



Original Research Article

Nutritional Status and Body Image Dissatisfaction among Adolescent Girls in Kaski District, Nepal

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ABSTRACT

Introduction: Adolescence is a stage of human life linked with gradual changes and rapid development. A good nutrition plays important in maintaining good health. Body image dissatisfaction affects the food habit and nutrition of the adolescent especially girls as they are concerned about their body image.

Objective: To find out the relationship between nutritional status and body image dissatisfaction among adolescent girls. **Methods:** A Cross sectional study was carried out in Kaski district, Nepal from October 2013 to January 2014 among 240 female adolescent students of 11-19 years of age selected randomly from 8 schools of grade six to twelve using multistage simple random sampling technique. Structured self administered questionnaire, anthropometric assessment and figure rating scale were used. Statistical analysis was done using Statistical Software for Social Sciences Version 16.

Results: Few (4.6%) of the adolescents girls were classified as underweight, 80.4 percent were normal weight, and ten percent were overweight. More than four in five (80.9%) of the adolescents girls were dissatisfied with their body image where positive body image dissatisfaction was (41.7%) and negative body image dissatisfaction was (39.2%). Absence of body image dissatisfaction was found (19.2%).

Conclusion: Body image dissatisfaction among adolescent girls was found high even though four in five girls had normal weight.

Key words: Adolescent girl; Body image dissatisfaction; Nutritional status

INTRODUCTION

Adolescence is the second decade of life and a period of rapid development. It is a time with accelerated growth and major physical changes take place in the body. Adolescents, mostly the girls often tend to have an idealized body image which when linked with an inadequate diet, may lead to nutritional imbalances with the negative impact on health and development. [1,2] Body

image is a multidimensional complex phenomenon which can involve perceptual, affective, cognitive or behavioral disturbances. [3] Body weight dissatisfaction and fear of fatness in early adolescence are important risk factors for disordered eating behaviors such as excessive dieting and striving for thinness are considered to be significant health concerns among health professionals worldwide. [4] Being thin is

desired within western societies, and many normal weight adolescents, especially girls, perceive themselves as overweight and try to lose weight to achieve the socially endorsed ideal of a beautiful body. Studies have shown variability in body size preference and in body image dissatisfaction among children and adolescents based on ethnicity, body mass index, gender, age, pubertal status, and family connectedness. [5]

Media, where adolescents spend one fourth of their daily time plays a big part in body image dissatisfaction. Advertisements in magazines and television typically glamorize skinny models that do not resemble the average woman. In fact, today's models generally weight 23% less than the average woman. [6]

More than half of adolescent girls are likely than males to think their current size is too large and feel negatively about their body image. The most important indicator of self-worth for girls is self look which for boys is based on abilities, rather than looks. [7]

Female adolescents exhibit higher levels of dieting behavior and lower levels of body image satisfaction than male counterparts. Body image dissatisfaction and eating disorders aren't limited to western countries and are common in Asian countries too. [8] Nutrition plays important role in adolescence in females since it is the time for the nutritional demands of pregnancy and lactation which girls should face in future and nutrition affects the intergenerational cycle and sexual maturation and growth. [1]

The objective of this study is to find out the relationship between nutritional status and body image dissatisfaction among adolescent girls.

MATERIALS AND METHODS

A cross sectional study was carried out in Kaski district, Nepal to assess the

nutritional status and body image dissatisfaction among 240 female adolescent students of 11-19 years of age selected randomly from 8 schools of grade six to twelve using multistage simple random sampling technique. A private and a public school were selected randomly from each of the 4 electoral constituencies of Kaski district. Data collection was done in between October 2013 to January 2014 using self-administered questionnaire and anthropometric assessment. Anthropometric assessment was done for assessing BMI for age and figure rating scale was used to measure body image dissatisfaction. Height was measured by un-stretchable tape and weight was taken by using Camry weighing machine. Percentiles specific to age and sex were used to classify underweight, healthy weight, overweight, and obesity in children. Garner Contour rating scale was used to calculate Body Image Dissatisfaction (BID) score. The data were entered and analyzed statistically using SPSS v. 16. Frequency distribution and cross tabulation between dependent and independent variables was done to describe summarize the basic background and characteristic of respondent. The chi-square was used to test the association between dependent and independent variable. P-value of less than 0.05 was taken to indicate statistically significance and value less than 0.01 to indicate highly statistically significance. Pre-testing was done among the 10% students of total sample size. Pre-tested samples were excluded from study.

Approval was taken from Department of Public Health, Pokhara University, Kaski for the conduction of study. Informed consent was taken from school administration as well as from students. Confidentiality of the data has been maintained and used only for this study purpose.

RESULTS

Socio demographic characteristics of the respondent

Mean age of female adolescents was 14.66 years. More than two third of the respondent (68.3%) were from village and

76(31.7%). Among 240 respondents almost half (49.2%) of the adolescent girls were moderately exposed to the media whereas 78(32.5%) were poorly exposed and less than 1/12th 44(18.3%) of the girls were highly exposed to the media. (Table 1)

Table 1: Socio demographic characteristics of the respondent

Socio-demographic characteristics	Frequency (n=240)	Percent
Age		
Elder adolescents (EA)	101	42.1
Middle/Lower adolescents (MA/LA)	139	57.9
Mean age:14.66		
Place of residence		
Urban	76	31.7
Rural	164	68.3
Media exposure		
Poor	78	32.5
Moderate	118	49.2
High	44	18.3

Perception of the weight

Nearly 2/3rd of the middle and late adolescent describe their weight as underweight. Also more than more 2/5th of the early adolescent described their weight as right weight and more than half of the middle and late adolescent described their weight as right weight. Also (58.1%) of the early adolescent described their weight as overweight and 2/5th of the middle and late adolescent described their weight as overweight. More than 2/5th (42.9%) of the early adolescent girls tried to lose their weight but only (27.1%) tried to gain weight. Also more than fifty percent of the middle and late adolescents girls tried to lose their weight and (72.9%) of them have tried to gain weight. (Table2)

Table 2: Measurement of the weight

Characteristics	E.A (n=101)	M.A /L.A(n=139)
Perception of the weight		
Underweight	8(33.3)	16(66.7)
Right weight	75(40.5)	110(59.5)
Over weight	18(58.1)	13(41.9)
Lose your weight		
Yes	30(42.9)	40(57.1)
No	71(41.8)	99(58.2)
Gain weight		
Yes	13(27.1)	35(72.9)
No	88(45.8)	104(54.2)
Mean weight 43.61		

Nutritional status and body image dissatisfaction of the respondent

Among the 240 respondents, 193(80.4%) of adolescence were healthy weight where 11(4.6%) were underweight and 36(15%) were overweight. (Table3)

Table 3: Body mass index of the adolescence

BMI of adolescence	Frequency(n=240)	Percent
Underweight	11	4.6
Healthy weight	193	80.4
Overweight	36	15.0

Among the 240 respondents, it was found that 194(80.9%) of the adolescent girls were dissatisfied with their body image where positive body image dissatisfaction was 100(41.7%) and negative body image dissatisfaction was 94(39.2%). Absence of body image dissatisfaction was found 46(19.2%) (Table 4)

Table 4: Body image dissatisfaction of the adolescence

BID category	Frequency(n=240)	Percent
Positive body image dissatisfaction	100	41.7
Negative body image dissatisfaction	94	39.2
Absence of body image dissatisfaction	46	19.2

Body Mass Index (BMI) and Body Image Dissatisfaction (BID) were weakly

correlated as the parametric assumption was not met. Non parametric correlation was applied. BMI was positively correlated with body image dissatisfaction (statistic= 0.094, $p < 0.001$) and BID (statistic=0.107, $p < 0.001$) (Table 5)

Table 5: Correlation of nutritional status and body image dissatisfaction

Characteristics	Rho	P value
Body Mass Index (BMI)	0.094	<0.001
Body Image Dissatisfaction(BID)	0.107	<0.001

Among the 94 girls having negative Body Image Dissatisfaction (BID), most of them, 77(81.9%) were normal weight followed by 16(17%) overweight and only 1(1.1%) underweight. Out of 46 girls having absence of BID, 39(84.8%) were normal weight, 4(8.6%) overweight and 3(6.5%) underweight. Similarly, among 100 girls having BID, 77(77.0%) were normal, followed by 16 (16%) overweight and 7(7%) underweight. (Table 6)

Table 6: Nutritional status and BID of respondents

BID	Underweight(n=11)	Normal weight (n=193)	Overweight (n=36)
Negative BID (n=94)	1 (1.1)	77 (81.9)	16 (17)
Absence of BID (n=46)	3 (6.5)	39 (84.8)	4 (8.6)
Positive BID (n=100)	7 (7.0)	77 (77.0)	16 (16.0)

Figures in parenthesis indicate percent

No association was found between BMI and BID ($p > 0.05$). (Table7)

Table 7: Association between BMI and BID

Variable	BID	Absence of BID	P-value
Unhealthy weight (Underweight/Overweight)	40(85.1)	7(14.89)	0.407
Healthy weight	154(79.79)	39(20.20)	

Figures in parenthesis indicate percent

Association of the socio demographic characteristics with nutritional status

Nutritional status was not statistically significantly with age ($p = 0.085$), media

exposure ($p = 0.949$). However, that nutritional status was found to be statistically significant with place of residence ($p = 0.001$). (Table 8)

Table 8: Association of the socio demographic characteristics with nutritional status

Characteristic	Nutritional status of the respondents.(BMI)		P value
	Normal weight	Unhealthy weight	
Age			
E.A	76(75.2)	25(24.8)	0.085
M.A and L.A	117(84.2)	22(15.8)	
Media exposure			
Poor	63(80.8)	15(19.2)	0.949
Moderate	94(79.7)	24(20.3)	
High	36(81.8)	8(18.2)	
Place of residence			
Urban	225(86)	37(14)	0.001*
Rural	28(88)	4(12)	

Figures in parenthesis indicate percent

*Statistically significant at $p < 0.01$

Association of the socio demographic characteristics with body image dissatisfaction of the respondents

Body image dissatisfaction was not found to be significantly associated with age

(p=0.724), media exposure (p=0.308), place of residence (p=0.845) (Table 9)

Table 9: Association of the socio demographic characteristics with BID of the respondent

Characteristic	Body image dissatisfaction (BID)of the respondent			P value
	Negative	Absence	Positive	
Age				0.724
E.A	37(36.6)	19(18.8)	45(44.6)	
M.A and L.A	57(41.0)	27(19.4)	55(39.6)	
Media exposure				0.308
Poor	37(47.4)	15(19.2)	26(33.3)	
Moderate	39(33.1)	23(19.5)	56(47.5)	
High	18(40.9)	8(18.2)	18(40.9)	
Place of residence				0.845
Rural	30(39.5)	16(21.1)	30(39.5)	
Urban	64(39.0)	30(18.3)	70(42.7)	

Figures in parenthesis indicate percent

DISCUSSION

Misconceptions of owns body weight was found very high even though more than 80% of the girls had healthy weight. Adolescent girls perceived themselves as overweight even though they were not which is similar to study carried in 2013 [9] in Portugal. Normal weight adolescents in the study (80.4%) is similar to the study carried out by Maria et al. [10] where 80.6% adolescent girls were found normal weight but the body image dissatisfaction was high.

To measure body image perception adolescence girls were asked to answer multiple choice questions like I think I am underweight, right weight, overweight and 29% of the girls wanted to lose their weight (mean body mass index=19.31). Similar pattern is on study carried out by Skemp-Arlt KM [11] where 25% of the sample of children indicated a desire to lose weight (mean body mass index = 21.35) and 67% desired to “stay the same” (mean body mass index = 17.45).

Current study on body image and BMI status showed that adolescent body image dissatisfaction were associated with BMI status (p<0.000) and BMI was positively correlated with body concerns. Thus in all, adolescents seemed to support the current slim ideals similar result is shown in the study carried out in Malaysia by Zofiran et al. [4] in 2011.

Association was found between body image dissatisfaction and nutritional status. Healthy weight adolescents were more dissatisfied with their body image than those of obese and underweight. Similar study carried out by Pelegrini A [3] found overweight adolescents were more dissatisfied with their body image than those in normal weight. Similarly Branco et al. [12] who, in an analysis of male and female adolescents aged 14 to 19, found greater body image dissatisfaction among overweight and obese girls. However, Bell C et al. [13] found no association in a sample of college students of those who are found to be dissatisfied in their study, 82.9% had normal weight, and only 11.4% were overweight. Similarly, Madrigal et al. pointed out the relationship between body weight and body image self-perception. [14]

High prevalence of body image dissatisfaction was found showing a need for public and private school-based interventions seeking to prevent the development of eating disorders in female adolescents because of their perception about their weight. Nutritional status indicates that perception of the weight is predictive of greater body image dissatisfaction.

The thinness decreased with increased age but due to the perception of

self weight. Similar to this, the trend in the prevalence of overweight including obesity among girls from nine year to fifteen year old strongly decreased, while the prevalence of thinness increased in a study carried out by Pesa JA et al. [15] which is due to the influence of media in adolescent girls. Also no significant association was found between body mass index and body image dissatisfaction which is similar to the study carried out in different ethnic group adolescent where the result shows that the body image dissatisfaction increases as the body mass index increases [16]

Similarly the associations between body image and attitudes toward obesity and thinness and their associations with measured body mass index among female students of Kuwait University was examined in 2008 where the body image perceptions were assessed using nine female silhouettes figures and the difference between current perceived body image and ideal body image was used as a measure of body image dissatisfaction (BID). [17] Similar method was done in the current study where thirteen silhouettes figures was used

Students tended to have bigger perceived body image leading to high levels of BID in each BMI category. It is found that BMI and BID was significantly correlated and the results show that perceived body image and a desire to be thinner were strongly related to BID and that thinness is becoming more desired in Kuwaiti society than the plump body image of the past, which is similar to the present study where body image dissatisfaction was found high due to perceived body image even though adolescents girls have healthy weight and thinness is becoming more desired in Kaski District too. [17]

Socio-demographic parameters weren't found to have statistically significant association with nutritional status and body image dissatisfaction ($P > 0.05$).

On contrary to the finding, various studies [18,19] have reported significant association of socio-demographic parameters like age, place of residence, socio-economic status, literacy status of parents with nutritional status and body image dissatisfaction of adolescent girls. This might be due to the self perception of the weight of adolescence girls. On contrary to the findings of the study, studies done by Hargreaves D et al. [20] and Anschutz DJ et al. [21] found that the amount of time adolescents watches movies, and music videos is associated with degree of body image dissatisfaction and have desire of becoming thin.

Perceived weight is seen as the predictor of body image dissatisfaction. Similar result where perceived health and weight is an important health predictor and self-assessed health during adolescence is of great interest. [22,23] Body dissatisfaction is associated with an increased risk of perceived negative health, also when controlling for the possible confounding effects of age and gender.

CONCLUSION

Nutritional status of the adolescent girls is good as only few (4.6%) of the adolescent girls were found underweight. Body image dissatisfaction among the adolescent girls in Kaski district was found high (80.9%) even though four in five adolescence girls (80.4%) adolescent girls have healthy weight. Regular monitoring of the nutritional status of the adolescence girls should be emphasized by both schools and the health system of Nepal. Awareness of body image size and increasing body dissatisfaction with weight status should be established by the family, community, NGOs, INGOs and the government at the young age in this population. It is recommended larger studies should be conducted to determine the nutritional status

and prevent dissatisfaction among adolescent girls at regional and national level.

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