

Association of body weight concern with media exposure: A study on young girls of Howrah District, West Bengal

N. Mallick¹, S. Ray² and S. Mukhopadhyay³

Citation: Mallick N, Ray S and Mukhopadhyay S. 2015. Association of body weight concern with media exposure: A study on young girls of Howrah district, West Bengal. Human Biology Review, 4(1), 94-114.

¹Nadira Mallick (Research Scholar), Department of Anthropology, University of Calcutta, 35, Ballygunj Circular Road, Kolkata 700 019, India. Mob. No: 09883324907.
Email: ngangulyanthro@gmail.com

²Dr. Subha Ray (Associate Professor), Department of Anthropology, University of Calcutta, 35, Ballygunj Circular Road, Kolkata 700 019, India. Email: srayanth@gmail.com

³Dr. Susmita Mukhopadhyay (Associate Professor), Biological Anthropology Unit, Indian Statistical Institute, 203 B.T. Road, Kolkata- 700 108, India
Email susmi.mukho@gmail.com

Corresponding author: ¹Nadira Mallick (Research Scholar), Department of Anthropology, University of Calcutta, 35, Ballygunj Circular Road, Kolkata 700 019, India. Mob. No: 09883324907. Email: ngangulyanthro@gmail.com

ABSTRACT: ***Objective:** To assess the association between body weight concern and their frequency of exposure to the media among a group of young girls. **Methods:** A cross sectional study was conducted of 110 girls aged 14-21 years, residing in the district of Howrah, West Bengal. Information on socio-demographic characteristics, weight related concern and media exposures were collected using pretested questionnaires. Weight related concerns included body weight dissatisfaction and perceived body weight. Media exposures included frequency of watching television programs, reading newspaper and magazine articles and browsing internet on topics related to body weight concern. **Results:** Although the frequency of watching television programs was high among the study participants yet it was not significantly associated with their body weight. Ch-square test showed that there was an association between the frequency of exposure to magazine articles related to body weight concern and initiation of exercise to reduce body weight. Reading of newspaper articles related to body weight by the participants was significantly associated with those who perceive themselves as fat. Multinomial logistic regression analysis revealed that the perception of being overweight was found to be four times more among the girls below 17 years compared to those who are older. **Conclusions:** Print media (both news paper and magazine) did play a significant role in developing concerns over body weight among this group of young girls.*

Keywords: Body weight concerns, media exposure, adolescent girls

INTRODUCTION

In the present society, concern over body weight is common among preadolescent and adolescent girls (Desmond *et al.*, 1986; Moses *et al.* 1989; Casper and Offer 1990). A few longitudinal studies indicate that such concern increasingly developed through early adolescence to late adolescence (Field *et al.*, 2001). During this period, girls become preoccupied with and sensitive to their changing body size, shape and physical appearance. At times, due to peer pressure and being influenced by media, they feel dissatisfied with their body shape and want to reduce their weight (Wardle and Marsland, 1990, Kann *et al.*, 1996; Augustine and Poojara, 2003). Some studies identified that factors like age (Demarest and Allen, 2004; Nuemark-Sztainer and Hannan, 2000 and Berger *et al.*, 2005), gender (Kann *et al.*, 1997, Gardner *et al.*, 1999 and Jones *et al.*, 2001), socio-economic status (Thomas *et al.*, 2001), preoccupation with thinness (Tucci and Peters, 2008), parental influence (Smolak, 1999, Field *et al.*, 2001 and 2005), peer pressure (Thompson *et al.*, 1995) and mass media (Tiggemann and Pickering,1996, Cash and Pruzinsky, 2004, Borzekowski *et al.*, and Van den Bulck , 2000 , Grabe *et al.*, 2008 and Khan *et al.*, 2011) are important in determining body weight concerns among adolescents. The environment of today's youth is filled with media of all kinds such as electronic media and print media (Roberts *et al.*, 1999).

Both electronic and print media have been identified as being responsible for the development of unrealistically thin body ideals following the fashion models and actresses who are underweight. For example, viewing of music videos in TV has been found to be associated with higher concerns regarding perceived appearance and body weight among adolescent girls from San Jose, California (Borzekowski *et al.*, 2000). In Australia, Tiggemann and Pickering (1996) found that female students who like to spend more time watching films and soap operas on television and less time on sports programs showed greater body dissatisfaction than the others. Similarly, Van den Bulck (2000) reported an association between the exposure to ideal body images portrayed on television and the self-assessment of body weight and shape among adolescent girls.

In spite of burgeoning dominance of electronic media, print media is still very popular among adolescents. They feel greatly attracted to the articles and figures displayed in fashion magazines and initiate exercise and dieting to reduce body weight (Levine and Smolak., 1996; Field *et al.*, 1999). .

In Indian context, literature on body weight concern is sparse. Mishra and Mukhopadhyay (2010) found that Sikkimese adolescent girls as a result of their concern over body weight often skipped their meals. Similarly, a study in Delhi found that dissatisfaction over body weight was prevalent among both underweight as well as overweight adolescent girls (Chug and Puri, 2001) and most of them follow disordered eating behaviours such as skipping meals, eating out and snacking between meals. Eventually such eating habits might lead to nutritional deficiency among them. Another study by Latha *et al.* 2006 on female adolescent college students (aged 16 to 21 years) of Karnataka showed that more than 80% of the girls remained preoccupied with their body weight and shape and this resulted in higher levels of anxiety, somatic symptoms and social dysfunction.

Dissatisfaction over body weight provokes the development of weight and eating concerns among these young girls. Excessive concern over body weight may develop physical as well as mental health risk. Further, there is a lack of research directly assessing the impact of media (both electronic and print) on the body weight concern among young girls in the eastern region of India including West Bengal.

The process of globalization has paved the way for a number of multinational companies (including food processing) to spread their businesses in this country. The adolescent and youth of this country are getting attracted to these food products rather than the traditional ones. The Indian versions of some of these newly introduced food types are attracting those who cannot afford those from branded outlets. Simultaneously, media is trying to promote a thin image among the adolescent girls in the form of advertisement models or other. Thus, adolescent girls are at a cross-road.

The objective of the present study was to assess the association between body weight concern and the frequency of exposure to the media (measured in terms of electronic and print media) among a group of young girls, residing in a developing country like India.

METHODS

Study setting and population

In this cross sectional study, one municipal ward was selected randomly from the ward-list of Howrah Municipal Corporation. This urban area was chosen for operational convenience. A sample of 110 unmarried girls aged between 14 and 21 years was identified for the study. Though

the participants represent different socio-economic strata, they shared similar physical and social environment of educated middle-class.

Prior to the collection of data, the nature and the objective of the study were explained to the participants and informed consent was taken.

Data Collection

Data on socio-demographic characteristics, weight related concern along with weight related behaviours and media exposure were collected using pretested questionnaires.

Socio demographic variables

Socio demographic variables include age and birth order of the participant, religion, economic status, educational and occupational status of their parents. Economic status of these study participants were ascertained in terms of monthly household expenditure.

Concern over body weight

Information regarding 'concern over body weight' was collected using a standard questionnaire used by Mciza et al. (2005) with little modification following cultural norms. Selective questions from original questionnaire were used for the present study; for example, "Have you ever thought that you are fat?", "Have you ever thought that you are thin?", "Do you worry about being fat?", "Do you worry about being thin?" The response options were 'yes' or 'no'. Other questions like "How happy are you with your present weight?" the response options were 'Happy', 'Not sure / somewhat happy' and 'unhappy' and "What do you think about your current body weight?" the response options were 'underweight', 'normal' and 'overweight' were also used.

Weight related behaviours

A structured questionnaire was used to assess the participant's weight related behaviours. This questionnaire consisted of five statements. The statements were "Engage in dieting behaviour", "Initiation of exercise to reduce body weight", "Taking less food to reduce body weight", "Taking more food to increase body weight" and "Taking supplements to increase body weight". The response options of each statement were 'yes' or 'no'. Pretesting was carried out before the questionnaire was administered.

Media exposure

A suitable questionnaire was designed to assess the information on the frequency of watching television programs (advertisement, soap opera, movie and music video), reading newspaper and magazine articles and browsing internet on topics related to body weight concern. Both daily and

weekly exposures to media were collected. In case of daily exposure, the study participants were asked to report hours of exposure during a day to each of the four types of media: television, news paper, magazine and internet at computer, whereas, in case of weekly exposure study participants were divided into three categories on the basis of the frequency of exposure to media: never, infrequent and frequent. Participants reporting 'no exposure' was classified as *never*, those reporting 'once to three days in a week' as *infrequent*, and those reporting 'more than three days in a week' as *frequent*. Media exposure is also assessed in terms of total media exposure and partial media exposure. Total media exposure has been defined as exposure to electronic and print media and on topics related to body weight concern. In contrast, partial media exposure has been defined as not being exposed to any one of the media types. Pretesting of the questionnaire was carried out before it was administered.

Data analysis

The SPSS version 16 was used for data analysis. Descriptive statistics were used to calculate the frequency of the variables for different categories. Bivariate statistics, like chi square test was used to assess the association between the variables. A minimum cut off point of $p < 0.05$ was used to determine the significance level. Multinomial logistic regression was used independently to estimate the association of 'perceived own body weight' and 'satisfaction level regarding own body weight'. The independent variables considered in the analyses were monthly household expenditure, age group of the participants, exposure to media. The reference categories for the independent variables are as follows: monthly household expenditure (in Indian rupees i.e.8000/- and above), age group (18-21 years), exposure to media (partial exposure). The reference category for the first dependent variables is 'underweight' and for the second one is 'satisfied with the present body weight'. Odds ratios (OR) and respective confidence intervals (95%CI) were calculated. Pie chart and bar diagram were used to represent the data graphically.

RESULTS

Table 1 shows the demographic profile of the study participants. More than half of the participants were between 18 and 21 years of age. More than 60% of the girls belonged to household with expenditure below Rs.8000. It is noticed that more than one third of the fathers of the participants were graduate, while 50.9% of the mothers of the participants attend secondary level of education. Results revealed that close to 50% of the fathers of the participants were in service, followed by

business. More than 90% of mothers of the participants were homemakers; and 70% of the participants were the only child of their parents.

Table 1. Socio-demographic profile of the study participants

Group	Study participants	
	N	%
Age groups (years)		
14 -17	52	47.2
18 - 21	58	52.7
Monthly household expenditure (in rupees) as economic status		
Rs. <8,000	73	66.4
Rs. 8,000-15,000	20	18.2
Rs. >15,000	17	15.5
Education levels of the fathers		
Non literate	2	1.8
Up to secondary	34	30.9
Up to higher secondary	24	21.8
Up to graduate	41	37.3
Up to postgraduate	6	5.5
Education levels of the mothers		
Non literate	2	1.8
Up to secondary	56	50.9
Up to higher secondary	23	20.9
Up to graduate	25	22.7
Up to postgraduate	2	1.8
Fathers' occupational types		
Service	54	49.1
Professional	3	2.7
Business	40	36.4
Others*	10	9.1
Mothers' occupational types		
Home maker	100	90.9
Service	4	3.6
Professional	1	0.9
Business	0	0
Others**	2	1.8
Birth order		
Single child	77	70.0
Second born	29	26.4
Third born	4	3.6

*Others: Professional, labour and shop owner ** Others: Professional and labour

Media exposure

About 72.7% of the study participants have had exposures to at least one of the media types (Fig 1); and more than three-fifth of them had the habit of watching television daily.

Nearly 30% of the study participants spend more than one hour a day on watching television, where as hardly 1% of them spend more than one hour a day on reading newspaper (Fig 2).

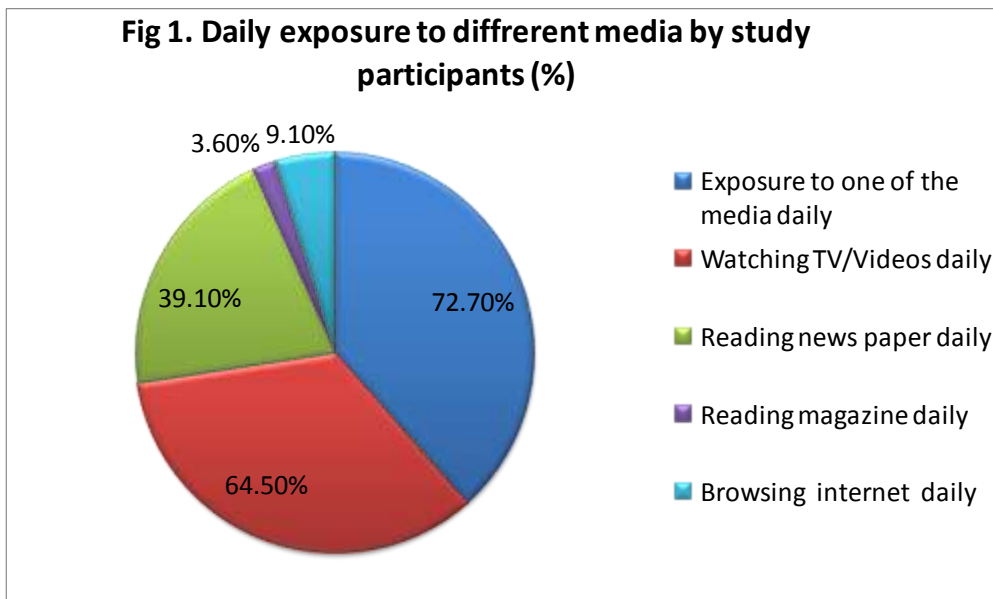


Fig 2. Duration of exposure to various media in a day

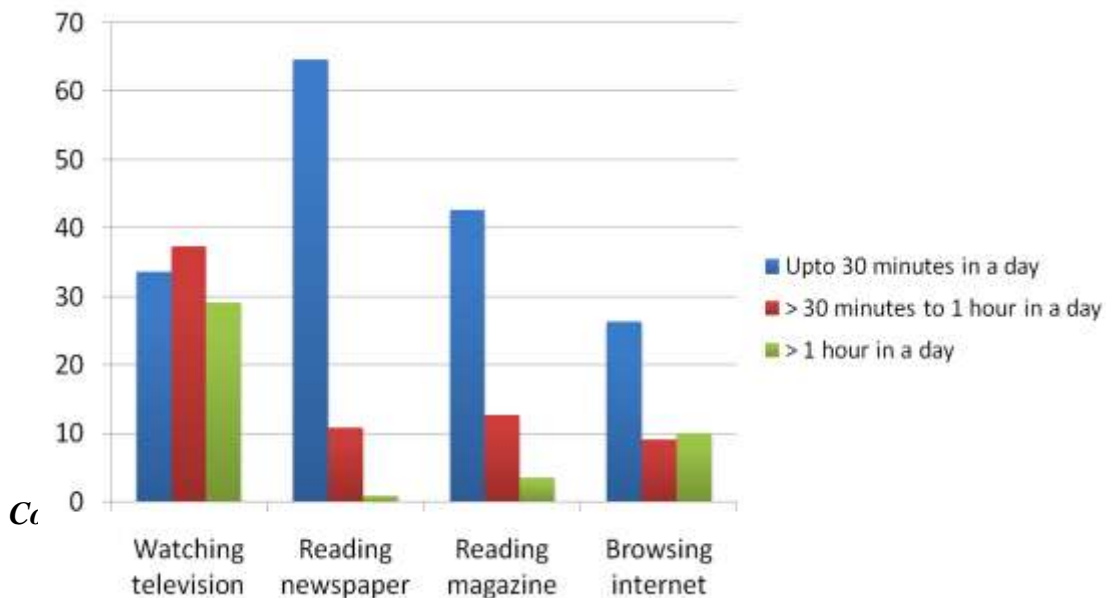


Table 2 shows that about 42% of the study participants remain unaware of their present body weight. More than half of the study participants perceived themselves as normal weight and about 29% of them were worried about being fat.

Table 2. Concern over body weight among study participants

Variables		NN	%%
Satisfied with present body weight	Satisfied	31	28.2
	Unsure	47	42.7
	Unsatisfied	32	29.1
Perceived own body weight as	Underweight	24	21.8
	Normal weight	61	55.5
	Overweight	25	22.7
Perception about self as thin	Yes	50	45.5
	No	60	54.5
Perception about self as fat	Yes	38	34.5
	No	72	65.5
Whether worried of being thin	Yes	16	14.5
	No	94	85.5
Whether worried of being fat	Yes	32	29.1
	No	78	70.9

Association between body weight concern and media exposure

There remains no significant association between any of the body weight concerns and watching television (table 3) and reading magazine article (table 5). However, news paper reading has shown to have significant association with the concern for 'perception of self as fat' (Table-4). It is notable that the frequency of browsing internet was very low among the participants in general and naturally do not show any significant association with their body weight concern (table-6). As shown in table 7, there exists no significant association between body weight concern and the type of exposure to media among the adolescent girls.

Table 3. Body weight concern and frequency of watching television among study participants

Concern over body weight		Frequency of watching television		χ^2 , p
		Infrequent n(%)	Frequent n(%)	
Satisfied with present body weight	Satisfied (n=31)	5(16.1)	26(83.9)	$\chi^2 = 0.337$, p = 0.845
	Unsure (n=47)	9(19.1)	38(80.9)	
	Unsatisfied (32)	7(21.9)	25(78.1)	
Perceived own body weight as	Underweight (n=24)	5(20.8)	19(79.2)	$\chi^2 = 0.215$, p = 0.898
	Normal weight (n=61)	12(19.7)	49(80.3)	
	Overweight (n=25)	4(16.0)	21(84.0)	
Perception about self as thin	Yes (n=50)	10(20.0)	40(80.0)	$\chi^2 = 0.049$, p = 0.825
	No (n=60)	11(18.3)	49(81.7)	
Perception about self as fat	Yes (n=38)	5(13.2)	33(86.3)	$\chi^2 = 1.323$, p = 0.250
	No (n=72)	16(22.2)	56(77.8)	
Whether worried of being thin	Yes (n=16)	4(25.0)	12(75.0)	$\chi^2 = 0.423$, p = 0.515
	No (n=94)	17(18.1)	77(81.9)	
Whether worried of being fat	Yes (n=32)	4(12.5)	28(87.5)	$\chi^2 = 1.269$, p = 0.260
	No (n=78)	17(21.8)	61(78.2)	

Table 4. Body weight concern and frequency of reading news paper on topics related to weight concern among study participants

Concern over body weight	Frequency of reading news paper			χ^2 , p
	Never n(%)	Infrequent n(%)	Frequent n(%)	
Satisfied with present body weight	3(9.7)	9(29.0)	19(61.3)	$\chi^2 = 4.916$, p = 0.296
Satisfied (n=31)	13(27.7)	12(25.5)	22(46.8)	
Unsure (n=47)	10(31.2)	8(25.0)	14(43.8)	
Unsatisfied (n=32)				
Perceived own body weight as	5(20.8)	7(29.2)	12(50.0)	$\chi^2 = 6.176$, p = 0.186
Underweight (n=24)	11(18.0)	15(24.6)	35(57.4)	
Normal weight (n=61)	10(40.0)	7(28.0)	8(32.0)	
Overweight (n=25)				
Perception about self as thin	13(26.0)	8(16.0)	29(58.0)	$\chi^2 = 5.124$, p = 0.077
Yes (n=50)	13(21.7)	21(35.0)	26(43.3)	
No(n=60)				
Perception about self as fat	15(39.5)	13(34.2)	10(36.3)	$\chi^2 = 11.599^*$, p = 0.003
Yes (n=38)	13(18.1)	16(22.2)	43(59.7)	
No (n=72)				
Whether worried of being thin	4(25)	3(18.8)	9(56.2)	$\chi^2 = 0.666$, p = 0.717
Yes (n=16)	24(25.5)	26(27.7)	44(46.8)	
No (n=94)				
Whether worried of being fat	11(34.4)	10(31.2)	11(34.4)	$\chi^2 = 4.814$, p = 0.090
Yes (n=32)	15(19.2)	19(24.4)	44(56.4)	
No (n=78)				

Table 5. Body weight concern and frequency of exposure to magazine articles among study participants

Concern over body weight		Frequency of reading magazine			χ^2 , p
		Never n(%)	Infrequent n(%)	Frequent n(%)	
Satisfied with present body weight	Satisfied (n=31)	10(32.3)	15(48.4)	6(19.4)	$\chi^2 = 0.222$, p = 0.994
	Unsure (n=47)	17(36.2)	21(44.7)	9(19.1)	
	Unsatisfied (n=32)	12(37.5)	14(43.8)	6(18.8)	
Perceived own body weight as	Underweight (n=24)	7(29.2)	11(45.8)	6(25.0)	$\chi^2 = 1.924$, p = 0.750
	Normal weight (n=61)	21(34.4)	28(45.9)	12(19.7)	
	Overweight (n=25)	11(44.0)	11(44.0)	3(12.0)	
Perception about self as thin	Yes (n=50)	17(34.0)	21(42.0)	12(24.0)	$\chi^2 = 1.453$, p = 0.485
	No (n=60)	22(36.7)	29(48.3)	9(15.0)	
Perception about self as fat	Yes (n=38)	16(42.1)	17(44.7)	5(13.2)	$\chi^2 = 1.801$, p = 0.406
	No (n=72)	23(31.9)	33(45.8)	16(22.2)	
Whether worried of being thin	Yes (n=16)	5(31.2)	6(37.5)	5(31.2)	$\chi^2 = 1.804$, p = 0.406
	No (n=94)	34(36.2)	44(46.8)	16(17.0)	
Whether worried of being fat	Yes (n=32)	15(46.9)	12(37.5)	5(15.6)	$\chi^2 = 2.572$, p = 0.276
	No (n=78)	24(30.8)	38(48.7)	16(20.5)	

Table 6. Body weight concern and frequency of browsing internet among participants

Concern over body weight		Frequency of browsing internet			χ^2 , P
		Never n(%)	Infrequent n(%)	Frequent n(%)	
Satisfied with present body weight	Satisfied (n=31)	18 (58.1)	8 (25.8)	5 (16.1)	$\chi^2 = 2.734,$ p=0.603
	Unsure (n=47)	28 (59.6)	9 (19.1)	10 (21.3)	
	Unsatisfied (n=32)	14 (43.8)	10 (31.2)	8 (25)	
Perceived own body weight as	Underweight (n=24)	13 (54.2)	4 (16.7)	7 (29.2)	$\chi^2 = 1.931,$ p=0.748
	Normal weight (n=61)	33 (54.1)	17 (27.9)	11 (18.0)	
	Overweight (n=25)	14 (56.0)	6 (24.0)	5 (20.0)	
Perception about self as thin	Yes (n=50)	28 (56.0)	12 (24.0)	10 (20.0)	$\chi^2 = 0.083,$ p=0.959
	No (n=60)	32 (53.3)	15 (25.0)	13 (21.7)	
Perception about self as fat	Yes (n=38)	21 (55.3)	9 (21.1)	8 (21.1)	$\chi^2 = 0.024,$ p=0.988
	No (n=72)	39 (54.2)	18 (25.0)	15 (20.8)	
Whether worried of being thin	Yes (n=16)	10 (62.5)	3 (18.8)	3 (18.8)	$\chi^2 = 0.515,$ p=0.773
	No (n=94)	50 (53.2)	24 (25.5)	20 (21.3)	
Whether worried of being fat	Yes (n=32)	17 (53.1)	8 (25.0)	7 (21.9)	$\chi^2 = 0.041,$ p=0.980
	No (n=78)	43 (55.1)	19 (24.4)	16 (20.5)	

Table7. Body weight concern and type of exposure to media (both electronic and print) among study participants

Body weight concern		Type of exposure		χ^2 , P
		Total exposure	Partial exposure	
Satisfied with present body weight	Satisfied (n=31)	9(29.0%)	22(71.0%)	$\chi^2 = 0.161,$ p=0.923
	Unsure (n=47)	12(25.5)	35(74.5%)	
	Unsatisfied (n=32)	8(25.0)	24(75%)	
Perceived own body weight as	Underweight (n=24)	6(25%)	18(75%)	$\chi^2 = 0.855,$ p=0.652
	Normal weight (n=61)	18(29.5%)	43(70.5%)	
	Overweight (n=25)	5(20%)	20(80%)	
Perception about self as thin	Yes (n=50)	11(22%)	39(78%)	$\chi^2 = 0.899,$ p=0.343
	No(n=60)	18(30%)	42(70%)	
Perception about self as fat	Yes(n=38)	7(18.4)	31(81.6)	$\chi^2 = 1.887,$ p=0.170
	No(n=72)	22(30.6)	50(69.4)	
Whether worried of being thin	Yes(n=16)	4(25%)	12(75%)	$\chi^2 = 0.018,$ p=0.893
	No(n=94)	25(26.6%)	69(73.4%)	
Whether worried of being fat	Yes(n=32)	6(18.8%)	26(81.2)	$\chi^2 = 1.348,$ p=0.246
	No(n=78)	23(29.5%)	55(70.5%)	

Weight related behaviours and media exposure

Table-8 shows that the influence of print media (i.e. reading magazine articles) on weight related behaviours among study participants. The significant association was found between the frequency of exposure to magazine articles and initiation of exercise to reduce body weight among the participants.

Table8. Influence of print media (reading magazine) on weight related behaviours among study participants

Weight related behaviours	Frequency of reading magazine			χ^2 , p
	Never n (%)	Infrequent n (%)	Frequent n(%)	
Engage in dieting behaviour	7 (50.0)	5 (35.7)	2 (14.3)	$\chi^2 = 0.723$, p =0.697
Yes (n=14)	32 (33.3)	45 (46.9)	19 (19.8)	
No (n=96)				
Initiation of exercise to reduce body weight	2 (8.3)	12 (50.0)	10 (41.7)	$\chi^2 = 14.70^*$, p =0.001
Yes (n=24)	37 (43.0)	38 (44.2)	11 (12.8)	
No (n=86)				
Taking less food to reduce body weight	5 (23.8)	12 (57.1)	4 (19.0)	$\chi^2 = 1.773$, p =0.412
Yes (n=21)	34 (38.2)	38 (42.7)	17 (19.1)	
No (n=89)				
Taking more food to increase body weight	8 (33.3)	10 (41.7)	6 (25.0)	$\chi^2 = 0.697$, p =0.706
Yes (n=24)	31 (36.0)	40 (46.5)	15 (17.4)	
No (n=86)				
Taking supplements to increase body weight	1 (16.7)	3 (50.0)	2 (33.3)	$\chi^2 = 1.335$, p =0.513
Yes (n=6)	38 (36.5)	47 (45.2)	19 (18.3)	
No (n=104)				

*p≤0.05

Factors associated with body weight concern

Table 9 represents factors associated with the perception about body weight as ‘normal weight’ compared to ‘underweight’. The adolescent girls who belong to the age group of 14-17 years were more likely (Odds Ratio=3.403; p=0.025) to perceive their body weight as normal than the girls of age group of 18-21 years. Furthermore the same table shows that the perception of being

overweight was found to be more among the girls belongs to age group 14-17 years (Odds Ratio=3.778; p=0.035) compared to the rest. The factors such as monthly expenditure, exposure to media and age group were not significantly associated with the satisfaction level of body weight among the participants (table 10).

Table 9. Results of the multinomial regression; factors associated with the perception about body weight among adolescent girls

Dependant variable	Independent Variables	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
				Lower Bound	Upper Bound
Perceived own body weight as normal	<i>Economic status in terms of monthly expenditure</i> [< 8000/-] [≥8000/-]	0.866	1.094	0.385	3.109
	<i>Exposure to media</i> [Total exposure] [partial exposure]	0.489	1.492	0.481	4.630
	<i>Age groups</i> [14-17 years] [18-21 years]	0.025*	3.403	1.166	9.932
Perceived own body weight as overweight	<i>Economic status in terms of monthly expenditure</i> [< 8000/-] [≥ 8000/-]	0.993	0.994	0.286	3.453
	<i>Exposure to media</i> [total exposure] [partial exposure]	0.861	0.882	0.216	3.600
	<i>Age groups</i> [14-17 years] [18-21 years]	0.035*	3.778	1.099	12.99

p≤0.05

Table 10. Results of the multinomial regression; factors associated with the satisfaction level of body weight among adolescent girls

Dependant variable	Independent variables	Sig.	Exp(B)	95% Confidence Interval for Exp(B)		
				Lower Bound	Upper Bound	
Not sure about present body weight	<i>Economic status in terms of monthly expenditure</i> [< 8000/-] [≥8000/-]	0.419	1.523	549	4.226	
		0.346	0.638	0.251	1.625	
						<i>Exposure to media</i> [Total exposure] [partial exposure]
	0.803	0.875	0.305	2.511		
					<i>Age groups</i> [14-17 years] [18-21 years]	
	Dissatisfied with present Body weight	<i>Economic status in terms of monthly expenditure</i> [< 8000/-] [≥8000/-]	0.618	.762	.262	2.217
			0.935	0.959	0.349	2.636
		0.633	0.755	0.238	2.391	
<i>Age groups</i> [14-17 years] [18-21 years]						

DISCUSSION

The present study shows that television watching is one of the most preferred media of the study participants, as found by Arya (2004) among school going children. Studies have demonstrated a direct relationship between media exposure and eating pathology and body dissatisfaction (Stice and Shaw 1994; Utter *et al.*, 2003). But, the strength of the correlations varied within and between the population studied and with type of media exposure (Tiggeman, 2003; Vaughan and Fouts, 2003). For example, print media such as fashion magazine related to health and fitness has become more popular among European American, African American and Asia-American adolescent students, living in midsized Midwestern city than electronic media such as television watching (Harrison, 2001). It was found that majority (about 83%) of the adolescent girls of western country read fashion magazines for an average of 4.3 hours per week (Levine and Smolak, 1996; Levine *et al.*, 1999). A cross sectional study on adolescent females from San Francisco Bay area showed a positive association between exposure to beauty and fashion magazines and higher levels of weight concern or eating disorder symptoms in girls (Stice and Shaw, 1994). Field *et al.* (1999) concluded in his study that the majority of the preadolescent and adolescent girls were unhappy with their body shape and weight, and these negative attitudes were strongly related to frequency of reading fashion magazines. The present study does not show any such association. But, bivariate analysis revealed that reading of newspaper articles related to body weight by the participants was significantly associated with those who perceive themselves as fat. The print media promotes an unrealistically thin body image which is partially responsible for the development of body weight concerns (Tucci and Peters, 2008).

In the context of weight related behaviour, we found a significant association between the frequency of exposure to magazine articles and initiation of exercise to reduce body weight among the participants. This finding is consistent with those of Field *et al.* (1999) study who observed a positive linear association between the frequency of reading magazine articles and initiation of exercise, dieting and weight loss behavior. He further observed that the pictures of the models displayed in the magazine encourage adolescents to have a perfect body shape.

A good number of studies revealed that factors like family environment (Smolak *et al.*, 1999 and Neumark-Sztainer *et al.*, 2008), peer pressure (Baker *et al.*, 2003 and Favor, 2007), sociocultural and economic context (Neumark-Sztainer *et al.*, 2008; Abraham and Birmingham,

2008), gender (Costa *et al.*, 2008), and age (Neumark-Sztainer and Hannan, 2000 and Jones *et al.*, 2001) also influence body weight concern among the adolescent girls. The older adolescent girls are more concerned with their body weight in comparison to younger ones (Marchi and Cohen, 1990; Neumark-Sztainer and Hannan, 2000 and Gowers and Shore, 2001) but, this finding is not consistent with the present study. For example, in the current situation multinomial logistic regression analysis revealed that the perception of being overweight was found to be four times more among the girls below 17 years compared to those who are older. Factors like monthly expenditure, exposure to media and age group were not significantly associated with the satisfaction level of body weight among the girls from both age groups.

Thus, the effect of exposure to media remain inconspicuous when other variables were controlled.

Strength and limitations of the study

This endeavour is the first of its kind from Indian perspective, and here lies its strength.

We are aware of several limitations in the present study. First, we have limited sample size which may not provide the estimate of the general population. Inclusion of anthropometric measures (height, weight, and fat distribution), dietary behaviour and other factors could have presented a better picture of body weight concern among the adolescent girls.

CONCLUSION

Present study revealed that the print media (both news paper and magazine) did play a significant role in bringing concerns over body weight among a group of young girls. There could be many possible explanations behind this observation. They considered the contents of the magazines as physical documents which can be preserved and they are reliable. The photographs of models and actresses displayed in these magazines might create a positive impact on adolescent girls over their weight concern and subsequent feeling of dissatisfaction. Thus, print media appears to be more effective than the electronic media in terms of its documentation which can be referred readily. An in-depth study will be needed to trace the pathways of media influence (both print and electronic media) among young girls.

Acknowledgements

The authors are thankful to the participants who volunteered their time and services for this study. The financial support provided by UGC, University of Calcutta is gratefully acknowledged.

REFERENCES

- Abraham NK, Birmingham CL. 2008. Is there evidence that religious is a risk factor for eating disorders? *Eat weight Disord*, **13**: e75-e78.
- Arya K .2004. Time spent on television viewing and its effect on changing values of school going children. *Anthropologist*, **6**: 269-271.
- Augustine LF, Poojara RH.2003. Prevalence of obesity, weight perceptions and weight control practices among urban college going girls. *Indian J Community Med*, **xxvii**: 187-190.
- Baker CW, Little TD, Brownell KD .2003. Predicting adolescent eating and activity behaviours: the role of social norms and personal agency. *Health Psychol*, **22**: 189-198.
- Berger U, Schilke C, Strauss B.2005.Weight concerns and dieting among 8 to 12 year old children. *Psychother Psychosom Med Psychol*, **55**: 331-338.
- Borzekowski DL, Robinson TN, Killen JD.2000. Does the camera add 10 pounds? Media use, perceived importance of appearance, and weight concerns among teenage girls. *J Adolesc Health*, **26**: 36–41.
- Cash, TF, Pruzinsky T.2004. *Body Image A Handbook Of Theory, Research and Clinical Practice*. The Guildford Press. London.
- Casper RC, Offer D.1990. Weight and dieting concerns in adolescents: Fashion or symptom? *Pediatrics*, **86**: 384–390.
- Chug R, Puri S.2001. Affluent adolescent girls of Delhi: eating and weight concerns. *Br J Nutr*. **86**: 535-542.
- Costa C, Ramos E, Severo M, Barros H, Lopes C.2008.Determinants of Eating Disorders Symptomatology in Portuguese Adolescents. *Arch Pediatr Adolesc Med*, **162**:1126-1132
- Demarest, Allen R.2000.Body image: gender, ethnic, and age differences. *J Soc Psychol*. **140**:465-472.
- Desmond SM, Price JH, Gray N, O'Connell JK.1986. The etiology of adolescents' perceptions of their weight. *J Youth Adolesc*, **15**: 461–473.
- Favor LJ.2007.*Food as foe: Nutrition and Eating Disorders*. Courtesy of the National Academic Press, Washington.

Field AE, Camargo CA Jr, Taylor CB, Berkey CS, Roberts SB, Colditz GA.2001. Peer, parent, and media influences on the development of weight concerns and frequent dieting among preadolescent and adolescent girls and boys. *Pediatrics*,**107**:54-60.

Field AE, Camargo CA Jr, Taylor CB, Berkey, Colditz GA.1999.Relation of Peer and Media influences to the development of purging behaviors among preadolescent and adolescent girls. *Arch Pediatr Adolesc Med*,**153**:1184-1189.

Field AE, Austin SB, Camargo CA Jr, Taylor CB, Striegel-Moore RH, Loud KJ, Colditz GA.2005. Exposure to the mass media, body shape concerns, and use of supplements to improve weight and shape among male and female adolescents. *Pediatrics*, **116**. 214-220.

Gardner RM, Friedman BN, Stark K, Jackson NA.1999.Body- size estimations, body dissatisfaction and ideal size preferences in children six through thirteen. *J Youth Adolesc*. **28**:603-618.

Gowers, Shore A.2001.Development of weight and shape concerns in the aetiology of eating disorder. *Br J Psychiatry*, **179**: 236-242.

Grabe S, Ward LM, Hyde JS.2008. The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychol Bull*, **134**: 460-476.

Harrison K.2001. Ourselves, our bodies: Thin-ideal media, self discrepancies, and eating disorder symptomatology in adolescents. *J. Soc. Clin. Psychol*. **20**: 289–323.

Jones MJ, Bennett S, Olmsted PM, Lawson LM, Rodin G.2001.Disordered eating attitude and behaviours in teenaged girls: a school based study. *CMAJ*,**165**: 547-552.

Kann L, Kinchen SA,Willams BI.1998. Youth risk behavior Surveillance-United States, 1997. *J Sch Health*,**68**: 355-369.

Kann L, Warren CW, Harris WA, et al.1996. Youth risk behavior Surveillance- United States, 1995.*J Sch Health*,**66**:365-377.

Khan AN, Khalid S, Khan H, Jabeen M.2011. Impact of today's media on university student's body image in Pakistan: a conservative,developing country's perspective. *BMC Public Health*, **11**:1-8.

Latha KS, Hegde S, Bhat SM, Sharma PS VN, Rai P.2006.Body image, Self-Esteem and Depression in Female Adolescent College Students.*J Indian Assoc Ment Health*,**2**:78-84.

Levine MP, Smolak L.1996. Media as a context for the development of disordered eating. In Smolak L, Levine, editors.The Developmental Psychopathology of Eating Disorders: Implications for Research, Prevention, and Treatment. Lawrence Erlbaum Associates Inc, Hillsdale, NJ.

Levine MP, Piran N, Stoddard C.1999. Mission more probable: Media literacy, activism, and advocacy in the prevention of eating disorders. In Piran N,Levine MP,Steiner-Adair C, editors.

Preventing eating disorders: A handbook of interventions and special challenges. Brunner/Mazel, Philadelphia.P3-25.

Marchi M, Cohen P.1990. Early childhood eating behaviours and adolescent eating disorders. *J Acad Child Adolesc Psychiatry* **29**: 112–117.

Mciza Z, Goedecke JH, Steyn NP, Charlton K, Puoane T, Meltzer S, Levitt NS, Lambert EV.2005.Development and validation of instruments measuring body image and body weight dissatisfaction in South African mothers and their daughters. *Public Health Nutr*,**8**:509-519.

Mishra SK, Mukhopadhyay S.2010. Eating and weight concerns among Sikkimese adolescent girls and their biocultural correlates: an exploratory study. *Public Health Nutr*,**14**:853-859.

Moses N, Banilivy MM, Lifshitz F.1989. Fear of obesity among adolescent girls. *Pediatrics* **83**:393–8.

Neumark-Sztainer D, Eisenberg ME, Fulkerson JA, Story M, Larson NI.2008. Family meals and disordered eating in adolescents: Longitudinal findings from Project EAT. *Arch Pediatr Adolesc Med*, **162**: 17-22.

Neumark-Sztainer D, Hannan J.2000. Weight –related behaviours among adolescent girls and boys. *Arch Pediatr Adolesc Med*,**54**: 569-577.

Roberts 2008. Trends in Media Use - The Future of Children futureofchildren.org/futureofchildren/publications/docs/18_01_02.pdf, access on 20.10.2014.

Smolak L, Levine MP, Schermer F.1999. Parental input and weight concerns among elementary school children.*Int J Eat Disord*,**25**: 263-271.

Stice E, Shaw H.1994. Adverse effects of the media portrayed thin-ideal on women and linkages to bulimic symptomatology. *J Soc Clin Psychol*,**13**:288-308.

Thompson SH, Rapiroin AC, Sargent RG.2003.Examining gender, racial & age differences in weight concern among third, fifth, eighth and eleventh graders.*Eat Behav*,**3**: 307-323.

Tiggeman M.2003. Media exposure and body dissatisfaction. *Eur Eat Disord Rev*,**11**:418–425.

Tiggemann M, Pickering AS.1996. Role of television in adolescent women’s body dissatisfaction and drive for thinness.*Int J Eat Disord*,**20**: 199-203.

Tucci S, Peters J.2008. Media influences on body satisfaction in female students. *Psicothema*,**20**:521-524.

Utter J, Neumark-Sztainer D, Wall M, Story M.2003. Reading magazine articles about dieting and associated weight control behaviours among adolescents. *J Adolesc Health*, **32**:78-82.

Van den Bulck H.2000. Is television bad for your health? Behavior and body image of the adolescent “Couch potato”. *J Youth Adolesc*, **29**: 273–288.

Vaughan K, Fouts G.2003. Changes in television and magazine exposure and eating disorder symptomatology.*Sex Roles*,**49**:313–320.

Wardle, Marsland L.1990. Adolescent concerns about weight and eating: A social development perspective. *Psychosom Res*,**34**: 377-391.