

# Exposure to weight loss advertisements in the Mass Media and its effects on the Health of Young Women in Thane city

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## Abstract :

**INTRODUCTION:** The visual media's omnipresent idealized depiction of thin female figures influences women's body image and cause body shape dissatisfaction. For accomplishing that idealized figure, women show negative outcomes through eating attitude and weight loss behavior. Even though virtually all women are exposed to idealized, but it depends upon the women which make such comparison may differ.

**OBJECTIVES:** The objective of the study was to analyze the association of mass media exposure (weight loss advertisements) with body shape dissatisfaction, eating disorder symptomatology and weight loss behaviors. To investigate the significant difference between desired weight change and ideal BMI. To investigate the relation between eating disorder symptomatology and health problems.

**METHODS:** The study was conducted on 100 females from 19-21 years age group. A questionnaire was used to collect data on Anthropometric Parameters, Desired Weight Change, Health Problems. The other information was collected through Mass Media Exposure (MME) Body Shape Questionnaire (BSQ-8C), Eating Attitude Test (EAT-26), Weight Loss Behaviors (WLB) questionnaire. The results were statistically analyzed by using standard statistical methods.

**RESULTS:** Mass Media Exposure was significantly associated with Body Shape Dissatisfaction, Eating Disorder Symptomatology, Weight Loss Behaviors ( $p < 0.05$ ). Pearson's correlation between Mass Media Exposure and Body shape dissatisfaction ( $r = 0.464$ ), Mass Media Exposure and Eating disorder symptomatology ( $r = 0.451$ ), and between Mass Media Exposure and Weight Loss Behaviors ( $r = 0.459$ ) was observed. These variables correlated positively i.e. the higher the mass media exposure level, the higher the body shape dissatisfaction, the eating disorder symptomatology and the weight loss behaviors in the female participants. The Desired Weight Change with Ideal BMI category was differed significantly which showed that 41% participants of normal weight category desired to lose weight which directly emphasized on body shape dissatisfaction. 73.4% participants of eating disorders category revealed health problems which also showed that there was a significant association ( $p < 0.05$ ) between Eating Disorder Symptomatology and Health Problems.

**CONCLUSION:** The eating disorder symptomatology was associated with health problems. It was also seen that the females with normal weight category desired to lose weight which demonstrated body shape dissatisfaction among female participants. Thus, this study concluded that the high level of exposure to weight loss advertisements in the mass media caused body shape dissatisfaction, eating disorder symptomatology and extreme weight loss behaviors among female participants. Hence, psychological support and diet counseling is required for the young females to prevent negative feelings about the physical body shape and clinically diagnosable eating disorders among them.

**Keywords:** Mass media, Body shape dissatisfaction, Eating disorder symptomatology, Weight loss behaviors, Desired weight change.

## INTRODUCTION

The cultural ideals of beauty and attractiveness are modelled and reinforced through societal factors in the mass media which is considered to be one of the most strong and powerful communicator causes dramatic increase in the incidence of eating disorders and also coincided with a decrease in women's ideal body weight as portrayed in the mass media. An increase in weight loss advertisements in the mass media was parallel with the rise in eating disturbances, body dissatisfactions among young women populations. A negative feelings about body appearance are related to a number of psychopathological problems, including psychiatric disorders characterized by body image disturbances such as eating disorders. [Dakanalis A & Riva G, 2013]

Adolescence is an important stage where gender socialization takes place. The media plays an influential role in the socialization of adolescents. Adolescents make use of media to develop their gender role identity — one of the important aspects of identity formation. According to the theory of self-socialization, adolescents base their behaviors on ideal role models in the media. They seek out information actively to monitor and change their own behaviors to fit in with their ideal gender images. Advertising, as a powerful socializing agent, has the potential to shape consumer interest. [Ng YL & Chan K, 2014]

The relationship between the pressure created by advertisements and its impact on body dissatisfaction and body image perception of women in India shows that around 30% of the women respondents have stated that they are pressurized by advertisements. [Sasi RV & Maran K, 2012]

26 Indian women who reported that social comparisons with friends and family members as well as Bollywood actresses play a role in their dissatisfaction with their body shape and size. They also revealed that they have noted a trend for women in Bollywood to become slimmer over time. Indian media overwhelmingly portray Western ideals when it comes to images of women. [Kapadia MK, 2009]

India is reported to be in a phase of change in its dietary pattern fuelled by economic changes, rapid urbanization, increased women's participation in the workforce, the effect of globalization, and targeted advertisements. These phenomenon are often accompanied by shift of diet from traditional balanced to carbohydrate-rich western diet. It is reported that the concept of "thin body" is promoted among urban girls through mass media that may lead to dissatisfaction to their body weight. Such a negative feeling may precipitate to disordered eating behavior or Eating Disorder. [Mohandass AA, 2016]

Mass media has become an integral part of our daily life. With the increased exposure of media, the psychological and physiological problems associated with media exposure have also multiplied. Mass media displays an exaggerated version of reality and lately it is also criticized for using thin very thin female models and very muscular male models changing perception of ideal beauty. When this ideal image conflicts with actual image of consumers it causes disruption in their body perception. Psychological problems associated with the disrupted body perception are depression, body image dissatisfaction, low self-esteem and body image consciousness. Whereas, the Physiological problems associated with it are eating disorder and indulgence in unhealthy weight control behaviors. [Nasir B & et al, 2017]

## OBJECTIVES

- To analyze the association of mass media exposure (weight loss advertisements) with body shape dissatisfaction, eating disorder symptomatology and weight loss behaviors.
- To investigate the significant difference between desired weight change and ideal BMI.
- To investigate the relation between eating disorder symptomatology and health problems.

## MATERIALS AND METHODS

### Study Area:

It was conducted on 100 females from 19-21 years aged group in Thane city.

### Sample Technique:

Purposive sampling technique was used. The samples selected for the study were based on their willingness to participate.

### Data Collection:

A questionnaire was incorporated to gather relevant data from the participants in the study.

It was categorized into sections comprising of:

- Anthropometric Parameters like height, weight, BMI, etc.
- Desired Weight Change – It was the question to analyzed as to whether the participants were satisfied or dissatisfied with their body weight.
- Health Problems – This category gathered data regarding the participant's health issues whether they had any health problems or not.
- Mass Media Exposure (MME) - The mass media exposure questionnaire was designed to assess the influence of weight loss advertisements on females (19-21) years age group. Responses to the mass media influence scale were also assessed using 6- point Likert scale. Highest scores representing greater susceptibility to mass media influence. The MME score was calculated by adding the answers returned for the 20 items.
- Body Shape Dissatisfaction – It was measured using a short form of the Body Shape Questionnaire (BSQ). The original body shape questionnaire had 34 items and was developed to measure the concern of body shape in women. [Copper PJ & et al, 1986]

The 4 different short forms of 8 items each (BSQ) from original Body Shape Questionnaire was developed later. It was noted that the 4 short forms had Cronbach alphas from .88 to .94 among each other and concluded that they were reliable measures of body shape dissatisfaction. [Evans C & Dolan B, 1993]

Short form **BSQ-8C** was used for this study. The higher the score in BSQ, the higher the level of body shape dissatisfaction. BSQ scores were calculated by adding the answers returned for the 8 items.

- Eating Disorder Symptomatology - It was measured using the **EAT - 26 questionnaire** the original eating attitude test. [Garner DM & et al, 1982]

It is self reported survey of eating disturbances and is one of the most widely used scales in research on eating disturbances, it is one of the most widely used scales in research on eating disorders. The short form, the **EAT-26**, assesses a broad range of symptoms of anorexia nervosa and bulimia nervosa; including dieting behavior, drive for thinness, vomiting after eating, and food preoccupation. Respondents rate the frequency of each behavior on a 6-point scale from 1(always) to (6) never. The clinical cut-off point for eating disturbances is 20. If the score of a respondents is above 20, it indicates a high level of concern about dieting, body weight or problematic eating behaviors. A score below 20 indicates that respondents do not have any symptoms or attitudes characteristics of an eating disorder.

g) Weight Loss Behaviors (WLB) - In their study of food habits, body image and weight control of young male and female adolescents, a survey on weight loss behaviors (WLB) was developed which consist of 21 behavioral statements. [O'Dea J & et al, 1996]

Participants were requested to return the frequency of that particular behavior on a 5-point scale (1=Never, 2=Rarely, 3=Sometimes, 4=Usually, and 5=Always). The higher the score, the more frequent the individual participate in weight loss behaviors. WLB scores were calculated by adding the answers returned for the 21 items.

### STATISTICAL ANALYSIS

Analyses were performed using the Statistical package for Social Sciences (SPSS) software (version 20. SPSS Inc, Chicago, IL, USA). Chi-square test of association were done to examine the relationship between the variables like Mass media exposure with body shape dissatisfaction, eating disorder symptomatology and with weight loss behaviors. It was also used between variables like eating disorder symptomatology and health problems. One way ANOVA test is used to determine whether there are any statistically significant differences between the means of two or more unrelated (independent) groups like between desired weight change and ideal BMI category. P-values less than 0.05 were considered statistically significant.

Pearson's Correlation were used to correlate among each four variables like Mass media exposure, eating disorder symptomatology, body shape dissatisfaction and weight loss behaviors. P-values less than 0.01 were considered statistically significant for the correlation.

### RESULTS AND DISCUSSION

In this study, a structured interview schedule was filled by 100 females from 19 to 21 years age group. Main Finding of the study was discussed under the following tables.

**Table 1: Mass Media Exposure with Body Shape Dissatisfaction**

Mass Media Exposure	Body Shape Dissatisfaction			Chi-square	p-value
	Low body shape dissatisfaction	High body shape dissatisfaction	Total		
	% (n)	% (n)	% (n)		
Low mass media exposure	72.2% (26)	27.8 (10)	100% (36)	17.145	0.000*
Medium mass media exposure	66.7% (20)	33.3% (10)	100% (30)		
High mass media exposure	26.5% (9)	73.5% (25)	100% (34)		
Total	55% (55)	45% (45)	100% (100)		

\*p-value<0.05

According to the **Table 1**, it was observed that in low mass media exposure category 72.2% participants had low body shape dissatisfaction while 27.8% had high body shape dissatisfaction. In medium mass media exposure category 66.7% participants had low body shape dissatisfaction and 33.3 % had high body shape dissatisfaction. In high mass media exposure category 26.5 % participants had low body shape dissatisfaction while 73.5% had high body shape dissatisfaction. It was also observed that there was a statistically significant association ( $p<0.05$ ) between mass media exposure and body shape dissatisfaction.

In a study, the adolescents were exposed to thin-ideal messages a few times a week. Females had higher levels of thin-ideal media exposure, media pressure to be thin, thin-ideal internalization, body dissatisfaction, and disordered eating behaviors than males. Multivariate logistic regression results indicated that media pressure and thin-deal internalization significantly increased the likelihood of body dissatisfaction, while media pressure and body dissatisfaction contributed to both restrained eating and unhealthy weight control behaviors, when all other variables were controlled for. [Chang FC & et al, 2013]

A study outcome revealed that positive commenting in social media increases internalization and relates to body dissatisfaction because it brings attention to body image and makes one more conscious of their body. Commenting that someone looks 'hot' or looks 'thin' reinforces body standards set forth by the media. It caused users to look at their own bodies in relation to what social media promotes as being the ideal body. This can lead them to compare their own bodies to these ideals leading to feelings of body dissatisfaction, which they are then more likely to internalize since attention was brought to their body. [Slater A & Tiggemann M, 2015]

**Table 2: Mass Media Exposure with Eating Disorder Symptomatology**

Mass Media Exposure	Eating Disorder Symptomatology			Chi-square	p-value
	No eating disorder	Eating disorders	Total		
	% (n)	% (n)	% (n)		
Low mass media exposure	58.3% (21)	41.7% (15)	100% (36)	20.196	0.000*
Medium mass media exposure	50% (15)	50% (15)	100% (30)		
High mass media exposure	8.8% (3)	91.2% (31)	100% (34)		
Total	39% (39)	61% (61)	100% (100)		

\*p-value&lt;0.05

According to the **Table 2**, it was observed that in low mass media exposure category 58.3% participants had no eating disorder while 41.7% had eating disorders. In medium mass media exposure category 50% participants had no eating disorder while 50% had eating disorders. In high mass media exposure category 8.8% participants had no eating disorder while 91.2% had eating disorders. It was also observed that there was a statistically significant association ( $p < 0.05$ ) between mass media exposure and eating disorder symptomatology.

The data of a study reflects that Facebook intensity, online physical appearance comparison, and online fat talk were significantly and uniquely associated with disordered eating and explained a large percentage of the variance in disordered eating (60%) in conjunction with covariates. [Walker M & et al, 2015]

In a study, social network media exposure and adolescents eating pathology in Fiji showed that both direct and indirect mass media exposures were associated with eating pathology in unadjusted analyses, whereas in adjusted analyses only social network media exposure was associated with eating pathology. [Becker AE & et al, 2011]

**Table 3: Mass Media Exposure with Weight Loss Behaviors**

Mass Media Exposure	Weight Loss Behaviors						Chi-square	p-value
	No Weight Loss Behaviors	Mild Weight Loss Behaviors	Moderate Weight Loss Behaviors	Marked Weight Loss Behaviors	Extreme Weight Loss Behaviors	Total		
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)		
Low mass media exposure	30.6% (11)	19.4% (7)	30.6% (11)	8.3% (3)	11.1% (4)	100.0% (36)	26.813	0.001*
Medium mass media exposure	26.7% (8)	30.0% (9)	13.3% (4)	13.3% (4)	16.7% (5)	100.0% (30)		
High mass media exposure	2.9% (1)	11.8% (4)	14.7% (5)	41.2% (14)	29.4% (10)	100.0% (30)		
Total	20.0% (20)	20.0% (20)	20.0% (20)	21.0% (21)	19.0% (19)	100.0% (100)		

\*p-value&lt;0.05

According to the **Table 3**, it was found that in low mass media exposure category 30.6% participants had no weight loss behaviors, 19.4% had mild weight loss behaviors, 30.6% had moderate weight loss behaviors, 8.3% had marked weight loss behaviors and 11.1% had extreme weight loss behaviors. In medium mass media category 26.7% participants had no weight loss behaviors, 30% had mild weight loss behaviors, 13.3% had moderate weight loss behaviors, 13.3% had marked weight loss behaviors and 16.7% had extreme weight loss behaviors. In high mass media exposure category 2.9% participants had no weight loss behaviors 11.8% had mild weight loss behaviors, 14.7 % had moderate weight loss behaviors, 41.2% had marked weight loss behaviors and 29.4% had extreme weight loss behaviors. It was also observed that there was a statistically significant association ( $p<0.05$ ) between mass media exposure and weight loss behaviors.

A study exhibited that media-induced stress increased the probability of restrictive eating and fluid intake, vomiting, and laxative abuse across the day. Media-induced stress may contribute to increased eating disorder behaviors in women with Anorexia Nervosa, as women who saw a media image and reported this experience as stressful were more likely to engage in momentary binge eating or vomiting. [White EK & et al, 2016]

A study reflects that youth engage in a variety of methods to manage their weight, including unhealthy weight control behaviors (UWCBs). Over 40% of youth endorsed using at least one UWCB in the past year. Girls reported using more UWCBs and engaging in UWCBs more frequently than boys. For boys, media influence to lose weight was only related to UWCB frequency for those with a BMI z-score of 1.23 and above. For girls, media influence was only related to UWCB frequency for those with low to average levels of global self-worth. [Mayer- Brown S & et al, 2016]

**Table 4: Pearson's Correlation among Mass Media Exposure, Body Shape Dissatisfaction, Eating Disorder Symptomatology and Weight Loss Behaviors**

	Mass Media Exposure		Body Shape Dissatisfaction		Eating Disorder Symptomatology		Weight Loss Behaviors	
	r	p-value	r	p-value	r	p-value	r	p-value
<b>Mass Media Exposure</b>	-	-	0.464**	0.000	0.451**	0.000	0.459**	0.000
<b>Body Shape Dissatisfaction</b>	0.464**	0.000	-	-	0.693**	0.000	0.759**	0.000
<b>Eating Disorder Symptomatology</b>	0.451**	0.000	0.693**	0.000	-	-	0.768**	0.000
<b>Weight Loss Behaviors</b>	0.459**	0.000	0.759**	0.000	0.768**	0.000	-	-

\*\* p&lt;0.01

r = Pearson's Correlation

According to the **Table 4**, Pearson's correlation between Mass Media Exposure and Body Shape Dissatisfaction ( $r= 0.464$ ), Mass Media Exposure and Eating Disorder Symptomatology ( $r= 0.451$ ) and between Mass Media Exposure and Weight Loss Behaviors ( $r=0.459$ ) was observed. These variables correlated positively i.e. the higher the mass media exposure level, the higher the body shape dissatisfaction, the eating disorder symptomatology and the weight loss behaviors in the female participants.

A study data showed that media influences the importance of body image in young adults which means a relation between mass media and body image was found. Karl Pearson product moment correlation was used to find out the relationship between the variables. It was found out that media influences the importance of body image, body image concern, eating practices and body change strategies among young adults. [Poorna S & Vijaybanu U, 2016]

Data from the study revealed that factors significantly associated with Inappropriate Weight Loss Attempts (IWLA) by the girls were percentage deviation of weight from standard weight (%DW) and media influence on the girls themselves, and media influence on and self-esteem of their mothers. IWLA, which were frequently observed among early adolescent girls even among those of normal weight, were closely related to depressive status. IWLA were significantly associated with not only factors related to the girls (1.09 (1.04-1.14),  $p=0.001$ ), but also with maternal psychological factors (1.06 (1.00-1.13),  $p=0.035$ ) conveyed by the media. [Sugarwara A & et al, 2011]

**Table 5: Desired Weight Change when classified according to Ideal BMI Category**

Ideal BMI category	Desired Weight Change		F ratio	p-value
	% (n)	Mean $\pm$ SD		
Underweight	31% (31)	2.35 $\pm$ 3.93	18.557	0.000*
Normal	41% (41)	-2.02 $\pm$ 3.25		
Overweight	12% (12)	-3.92 $\pm$ 3.28		
Obese	16% (16)	-5.88 $\pm$ 5.51		
Total	100% (100)	-1.51 $\pm$ 4.83		

Data presented as Mean $\pm$ SD

\*p-value&lt;0.05

According to the **Table 5**, it was observed that the desired weight change differed significantly in participants when compared with ideal BMI category. 31% participants of underweight category showed that they craved to gain weight by mean of 2.4 $\pm$ 4kg. 41% participants of normal category showed that they craved to lose weight by mean (-2 $\pm$ 3.2) kg. 12% participants of overweight category participants showed that they craved to lose weight by mean (-4 $\pm$ 3.2) kg. 16% participants of obese category showed that they craved to lose weight by mean (-5.9 $\pm$ 5.5) kg.

A study outcome showed that on average, females chose as feel status a significantly higher figure than the males (4.7 versus 3.8) and they would have liked to have a significantly thinner figure than the males (3.4 versus 3.6). Therefore, the mean FID (Feel minus Ideal Discrepancy) values (positive in both sexes) were significantly higher in females than in males, meaning higher dissatisfaction. The mean FAI (Feel status minus Actual status Inconsistency values) were positive in females and negative in males, indicating a tendency of the women to overestimate their weight status and of the men to underestimate it. [Zaccagni L et al, 2014]

**Table 6: Health Problems with Eating Disorder Symptomatology**

Health Problems	Eating Disorder Symptomatology			Chi-square	p -value
	No eating disorder	Eating disorders	Total		
	% (n)	% (n)	% (n)		
Yes	21.6% (17)	<b>73.4% (47)</b>	100% (64)	11.560	0.001*
No	61.1% (22)	38.9% (14)	100% (36)		
Total	39% (39)	61% (61)	100% (100)		

\* p -value &lt;0.05

According to the **Table 6**, it was observed that 21.6% participants of no eating disorder category and 73.4% participants of eating disorders category revealed that they had health problems. 61.1% participants of no eating disorder category and 38.9% participants of eating disorders category revealed that they did not had any health problems. It was also observed that there was a statistically significant association ( $p < 0.05$ ) between health problems and eating disorder symptomatology.

The outcome of a study exhibited that there was a positive association between eating disorder history and subsequently being underweight ( $BMI < 18.5 \text{ kg/m}^2$ ) at ages 30–39 or baseline, and an inverse association between eating disorder history and being overweight or obese ( $BMI \geq 25 \text{ kg/m}^2$ ). Compared to women without eating disorders, women with eating disorders were more likely to self-report clinically diagnosed depression ( $OR = 2.17$ ,  $CI: 1.88–2.49$ ). [O'Brien KM et al, 2017]

## CONCLUSION

The eating disorder symptomatology was associated with health problems. It was also seen that the females with normal weight category desired to lose weight which demonstrated body shape dissatisfaction among female participants. Thus, this study concluded that the high level of exposure to weight loss advertisements caused body shape dissatisfaction, eating disorders symptomatology and extreme weight loss behaviors among females participants. Hence, psychological support and diet counseling is required for the young females to prevent negative feelings about the physical body shape and clinically diagnosable eating disorders among them.

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