and low digital literacy (Lund et al., 2012). The divide leads to a higher rate of online treatment and mental health mobile applications in high-income nations (Naslund et al., 2017). Because at times it is difficult for low-income or marginalized groups to make use of technology, healthcare disparities are compounded in higher-income nations (Naslund et al., 2017). We must address increasing infrastructure, reducing the expense of technology, and increasing the level of digital literacy among all individuals to address these problems. Cultural and Contextual Factors Perceptions of mental health, receipt of treatment, and treatment itself are highly culture-dependent. Chowdhary et al. (2014) say that technology-based treatments need to be flexible enough to be able to cater to the numerous groups that make up a population and align with local practices. Failure to consider cultural differences adequately can result in inappropriate treatment, reduced patient compliance, and increased health inequities. For example, individualistic mental health practices may not be as effective in societies that place great value on social support (Chowdhary et al., 2014). Moreover, language, stigma, and religious beliefs may determine the degree to which individuals accept tech-based solutions. According to research, culturally adapted treatment that is written in easy terms and images, engages local mental health personnel, and is more likely to work (Chowdhary et al., 2014). Examples from anywhere in the world We can clearly observe technology strengths and weaknesses for mental health by examining its deployment across geographical divides. Applications such as Wysa and YourDOST on

phones are gaining speed in India, where the need for mental health care is a pressing necessity, by making care cheaper and accessible. Both technophobes and experts in technology find themselves attracted to such applications due to the self-help information they provide and anonymity offered (Sharma et al., 2021). Text message mHealth interventions to improve anxiety and depression, for example, can complement mental health care and decrease stigma in sub-Saharan Africa (Lund et al., 2012). Telepsychiatry in Latin America, however, is enabling individuals to access care without having to travel very far, making specialists' access more accessible, especially in rural areas (Bashshur et al., 2017). Such examples illustrate the potential for technology in mental health care, while also showcasing that interventions will have to be adapted to fit into local situations.

Cultural and Contextual Influences

How people view mental health, receive care, and are treated depends heavily on culture. Tech-based interventions need to be flexible enough to reach the different groups within a population and be compatible with local practice, Chowdhary et al. (2014) goes on. Cultural differences cannot be escaped because this will result in negative treatment outcomes, patient non-compliance, and worsening of health inequities. For example, individualistic conceptions of mental health will be less successful in societies where social support is highly valued (Chowdhary et al., 2014). Moreover, it is possible that language, stigma, and religion may influence the degree to which people adopt tech-based interventions. Culturally adapted therapies that use simple language and drawings, engage local mental health staff, and have a high success probability (Chowdhary et al., 2014), according to research.

Examples from Around the World

We can quite easily see the benefits and pitfalls of technology for mental health by seeing how it is being utilized across the globe. Wysa

and YourDOST apps are becoming more mainstream in India, where there is a critical shortage of mental health care, by making the price affordable and the access greater. People with all levels of comfort with technology are drawn to these apps because they provide self-help content and anonymous counseling (Sharma et al., 2021). mHealth interventions, including text messaging for depression and anxiety, have the potential to improve mental health outcomes and decrease stigma in sub-Saharan Africa (Lund et al., 2012). Telepsychiatry in Latin America, on the other hand, is allowing people to gain access to care without having to go very far, making specialists more accessible, especially in rural communities (Bashshur et al., 2017). These examples show both the promise of technology for mental health as well as the necessity to adapt interventions to local circumstances.

Challenges and Looking Ahead

While technology in mental health is so promising, we also need to be cognizant of its challenges and complexities and learn how to address them. We will be addressing the limitations, ethics, and future of technology in mental health in the next section so that we can build a balanced view regarding its role.

Evidence and Evaluation

It's an ongoing process to develop a robust body of evidence for the advantages of technology in mental health. Some early studies show promising results for different methodologies but large studies, including larger trials, are needed to definitively establish the potential long-term effectiveness of these interventions (Donker et al., 2013). It can be difficult to evaluate these interventions as they emerge because technology is developing at a phenomenal pace. For us to make informed decisions, studies need to keep abreast of these developments. Quality of data are also an issue in a significant way because while self-report data are useful, self-report data are biased. Outcomes are more intelligible when supplemented with

more objective data from devices (Faurholt Jepsen et al., 2019). We also need to think about the extent to which outcomes of a given study will generalize to other groups. Ethical Issues Technology use for mental health has made ethical issues more complex that must be thought through very carefully. Because online data on mental health can be tampered with, particularly in today's era where everything is viewed through the prism of a capitalistic worldview, where boundaryless connectivity also means as permission to transgression. maintaining data privacy is absolutely vital. There is a need to employ rigorous privacy practices (Luxton et al., 2016). Informed consent is also crucial, prior to agreeing to participate, the users need to be made aware of the risks and well-informed of the forthcoming of the data collection process, and what use will be made of it (Luxton et al., 2016). In addition, bias in AI technologies has the potential to widen existing health disparities. We need to test algorithms thoroughly and be transparent and honest about the data we collect and use to get things right (Vayena et al., 2018). Finally, we need to be careful not to over-rely on technology to the exclusion of human relationships, as technology needs to supplement, not substitute, human interaction in mental health care.

Tech Innovations in India

India's scope in integrated tech enabled mental health is buzzing, with solutions catering a wide range of individualistic and collective needs.

1. Mobile Apps: There are many mental apps oriented to keeping track of health and well being out there that have features like guided self-monitoring and therapeutic suggestions. Wysa, YourDOST, and ePsyclinic are a few great examples that make mental health care affordable and accessible through anonymous support (Sharma et al., 2021).

2. Artificial Intelligence: AI plays a very interesting role, AI chatbots like Woebot and Wysa create a platform to facilitate ai based

conversational support, which could ease the load on practicing therapists and mental health care practitioners. AI is also employed for spotting and predicting individuals who might be at risk of mental health issues, allowing for earlier interventions. As the saying goes “prevention is better than cure” (Torous et al., 2016).

3. Teletherapy: Telepsychiatry and online counseling platforms are fulfilling much of troubled individuals needs and is gathering popularity, especially in rural areas where mental health experts are scarce and areas where help cant reach in time. These platforms enable remote consultations, sessions and inclusive help making it easier to access care (Bashshur et al., 2017).

Challenges and Solutions

The hope and potential for the future is immense, technology integrated with Mental health seems not only promising but revolutionary if executed rightly. There still remains some blind spots and hurdles to overcome

1. The Digital Divide: Many people today, especially in remote areas, either dont have access to unlimited consistent network or they arent equipped with the appliances that these technologies need to work proficiently with handicaps their connectivity to the world and to such initiatives. Improving tech databases and internet infrastructure while making devices and appliances more affordable come to light as primary measures to be taken in an attempt at closing the digital divide.

2. Cultural Barriers: With a country as diverse as India, it comes as no surprise that stigma and prejudices against seeking mental care is prevalent. This not only limits people's knowledge on such sensitive matters, it also silences individuals who want to speak up and seek such care, An attempt to make this criteria universally approached to with the care it deserves could be fostered through conducting culturally appropriate interventions, curated and created in collaboration with local communities and mental health experts where these

individuals understand their audience demographic and bring forth its dire seriousness, such measures could be a positive step towards normalising mental care.

3. Data Privacy: In a day where sensitivity has lost its instinctive value, people capitalise on other's weaknesses and exploit it in profitable ways. Protecting user data becomes a major task as these sensitive data and information in the wrong hands could cause serious damage to the individual particularly with sensitive mental health information. Strong privacy measures are vital to build trust and protect an individual's data while building a true sense of good will and customer/client friendly platforms.

4. Integrating with Traditional Care: Older generations relate technology with something computed and devoid of any humanistic values or instincts, whilst care is most often related with the elderly. How do we combine the two where any individual of any age feels cared for without the hint of the older opinion of technology and its outcomes. This is a challenging task that requires a true blend of tradition and technology under the current mental health care systems. This can be approached by trying to augment professional training slightly inclined towards client oriented/personalised care suggestions and in trying to pick up on personal cues that could be important to the client, easy data sharing, and supportive policies in place.

All these challenges and the pathway towards its solution cannot be treaded alone. These measures calls for cooperation between the government, healthcare providers, tech developers, as well as community organizations. These communities must come together and proactively make sustainable upliftments in infrastructure, affordability, and culturally relevant solutions as a key to realizing the true potential of technology for mental health in India.

Discussion

Critical Analysis of Technological Interventions

We have looked into the positives and the hope technology instills for the coming revolution of mental health care. Its also important we look into the short comings of these positives to help build a better more inclusive and sustainable platform for the perfect interplay between technology and mental health care. Some of the short comings are:

1. Mobile Apps: Mental health apps are pioneering for its easy useability and how it enables an individual to have access to self-management at the tips of their fingers. This easy access to calmness has proved to reduce symptoms of depression and anxiety, and it acts as a perfect partner when used alongside therapy. There still remains a big difference in terms of the quality of the app as they still arent well regulated, some violate privacy concerns, and requires careful and thorough testing and adherence to guidelines

2. Virtual and Augmented Reality: VR and AR can be a game changer in therapy and the kin of results it can yield. VR/AR equips the client to face their deepest fears and transport to places, in and out of simulated confrontational or triggering situations and places. It helps reduce anxiety and improve social thinking skills. This however comes at a cost, these appliances are quite expensive and there is not much research evidence on its success.

3. Artificial Intelligence: AI being an integral part of today's technological wave has an impactful role to play in this integration. It aids early detection and predicting behavioural pattersns after studying and analysing substantive amounts of data and also tailors personalised solutions and first aid care for critical situations. While these chatbots offer reliance in places where resources are limited it has some sensitive flaws such as privacy boundries, algorithm bias, over reliance on technology and a very owner centered responses

and care that could sometimes be misunderstood as encouragement.

4. Wearable Devices: Wearable tech plays well with the upcoming generations as well, with high end technology and real accuracy, it also promises to track physiological signals in real-time, it gathers these stimulus and crafts makes informed insights into the working of the mind and the body and their vital interlink. These cause oriented activity helps identify problems early. Unfortunately issues like data accuracy, and user compliance needs to be addressed to unlock the optimum level of such technology.

5. Teletherapy: This is one of the most convenient opportunity to access free mental healthcare, especially in areas where resources are limited. Research has explored the effectiveness of teletherapy as to face to face therapy and has found the former to be just as effective, even with such efficient channels of help laid out problems like equal access, and the true behaviour depicted through non verbal cues, appearance etc are masked limiting the knowledge about the client based highly out of their descriptions. These might limit or hide valuable insights.

Ethical Implications: Integrating technology in mental health nonetheless poses complex ethical questions such as privacy protection, data security is highly crucial. Users and trusters should give informed consent and be aware of the proceedings that they would have to abide by and what is going to happen to their personal data and how trust worthy the professional is. The bias predominantly found in AI must be addressed as it has potential to worsen the situation or initiate health disparities. Finding the right fulcrum point to balance mental health and technology need not be at the perfect center, mental health courted by human care is always going to outweigh technologically crafted aids, we must find the blending point where both these sides ultimately

curate the best treatment for building better lives and therapeutic relationships.

Conclusion: Global and Indian Perspectives

From the literature of this paper we can definitely say that technology has significant potential to influence and alter mental health services globally and in India. As each individual has a mind of his own, we must move a step further from thinking about mental health benefits collectively to a more personalised channel of servicing which is more individualistic, accessible and trust worthy. Through technologies such as VR/AR, AI, smart health apps these goals seem highly achievable. Research has proven that such technology can truly lessen the symptoms of anxiety and depression, helping to aid the gap between low healthcare access to professionals. Reality simulators such as VR/AR can create engaging therapy experiences with prompt initiations, another potential filled aspect is AI's capacity to anticipate problems that would truly revolutionise healthcare. In a country like India such revolutionary and force driven purpose poses both challenges and opportunities. But these challenges are taken graciously as it promises inclusivity and fosters a deeper orientation for care, a dedication to maximising such opportunities is shown by initiatives such as Tele - MANAS helpline and the MANAS app. This initiative creates a care filled umbrella shade for anyone hoping to get mental help by providing professional care a call away. However equitable reach, results and cooperation must be ensured on all ends while combining these innovations with sensitivity, traditional care and cultural sensitivity with a strong focus on data security.

Future Outlook & Recommendations

Technology in mental health appears to have a promising future. Advances in AI, machine learning, and definitely leads to a more personalised, individualistic and diverse core of care. To truly be able to access this potential that

technology harbours, we must abide by ethical research and prioritise an individual's need above all. To manage and make a perfect working machine of a care system we must ensure, mental health professionals, researchers, legislators, and tech specialists need to work together. Protecting universal access and data privacy will significantly contribute to the accessibility of advancements in mental health and foster a deeper true sense of trust and bond promising non-violating vulnerability. When people use technology responsibly, they can surely get the help they need and prioritise their mental health that caters and leaves a lasting positive impact in every other facet of their lives. We can make the world healthier and open minded while we work on working together with compassion. The time has come where technology by man is for man and its never been so critical and in need as people all over the world have a voice and this voice needs to be heard and catered to with utmost care and compassion as we the people constitute the system we sustain in and by cooperating and behaving morally we pave a way for generations to come that prioritises perfecting mental health services and embraces diversity and does not attempt to categorise individual to broader needs but must be equipped to cater to each and every need, thus individuals thrive, communities thrive and we survive.

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The Role of Employee Wellness Programs and Perceived Organizational Support in Enhancing Organizational Performance

Harshitha K*, Chidananda H L**, Ranjith Kumar S***, Madhu Karnat S****

Abstract

This study examines the impact of Employee Wellness Programmes (EWP) and Perceived Organizational Support (POS) on Organizational Performance (OP) among employees working in the financial sector of Bangalore's corporate environment. Drawing from the theoretical underpinnings of human capital and social exchange theories, the research aims to determine whether investing in employee wellness and fostering a supportive work culture leads to tangible improvements in organizational outcomes. A structured questionnaire was distributed online, yielding 478 responses, of which 461 valid entries were retained for analysis after screening for completeness and consistency. The constructs for EWP, POS, and OP were adapted from Peña et al. (2024), ensuring content validity and relevance. The internal consistency of the scale was confirmed through Cronbach's alpha, with all constructs scoring above 0.80, indicating strong reliability. The model summary revealed an R-value of 0.734 and an R² of 0.538, showing that 53.8% of the variation in organizational performance could be explained by the two predictors. ANOVA results confirmed the overall model significance ($F = 266.959, p < 0.001$). Coefficient analysis indicated that both EWP ($\beta = 0.443, p < 0.001$) and POS ($\beta = 0.353, p < 0.001$) had significant and positive effects on OP, with wellness programmes exerting a slightly stronger influence. These findings highlight the strategic value of implementing structured wellness initiatives and fostering a culture of organizational support. The study contributes to existing literature by empirically validating the role of human resource practices in enhancing performance and offers practical guidance for organizational leaders aiming to improve employee well-being and drive business success.

Keywords: Employee wellness, perceived organisational support, organisational performance

*Assistant Professor, School of Business, RV University, Bangalore

**Associate Professor, School of Economics and Commerce, CMR University, Bangalore

***Professor, School of Economics and Commerce, CMR University, Bangalore

****Assistant Professor, School of Liberal Arts and Sciences, RV University, Bengaluru,

Introduction

In today's highly competitive and rapidly evolving global business environment, organizations are increasingly recognizing the pivotal role of human capital in driving long-term success. Employees not only acts as a operational contributors but also as strategic agents, and their motivation, mental wellbeing and perceived value in the organisation significantly contribute to the organisational performance (Yadav & Singh, 2023). Human capital theory strongly makes this argument: Firms, which will succeed all the more against

their competitors on attributes of innovativeness, efficacy, and agility, will be firms, which will constantly invest their workers' physical as well as psychological health (Kundu & Gahlawat, 2022). Organisational performance has been extended during the last two decades from a narrowly conceived economic indicator into a multi-dimensional entity as reflected by employee participation, employee involvement, innovativeness, as well as sustainability (Zhang et al., 2023). Such extension has been facilitated by Sustainable models of business having partly underpinned the developments of organisational performance concept, which involve a balancing

of economic quest with social responsibility, employee welfare as well as green consciousness (Elkington, 1998; Stahl et al., 2023). Employee well-being emerges as a key driving force of organisational vitality as well as competitive advantage under this paradigm. (García-Pardo et al., 2024).

A crucial part of this paradigm shift is the Employee Wellness Program (EWP) with a view to fostering employee health and quality of life through a standardized policy set, services, and practices. EWPs typically covers various dimensions such as stress management, lifestyle education, mental health services, ergonomic interventions, fitness initiatives and preventive health check-ups (Pronk, 2022). These programs will facilitate the organisations not only to improve health outcomes but also to boost productivity by reducing absenteeism and enhancing job. Recent research has confirmed that companies that implement well-designed wellness programs experience better attention rates, reduced healthcare costs and improved employee morale (Cai, Yii, & Pathak, 2024). However, wellness programs do more than improve physiological outcomes—they shape the employees' perception about the organization. One of the key psychological constructs influenced by wellness programs is Perceived Organizational Support (POS), which refers to the extent to which employees believe that their organization values their contributions and cares about their well-being (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). POS has emerged as a critical determinant of numerous positive organizational behaviors, including discretionary effort, organizational citizenship behavior (OCB), and enhanced performance (Kim & Park, 2024). Research has increasingly shown that when employees perceive a high degree of organizational support—especially through visible wellness investments—they tend to exhibit higher levels of commitment, loyalty, and engagement (Kumar & Rao, 2024). A study conducted by García-Pardo et al. (2024) using a

sample of Spanish firms found that wellness programs significantly enhanced POS, which in turn influenced organizational outcomes such as team performance and innovation. Similarly, a recent investigation by Al-Taie and Khattak (2023) found that perceived support mediated the relationship between HR practices and innovative behavior, confirming the strategic importance of fostering support perceptions within the workforce.

The direct linkage between Employee Wellness Programs and organizational performance has also gained scholarly attention. Henderson et al. (2024) identified that companies with integrated wellness strategies reported fewer cases of presenteeism and burnout, leading to quantifiable productivity gains. In their large-scale study across sectors in Europe, they concluded that wellness programs, when implemented with consistency and strategic intent, act as a performance enhancer rather than a cost center. Notably, organizations that treat wellness as a strategic initiative—aligned with corporate values and leadership support—achieve more profound effects compared to those that adopt it as a compliance activity or employee perk.

Perceived Organizational Support further amplifies these effects. POS creates a psychological contract where employees internalize the organization's commitment and reciprocate through behaviors aligned with organizational goals (Baran, Shanock, & Miller, 2012). These behaviors include enhanced problem-solving, lower turnover intentions, and greater adaptability to change. In fact, in the post-pandemic work environment characterized by uncertainty and hybrid working models, the role of POS has become even more critical in retaining top talent and maintaining operational continuity (López-Cabarcos et al., 2022). While a considerable body of literature addresses the independent effects of EWPs and POS, fewer studies have integrated both constructs into a single framework aimed explicitly at enhancing

organizational performance. This omission is significant, as wellness programs are most effective when embedded in a culture of organizational support rather than implemented as isolated interventions. Moreover, performance benefits are often maximized when employees both experience wellness initiatives and interpret them as genuine expressions of employer care (Sun & Bunchapattanasakda, 2019). It is highly essential to assess the strategic significance of employee wellbeing and perceived organisational support in enhancing the organisational performance. There is an increasing demand for integrative models that quantify and connect the tangible impact of wellness-oriented HR practices with broader organizational goals. Such understanding is critical for organizational leaders, particularly in industries facing rising healthcare costs, talent crunch, and competitive pressure to sustain high performance.

This study addresses this gap by empirically examining the direct effects of Employee Wellness Programs and Perceived Organizational Support on Organizational Performance. The research is grounded in the intersection of human capital theory and social exchange theory, both of which argue that investments in people and their perceptions of reciprocity fundamentally drive sustainable competitive advantage (Cropanzano & Mitchell, 2005; Yadav & Singh, 2023). This approach allows one to better understand how wellness initiatives, if perceived as legitimate and compatible with corporate values, can trigger high-return employee behavioral reactions with matching performance benefits.

Literature review

Employee Wellness Program and organisational performance

Employee Wellness Programs (EWPs) are workplace initiatives created with a focus on fostering employees' physical, emotional, and social health through fitness programs, mental health services, lifestyle education, and health

assessments. Employee Wellness programs not only address individual health concerns but also serve as strategic intervention for enhancing organizational performance. A growing body of empirical research has established that comprehensive EWPs are positively associated with improvements in employee morale, reduced absenteeism, and increased productivity, all of which contribute directly to organizational effectiveness (Pronk, 2022; Cai, Yii, and Pathak (2024) established that wellness programs have a high positive influence on job performance and reduced presenteeism among service workers. Moreover, organizations that incorporate wellness strategies into the corporate structure benefit from increased employee engagement, reduced turnover rate, and increased innovation, all of which are crucial determinants of competitive performance (Zhang et al., 2023). In a longitudinal examination, García-Pardo et al. (2024) established that repeated wellness interventions generated measurable gains in team effectiveness and organizational productivity. Moreover, wellness programs promote organizational citizenship behaviors, thus enhancing collaboration and alignment with long-term strategic goals (Kim & Park, 2024). Financially, organizations have realized substantial cost savings through reduced healthcare spending and reduced insurance claims due to proactive health management practices (Henderson et al., 2024). As such, when properly implemented and supported by organizational leadership, Employee Wellness Programs (EWPs) become drivers for performance enhancement, hence making employee well-being a core component of business strategy rather than an add-on perk. Based on the above discussion, below hypothesis is framed

Perceived Organizational Support and organisational performance

Perceived Organizational Support (POS) refers to employees' belief that their organization values their contributions and genuinely cares about their well-being (Eisenberger et al., 1986).

As a psychological construct, Perceived Organizational Support (POS) is central to framing employees' attitudes, intrinsic motivation, and workplace behaviour. Recent empirical studies have increasingly highlighted POS as a key determinant of performance at the organizational level through its effects on a range of employee outcomes such as job satisfaction, affective commitment, engagement, and proactive behavior (Kurtessis et al., 2017). Organisations with high support perceptions tend to reap employees with high levels of discretionary effort and initiative-taking of an extra-role nature, contributing consequently to enhanced productivity and innovative capability (Kim & Beehr, 2023). In addition, POS has been found to foster emotional attachment and a sense of interior belongingness at the employee level, which, apart from attenuating turnover intentions, also fosters cooperation at a relationship level of interpersonal collaboration and team harmony, consequently enhancing organisational effectiveness (López-Cabarcos et al., 2022). In a recent inter-sectorial study, Kumar and Rao (2024) found that firms with high POS scores had stronger strategic alignment, enhanced employee performance indices, as well as enhanced overall profitability, highlighting support-oriented human capital systems' value. POS has additionally been found beneficial particularly under dynamic or uncertainty-laden business settings, where adaptability and resilience on employee part become paramount. According to a study by Zhang et al. (2023), employees with high POS cope with pressures and stay committed even during organisational metamorphosis or crisis situations. These results cumulatively support even further that a supporting organisational climate is an ethical as well as a strategic imperative under contemporary knowledge economy and globalising markets. Organisations with deliberate infusion of POS into their leadership, communication, as well as HRM practices tend to foster trust, loyalty, as well as prolonged high performance. Therefore, fostering employee perceptions of support can be a long-

term investment with returns in terms of organizational success and sustainability. Based on above discussion, below hypothesis is framed

Hypothesis

H₁: Employee Wellness Program significantly impacts on organisational performance

H₂: Perceived Organisational Support significantly impacts on organisational performance

Methods

In alignment with research objectives of understanding the influence of Employee Wellness Programmes (EWP) and Perceived Organisational Support (POS) on Organisational Performance within finance-oriented corporate professionals of Bangalore, a quantitative, cross-sectional research design was adapted with an eye on methodological strength and empirical exactness. A structured, self-administered questionnaire was adapted as the primary data collection instrument, which was administered online via Google Forms within finance-oriented corporate professionals. Convenience sampling was used to sample under time and resource constraints. 461 usable and completed responses were retained following diligent screening of missing data and inconsistencies, from 478 received responses, with a resultant usable response rate of 96.44%. In a bid to achieve theoretical propriety and content validity, EWP, POS, and Organisational Performance constructs and their respective measurement items were adapted from the established instrument designed by Peña et al. (2024). The EWP construct was comprised of nine statements which captured physical and psychological wellness practices at the organisational level, such as 'I feel I can be fit in my present job' and 'Management at this organisation expects employees to engage in physical activities.' POS was comprised of ten statements intended to assess how much employees perceived organisational care and value added as a consequence of their efforts, as exemplified by statements such as 'The company

makes efforts toward its employees' well-being' and 'The company considers its employees' interests and goals.' Organisational Performance was assessed with five indicators on the basis of perceived competitive and operational advantage, such as 'I know my company has competitive strengths based on its productivity.' Each was self-rated on a five-point Likert-type scale ranging from 1 (Strongly Disagree) through 5 (Strongly Agree) as a means of capturing

respondent agreement strength of differing intensities. To assess internal consistency and verify scale reliability, Cronbach's alpha coefficient was calculated at each level of each of constructs, all of which reached the 0.70 mark, satisfactorily confirming high reliability. Hypothesis testing as well as inter-relationships between variables was conducted with a procedure of Multiple Linear Regression using SPSS Version 23.

Table 1

Reliability Analysis

	Constructs	No. Of. Items	Cronbach's Alpha
1	Employee Wellness Programme	9	0.896
2	Perceived Organisational Support	10	0.802
3	Organisation Performance	5	0.815

Source: Survey data

According to the data in Table 1, the internal consistency for all three constructs in this study is quite strong. The Employee Wellness Programme achieves a Cronbach's Alpha of 0.896, which clearly indicates excellent reliability. Perceived Organisational Support and Organisational Performance show values of 0.802

and 0.815, respectively—both comfortably above the standard 0.70 threshold commonly accepted in research. These results suggest that the measurement instruments used for each construct are indeed reliable, providing consistent and dependable outcomes when capturing participants' responses.

Table 2A

Impact of perceived organisational support and employee wellness programme

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.734 ^a	.538	.536	2.20860
a. Predictors: (Constant), Perceived Organisational Support, Employee Wellness Programme				

Source: Survey data

From the data in Table 2a, it's clear that both Employee Wellness Programmes and Perceived Organisational Support play a substantial role in shaping Organizational Performance. The reported R value of 0.734 indicates a notably strong positive correlation. Meanwhile, the R Square value of 0.538 suggests

that these two predictors together account for 53.8% of the variance observed in organizational performance. The Adjusted R Square stands at 0.536, which reinforces the reliability of the model, even after adjusting for the number of predictors involved. Overall, the findings emphasize the critical impact of wellness initiatives and a supportive organizational climate on enhancing performance outcomes.

Table 2B

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2604.405	2	1302.203	266.959	.000 ^b
	Residual	2234.081	458	4.878		
	Total	4838.486	460			
a. Dependent Variable: Organisational Performance						
b. Predictors: (Constant), Perceived Organisational Support, Employee Wellness Programme						

Source: Survey data

The ANOVA results in Table No. 2b confirm the statistical significance of the regression model examining the impact of Employee Wellness Programme and Perceived Organisational Support on Organizational Performance. The F-value of 266.959 with a significance level of 0.000 indicates that the model is highly significant and not due to random chance. This implies that the combination of the two independent variables meaningfully contributes to explaining the variation in organizational performance. Therefore, the regression model is valid and suitable for further interpretation and supports the study's objective of examining performance-related outcomes.

Table 2C

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.382	.812		1.702	.089
	Employee Wellness Programme	.267	.027	.443	10.030	.000
	Perceived Organisational Support	.206	.026	.353	7.995	.000
a. Dependent Variable: Organisational Performance						

Source: Survey data

The regression coefficients outlined in Table 2c provide compelling evidence of the statistically significant and positive influence that Employee Wellness Programmes (EWP) and Perceived Organisational Support (POS) exert on Organisational Performance. The unstandardized coefficient for EWP ($B = 0.267$, $p < .001$) suggests that, holding other variables constant, a one-unit increase in wellness initiatives leads to a 0.267-unit enhancement in organizational performance, thereby underscoring the critical function of wellness efforts in optimizing workplace outcomes. Likewise, POS indicates a significant performance influence ($B = 0.206$, $p < .001$) such that increased perceived support is associated with increased employee efforts toward organizational goals. Standardized regressions (Beta) also point this relationship out, revealing EWP ($\beta = 0.443$) has a greater relative influence compared with POS ($\beta = 0.353$). These empirical findings strongly correspond with established research, like Pronk (2022), illustrating how well-structured wellness initiatives strongly promote employee health, productivity, and reduce absenteeism, ultimately producing improved organizational results. Also, Kim and Beehr (2023) found POS produces intrinsic motivation and job involvement, which, through psychological empowerment and job satisfaction mediators, drive performance. While literature has nuanced perspectives as well, Saks (2022) argued POS produces positive employee

attitudes like trust and organizational commitment, yet a direct performance relationship may have contextual antecedents like leadership strength or reward practices as a moderator. Also, Li and Zhang (2021) recommended wellness initiatives, if not designed adaptively based on fluctuating employee demands, may produce diminishing returns, thus calling into focus dynamic design of initiatives and continuous reinforcement by managers. Despite these qualifications, this investigation's findings confirm strategic potential of EWP and POS within organizational systems, supporting theoretical frameworks based on Social Exchange Theory and Human Capital Theory. Such constructs must not merely view themselves as peripheral or ancillary HR functions but key mechanisms by which improved performance, engagement, and competitive advantage can incrementally be constructed over time. Embedding wellness and support into organizational culture isn't about employee happiness alone, however, but a deliberate approach toward sustainable and measurable performance excellence.

Conclusion

In reaction to building attention on employee well-being and organisational support as drivers of core performance, this research has investigated how Perceived Organisational Support (POS) and Employee Wellness Programmes (EWP) contribute to Organisational Performance (OP) within Bangalore's corporate financial sector. Energised by human capital theory's fundamental tenets and social exchange theory, this research discovers efforts on employee health and perceived care from employers aren't complementary at all—but core drivers of sustainable business outcomes. The statistical tests corroborated that both EWP and POS had a considerable influence on organisational performance, with wellness initiatives remaining the stronger predictor. These findings highlight that whenever an organisation can be perceived as visible investments into

employees' physical and psychological wellness, and whenever support is perceived as authentic, it has a two-way influence—manifesting as enhanced motivation, increased participation, lowered absenteeism, and improved role performance. These findings highlight a growing recognition that placing employees at the core of company policies lays the groundwork for organizational flexibility, resilience, and a strong market stance. From an academic standpoint, this research adds to the ongoing discussions in sustainable human resource management by providing real-world evidence of how cohesive wellness and support programs drive business effectiveness. For industry professionals, especially in demanding sectors such as finance, the insights emphasize the importance of integrating health and support initiatives directly into a company's core strategy rather than treating them as secondary or optional measures. Viewed through a societal perspective, the study suggests that promoting well-being at work can reduce public health expenditures and improve community health by nurturing more robust and healthier workforces. Ultimately, the research makes it clear that sustained support from organizations and thoughtfully designed wellness efforts are essential—not just perks—for innovative, successful companies dedicated to delivering enduring value for all their stakeholders.

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Psychological well-being in empty nesters in retirement and old age homes: A qualitative study

Srilakshmi Bhagam* and Dr Sangeeta Bhamidipati**

Abstract

Purpose: The study aims to explore psychological well-being in adults living in retirement and old age homes who are in the empty nest stage of the family cycle and to assess the impact of digital technology. **Methods:** This qualitative study explores psychological well-being focusing on anxiety, loneliness, and perceived social support among empty nesters aged 60 and above, also examining the role of digital technology. Using convenience sampling, semi-structured face-to-face interviews were conducted until data saturation, and thematic analysis was performed through open and axial coding. **Results:** A total of 3 themes with 12 sub-themes were identified regarding empty nesters' experience in retirement and old age homes, namely loneliness in retirement homes, anxiety and uncertainty about the future, social support, and coping strategies. Loneliness is influenced by limited family interactions, the loss of past roles as caregivers, and a lack of meaningful companionship in the facility. Anxiety arises from financial insecurity, uncertain living conditions, and the fear of abandonment by family members. Social support depends on the quality of care from facility staff, occasional family visits, and the role of spirituality in providing emotional comfort. **Conclusion:** Strengthening care policies, increasing family engagement, and facilitating structured social interactions within these facilities can greatly enhance their overall quality of life.

Keywords: old age communities, empty nesters, Loneliness, retirement homes

*BA III Year Student, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.

Corresponding Author

**Associate Professor, Department of Applied Psychology, School of Humanities & Social Sciences, GITAM (Deemed to be University), Visakhapatnam, Andhra Pradesh, India.

Introduction

“The terror of the elderly is not death itself but rather their current state of abandonment” (Makwana, 2023). This essay explores the intricacies of empty nesters' mental health and the role that nursing homes and retirement care facilities play. Retirement, changing careers, children leaving the nest, losing loved ones, health problems, and a decline in independence are just a few of the major life events that people must deal with as they get older. Healthy aging is frequently defined by the ability to effectively manage these changes (Smith et al., 2023). Usually brought on by feelings of grief, the empty nest syndrome is a challenging response to the change of no longer being a parent (Borland, 1982). A lot of grief,

sadness, unhappiness, and despair can be experienced by parents, particularly mothers (Kahana & Kahana, 1982). According to Borland (1982), one of the main factors causing this illness is loss of role. An identity crisis and worries about how to fill the time that was previously spent raising children can frequently result from such situations (Myers, J. E. 1989). A nursing home is a group housing designed for the elderly, also referred to as an old age home or an old people's home. Unfortunately, these locations never have the caring care and familial affection that one would expect from home, even while they aim to give a homely ambiance with the necessities of food, clothing, and shelter. After all, who can match the reassuring love of loved ones? (Bilal Bhat, 2021)

The feeling of voiding without replacement was another common subject throughout the interviews. Most participants highlighted emotions of loss, purposelessness, or emotional emptiness following the departure of their children by using expressions like "an emptiness in life" or similar terms to explain the sensation of emptying without a replacement.

Review of literature

An increasing number of elderly individuals are deciding to leave their personal residences and move into either public or private care facilities, categorized as "comfort" or "adjustment" based on their aging-related challenges (health issues, mobility challenges, loss of a spouse, living arrangements of children) (Bon valet, 2007). Regardless of the motivations, older adults are looking for tailored solutions that fit their needs and opt for care facilities to preserve their independence for as long as possible (Granborn et al.,)

Both social activity and health are important factors. Most previous studies have used cross-sectional data, making it difficult to trace causal patterns. But both social activity and health are dynamic. Physical health is assessed by activities of daily living and instrumental activities of daily living. Health indicators are physical health and mental health. Gao et al. (2024) found that female middle-aged and older empty nesters tend to have poorer physical and mental health, partly due to lower self-health management awareness, less frequent use of health services, and greater emotional reliance on

children. These findings highlight the need for gender-sensitive health interventions, especially targeting women in this demographic.

While there are global studies on aging and mental health, there is a paucity of research focusing specifically on Indian retirement homes. The unique socio-cultural dynamics of India, especially the shift from joint to nuclear families, are underexplored in the context of loneliness and anxiety in institutionalized older adults. While many Indian studies focus on a single psychological factor, this study aims to provide an understanding of multiple variables—loneliness, anxiety, and social support—offering a more nuanced understanding of elder mental health.

Method

This study employs a qualitative research design to explore and assess psychological well-being, like anxiety, loneliness, and perceived social support in adults living in the empty nest stage of the family cycle and assess the impact of digital technology. A semi-structured interview method was used until data saturation was reached to gather in-depth insights from participants above 60. The study recruited participants aged 60 years and above through convenience sampling. The inclusion criteria included individuals above 60, empty nesters or in the stage of empty nest of family cycle and have access to assisted retirement facilities. The data was collected through in-depth, semi-structured interviews conducted face-to-face. Open coding and axial coding were done to arrive at the final sub-themes and themes.



Participants

This study took the approach of qualitative research due to its aims of conducting one-on-one in-depth interviews with empty-nesters living in old age/retirement homes. The empty nesters were elderly residents of different retirement homes, each one of them with unique reasons and life experiences for taking shelter in these facilities. Their ages ranged from 65 to over 80 years, with a mix of individuals who had voluntarily moved into the homes and others placed there by family members. Most of the respondents had children, where a few would

visit and a few wouldn't and so some experience complete abandonment. The daily routines were more or less monotonous which included prayer, watching television for some time, walking, and engaging in basic social interactions. A few of the residents reported feelings of loneliness and disconnectedness, while a few others found their peace by engaging in spirituality or religious activities or structured routines. Access to technology was generally limited, with most participants preferring simple phone calls over social media or video calls. Common concerns included financial instability, lack of family involvement, and feelings of purposelessness.

Table 1*Participant Information*

ID	Age	Sex	Marital Status	Duration in RH	Reason for Residence	Family Visits	Primary Activities	Tech Use
C1	70+	F	No mention	No mention	Voluntary	Occasional phone calls	Prayer, reading scriptures	Minimal (Phone calls only)
C2	80+	F	widowed	3-4years	Placed by children	No visits for 3 months	Watching people, waiting for meals	None
C3	70s	F	widowed	6years	Health issues	Stepson visits every 2 months	Watching TV, thinking	None
C4	70+	F	widowed	No mention	Placed by children	Son visited recently	Limited mobility, relies on staff	None
C5	70+	F	widowed	3 years	Placed by grandson after injury	Occasional visits	Struggles with independence, misses home, watching TV	Minimal (Phone calls only)
C6	70+	F	married	3 years	Placed by children due to illness	Rare visits	Walking, watching TV	None
C7	61	F	widowed	No mention	Abandoned by daughters after paralysis	No visits	Writing, coping with loneliness	None
C8	65	F	widowed	2years	Voluntary (with husband, later widowed)	Visits from daughter	Eating meals on time, minimal interaction	None

RH – Retirement Home

Procedure

All interviews were carried out in person at a time and location that suited the respondent. The researcher began after obtaining the consent to take part in the study and to record the interview. An in-depth semi-structured interview was then used to gather the data. The duration of the interviews ranged from about 30 to 40 minutes, depending on the individual respondent. Following each interview, the researcher immediately transcribed and analyzed the data. Interviews continued until a saturation point was reached, at which no further information was forthcoming. The interviews were recorded on an

Apple 13 phone and subsequently transcribed into Microsoft Word.

Results

A total of three themes with twelve sub-themes were identified regarding the experiences of empty nesters in retirement and old-age homes:

- (1) Loneliness in Retirement Homes
- (2) Anxiety and Uncertainty about the Future
- (3) Perceived Social Support and Coping Mechanisms.

The following section presents these themes along with excerpts from participant interviews.

Table 2*Loneliness in retirement homes*

Sub-theme	Interview Excerpt	Participant ID
Limited family interactions	“No, not from three months. He took my pension money too.” “I don't disturb them or call them often because I know they're troubled by my presence.”	C2,C8
Loss of past roles as caregivers	I was always a housewife, liked making home and cooking. Now I have no purpose.” “I had my husband to take care of, and he took care of me well too, but after he's gone I don't know what to do.”	C5, C8
Lack of companionship	“I don't want to talk with anyone here; they don't seem like good people.” “They don't talk to me often as I'm paralysed and can't be talking like them. I just write something on the paper if I need anything from the caregivers.”	C8,C7

Loneliness emerged strongly from participant responses as a major theme, with various other contributing factors. Respondents C2 and C8 showed signs of few family interactions which bordered on neglect. For example, C2 shared that her “son had not visited for three months”, highlighting the emotional distance between them. Additionally, participants

experienced a loss of meaningful roles, as C5 mentioned feeling purposeless after spending years as a homemaker. Participants were socially disconnected despite being in group settings. One patient remarked “They don't talk to me often...I just write something on the paper” pointing to how physical limitations can hinder social connectedness and companionship.

Table 3*Anxiety and Uncertainty about the Future*

Sub-themes	Interview excerpt	Participant ID
Financial insecurity	“I don't have money to pay for this place. They haven't said anything yet. I don't know what will happen to me.” “I need some money to buy snacks because I'm always hungry.”	C2,C7
Uncertain conditions	“People like you come all the time, they give food, clothes maybe a blanket. And after that, they never come back.” “I don't know what will happen to me as I have no money to pay rent.”	C6,C2
Fear of abandonment by family	“Family is complicated. People change. Relationships change. You think they will always be there, but they're not.” “My daughter is the only one who comes to visit me after my husband died.”	C3,C8

Aspects like housing uncertainty, being able to afford her housing. Some residents financial instability and fear of abandonment, and also resonated the fear of abandonment. One financial instability caused anxiety in the participant (C3) talked about how familial ties residents. C2 expressed financial insecurity as a evolve over time, causing emotional suffering and major concern. She expressed fear regarding feelings of betrayal.

Table 4.*Perceived Social Support and Coping Mechanisms*

Sub-themes	Interview excerpt	Participant ID
Quality of care from staff	“The staff helps me. My leg is broken; they bathe me in a wheelchair, help with my needs.”	C4,C5
Occasional family visits	“They visit sometimes. I don't talk to them on the phone because I don't want to cause them any trouble; they will come to me to talk if they want to.” “My son visits me every month to see me.” “My grandson visited me last month and brought me pickles.”	C8,C2,C5
Role of spirituality in comforting	“Most of our time is spent in prayers, reading scriptures. It keeps us peaceful.” “I look at that picture on the wall of Jesus and think about it because I'm slowly losing my vision, and that's the only thing visible to me from a distance. I feel peaceful when I think about him”	C1,C7

C4 was a respondent who had issues related to mobility. She shared how the staff bathed her daily in a wheelchair, underlining the role of attentive caregiving. Such kind of behavior instills a sense of safety and comfort in the environment in which these empty nesters are residing in. The very few family visits she receives remain emotionally charged and meaningful. Another resident, C8, mentioned about the occasional visits her daughter would pay in order to stay connected. For some residents' spirituality offered emotional support; they found solace in prayer, scripture reading and spiritual conversations.

Discussion

The social and psychological problems that empty-nesters in retirement homes face are clarified by the study's findings. The issue of loneliness, which is impacted by less family interaction and the loss of previous caregiving responsibilities, is in keeping with other research that highlights the psychological toll of being away from loved ones as one ages (Victor & Bowling, 2012). Studying solutions that encourage social contact among the residents is crucial because the absence of genuine friendships and intimate ties within the facility exacerbates the residents' feelings of loneliness (Smith & Baltes, 2019). Fear of family abandonment, unstable living situations, and financial insecurity were the main causes of the prevalent anxiety and uncertainty about the future. These results are consistent with studies which demonstrate that older adults frequently suffer from financial crisis that eventually leads to emotional stress and psychological problems (Guan et al., 2021). Additionally, residents' described the unpredictable nature of their living situations which triggered concerns about the systematic neglect in care one gets to see in such facility settings generally (Kane & Cutler, 2020). Others turned to spirituality as a means of emotional coping, while others sought solace in the staff's care. Previous research has demonstrated the

protective effects of spirituality and religious practice on mental health, particularly in older persons who have experienced adversity (Koenig, 2018). Policies that encourage long-term family connection are supported by the fact that little but significant family interaction, such as visits, also improved mental health (Park et al., 2022).

Conclusion

With an emphasis on loneliness, anxiety, and perceived social support as the key elements influencing their well-being, this study offers significant insights into the lived experience of empty nesters in assisted living facilities. Systematic change is required, which includes better financial security plans, more family engagement, and improved mental health services for senior citizens (Victor & Bowling, 2012). Initiatives for social engagement and community programs can help combat loneliness and lessen the sense of isolation that many locals experience (Smith & Baltes, 2019).

Furthermore, the use of digital technology presents an opportunity to bridge communication gaps between residents and their families. Encouraging the adoption of user-friendly, age-inclusive digital devices and training programs can foster stronger social connections, ultimately enhancing the well-being of elderly individuals in institutional settings (Charness & Boot, 2016).

Implications

Retirement homes serve not only as physical spaces of residence but also as crucial environments for psychosocial well-being in later life. As India has emphasized intergenerational co-living, this study reflects a societal shift where more number of older adults reside in retirement homes- voluntarily or otherwise. Interventions targeting loneliness and anxiety are essential. Group therapies provide emotional catharsis, peer validation, and social bonding bring in trust among residents, reduce feelings of isolation, and promote emotional resilience. Given the

importance of perceived social support, facilitating peer-bonding activities (hobby circles, group therapies, and buddy systems) can create internal support systems. These micro-social networks may serve as buffers against isolation and reinforce communal care. Policy implications like setting minimum mental health standards for retirement homes-such as mandatory recreational staff training. This study challenges the currently built cultural narrative on ageing and helps society rethink family responsibilities and support. It also highlights the “empty nest” phenomenon. This is often associated with neglect and abandonment. To combat this social stigma, community programs depicting old age/retirement homes as places of independence, connection, and care are important. Technological programs that facilitate virtual communication with family and are age-inclusive should be made accessible.

Limitations

- The research was limited to elderly individuals in Vizag, India, cautioning against generalizing the results to other populations.
- The study’s cross-sectional design captures participants’ experiences at one point in time, making it difficult to assess how factors such as loneliness, anxiety, and social support evolve over time.
- The study may have not fully captured the spectrum of technology use, especially with emerging tools (e.g., telehealth apps, AI-powered companions, etc). Most participants may have been only familiar with basic technologies like phones and WhatsApp.
- The absence of more depth in the interviews limits the understanding of *why* the participants feel the way they do or how they subjectively experience social support and technology.

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