Effects of Stress on Caregivers of Chronically ILL Patients

***Tanushree Saha **Reeta Kumar ***Bipin Kumar**

Abstract

Chronic illnesses like Alzheimer's disease, Parkinson's disease, paralysis and so on can be disabling for a patient. Under these conditions the patient becomes dependent on another person and constantly need help from him/ her, even in the activities of daily living. The services provided by this person is called 'caregiving', while the person himself/herself is called the 'caregiver'. Caregivers can be either formal (nurses and trained staffs of hospitals) or informal (family members and friends). In case of informal caregivers, the responsibilities of maintaining a regular family life and career in addition to the duties of caregiving naturally leads to great stress. Dealing with this stress on a regular basis affects both the caregivers' mental as well as physical health, which if not monitored at the right time can become life-threatening. This study can help create an awareness amongst the family members of a primary caregiver as well as medical professionals to keep a check on the health status (both psychological and physical) of the caregiver in order to prevent him/her from becoming a patient himself/herself.

Introduction :

A chronic illness can be referred to as the long-term altered health condition of an individual which cannot be treated by a surgery or by a simple, short-term pharmacotherapy. It may or may not be lifelong or terminal in nature, although it takes away quite a number of years of the patient's life. Chronic illness, in some cases, can be disabling to the individual. Such illnesses include Alzheimer's disease, Parkinson's disease, multiple sclerosis, paralysis and so on.

Individuals suffering from such disabling illnesses cannot often live independently and need constant help and support from another individual in the form of caregiving. Hence, care giving is assisting or helping an individual who is either ill or disabled and cannot perform his/ her daily personal or other non-personal activities on his/her own.

Care giving has been classified into two types: formal and informal. Formal caregivers include trained staffs and nurses of hospitals, whereas, informal caregivers include spouse, parents, children, brothers, sisters, other relatives or even friends. Informal caregivers are also called family caregivers and provide unpaid services to the disabled patient.

In case of family (or informal) caregivers, the added responsibilities of caregiving, along with the already present pressures of maintaining a family and professional life, are quite likely to produce a lot of stress. This stress in caregivers can be of two types, i.e., primary stress and secondary stress. Primary stress arises from daily personal care services, such as feeding, washing and so on and this results in secondary stress in the form of restricted social life, family conflicts as well as financial hardships and other stress producing consequences. Ultimately, both these primary and secondary stresses are likely to lead to psychological and physiological malfunctioning in caregivers.

Psychological Consequences of Caregiving Stress

Several studies have reported psychological problems like feelings of burden, depression, anxiety, fatigue as well as sleep disturbances among caregivers.

Burden among Caregivers

In a recent study by Sreeja, Gupta, Lal, and Singh (2009), a comparison between caregivers of chronic mental illness (schizophrenia) and chronic physical illness (epilepsy), showed that there was significant level of burden due to caregiving on both the groups. In a study by Elmahdi et al. (2011) on caregivers of patients either suffering from a psychiatric illness or a chronic physical illness, it was reported that level of subjective burden was higher among wives than mothers. Personal tasks like feeding and washing the patient are perceived as more difficult and burdensome than non-personal tasks like doing the groceries (Horowitz, 1985). Given, Stommel, Collins, King, and Given (1990) stated that the more confining the caregiving tasks are, the more they create burden. Race (Horowitz & Reinhard, 1995), perceived social support (Edwards & Scheet, 2002) and depressive symptoms (Caap-Ahlgren & Dehlin, 2002) in caregivers are also important variables for predicting burden in caregivers.

Depression among Caregivers

Higher rates of depressive symptoms are consistently reported in family caregivers of ill patients in comparison to their same age control sample (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch; 1995, Dura, Stukenburg, & Kiecolt-Glaser, 1990; Tennstedt, Cafferata, & Sullivan; 1992). In recent studies, 32% to 50% of caregivers were found to have depressive symptoms of a level suggesting clinical depression (Burtler, Turner, Kaye, Ruffin, & Downey; 2005, Carter, 2002; Covinsky et al., 2003). Depression is found in caregivers of almost all chronically ill patients. It is found among caregivers of people suffering from HIV/AIDS (Folkman, Chesney, Cooke, Boccellari, & Collette, 1994; Land & Hudson, 2002; LeBlanc, London, & Aneashensel; 1997), Alzheimer's disease (Lawton, Miriam, Mortan, Allen, & Michael, 1991; Semple, 1992) and also of those who are hospitalized for a long time (Rosenthal, 1993). In a study on caregivers of spinal cord injury patients (Weitzenkamp, Gerhart, Charlifue, Whiteneck, & Savic, 1997), it was seen that the spouses reported more symptoms of depression than the patients themselves as well as the non-caregivers. There are a number of factors that lead to the development of depressive symptomatology in family caregivers. Rivera (2009) has given a list of factors which include age, race, sleep disturbances, social support and so on. It was found that younger caregivers have higher depression scores (Given et al., 2004; Kurtz, Kurtz, Given, & Given, 2005; Williams, 2005). In studies related to the gender of the caregivers, it has been found that female caregivers report higher levels of depression as compared to their male counterparts (Cho, Dodd, Lee, Padilla, & Slaughter, 2006; Covinsky et al., 2003; Haley, LaMonde, Han, Burton, & Schonwetter, 2003; Thompson et al., 2004). In a study conducted on female caregivers of patients suffering from either a psychiatric illness or a chronic physical illness, it was found that 34% were suffering from major depression (Elmahdi et al., 2011). Studies on race of caregivers have reported that Caucasians have significantly more depressive symptoms than African- Americans and Hispanics (Gallagher-Thompson et al., 2006;

Williams, 2005). In a study on cancer caregivers by Carter (2002), the family caregivers showed depression and chronic sleep loss. The family caregivers have reported that the chronic sleep loss made them feel irritable towards the patients. This irritability in turn led to angerwith the patients' increasing care demands, which further resulted in feelings of guilt. This guiltiness later made the caregivers feel depressed. Depression has been reported to be the cause of coronary heart disease and mortality in both the genders of caregivers (Ferketich, Schwartzbaum, Frid, & Moeschberger, 2000; Ford et al., 1998; Kouzis, Eaton, & Leaf, 1995).

Anxiety among Caregivers

Anxiety is also found to occur significantly in caregivers of chronically ill patients. Deshmukh, Patwardhan, Bakshi, Paranis, and Kelkar (2011) reported significant levels of anxiety in caregivers of cancer patients. In a study by Grov, Dahl, Moum, and Fossa (2005), the anxiety level in caregivers of both genders was found to be significantly higher than age and gender adjusted controls. Similar results were also found in caregivers of dementia patients (Cooper, Balamurali, & Livingstone, 2007). Elmahdi et al. (2011) reported a 22.3% prevalence of generalized anxiety disorder in female caregivers of patients suffering from either a psychiatric illness or a chronic physical illness. Like depression even anxiety in caregivers depends on several factors. Higher anxiety scores have been reported by female caregivers (Gaston-Johansson, Lachica, Fall-Dickson, and Kennedy, 2004; Iconomou, Viha, Kalofonos, and Kardamakis, 2001; Langer, Abrams, and Syrjala, 2003; Matthews, 2003). Singlehood, lower income, higher levels of sleep disturbances, increased fatigue and caregiver strain are other factors related to higher anxiety in caregivers (Flaskerud, Carter & Lee, 2000; Gaston-Johansson, Lachica, Fall-Dickson, & Kennedy, 2004; Iconomou, Viha, Kalofonos, & Kardamakis, 2001; Rossi Ferrario, Zotti, Massara, & Nuvolone, 2003). Younger caregivers are reported to be more anxious than their older counterparts (Deshmukh et al., 2011).

Fatigue among Caregivers

Fatigue is yet another outcome of caregiving. Studies showed higher fatigue scores in the family caregivers of patients with cancer, dementia and Parkinson's disease (Sato, Kanda, Anan, & Watanuki, 2002; Teel & Press, 1999). In family caregivers, fatigue has been found to be physically induced by the constant demands of caregiving and psychologically induced by concerns regarding the diagnosis, treatment and prognosis of the patient (Jensen & Given, 1993). Female gender (Cho, Dodd, Lee, Padilla, & Slaughter, 2006), lower income levels (Gaston-Johansson, Lachica, Fall-Dickson, & Kennedy, 2004), number of hours of daily care (Jensen & Given, 1993) and levels of caregiver strain (Passik & Kirsh, 2005) are some factors related to higher fatigue in caregivers.

Sleep Disturbances among Caregivers

Sleep disturbance is yet another outcome of caregiver stress. In a study on caregivers of Parkinson's disease patients it was reported that spouses involved in daily caregiving had a seven-fold increased risk of sleeping badly compared to partners not involved in caregiving (Happe & Berger, 2002). In a study on caregivers of Parkinson's disease patients it was reported that 48% female, in contrast to only 27% male, caregiver spouses suffered from sleep disturbances (Smith, Ellgring, & Oertel, 1997). Caregivers of adults with dementia also reported more sleep complaints than healthy controls of similar age (Wilcox & King, 1999). In studies on caregivers of cancer patients it was reported that more than 95% of the caregivers were experiencing moderate to severe overall sleep problems (Carter, 2002; Carter & Chang, 2000). Teel and Press (1999) reported higher levels of sleep disturbances in caregivers of cancer, dementia and Parkinson's disease patients than non-caregivers. In other studies on caregivers of dementia patients, family caregivers showed higher sleep problems than non-family caregivers (Sato, Kanda, Anan, & Watanuki, 2002; Smith et al., 1997; Wilson, 1989). It may be added here that both anxiety and depression are predictors of sleep disturbances (Quan et al., 2005; Spira et al., 2005). Female gender (Smith et al., 1997), lower levels of education, psychological distress, care recipient disruptions (Wilcox & King, 1999), lack of social support, fatigue and other familial issues (Aslan, Sanisoglu, Akyol, & Yetkin, 2009) lead to sleep disturbances. Caregivers' sleep disturbances are associated with higher levels of fatigue, anxiety, depression, lowered immune function, elevated stress hormones, increased risk for cardiovascular diseases and premature mortality (Martire & Hall, 2002; von Kanel et al., 2006).

Physiological Consequences of Caregiving Stress

Apart from psychological problems, caregiving stress also leads to physiological malfunctioning.

Hypertension and Heart Desease among Caregivers

Eventhough caregiving stress has been reported to cause somatic complaints like heart palpitations, headaches and digestive problems (Grasel, 2002, Kreutzer et al., 2009; Thompson et al., 2004), studies also indicate that it can lead to hypertension and coronary heart disease (Aronson, 1988). Moritz, Kasl, and Ostfeld (1992) reported that systolic blood pressure was higher among men whose wives were more cognitively impaired. Shaw et al. (1999) reported that caregivers experienced 67% increase in the risk for borderline hypertension compared with controls and this difference remained statistically significant after controlling for age, gender, education, socioeconomic status, body mass index and use of anti-hypertensive medications. Lee, Colditz, Berkman, and Kawachi (2003) reported that there is almost two-fold increased risk of coronary heart disease in family caregivers of ill spouses when compared with non-caregivers. In another study it was found that male caregivers had greater chances of coronary heart disease than non-caregivers (Vitaliano et al., 2002).

Altered Insulin Level among Caregivers

Insulin levels are also influenced by caregiving. Vitaliano, Scanlan, Krenz, Schwatz, and Marcovina (1996) observed significantly elevated insulin levels in non-diabetic spousal caregivers of dementia patients as compared with gender-matched spouses of non-demented older adults. Higher rates of diabetes is also reported in informal caregivers (Haley, Levin, Brown, Berry, & Hughes, 1987; Pruchno & Potashnik, 1989).

Disturbed Metabolic Functioning among Caregivers

With respect to metabolic functioning, significant differences between caregivers and non-caregivers were revealed. Older male caregivers had a significantly higher body mass index and were more obese than controls and female caregivers showed a greater increase in weight than controls over a fifteen to eighteen months period of time (Vitaliano, Russo, Scanlan, & Greeno, 1996). These metabolic changes put caregivers at risk for adverse health outcomes including elevated lipid levels, high blood pressure, cardiovascular diseases and arthritis in weight bearing joints (hips and knees).

Immune System Deterioration among Caregivers

Chronic stress related to caregiving also results in deterioration of the immune system. In a study conducted by Kiecolt-Glaser, Glaser, Gravenstein, Malarkey, and Sheridan (1996) on spousal caregivers of dementia patients, it was indicated that chronic elevations in stress can lead to impairments in immunity and in turn may result in increased vulnerability to infectious diseases. The study also reported that response to vaccination against influenza virus was compromised in caregivers as compared to same aged non-caregivers. Caregivers of relatives with Alzheimer's disease have shown increased wound healing time as compared to age matched control (Kiecolt-Glaser, Marucha, Malarkey, Mercado, & Glaser, 1995).

Other Physiological Disturbances among Caregivers

Informal caregivers are reported to have higher rates of arthritis, ulcers and anaemia than non-caregivers (Haley, Levine, Brown, Berry, & Hughes, 1987; Pruchno & Potashnik, 1989). Health issues like back problems and peptic ulcers have been associated with demands of providing full time care to a spouse (Cohen, 1982; Snyder & Keefe, 1985). In a descriptive report on caregivers of Parkinson's disease patients, it was stated that caregivers had higher rates of medical conditions including arthritis, asthma, diabetes, cardiac problems and also hypertension (Guinta, Parrish, & Adams, 2002). Caregiving stress is also reported to result in faster aging and mortality. In a study conducted by Epel et al. (2004), on mothers of chronically ill children, it was found that chronic stress accelerates the effects of aging by actually shortening cell life which in turn leads to weakened muscles, skin wrinkles and even organ failure. Caregivers of Alzheimer's patients experiencing emotional or physical strain were found to have 63% greater mortality than caregivers without strain or non-caregivers (Schulz & Beach, 1999).

Conclusion

The ill effects of caregiving stress has gradually come to the forefront. It is observed that the caregiver's stress leads to feelings of burden, which in turn leads to depression, anxiety, sleep disturbances and fatigue, and ultimately affects the physical well-being of the caregiver to the extent that if neglected it can also claim the caregiver's life. It is therefore very essential for the family and friends of a primary caregiver to be vigilant towards the caregiver's mental and physical health. Any slight change should not be ignored and reported to the physician as early as possible. Medical and psychiatric professionals should also be aware of the ill consequences of caregiving stress and identify those caregivers who are “at a risk” of developing psychological and physical health problems and hence provide early and proper interventions to minimize the risk of any long lasting damage. The significance of the problem needs to be realized firstly, in context to the reducing sizes of families which makes the availability of caregivers, especially the informal caregivers, less feasible. Secondly, and more importantly it needs to be remembered that informal caregivers provide an all important quotient of love, affection and emotional care which is paramount for the patient's physical and psychological well-being.

References

Aneshensel, C., Pearlin, L., Mullan., J., Zarit, S., & Whitlatch, C. (1995). Profiles in caregiving: The unexpected career. New York: Academic Press.

Aronson, M.K. (1988). Patients and families: Impact and long-term management implications. In: M.K. Aronson (Ed.), Understanding Alzheimer's disease, (pp.147-163), New York: Charles Scribner and Sons.

Aslan, O., Sanisoglu, Y., Akyol, M., & Yetkin, S. (2008). Quality of sleep in Turkish family caregivers of cancer patients. Cancer Nursing, 32(5), 370-377.

Burtler, S.S., Turner, W., Kaye, L.W., Ruffin, L., & Downey, R. (2005). Depression and caregiver burden among rural elder caregivers. Journal of Gerontological Social Work, 46(1), 56, 47-63.

Caap-Ahlgren M., & Dehlin, O. (2002). Factors of importance to the caregiver burden experienced by family caregivers of Parkinson's disease patients. Aging Clinical and Experimental Research, 14, 371-377.

Carter, P.A. (2002). Caregivers' descriptions of sleep changes and depressive symptoms. Oncology Nursing Forum, 29(9), 1277-1283

Carter, P.A., & Chang, B.L. (2000). Sleep and depression in cancer caregivers. Cancer Nursing, 23(6), 410-415.

Cho, M.H., Dodd, M.J., Lee, K.A., Padilla, G., & Slaughter, R. (2006). Self reported sleep quality in family caregivers of gastric cancer patients who are receiving chemotherapy in Korea. Journal of Cancer Education, 21(1, Suppl.), 37-41.

Cohen, D. (1982). Issues in psychological diagnosis and management of the cognitively

impaired aged. In: C. Eisdorfer, E. Fann (Eds.): Treatment of psychopathology in aging. (pp.192-211), New York: Springer.

Cooper, C., Balamurali, T.B., & Livingston, G. (2007). A systematic review of the prevalence and covariates of anxiety in caregivers of people with dementia. International Psychogeriatrics, 19(2), 175-195.

Covinsky, K.E., Newcomer, R., Fox, P., Wood, J., Sands, L., Dane, K., et al. (2003). Patient and caregiver characteristics associated with depression in caregivers of patients with dementia. Journal of General Internal Medicine, 18(12), 1006-1014

Deshmukh, C.D., Patwardhan, M., Bakshi, A.V., Paranis, A.S., & Kelkar, D.S. (2011). Anxiety in cancer caregivers: A pilot study in the Indian population. Journal of Clinical Oncology, 29(suppl; abstr e19652).

Dura, J., Stukenburg, K., & Kiecolt-Glaser, J. (1990). Chronic stress and depressive disorders in older adults. Journal of Abnormal Psychology, 99, 284-290.

Edwards, N.E., & Scheetz, P.S. (2002). Predictors of burden for caregivers of patients with Parkinson's disease. Journal of Neuroscience Nursing, 34, 184-190.

Elmahdi, M., Kamel, F., Esmael, A., Lotfi, M., Kamel, A., & Elhosini, A. (2011). Burden of care on female caregivers and its relation to psychiatric morbidity. Middle East Current Psychiatry, 18(2), 65-71.

Epel, E.S, Blackburn, E.H., Lin, J., Dhabhar, F.S., Adler, N.E., Morrow, J.D., et al. (2004). Accelerated telomere shortening in response to life stress. Proceedings of the National Academy of Sciences, 101(49), 17312-17315.

Ferketich, A.K., Schwartzbaum, J.A., Frid, D.J., & Moeschberger, M.L. (2000). Depression as an antecedent to heart disease among women and men in the NHANES study: National health and nutrition examination survey. Archives of Internal Medicine, 160(9), 1261-1268.

Flaskerud, J.H., Carter, P.A., & Lee, P. (2000). Distressing emotions in female caregivers of people with AIDS, age-related dementias and advanced stage cancers. Perspectives in Psychiatric Care, 36(4), 121-130.

Folkman, S., Chesney, M.A., Cooke, M., Boccellari, A., & Collette, L. (1994). Caregiver burden in HIV-positive and HIV-negative partners of men with AIDS. Journal of Consulting and Clinical Psychology, 62, 746-756.

Ford, D.E., Mead L.A., Chang, P.P., Cooper-Patrick, L., Wang, N.Y., & Klag, M.J. (1998). Depression is a risk factor for coronary artery disease in men: The precursors study. Archives of Internal Medicine, 158, 1422-1426.

Gallagher-Thompson, D., Shurgot, G.R., Rider, K., Gray, H.L., McKibbin, C.L., Kraemer, H.C., et al. (2006). Ethnicity, stress and cortisol function in Hispanic and non-Hispanic white women: A preliminary study of family dementia caregivers and non-caregivers. American Journal of Geriatric Psychiatry, 14(4), 334-342.

Gaston-Johansson, F., Lachica, E.M., Fall-Dickson, J.M., & Kennedy, M.J. (2004). Psychological distress, fatigue, burden of care and quality of life in primary caregivers of patients with breast cancer undergoing autologous bone marrow transplantation. Oncology Nursing Forum, 31(6), 1161-1169.

Given, B., Stommel, M., Collins, C., King, S. S., & Given, C.W. (1990). Responses of elderly spouse caregivers. Research in Nursing and Health 13, 77-85.

Given, B., Wyatt, G., Given, C., Sherwood, P., Gift, A., DeVoss, D., et al. (2004). Burden and depression among caregivers of patients with cancer at the end of life. Oncology Nursing Forum, 31(6), 1105-1117.

Grasel, E. (2002). When home care ends-changes in the physical health of informal caregivers caring for dementia patients: A longitudinal study. Journal of the American Geriatrics Society, 50, 843-849.

Grov, E.K., Dahl, A.A., Moum, T., & Fossa, S.D. (2005). Anxiety, depression and quality of life in caregivers of patients with cancer in late palliative phase. Annals of Oncology,16, 1185-1191.

Guinta, N., Parrish, M., & Adams, S. (2002). Parkinson's disease caregiving: A descriptive report. Family Caregiver Alliance.

Haley, W.E., LaMonde, L.A., Han, B., Burton, A.M., & Schonwetter, R. (2003). Predictors of depression and life satisfaction among spousal caregivers in hospice: Application of a stress process model. Journal of Palliative Medicine, 6(2), 215-224.

Haley, W.E., Levine, E.G., Brown, S.L., Berry, J.W., & Hughes, G.H. (1987). Psychological, social and health consequences of caring for a relative with senile dementia. Journal of American Geriatrics Society, 35, 405-411.

Happe, S., & Berger, K. (2002). The association between caregiver burden and sleep disturbances in partners of patients with Parkinson's disease. Age and aging, 31, 349- 354.

Horowitz, A. (1985). Family caregiving to the frail elderly. Annual Review of Gerontology and Geriatrics, 5, 194-246.

Horowitz, A.V., & Reinhard, S.C. (1995). Ethnic differences in caregiving duties and burdens among parents and siblings of persons with severe mental illness. Journal of Health and Social Behaviour, 36, 138-150.

Iconomou, G., Viha, A., Kalofonos, H.P., & Kardamakis, D. (2001). Impact of cancer on primary caregivers of patients receiving radiation therapy. Acta oncologica, 40(6), 766-771.

Jensen, S., & Given, B. (1993). Fatigue affecting family caregivers of cancer patients. Support Care Cancer, 1, 321-325.

Kiecolt-Glaser, J.K, Glaser, R., Graveinstein, S., Malarkey, W.B., & Shridan, J. (1996). Chronic stress alters the immune response to influenza virus vaccine in older adults. Proceedings of the National Academy of Sciences, 93, 3043-3047.

Kiecolt-Glaser, J.K., Marucha, P.T., Malarkey, W.B., Mercado, A.M., & Glaser, R. (1995). Slowing of wound healing by psychological stress. Lancet, 346, 1194-1196.

Kouzis, A., Eaton, W.W., & Leaf, P.J. (1995). Psychopathology and mortality in the general population. Social Psychiatry Psychiatric Epidemiology, 30, 165-170.

Kreutzer, J.S., Rapport, L.J., Marwitz, J.H., Harrison-Felix, C., Hart, T., Glenn, M. et al. (2009). Caregivers' well-being after traumatic brain injury: A multicenter prospective investigation. Archives of Physical Medicine and Rehabilitation, 90, 939-946.

Kurtz, M.E., Kurtz, J.C., Given, C.W., & Given, B.A. (2005). A randomized control trial of a patient/caregiver symptom control intervention: Effects on depressive symptomatology of caregivers of cancer patients. Journal of Pain and Symptom Management, 30(2), 112-122.

Land, H., & Hudson, S. (2002). HIV serostatus and factors related to physical and mental well-being in Latina family AIDS caregivers. Social Science and Medicine, 54, 147-159.

Langer, S., Abrams, J., & Syrjala, K. (2003). Caregiver and patient marital satisfaction and affect following hematopoietic stem cell transplantation: A prospective, longitudinal investigation. Psycho-oncology, 12(3), 239-253.

Lawton, P.M., Miriam, M., Mortan, H.K., Allen, G., & Michael, R. (1991). A two-factor model of caregiving appraisal and psychological well-being. Journal of Gerontology Series B: Psychological Sciences and Social Sciences, 46, 181-189.

LeBlanc, A.J., London, A.S., & Aneashensel, C.S. (1997). The physical costs of AIDS caregiving. Social Science and Medicine, 45, 915-923.

Lee, S., Colditz, G.A., Berkman, L.F., & Kawachi, I. (2003). Caregiving and risk of coronary heart disease in U.S. women: A prospective study. American Journal of Preventive Medicine, 24, 113-119.

Martire, L.M., & Hall, M. (2002). Dementia caregiving: Recent research on negative health effects and the efficacy of caregiver interventions. CNS Spectrums, 7(11), 791-796.

Matthews, B.A. (2003). Role and gender differences in cancer related distress: A comparison of survivor and caregiver self-reports. Oncology Nursing Forum, 30(3), 493-499.

Moritz, D.J., Kasl, S.V., & Ostfeld, A.M. (1992). The health impact of living with a cognitively impaired elderly spouse: Blood pressure, self-rated health and health behaviours. Journal of Aging Health, 4, 244-267.

Passik, S.D., & Kirsh, K.L (2005). A pilot examination of the impact of cancer patients' fatigue on their spousal caregivers. Palliative and Supportive Care, 3(4), 273-279.

Pruchno, R.A., & Potashnik, S.L. (1989). Caregiving spouses physical and mental health in perspective. Journal of American Geriatrics Society, 37, 697-705.

Quan, S.F., Katz,, R., Olson, J., Bonekat, W., Enright, P.L, Young, T., et al. (2005). Factors associated with incidence and persistence of symptoms of disturbed sleep in an elderly cohort: The cardiovascular health study. American Journal of the Medical Sciences, 329(4), 163-172.

Rivera, H.R. (2009). Depression symptoms in cancer caregivers. Clinical Journal of Oncology Nursing, 13(2), 195-202.

Rosenthal, C.J., Sulman, J., & Marshall, V.W. (1993). Depressive symptoms in family caregivers of long-stay patients. The Gerontologist, 33, 249-257.

Rossi Ferrario, S., Zotti, A.M., Massara, G., & Nuvolone, G. (2003). A comparative assessment of psychological and psychosocial characteristics of cancer patients and their caregivers. Psycho-oncology, 12(1), 1-7.

Sato, R., Kanda, K., Anan, M., & Watanuki, S. (2002). Sleep EEG patterns and fatigue of middle-aged and older female caregivers providing routine night-time care for elderly persons at home. Perceptual and Motor Skills, 95(3), 815-829.

Schulz, R., & Beach, S.R. (1999). Caregiving as a risk factor for mortality: The caregiver health effects study. Journal of American Medical Association, 282(23), 2215-2219.

Semple, S.J. (1992). Conflict in Alzheimer's caregiving families: Its dimensions and consequences. The Gerontologist, 32, 648-655.

Shaw, W.S, Patterson, T.L., Ziegler, M.G., Dimsdale, J.E., Semple, S.J., & Grant, I. (1999). Accelerated risk of hypertensive blood pressure recordings among Alzheimer's caregivers. Journal of Psychosomatic Research, 46(3), 215-22.

Smith, M.C., Ellgring, H., & Oertel, W.H. (1997). Sleep disturbances in Parkinson's disease patients and spouses. Journal of American Geriatrics Society, 45, 194-199.

Snyder, B., & Keefe, K. (1985). The unmet needs of family caregivers for frail and disabled adults. Social Work in Health Care, 10, 1-14.

Spira, A.P., Friedman, L., Flint, A., & Sheikh, J.P. (2005). Interaction of sleep disturbances and anxiety in later life: Perspectives and recommendations for future research. Journal of Geriatric Psychiatry and Neurology, 18(2), 109-115.

Sreeja, I., Gupta, S., Lal, R., & Singh, M.B. (2009). Comparison of burden between family caregivers of patients having schizophrenia and epilepsy. The Internet Journal of Epidemiology, 6 (2). doi:10.5580/18d0.

Teel, C.S., & Press, A.N. (1999). Fatigue among elders in caregiving and non-caregiving roles. Western Journal of Nursing Research, 21(4), 498-514.

Tennstedt, S., Cafferata, G., & Sullivan, L. (1992). Depression among caregivers of impaired elders. Journal of Aging and Health, 4(1), 58-76.

Thompson, R.L., Lewis, S.L., Murphy, M.R., Hale, J.M., Blackwell, P.H., Acton, G.J. et al. (2004). Are there sex differences in emotional and biological responses in spousal caregivers of patients with Alzheimer's disease? Biological Research for Nursing, 5(4), 319-330.

Vitaliano, P.P., Russo, J., Scanlan, J., & Greeno, K. (1996). Weight changes in caregivers of Alzheimer's care recipients: Psycho-behavioural predictors. Psychology and Aging, 11, 155-163.

Vitaliano, P.P., Scanlan, J.M., Krenz, C., Schwartz, R.S., & Marcovina, S.M. (1996). Psychological distress, care-giving and metabolic variables. Journal of Gerontology, Series B: Psychological Sciences and Social Sciences, 51, 290-297.

Vitaliano, P.P., Scanlan, J.M., Zhang, J., Savage, M.V., Hirsch, I.B., & Siegler, I.C. (2002). A path model of chronic stress, the metabolic syndrome and coronary heart disease. Psychosomatic Medicine, 64, 418-435.

von Kanel, R., Dimsdale, J.E., Ancoli-Israel, S., Mills, P.J., Patterson, T.L., McKibbin, C.L., et al. (2006). Poor sleep is associated with higher plasma proinflammatory cytokine interleukin-6 and procoagulant marker fibrin D-dimer in older caregivers of people with Alzheimer's disease. Journal of American Geriatrics Society, 54(3), 431-437.

Weitzenkamp, D.A., Gerhart, K.A., Charlifue, S.W., Whiteneck, G.G., & Savic, G. (1997). Spouses of spinal cord injury survivors: The added impact of caregiving. Archives of Physical Medicine and Rehabilitation, 78(8), 822-827.

Wilcox, S., & King, A.C. (1999). Sleep complaints in older women who are family caregivers. Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 54(3), 189-198.

Williams, I.C. (2005). Emotional health of black and white dementia caregivers: A contextual examination. Journal of Gerontology Series B: Psychological Sciences and Social Sciences, 60(6), 287-295.

Wilson, H.S. (1989). Family caregiving for a relative with Alzheimer's dementia: Coping with negative choices. Nursing Research, 38(2), 94-98.

***Research Scholar, **Professor, ***Research Scientist,**
Department of Psychology, Banaras Hindu University, Varanasi, India.

* * *