

Gender Differences in Body Image Dissatisfaction and Eating Disorder among Nepalese Adolescents: a Paradigm Shift from Fatness to Thinness

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Abstract

Adolescents are vulnerable to body image dissatisfaction (BID) and eating disorder, and this vulnerability might differ among females and males. Information about gender differences in prevalence and determinants of body image dissatisfaction and eating disorder in Nepalese adolescents is largely unknown. Therefore, we carried out to examine the gender difference in prevalence and determinants of eating disorder among adolescents in Kathmandu, Nepal. Two hundred and thirty nine adolescents aged 15 to 19 were invited to fill the self-administrable questionnaire. Almost, 71% of females had positive BID and 14% of females had negative BID. Whereas, 12% of males had positive BID and 60% had negative BID. The prevalence of eating disorder was 29% in females and 16% in males. Exposure to media determined BID and as such increased risk of eating disorder in both females and males. BMI was positively associated with BID in females and negatively associated with BID in males. Body esteem was also identified as a determinant of BID in females. It is recommended that awareness programs through different mass media about negative effects of eating disorder should be stipulated.

Keywords: Body image dissatisfaction; Eating disorder; Gender difference; Nepal; Vulnerability

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Introduction

Body image is the self-evaluation of the appearance and shape of one's body. Disturbance in body image occurs when there is a discrepancy between a person's ideal body image and perceptions of their own body [1]. Body image dissatisfaction (BID) is the negative subjective evaluation of one's physical body [2].

Body image changes rapidly during adolescence and adolescents are very much concerned about it. Adolescents who are dissatisfied with their body image could indulge themselves in different health compromising behaviors that can lead to inadequate intake of energy and essential nutrients, thereby jeopardizing growth, development and health [3,4]. BID might be an important predictor of increased incidence of eating disorders [5] (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006) and a range of psychological ill health like depression and low self-esteem [5].

BID is determined by socio-cultural factors and the analysis of gender is a main factor in the social construction of BID. Traditionally, thick built was perceived as beauty in both genders in Nepalese societies. However, recent criticisms stress more on the importance of health, which is thus associated with thinness [3]. Overweight people are regarded as greedy, weak and lazy. However, thin body shapes are associated with personality traits and positive values. Nevertheless, most of the studies are concerned about body image of women and information about BID in men is not clearly known so far.

Traditionally, the problem of body dissatisfaction and eating disorders was thought to be the problem of Western societies [6]. However, several studies [7-9] have clearly demonstrated that body dissatisfaction and disordered eating is leading to serious psychological and nutritional consequences in Asia. However, a very few evidence exist on prevalence and determinants of BID and eating disorder in the context of Southeast Asia [10,11].

Body image dissatisfaction and disordered eating could lead to serious psychological and nutritional consequences among Nepalese adolescents. However, none of the research has been documented explaining the prevalence and determinants of eating disorders in Nepal so far. Also, the current nutrition promotion plans and activities have not considered controlling this problem. Therefore, this study was carried out to examine the gender differences in prevalence and determinants of BID and eating disorder among the Nepalese adolescents. We believe that the findings of this study would inform programs to develop strategies to improve healthy nutritional practices among Nepalese adolescents.

Materials and Methods

Study design and population

This was an institutional based cross sectional study. Adolescents aged 15 to 19 years studying at 11th or 12th grade in private higher secondary schools in Kathmandu district were the study participants. Consent and ethical approval was obtained from Ethical Review Board of Institute of Medicine for the study.

Sampling and recruitment

Ten private higher secondary schools having 11th or 12th grade in Kathmandu were randomly selected. Out of these ten schools, three schools did not give permission to carry out the study. Three more schools were randomly chosen. In each school, one grade (either 11th or 12th) was randomly selected to administer the questionnaire. All the students from the selected grade were invited in the study.

Data collection

Students were invited to fill the self-administrable questionnaire that was prepared in English language. The teaching learning activities in the schools of urban areas of Nepal are all carried out in English language. All participants received a verbal introduction outlining the purpose of the study and the questionnaire set. The questionnaire also included detailed instructions for the students. The research team was available to assist in case students have problems to understand the questions. The students themselves measured their height and weight and note down on the questionnaire. Trained personnel from the research team assisted students to measure the height and weight.

The principal of the selected schools and class teacher of the students who participated in the survey signed the written consent on behalf of the students. Selected students were well explained about the study and its objectives and invited to participate in the study. Verbal consent was taken from all the selected students and the participation was 100%. A total of 272 questionnaires had been filled from 10 schools, out of which 29 students reported their age above 19 years old and were not included in the analysis, as the study was primarily concerned for the adolescents. Fourteen questionnaires were discarded due to incompleteness.

Variable description

The outcome variables were BID and eating disorder. The

independent variables were- media exposure, body mass index (BMI), self-esteem and body-esteem.

BID: The gender-appropriate version of the Gardner 13-figure schematic contour scale [12] with extremes of thinness and fatness at stable height was used to assess BID. The participants were asked to choose the figure their body looks like. Subsequently, they were asked to indicate how they would prefer to look like. The score ranges from 1 to 13 for each. A BID score was calculated by subtracting ideal body image score from the current body image score. BID score ranges from -12 to +12. Negative BID score (BID<0) indicates that adolescent perceive himself/herself thinner and want to have a bigger body where as a positive BID score (BID>0) indicates that the adolescent perceive himself/herself overweight and have desire to be thinner. A BID score of zero indicates the absence of body image dissatisfaction.

Eating disorder: To measure eating disorder, eating attitude test (EAT-26) [13] was used. Possible scores on the EAT range from 0 to 78. Cutoff scores of 20 on the EAT-26 have been suggested to identify persons with problematic attitudes and behavior toward eating [13]. The Chronbach's alpha reliability estimates for the sample were 0.80 for females and 0.81 for males.

Media Exposure

Exposure to three categories of media: print media, television and internet were measured, with each being further sub-divided into information, entertainment and sports. A scoring system was developed to measure the time spent per week on different modalities in each type of media.

BMI: Adolescent's height to nearest 0.1 cm and weight in light clothing and without shoes to nearest 0.1 kg were measured and BMI (kg/m²) was calculated.

Self-esteem: We used the Rosenberg Self-Esteem Scale (RSE) [14] to assess self-esteem. The RSE is made up of 10 items that refer to self-respect and self-acceptance rated on a 4-point Likert-scale. The scoring system was 3 for 'strongly agree', 2 for 'agree', 1 for 'disagree' and 0 for 'strongly disagree'. The Chronbach's alpha for RSE was found to be 0.61.

Body esteem: The Body esteem scale for adolescents and adults (BESAA) developed by [15] was used to measure body esteem. This scale consists of 21 items. The responses of these items were measured in 5-point Likert-scale ranging from never to always. The scoring system was 1 for 'never', 2 for 'seldom', 3 for 'sometimes', 4 for 'often', and 5 for 'always'. The negative items were reverse scored. The higher score indicates more positive body esteem. The Chronbach's alpha for BESAA was found to be 0.83.

Statistical Analysis

All the analysis was carried out using SPSS (Version 20). Cronbach's alphas were used to estimate the internal consistency of the subscales. T-tests were performed for bivariate comparisons among males and females. Pearson's correlation was carried out to examine the correlations between the selected variables in females and males. Multiple Regression analysis was carried out to assess determinants of BID separately for females and males. Variables found to be significantly correlated in Pearson

correlation were entered into multiple regression models. Eating disorder (EAT score) was not entered into the final model as it was not considered an exposure variable, rather considered a consequence of body image dissatisfaction.

Results

Out of 239 adolescents, 47.7% were females and 52.3% were males. The age range was 15 to 19 years. The prevalence of BID was 78% in total, with 38% negative BID and 40% with positive BID. Almost, 14% of females had negative BID, 71% had positive BID and 15% had no BID. Likewise, 60% of males had negative BID, 12% had positive BID and 28% had no BID. The prevalence of eating disorder was 29% in females and 16% in males.

Table 1 presents the bivariate analysis of selected variables with gender. Males were significantly more likely to be older in age, to have higher weight and height than females. However, no significant difference was seen in BMI, body dissatisfaction score and self-esteem score between females and males. Males were more likely to have higher exposure to media, to have higher body esteem score and to have lower EAT score than females (**Table 1**).

The bivariate correlation analysis between selected variables is presented in **Table 2**. The figures above and below the diagonal represent the correlation coefficients of females and males respectively. In females, BID was positively correlated with media exposure, EAT and BMI, and was negative correlated with self-esteem and body esteem. In males, BID was positively associated with media exposure and EAT, and was negatively correlated with BMI, self-esteem and body-esteem (**Table 2**).

Multiple regression analysis of selected variables with BID is summarized in table 3. BID was independently positively associated with media exposure in both genders. BID was independently negatively associated with body esteem in females. BID was independently positively associated with BMI in females, where as it was independently negatively associated with BMI in males (**Table 3**).

Discussion

To our knowledge, this is the first study to assess the prevalence and determinants of BID in Nepal. This study found that a great majority of adolescents had BID and one-fifth of the adolescents suffered disordered eating. Females were more vulnerable for BID and eating disorder than males. BID was independently

associated with media exposure, body esteem and BMI in females. Likewise, BID was independently associated with media exposure and BMI in males.

Exposure to media was identified as one of the determinant of BID in both genders in this study. The mass media like-television, internet, cinema and printed media project that thin built is valued as beauty in the society [16]. Exposure to thin media images led to an increase in body dissatisfaction. Similarly, these media also provide information on how to achieve the idealized body image. Adolescents might follow rigorous dieting and exercise to lose weight and this can lead to serious eating disorders [17]. Messages regarding negative aspects of excessive dieting and severe weight loss should also be projected in these media.

Generally, female adolescents are more dissatisfied with their bodies than males [8,18] and this was well supported in our study. We also found that dissatisfaction with body image and weight was not significantly correlated with self-esteem for males but was significant for the females. This result confirms research on the relationship between body satisfaction and self-esteem showing that female body image satisfaction is highly correlated with self-esteem. It might suggest that females are more vulnerable to BID, low self esteem and eating disorders than males [19,20-24] Davis and Cowles (1991) have reported that dieting and eating disorder is very common in females than males and this was well supported in our study. This might signify that females have traditionally displayed a greater commitment to the pursuit of cultural standards of beauty than men.

BMI is a significant predictor of BID in both genders and it was well supported by our study [20,21,4]. However, we identified a negative association in males and a positive association in females. It signifies that females are more likely to perceive that they are overweight and males are more likely to perceive that they are underweight. This was in line with a study carried out by [22] that more than half of the normal weight males perceive themselves as underweight and want to gain weight. This might be due to the fact that fatness among men is symbolized as health and wellbeing in some societies in Nepal. Males are the breadwinners of the family and they have to be physically tough and strong to feed the family. Whereas, females are taken as a symbol of love and beauty and they might be more concerned to have a thin built. Sociological research to explain association of gender roles and body image are necessary.

Table 1 Association of selected variables and gender.

Variables	Total	Female	Male	P (2-tailed t-test)
	Mean (SD)	Mean (SD)	Mean (SD)	
Age	17.32 (0.93)	17.13 (0.91)	17.49 (0.92)	0.003
Weight (kg)	53.33(8.78)	47.92 (5.38)	58.26 (8.37)	<0.001
Height (m)	1.60 (0.09)	1.53 (0.05)	1.67 (0.07)	<0.001
BMI (kg/m ²)	20.76(2.99)	20.45 (2.50)	21.05 (3.35)	0.116
BID score	2.17 (1.78)	2.29(1.78)	2.06 (1.76)	0.293
Media exposure score	16.13 (5.45)	15.39 (4.45)	16.81 (6.15)	0.041
Self esteem score	18.06 (3.64)	17.98 (3.64)	18.14 (3.66)	0.745
EAT score	12.90 (8.12)	14.59 (7.93)	11.37 (8.01)	0.002
Body Esteem score	52.05 (13.05)	50.11 (13.84)	53.82 (12.07)	0.027

Table 2 Correlation between selected variables for each gender (Males below diagonal and females above diagonal).

Variables	Age	Media exposure	Self-esteem	Eating disorder	BID	Body esteem	BMI
Age	1	0.004	-0.03	-0.06	-0.02	0.04	0.14
Media exposure	-0.04	1	-0.31**	0.59**	0.72**	-0.47**	0.47**
Self-esteem	-0.16	-0.13	1	-0.21*	-0.46**	0.61**	-0.15
Eating disorder	0.03	0.20*	-0.21*	1	0.65**	-0.50**	0.40**
BID	-0.03	0.43**	-0.31**	0.32**	1	-0.63**	0.57**
Body esteem	-0.05	-0.32**	0.47**	-0.26**	-0.50**	1	-0.23*
BMI	0.02	-0.04	0.15	0.07	-0.45**	0.16	1

** Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

Table 3 Multiple regression analyses of selected variables with BID.

Gender	Predictors	B	95% CI	t	P value
Female	Media exposure	0.14	0.09, 0.20	5.09	<0.001
	Self esteem	-0.06	-0.12, 0.01	-1.79	.076
	Body esteem	-0.03	-0.05, -0.01	-3.52	0.001
	BMI	0.20	0.11, 0.28	4.56	<0.001
Male	Media exposure	0.07	0.04, 0.11	3.84	<0.001
	Self esteem	-0.05	-0.11, 0.02	-1.35	0.181
	Body esteem	-0.03	-0.06, -0.01	-2.85	0.005
	BMI	-0.16	-0.25, -0.03	-3.96	<0.001

There are some limitations of this study. First, given that the adolescents in this study were recruited from private higher secondary schools, it should be cautiously generalized to other adolescent population. Second, eating disorder was defined based on EAT-26 scale and no other specific diagnostic criteria were used to identify disordered eating. Third, the study did not consider socioeconomic status as attending private school, exposure to different media and eating patterns might be determined by socio-economic status. Lastly, this cross-sectional study was based on behaviors reported in self-administered questionnaire in a classroom setting and there might be chances of information bias.

Conclusion

This research provided information on prevalence of BID and eating disorder among female and male adolescents and also examined determinants of BID in both genders. Females are more vulnerable to BID and eating disorder. Sociocultural factor like-exposure to media determines BID and as such increases risk of eating disorder in both females and males. Likewise, individual

factors like body esteem also determine BID in females. BID was positively associated with BID in females and negatively associated with BID in males. Awareness programs through different mass media about negative effects of eating disorder should be conducted. School health programs should also prioritize eating disorder, identify the vulnerable individuals and provide counseling to them. Future research should be carried out to explain the association of body image with socio-economic status and gender roles.

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Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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