Body Mass Hurts Adolescent Girls More Than Thin-Ideal Images

*Javaid Marium **Ahmad Iftikhar

Abstract

This study was aimed to identify factors that affect negative mood and body image dissatisfaction in women. Positive and Negative Affect, Self Esteem, Body Image Satisfaction and Figure Rating Scale was administered to 97 female undergraduate students. This served as a base line data for correlation analysis in the first instance. One week later participants who volunteered to appear in the second phase of the study (N=47) were shown thin- ideal images as an intervention and soon after they completed Positive and Negative Affect Schedule and Body Image States Scale again as a post test. Results indicated body mass as a strong negative predictor of body image dis/satisfaction, self esteem was a moderate predictor and mood was not a significant predictor. The participants whose actual body shape was markedly discrepant with the ideally desired body shape had significantly low level of body image satisfaction ($p < .001$) than those with low discrepancy. Similar results were found for self esteem ($p < .004$). Both self esteem and body mass predicted body satisfaction about equally and significantly. However, on viewing thin-ideal images, the participants of different body weight showed no change in their body image satisfaction than before. Only the overweight participants were significantly affected on negative mood as a short term reaction after viewing the thin ideal images. Comparing the three groups based on their body mass, one-way ANOVA revealed significant difference in mean score of thin, average and overweight participants on negative mood as well as body image satisfaction. This reveals body mass as a potent and stable factor that consistently and strongly affected body satisfaction not the transient portrayal of thin ideal images. Further, there is some evidence on the moderating role of self esteem between body mass and body image satisfaction linkage. It therefore appears necessary to explore in future researches whether enhancing self esteem can trade off body mass negative effects on young girls.

Keywords: *Body image satisfaction, thin-ideal images, media, mood affects, self esteem.*

Introduction :

Images of thin-ideal women as portrayed in magazines, movies and commercials glorify slenderness of female body. These images influence socio-cultural norm for young people. Young girls idealize and internalize thin-ideal models and judge their body image after them (Heinberg & Thompson, 1995). The social desirability of thin body shape and physical attractiveness involve young adolescents in actual-ideal body comparisons.

Most women perceive their actual figure as significantly larger than the ideal figure (Tiggemann & Pickering, 1996). According to Ozer and Brindis (1998) about 44% of adolescent girls believe they are overweight and 60% are actively trying to lose weight although majority of these girls are within normal weight range. Similarly in a study involving 15-19 years old 303 girls, Cash, Ancis and Strachan (1997) found that 78.5% females desired to be underweight, whereas based on

Body Mass Index (BMI) 79.2% were normal weight, 18.2 % were underweight and 2.6% were overweight. Watching television shapes women mindset such that they become biased against their body self causes mood annoyances and even body disorders such as anorexia nervosa and bulimia nervosa, badly interfering in their everyday life. The media constructed reality of a slender and perfect ideal figure is though pervasive but largely unrealistic and almost unattainable by common man (Cash & Pruzinsky, 1990). Thus women suffer at large from 'body dissatisfaction'—a term generally used to refer to subjective unhappiness with one's appearance (Thompson et al. 1999). A meta-analysis of the studies of exposure to idealized images of female body concluded that viewing these images lead to a consistent but small effect on body dissatisfaction (Groesz, Levine & Murnen, 2002).

Several psychological theories have been referred to explain how one becomes desirous of thin-ideal body self. Higgins (1987) self-discrepancy theory holds that discrepancy between a women's actual body shape and what she ideally desires it to look like causes distress, body dissatisfaction and eating disorder. Leon Festinger (1954) held that individuals tend to rate and evaluate themselves in social comparison. Media, a common household item, invokes comparison of young viewers to the thin body that is heavily idealized in the cultural shows, drama serials and commercial ads. This causes negative affect, low self esteem and high level of body-image self-discrepancy in young female viewers. For example, Triggeman and Slater (2004) conducted a study exposing women to ordinary looking women and then to music video clips of highly attractive ones. They found subjects feeling mood changes as they involved themselves differently in the two conditions on mood while involving themselves in comparison with the idealized figures. Comparison with the ideally thin and attractive figures is in fact accentuated under culture and familial influences as well (Schwartz, 1986) that endorse notions of body perfect. For example one of the popular notions is that physical body is the true person and if the body is good (thin-ideal) then the person is good enough. The popular media, according to Pollack-Seid (1989) does not show heavy women leading normal and happy social lives. Girls are taught to be “good enough” in order to be happy in their marriages, their jobs, their families, and their lives. This social cultural thin body ideal has a great following among the young people. The psychological toll of such self focused narratives has a tremendously negative effect: unhappiness, shame, guilt, depression and low self-esteem (Stice & Shaw 1994; Unger & Crawford, 1996).

The ideal images are focused on a woman's physical appearance. Appearance stereotype affects self-esteem when television screen depicts thin women as successful. The envious mostly overweight persons, reactively battle their bodies to achieve the thin body by dieting and reconstructive surgeries. Culture usually promotes battling against negative body image. Needless to say discrimination against overweight persons is acceptable even today. The media, as a cultural tool, contributes to negative body image by depicting the thin ideal as means to live a happy life.

Cash, Ancis and Strachan (1997) are of the view that body image is psychological in nature and is more about a person's self perception than their actual physical appearance / attractiveness. Majority of the women desire to reduce weight although very few are actually overweight. They hold that a person's early socialization about physical

appearance and their experience of their body during childhood and adolescence influences how they will view their body as they grow up. These feelings, impressions and experiences partially shape their self or personality especially self esteem. Tiggemann (2005) reported that high school girls with perception of being overweight were particularly vulnerable to developing low self esteem. Self esteem is how much one values one's self as a valued person. Comparing groups based on BMI, ANOVA detected small but significant difference on self esteem scores. Secure attachment in childhood however has been found to withstand the socio-cultural stereotype of the thin-ideal and the media onslaught of the thin-ideal images. Enlightenment as a result of education and worldly exposure can also shield against the stereotypical propaganda in favor of the thin-ideal (Bostrom & Didrichson, 1997). In fact the antecedents and correlates of body image are complex and include the developmental influences; cultural, familial, interpersonal as well as actual physical characteristics (Cash & Pruzinsky, 2002; Thompson & Smolak, 2002). This study aims at finding problems of BMI as a stable factor as well as those of media-culture sponsored thin-ideal images as an ongoing influence affecting young girls' body-self image.

Rationale of the study

The purpose of the study is to see how well data from Pakistan support the western literature on the effect of thin-ideal images on the young women. There has been an influx of media in the last 10 years with over 100 channels emerging in the private sector in Pakistan. The life style of people has been changed resultantly, especially of the middle class.

A second interest in this investigation concerns if self esteem can moderate the influence of media portrayal of thin ideal images and the body mass on body-image satisfaction in women. The findings along these lines are mixed. It could be that low self esteem enhances vulnerability to media images or low self esteem could be the effect of watching and overly internalizing thin ideal images (Clay et al., 2005).

The results of this study would likely suggest how much body mass as well personal-social construction of 'thin ideal image' affect the women folk in Pakistan and the role of self esteem as corrective factor towards healthy life and well being.

Hypotheses

Two set of hypotheses pertaining to correlational and experimental part of the study were tested:

Phase -1

1. Participants' body mass will be inversely related to mood affects and body image satisfaction.
2. Participants with small discrepancy between their ideal (desired) body-self and actual (perceived) body-self will have higher self-esteem and body image satisfaction than those with large discrepancy.
3. Self esteem mediates the effect of body mass on body image satisfaction.

Phase- 2

4. Exposure to thin-ideal images will affect mood and body image satisfaction more in the overweight than in thin or average body size participants in pre-post comparisons.

Method

Participants

In all 97 undergraduate female students between the age of 16 and 21 years participated from a local private university. Their mean age was 20.5 years (SD = 1.7). They were enrolled in undergraduate programs in Psychology, Media Studies, Textile Designing and Business studies. All participants were single, belonging to good household background and had access to the television and internet. They were recruited purposively for this study; persons with different body shapes; thin, average and the overweight. Their weight to height ratio (kg / $m^{2)}$) or BMI was about normal (M = 22.30, SD = 4.61). The participants reported watching TV almost daily as one of their household chores for the purpose of information and entertainment.

Measures

Rosenberg Self-Esteem Scale (Rosenberg, 1965)
The 10 item Rosenberg Self Esteem Scale (RSES) was originally designed to measure adolescents' levels of global self-esteem: 'I feel useless at times', 'I am satisfied with myself, 'I am no good at al'. Participants respond to these statements on a four point scale; strongly agree =1 to strongly disagree=4. Scores range from 10 – 40, high score indicate greater level of self-esteem. RSES has become the most widely used instrument to measure self esteem in all age groups, and is seen as highly reliable and internally consistent instrument (Gray et al., 1997). A Cronbach alpha of .88 is reported in this study. It had sufficient test-retest reliability of .84 (Rosenberg, 1965). Convergent validity of RSES has been demonstrated with other measures of self esteem (Ellis & Tayler, 1983).

Positive and Negative Affect Schedule (Watson et al., 1988)

The Positive and Negative Affect Schedule (PANAS) is a widely used measure of current positive and negative moods. It consists of 20 words which describe emotions and feelings, half of which are positive (Proud, Inspired, Interested etc.) and the other half negative (Distressed, Upset, Guilty etc.). The participants rate how well these terms describe how they feel right now on 5 point scale; not at all =1, extremely =5 . High score on positive affect (PA) indicates individual's pleasant involvement with the environment while high score on negative affect (NA) indicates feelings of distress. In the present study PANAS had Cronbach alpha of .70 and .82 for positive and negative affect, respectively. The reliability coefficients are reported as .89 for PA and .85 for NA in the original research (Watson et al., 1988). The two affectivities are inversely related as opposite concepts.

The Body Image States Scale (Cash & Pruzinsky, 2002)

The Body Image States Scale (BISS) is designed to evaluative self body image dis/satisfaction. It is a short questionnaire of six items that investigate the subjects' perception of their physical appearance in a given moment, participants express level of satisfaction or otherwise with their body shape, size, overall appearance, weight, feelings of physical attractiveness or unattractiveness, current feelings about one's looks. The questions are answered on a nine point bipolar scale. High scores on BISS indicate satisfaction with body characteristics and low scores indicate dissatisfaction. The current study reports Cronbach alpha of .80. Cash and Pruzisky (2002) reported an alpha of .77 in a sample of undergraduate women and a test-retest coefficient of .69 over 2-3 weeks. Sandoval (2008) found that BISS is sensitive to

imaginational manipulation of body image state.

Figure Rating Scale. (Stunkard et al., 1983)

The Figure Rating Scale (FRS) depicts body shapes in nine categories; from very thin to obese: The images 1 and 2 are underweight, images 3 and 4 are appropriate weight, image 5 is slightly overweight, images 6 and 7 are moderately overweight and images 8 and 9 is very overweight. A participant rates how she perceived her actual body shape close to the corresponding image pictured on the FRS. In this study participants were asked to indicate along 1-9 images of different weight on FRS the one which is closer to their actual body figure --- 'pick the figure that best represents how you feel you look most of the time'. They also indicated the body shape that would best represent their body ideal. Finally, the Body Image Discrepancy (BID) score is worked out by subtracting ideal from the actual weight-size figure: The greater the discrepancy, the lower the level of satisfaction with ones body. A negative discrepancy score indicates that the subject perceives herself as fatter than her desired figure whereas a positive score indicates that a subject perceives her body thinner than the ideal body figure. A score of zero indicates that the participant perceives her actual body just close to the ideal body shape.

Body Mass Index

Body Mass Index (BMI) is calculated as [(weight (kg) / height (m^2)]. BMI is considered as a major factor predicting body image concerns among females. According to Thompson (2004) BMI of 18.5 is the lower end of biologically healthy body size. In another study, BMI up to 22 was considered thin, whereas persons between 25 and 30 were considered overweight (Zaninotto et al., 2006). Body Mass Index can be considered as an alternative for direct measures of body fat. All participants were weighed on machine and their height was scaled in feet to work out their BMI. The M BMI was 22.31 (SD = 4.61) in this study.

Finally, participants provided biographical information such as age, year of education and subject. They were asked one question as well: 'Do you watch TV daily at home as a household chore for entertainment purposes'? This question was asked to make certain that they were media watchers and could be potentially under media effect for the thin ideal images.

Material / Thin Ideal Images

A set of 60 full body shots of thin images of female models clad in revealing dress were gathered from Asian websites and fashion magazines, in the Pakistani / Indian culture context. The images emphasized appearance and were of unknown persons, not of celebrities, so that other aspects e.g. life history, work or public reputation etc. do not confound participants' judgment or liking of the images. A group of five girls other than the participants, were asked to rate each picture overall as unattractive = 1, attractive = 2 or highly attractive = 3. A set of 30 attractive and highly attractive pictures were then selected that were unique and non-redundant within the set. This stimuli / material were used as intervention in this study. The images were purported to evoke upward comparison with the participants as they watched them in a power point presentation and reported their resultant / current feelings on a post exposure questionnaire.

Procedure

Phase -1

Data was collected in the spring semester 2012 at the university campus during free lesson hours. Subjects were briefed about

the research project and those who consented for participation took Rosenberg Self-Esteem Scale, Positive and Negative Affect Scale, Body Image States Scale, Figure Rating Scale and Biographic Information in order. The latter included an open-ended question: Do you watch TV daily as a household chore for entertainment purposes? All the participants answered the question in the affirmative therefore they were included in the study for the purpose of data analysis. The participants were assured anonymity and the right to withdraw from the study anytime.

All the protocols were scored. The data set thus generated served as a baseline to carry out descriptive and correlation analysis to test set-I hypotheses. It also served as a pre-test data to be compared with after-intervention (post-test) scores investigating set-II hypothesis.

Phase-II

Next, the participants were invited to participate in phase II of the study after a break of 7 days. They appeared in groups of 5-7 persons on the specified schedule. Only 47 participants turned up. Phase-II study comprised an intervention consisting of a set of 30 thin ideal images shown on power point displaying each picture for 30 seconds. As soon as they finished watching the slid show, they were handed over PANAS and BISS again with the instructions to complete them afresh expressing their current state of feelings / opinions through the questionnaires.

Finally, the participants were scaled for their body weight (bare-footed) on digital weighing scale reading to the nearest 0.1 kg and the height was measured upright and relaxed, with the help of a tape-meter affixed on the wall. This served to categorize participants as thin (BMI < 19), average (BMI 19-25) and overweight (BMI > 25). The M BMI was 22.31 and SD = 4.61.

In the end, the participants were thanked and were debriefed. About half the participants were surprised over the true purpose of research. They were told to contact if they had any concern regarding their body image or any feeling resulting from participating in this study. They were encouraged to accept one's body well enough gift of nature and supplement it with other qualities of mind and character.

Results

First, overall properties of the data were examined in terms of descriptive statistics, relationship among study variables and reliability estimates of the measures (see Table 1). The participants had far higher positive mood than negative mood $t = 8.32$, $p < .000$. On BISS, a measure of body satisfaction where scores could range 6 to 54, a mean of 36 indicated participants as mostly satisfied. Mean score on self-esteem was also adequate. The mean discrepancy between the participants' idealized body figure and the perception of their actual body figure was small. The M MBI = 22.31 (SD = 4.61) indicated majority of the participants as average weight by WHO standards for Asia-Pacific region; < 18.5 as thin or underweight, > 25 as average, and >30 as obese (WHO, 2010).

Table 1 : Mean, Standard Deviation and Correlation Matrix of the Study Variables (N=97)

	Variables	*M (SD)*	α	2	3	4	5	6
1	PM	31.3 (7.7)	.70	-.46**	.27**	.38**	-.05	.01
2	NM	20.5 (7.8)	.82		-.30**	-.46**	.00	.04
3	BISS	36.3 (9.3)	.80			.37**	-.51**	-.71***
4	SE	19.3 (4.0)	.65				-.20*	-.19*
5	DIAS	.75 (1.3)	_					-.41**
6	BMI	22.30(4.61	_					

Note: PM = Positive Mood, NM = Negative Mood, BISS = Body Image States Scale, SE = Self-esteem, DIAS = Discrepancy Ideal- Actual Self, BMI = Body Mass Index.

*p <0.05, **p < 0.01, *** p < 0.001

Overall, this indicated that participants of the study were representative of normal people. These results, serving as base line, make one confident to proceed further with the analysis.

The BISS and NA scales showed good internal consistency of .82 and .80, whereas positive mood and self-esteem scales showed a moderate index of .70 and .65, respectively. The positive mood was inversely related with negative mood, as expected. Moreover, positive mood had moderate positive relation with body satisfaction as well as self esteem scores. It was otherwise with negative mood, meaningfully enough. Discrepancy between the actual-self and the ideal-self score was negatively related with body image satisfaction and self-esteem indicating that individuals with little discrepancy had more body satisfaction and high self-esteem than others. BMI was strongly and inversely related with body satisfaction and moderately related with the ideal-actual body discrepancy score or DIAS. Interestingly, body based measures i.e. BMI, BISS and DIAS were more interrelated than the psychological measures i.e. mood affects and self esteem. This evidence lends validity to these constructs: Correlation coefficients among variables made psychological sense and was theoretically in line. It also indicated that the data generated in this study was discrete, non- random and credible enough to test the hypotheses as follow.

H1: Body mass is inversely related to mood affects and body satisfaction.

There was a strong and inverse correlation between body image satisfaction and body mass or the BMI (r = - .71, p < .001). The latter was not related to either positive (r = -.01) or negative moods (r = -.04). Thus the hypothesis is partially supported. It means one's BMI [(weight (kg) / [height $(m)^2$] did not affect mood but it did influence body image satisfaction of the participants; lower the body

mass, greater the body image satisfaction. The body image satisfaction therefore appears to be more credible and sensitive psychological correlate of BMI than mood affects.

H-2 Participants with small discrepancy between their ideal (desired) body-self and actual (perceived) body-self will have higher self-esteem and body image satisfaction than those with large discrepancy.

Self esteem and body image satisfaction scores were compared of the two groups; those with discrepancy of 2-5 points (between their actual-body self and the ideal-body self) and ones with minimal discrepancy i.e. ≤ 1 points, on a nine point FRS (subtracting actual from ideal body-shape rating). An independent sample t-test revealed significant difference ($p<.004$) between the two groups (Table 2) on self-esteem as well as on body image satisfaction ($p < .000$). It means that if participants perceive the actual-body self closer to their idealized body self, they would enjoy greater self esteem and body image satisfaction and vice versa. There is sufficient power of statistics (Cohen's d) supporting hypothesis 2, particularly for body image satisfaction.

Table 2 : Self-Esteem and Body Satisfaction Scores of Subjects With and Without Discrepancy between Ideal and Actual Body Self (DIAS)

	DIAS					
	With (n=31)	Without (n=66)				
Variables	M(SD)	M(SD)	t	p	95%CI	Cohen's d
Self-Esteem	17.7(4.01)	20.1(3.80)	3.0	.004	[.80,4.1]	0.60
Body Satisfaction	30.5(9.7)	39.0(7.8)	4.2	.000	[4.8, 12.1]	0.85

Note: DIAS = Discrepancy between ideal and Actual Self

Table 3 : Hierarchical Regression Analysis for Self Esteem and Body Size as Predictors of Body Satisfaction

Procedure	R^2	$R^{2Change}$	B	SE	β	t	p
Step-1							
Constant	**.143**	**.143**	**19.32**	**4.37**			
Self-Esteem			**.88**	**.22**	**.38**	**3.98**	**.000**
Step-2							
Constant	**.257**	**.114**	**37.94**	**6.39**			
Self-Esteem			**.72**	**.21**	**.31**	**3.42**	**.001**
BMI			**-.70**	**.18**	**-.34**	**-3.80**	**.000**
Step-3							
Constant	**.305**	**.047**	**44.66**	**8.39**			
Self-Esteem			**.41**	**.24**	**.18**	**1.69**	**.094**
BMI			**-.77**	**.18**	**-.38**	**-4.19**	**.000**
Negative affect			**-.20**	**.13**	**-.17**	**-1.59**	**.115**
Positive affect			**.16**	**.12**	**.13**	**1.26**	**.208**

(N=97)

H3: Self esteem mediates the effect of body mass (kg /m^2) on mood affects and body satisfaction.

Body mass or BMI has emerged as a major variable thus far which is associated with creating a self judgment of dis/satisfaction about one's body image and producing concomitant mood affects. There is evidence for self esteem bearing on body image dis/satisfaction and negative mood effects as outcomes (see Table 1). Taking lead from these findings a hierarchical regression analysis was run to estimate the effect of body mass i.e. BMI on body image satisfaction controlling for self esteem (Table 3). Self esteem was entered at the first step in hierarchical regression analysis in view of its logical priority and it explained 14% of variance in body satisfaction scores. BMI, entered in the second step explained another 11% of the variance, however, mood affects, entered at the third step, could account for only 5% of the additional variance ($p < .115$ & $p < .208$). Step-3 could well be dropped for insignificance, confining regression analysis to the second step. The regression coefficients for the self esteem ($\beta = .31$) and body mass ($\beta = -.34$) were nearly comparable towards determining body image satisfaction, in opposite direction. It means body mass discounts towards body image satisfaction whereas self esteem adds or compensates it. The moderating potential of self esteem between BMI and body image

satisfaction is discerned also since all the three variables are significantly inter correlated : Independent and mediating variables predict dependent variable in step-2 of and independent and mediating variables are significantly related (r =.19, p < .05).

The mediation analysis was further supplemented by Sobel (1982) test. The test statistic determines the indirect effect of the independent variable on the dependent variable through a mediator. Reported p values are acquired from the unit normal distribution under the assumption of a two-tailed test of hypothesis assuming the mediated effect is zero in the population using +/- 1.96 as the critical values (Preacher & Hayes, 2004). Results obtained after running the Sobel test equation (z =1.92, p<.058) appear to be marginally significant at .05 level.

H4: Exposure to thin-ideal images will increase the feelings of body image dissatisfaction among overweight participants more than on thin and average weight participants

Body Image States Scale (BISS) measures participants' self judgment of their body called body image dis/satisfaction. The participants who were shown images of thin-ideal girls (intervention) were also re-administered BISS and PANAS soon after as a post test. Table 4 presents pre and post scores of thin, average and overweight participants. Difference in the pre and post mean scores on BISS were not found significant for any category of participants, contrary to the expectation. Similar results were found for positive mood affects. Negative mood affects were however found in overweight participants t = 2.12, p <.05 followed by average body mass participants who also showed somewhat similar scores. The overweight group marginally declined on positive mood affect as well. The hypothesis that feeling of body image satisfaction would change significantly after watching thin-ideal images more in the overweight than thin and average groups of participants could not be supported. However, there was a partial support for the negative mood effects. The Participants of different weight categories however strongly differed on negative mood F (3, 45) = 6.1, p <.01 and body image satisfaction F (3, 45) = 5.6, p

Table 4 : Effect of Thin-Ideal Images on Participants' Mood and Body Satisfaction (N=49)

Conditions	Thin (n=15) M(SD)	Average (n=20) M(SD)	Overweight (n=14) M(SD)	F
	Positive Affect			
Pre	32.3(4.5)	32.0(8.7)	31.2(6.4)	F(3,45)=.21, p<.88
Post	29.0(8.7)	31.1(7.2)	29.2(7.2)	
	t=1.56, p</83	t=1.56, p<.13	t=2.05, p<.83	
	Negative Affect			
Pre	18.0(9.0)	21.0(7.0)	19.1(5.7)	F(3,45)=6.1, p<.01
Post	16.0(7.8)	19.0(8.4)	22.5(9.1)	
	t=0.63, p<.53	t=1.92, p<.06	t=2.12, p<.05	
	Body Satisfaction			
Pre	40.0(7.8)	38.0(7.5)	31.0(9.2)	F(3,45)=5.6, p<.02
Post	37.5(9.2)	36.0(8.1)	29.0(9.6)	
	t=1.40, p<.18	t=1.93, p<.07	t=1.62, p<.13	

Note: Thin = BMI >19, Normal = BMI 20 - 25, Overweight = BMI < 25

<. 02. These categories of participants had been set up on the basis of body mass or BMI. It evidenced that BMI or body mass not the portrayal of thin body images adversely influenced body image satisfaction consistently and strongly. Resultantly, body image dis/satisfaction seems to be a stable factor: the overweight were significantly less satisfied than the average and thin body participants at the outset (pre test) and their body image satisfaction did not change any more after the intervention (post test). Negative mood affect was however discerned among the overweight persons only, as a state / temporary sentiment.

Discussion

It was hypothesized that body mass would directly affect mood and body image satisfaction and that exposure to thin ideal images would adversely affect the overweight women still more. It was also hypothesizes that self esteem protects body image satisfaction and it mediates between BMI and body image satisfaction.

Preliminary analysis yielded psychologically meaningful indices of correlation among the variables of the study and most of the instruments displayed sufficient dispersion of scores indicating the sample following a general population. On another count, participants' BMI was comparable to a study conducted by the Agha Knan Medical University, Pakistan which regarded incidence of BMI > 26 as overweight and > 30 as obesity. MBI having a strong inverse relationship with body satisfaction emerged as the major variable of the study; larger the BMI, lower the body satisfaction as well as ideal actual body-self discrepancy. This is consistent with the findings of Cash, Jakatdar and Williams (2004) that increasing levels of BMI is related to a poorer body image / quality of life among females. Zain-Ul-Abideen, Farooq, Latif and Khan (2010), conducted a study on the females in Lahore and found that there was an inverse relationship between the participants' BMI and body image satisfaction.

One-Way ANOVA revealed that overweight participants had significantly lower body image satisfaction compared to the average and thin body participants ($p < .02$). However, exposure to thin-ideal images (intervention) did not affect the body image satisfaction further in any of the three groups contrary to the expectation except that negative mood increased and positive mood decreased in the overweight group only (Table 4). This is an interesting result given the view that meta-analysis of the media exposure studies conducted by Groesz et.al. (2002) found an effect of viewing ideal images on body dissatisfaction. Stice and Shaw (1994) report other studies that found no difference between the scores of those watching ideal images and the control (no model images) group.

To sum up BMI or body mass influenced body image satisfaction, not the ideal-body image display. One might question the efficacy of the intervention in not affecting the body image satisfaction. Besides, the study had certain limitations such as involving a small sample. These findings may thus be taken as tentative. A major explanation to the findings is that the concept of body dis/satisfaction is a stable cognition or a trait based on very cognizable MBI unlike mood states which are transitory and subject to state effects. Following Stice (2002) who postulated two distinct pathways to body image satisfaction; one involving social pressures to be thin and the other involving body size, our findings support the latter pathway; the intervention effects were comparatively weak.

Weight reduction by traditional methods is a popular way of managing the MBI

to counteract body dissatisfaction. However, the latter can be reduced by alternatively focusing on the positive aspects of the self unique to an individual; ability, effort, education, positivity and other characteristics that might outweigh the body shape virtue. Holding these in good esteem can be self boosting and satisfying in body self judgment.

Conclusion

BMI is the major biological and temporal-causal variable effecting body image dis/satisfaction. The two are strongly inversely correlated. More specifically, body size influenced body image satisfaction and negative mood in overweight persons more than the average and the thin ones. Moreover, self esteem as a psychological variable has been found to have a moderating effect between body size and body satisfaction and can potentially trade off the effect of body size in overweight persons. The enhanced self esteem could bring about a re-cognition of one's body self judgment compensating the body mass effect. This can be investigated in future research.

Limitations and suggestions for future research. The present study involved small sample and was limited to just one university in order to control for variation in age and education across different body weight categories. Future studies may extend the study to diverse samples in age as well as those with different level of education and income to comprehensively investigate the subject. Levels of education and income could also affect our perspective on self judgment of the body. There must be multiple predictors of this very complex construct called 'body image '. Second, this study alluded to self esteem as a moderator between body weight and body satisfaction. In this regard, one might test the effect of boosting self esteem to counteract hurting effect of large BMI on body satisfaction. For example, self compassion or a caring self outlook may trade off body mass effect on body dissatisfaction. Intervention on these lines could be carried out aiming at 'thinking body positive' to feel good in our bodies.

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***&** University of Management and Technology, Lahore, Pakistan**