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Relationship between BMI, Overweight Preoccupation, Dysfunctional Attitude, and Social Avoidance

Ekta Soni
Govt. College, Hansi, Hisar

Rakesh Kumar Behmani
Guru Jambheshwar University of Science and Technology, Hisar

Adolescents generally believe that they are the center of attraction everywhere. This leads to their worries regarding their body weight and shape. This paper explores different correlates of body image in adolescents. The data was collected from a total of 397 adolescents. Based on BMI (Body Mass Index), this sample was then divided into three groups: underweight, normal weight and overweight. Tools used to study these variables included the Multidimensional Body-Self Relations Questionnaire, Dysfunctional Attitude Scale and Social Avoidance Scale. After collecting the data one-way ANOVA and correlation were computed. Results revealed that there were significant differences between the groups on social avoidance and dysfunctional attitudes. Underweight people are more socially avoidant in comparison to overweight and normal-weight people. Underweight people also had low scores on Dysfunctional attitude (social approval, avoidance, dependency) in comparison to normal-weight people. Overweight preoccupation is positively correlated to social avoidance and negatively related to dysfunctional attitudes social approval. BMI is negatively related to social avoidance and positively related toDysfunctional attitude (dependency, avoidance, social approval). Social avoidance is negatively related with dysfunctional attitudes.

Keywords: BMI, overweight preoccupation, social avoidance, dysfunctional attitude, overweight, underweight, normal weight.

Body mass index (BMI) is an indicator of the ratio of a person's weight and height. It tells about the category of a person based on his weight. Basically, there are three categories: underweight, normal weight and overweight. World Health Organization identifies some more categories which are depicted in figure 1.

In our society weight is generally considered as the indicator of beauty. Perfect or ideal body weight is desired by all. Adolescents are specifically very much conscious about the image of their bodies. It is well known that adolescents always want to look best and gain the attraction of others. Studying the effects of BMI in this population is thus of great importance. BMI may affect a lot of other characteristics or aspects of a person's life. People who look perfect according to weight and people who are overweight or obese may behave differently in many aspects of life. BMI can affect a person's body image to a great extent (McCabe &Ricciardelli, 2001).

Classification	BMI
	Principal cut-off points
Underweight	<18.50
Severe thinness	<16.00
Moderate thinness	16.00- 16.99
Mild thinness	17.00-18.49
Normal range	18.5-24.99
Over weight	>= 25.00
Pre- obese	25.00-29.99
Obese	>= 30.00
Obese class i	30.00-34.99
Obese class ii	35.00-39.99
Obese class iii	>= 40.00

Fig 1 The International classification of adult underweight, overweight and obesity according to BMI

Body image is the perception of one's body by oneself– how it feels, looks, and moves. It is shaped by our perception, emotions and physical sensations. It is not stable but can change based on a person's mood, physical experience, and environment. According to Grogan, "body

image is a multidimensional, subjective and dynamic concept that encompasses a person's perceptions, thoughts, and feelings about his or her body" (Grogan, 2007). People have mental images regarding their bodies which indicate their beliefs and perceptions of their bodies. Body image is the way our bodies are introduced to ourselves (Schilder & Bender, 1964).Itis made up of many aspects. One such aspect which is focused on this study is overweight preoccupation (OWP). This is derived from concerns about being or becoming fat, careful observations of small weight fluctuations, dieting behaviours, and eating control (Cash, 2000).Imprudent worries about body weight are prevalent among adolescents and a major area for both research and clinical attention due to its links with problematic behaviours (Duncan, Ritter, Dornbusch, Gross, & Carlsmith, 1985; Neumark-Sztainer & Hannan, 2000). Weight preoccupation can be predicted by self-efficacy in relation to body image, eating behaviour and weight (Abdullah, Goreczny, Magee, Wister &Valutis, 2009).Goreczny, Newton, Popp, Valuti, Vavrek& Wister (2008) found in his study that body dissatisfaction is a predictor of weight preoccupation. Caucasian female adolescents who were considered as more attractive had greater weight preoccupation (Borawski, Colabianchi & Ievers- Landis, 2006). Body image has been extensively explored in relation to BMI (Cash & Fleming, 2002; Newman, Salvato & Sontag, 2006). BMI has been reported to be highly correlated with body image and self-dissatisfaction in female college students (Yates, Edman & Aruguete, 2004). A similar study was conducted by Burger & Doiny (2002) found that a higher BMI was linked with a more negative body image.

Dysfunctional attitude

People who are vulnerable to depression have some maladaptive schemas, which are hidden in the person until they face some life stressors (Beck & Beck, 1972).Dysfunctional attitudes are a mirror of the content of these comparatively steady schemas. Laying his foundations on Beck's model, Teasdale (1988) theorized that these dysfunctional beliefs in a vulnerable individual could be measured only in the existence of a trigger. According to Teasdale (1988), connotation between dysfunctional beliefs and depressed mood is formed through the first occurrence of depression. Afterwards, this association plays a role in activating dysfunctional beliefs in other episodes of depressed mood. Beck (1987) anticipated that definite dysfunctional belief intermingles with a specific stressor. Therefore, it is important to emphasize on specific rather than on general dysfunctional beliefs. It was found in a study that there were significant correlations between the Multidimensional Body-Self Relations Questionnaire (MBSRQ) total score; the MBSRQ subscale scores, dysfunctional attitudes, and the Beck Depression Inventory score (Barlas et al., 2014).

Social avoidance

Social avoidance is defined as "being with, talking to, or escaping from others for any reason, both actual avoidance and the desire for avoidance were included" (Watson & Friend, 1969). Individuals, high in social avoidance feel anxiety or distress in social interactions or with the imagination of social interaction. Social avoidance negatively correlates with attachment (Watson & Friend, 1969). People high in need for affiliation will never be high in social avoidance. Need for Affiliation serves as motivation for social acceptance (Atkinson, Hens, & Veroff, 1954). It has been defined in terms of an approach as well as avoidance propensity (Byrnne, McDonald, & Mikawa, 1963). The approach inclination can be seen in people who want to affiliate in order to receive the rewards gained from a social interaction, whereas social avoidance is an avoidance tendency. Geist and Borecki (1982) established that persons high in social avoidance had considerably low self-esteem. Personal dissatisfaction with one's body size may affect his/her involvement in various life events and women are specifically avoidant of activities that require displaying their bodies. (Bergman, Curtin, Maphis, Martz & Webb , 2013).

Overweight children and youth generally

suffer from various types of social difficulties. Some studies reported that overweight adolescents were expected to be more communally secluded and have additional subsidiary parts in social settings in comparison to normal-weight adolescents (Beuhring, Falkner, Jeffery, Neumark & Sztainer, Story &Resnick, 2001; Strauss and Pollack, 2003). Informal proof proposes that peer teasing, rejection, and isolation were significant in overweight youths (Hayden-Wade, Stein, Ghaderi, Saelens, Zabinski&Wilfley, 2005). These negative responses from their friends and other people may be a cause for an enlarged danger of social anxiety and social avoidance. Role of BMI in Social anxiety is higher for girls in the non-clinical sample (Crick and Ladd 1993; La Greca and Stone 1993). It is also higher for Caucasians population (Himle, Baser, Taylor, Campbell, & Jackson, 2009).

Objective

To study if there is a difference in people based on their BMI on overweight preoccupation, social avoidance, and dysfunctional attitudes.

Hypothesis-

There will be a significant difference in people because of BMI on overweight preoccupation, social avoidance, and dysfunctional attitudes.

Method

Sample

The sample (397 adolescents) of this study consists of adolescents with older ages. Mean age of the participants was 18.26 with a S.D of .776. The sample was then divided into three groups based on their BMI. The three groups were underweight, normal weight and overweight. The first group was formed by 134 subjects, the second group contained 205 people and the third group contained 38 people. Theiinclusion criterion was to take only undergraduate students.

Tools

The “Multidimensional Body-Self Relations Questionnaire” (MBSRQ; Cash, 2000) was used for evaluation of appearance perception. The MBSRQ is a self-report questionnaire used for the assessment of one’s attitude toward their body. The questionnaire comprises of 10 subscales to assess peoples’ attitudes regarding their bodies based on their evaluation of themselves, their appearance, fitness, and how healthy they think they are (Cash, 2000). The ten subscales are, “appearance evaluation, appearance orientation, fitness evaluation, fitness orientation, health evaluation, health orientation, illness orientation, body area satisfaction, overweight preoccupation, and self-classified weight”. Overweight preoccupation subscale was used to assess overweight preoccupation.

The Dysfunctional Attitudes Scale-form A (DAS; Weissman& Beck, 1978; Weissman, 1980) is a self-report inventory, which is aimed to assess approaches that can predispose people to depression. It is a 40-iteminventory with forms A and B. The DAS- Form A consists of 40 items and each of the itemsis responded on a 7-point Likert scale (7 = fully agree; 1 = fully disagree). Higher scores indicate high dysfunctional attitudes. Many studies have reported satisfactory internal consistency, test-retest reliability, and average item-total correlations of the DAS-A in many samples (e.g., Cane, Olinger, Gotlib & Kuiper,1986; Oliver and Baumgart, 1985).There are four subscales in this scale- perfectionism, social approval, dependency and autonomy.

The Social Avoidance and Distress Scale (SAD; Watson & Friend, 1969) was used in this study to assess the degree of social anxiety. It is a 28-item scale in a true-false format that assesses the feelings of distress/discomfort and avoidance of social interactions. Higher scores on this measure imply higher levels of social anxiety and avoidance. Internal consistency estimates range from 0.77 to 0.93(Watson & Friend, 1969).

Results

The descriptive statistics of all the variables are given in table-1. Participants were classified according to BMI in three categories- underweight, normal weight and overweight.

The majority of the cases fall under normal weight category. Mean and S.D of all the three groups on all the variables is shown in table 1. Further the correlation of all the variables with one another is shown in table 2. It is evident from the table that overweight preoccupation is positively correlated to social avoidance (0.13, p<.01) which indicates that when overweight preoccupation is high social avoidance is also high. It is negatively correlated to Dysfunctional attitude (social approval) (-0.16, p<0.01). Social avoidance is negatively correlated to all the dimensions of dysfunctional attitude (-0.13, p<0.01; -0.25, p<0.01; -0.18, p<0.01; -0.17, p<0.01).All the four dimensions of dysfunctional attitude are positively correlated to each other at p<0.01 level. Dysfunctional attitudes (social approval, dependency, avoidance) are positively correlated to BMI (0.11, p<0.05, 0.12, p<0.05 and 0.18, p<0.01). Social avoidance is negatively correlated to BMI (-0.16, p<0.01). Thus the hypothesis is partially accepted because some of the variables are significantly related to each other.

Table 1: Descriptive of Variables According to Three Groups Based on BMI

Variable	Levels	Mean	S.D
Overweight preoccupation	Under weight	11.31	2.77
	Normal weight	11.85	2.89
	Over weight	11.63	2.40
Social avoidance	Under weight	15.79	2.85
	Normal weight	14.77	3.23
	Over weight	14.68	3.77
Dysfunctional attitude(perfectionism)	Under weight	31.88	7.09
	Normal weight	31.78	7.89
	Over weight	30.28	6.59
Dysfunctional attitude(social approval)	Under weight	13.40	4.85
	Normal weight	14.70	4.35
	Over weight	14.55	5.14
Dysfunctional attitude(dependency)	Under weight	13.20	4.53
	Normal weight	14.64	4.22
	Over weight	14.23	4.50
Dysfunctional attitude(avoidance)	Under weight	11.25	4.14
	Normal weight	12.82	4.53
	Over weight	13.36	5.01

Table 3 shows the one way ANOVA for all the variables. There were three levels of the variable BMI- underweight, normal weight and overweight. It can be seen that F value is significant for social avoidance (1.95) at p< .01 level, dysfunctional attitude (social approval) (3.56) at p< .05 level, dysfunctional attitude (dependency) (4.82) at p< .01 level and, dysfunctional attitude (avoidance) (6.74) at p< .01 level. This implies that all the three groups are significantly different on social avoidance, anddysfunctional attitude (social approval, dependency, avoidance). From table 1 and table 4, it can be seen that social avoidance is highest in the underweight group. Mean scores reveal that underweight group scores lowest on dysfunctional attitude (social approval, dependency, and avoidance). Normal and overweight groups were almost similar in both dysfunctional attitude (social approval and dependency) while in dysfunctional attitudes (avoidance) overweight group received the highest scoring and the normal group was in the medium group. The other two F values (Overweight preoccupation and Dysfunctional attitude perfectionism) are non-significant. Therefore it can be said that underweight, normal weight and overweight people are no different in Overweight preoccupation and Dysfunctional attitude (perfectionism). They are similar to these

	Overweight preoccupation	BMI	Social avoidance	Dysfunctional attitude (perfectionism)	Dysfunctional attitude (social approval)	Dysfunctional attitude (dependency)	Dysfunctional attitude (avoidance)
Overweight preoccupation	1	.05	.13**	-.02	-.16**	.01	-.07
BMI		1	-.16**	-.06	.11*	.12*	.18**
Social avoidance			1	-.13**	-.25**	-.18**	-.17**
Dysfunctional attitude (perfectionism)				1	.35**	.31**	.04
Dysfunctional attitude (social approval)					1	.43**	.42**
Dysfunctional attitude (dependency)						1	.29**
Dysfunctional attitude (avoidance)							1

*Significant at p<0.05, ** significant at p<0.01

Table 3: One-way ANOVA of all the Variables on Three Groups Based on BMI

Variable	Sources	SS	Df	MS	F
Overweight preoccupation	Between groups	26.29	2	13.15	1.67
	Within groups	3094.77	394	7.85	
	Total	3121.07	396		
Social avoidance	Between groups	102.48	2	51.24	1.95**
	Within groups	3903.19	394	9.90	
	Total	4005.68	396		
Dysfunctional attitude perfectionism	Between groups	81.89	2	40.94	.73
	Within groups	22026.83	394	55.90	
	Total	22108.73	396		
Dysfunctional attitude social approval	Between groups	152.73	2	76.36	3.56*
	Within groups	8453.47	394	21.45	
	Total	8606.20	396		
Dysfunctional attitude dependency	Between groups	184.55	2	92.27	4.82**
	Within groups	7538.63	394	19.13	
	Total	7723.18	396		
Dysfunctional attitude avoidance	Between groups	267.14	2	133.57	6.78**
	Within groups	7757.47	394	19.68	
	Total	8024.62	396		

*Significant at p<0.05, ** significant at p<0.01

Table 4: Comparison of Mean Scores of Different Groups on Overweight Preoccupation, Dysfunctional Attitude, and Social Avoidance by Applying Scheffe Test

Dependent Variable	Comparison of Groups		Mean Difference	Significance Level
Overweight preoccupation	Underweight	Normal weight	-.54	.18
	Normal weight	Over weight	.22	.900
	Over weight	Under weight	.31	.820
Social avoidance	Under weight	Normal weight	1.02**	0.01
	Normal weight	Over weight	-.08	.99
	Over weight	Under weight	1.11	.15
Dysfunctional attitude (perfectionism)	Under weight	Normal weight	.102	.99
	Normal weight	Over weight	1.49	.53
	Over weight	Under weight	-1.59	.50
Dysfunctional attitude (social approval)	Under weight	Normal weight	1.3*	.033
	Normal weight	Over weight	.15	.98
	Over weight	Under weight	1.14	.39
Dysfunctional attitude (dependency)	Under weight	Normal weight	-1.44**	.00
	Normal weight	Over weight	.41	.87
	Over weight	Under weight	1.03	.42
Dysfunctional attitude (avoidance)	Under weight	Normal weight	-1.56**	.00
	Normal weight	Over weight	-.53	.78
	Over weight	Under weight	2.10*	.03

** Significant at p<0.001, * significant at p<0.05 levels.

two variables but differ on the other variables. In this study, there were two hypotheses. One says that there will be a difference in the three groups on overweight preoccupation, social avoidance, and dysfunctional attitudes. From the ANOVA results, it is concluded that the hypothesis is true for some of the sub-dimensions of these variables.

Table 4 shows the results from the Scheffe test. It was applied to find the exact nature of the difference in the mean scores of the three groups on appearance evaluation, health locus of control (powerful others) and peer pressure. There is a significant mean difference between the normal and underweight group with a mean difference of 1.02 at p<0.01 on social avoidance. Underweight and normal-weight groups are significantly different on dysfunctional attitudes and dependency at p<.05 level and dependency and avoidance at p< .01 level. On the dimension of dysfunctional attitude avoidance overweight and underweight groups are significantly different with a mean difference of 2.1 at p< .05 level. Other mean differences are not significant.

Discussion

BMI of a person is an important index of being overweight or underweight. Our body weight is a critical feature of ourselves and how we define ourselves. This study has examined this critical feature of our bodies and its association with different aspects of life. This paper explores the links between BMI, Overweight Preoccupation, Dysfunctional Attitude, and Social Avoidance.

The findings of this study reveal that there are significant differences in three groups

(underweight, normal weight and overweight) on social avoidance. On comparing the three groups it was seen that underweight people are more socially avoidant in comparison to overweight and normal weight people. However, there is no difference in underweight and normal weight people in being socially avoidant. They are almost similar in social avoidance. This study is not supported by earlier researches regarding social avoidance and BMI. Earlier researches said that overweight people are more socially avoidant (Beuhring, Falkner, Jeffery, Neumark-Sztainer, Story &Resnick, 2001; Strauss and Pollack 2003). Further, it was found that Dysfunctional attitude (social approval, dependency, and avoidance) was also different for the three groups of BMIs. Underweight people are low on dysfunctional attitude (social approval, avoidance, and dependency) in comparison to normal weight people. People in the lowest group of BMI or who are thin have less dysfunctional attitudes (social approval, avoidance, and dependency).

Findings from the correlation analysis show that overweight preoccupation is positively correlated to social avoidance which means that when people have weight preoccupation they are socially avoidant in this sample. In a study by Akyüz, Doğan, Izgiç, & Kuğu (2004) it was seen that students having social phobia scored low on the MBSRQ in comparison to those without social phobia. People who are continuously thinking about being fat or overweight may not want to meet people or show themselves in front of others. It may be because of their continuous worries regarding their weight that makes them see themselves as unattractive. Overweight preoccupation is negatively related to dysfunctional attitudes (social approval). This finding is supported by a study by Barlas et al., (2014) which reported that there was a significant correlation between the MBSRQ total score, the MBSRQ subscale scores, dysfunctional attitudes, and the Beck Depression Inventory score.

BMI is negatively related to social avoidance. A person with more BMI will have less social avoidance in this sample. This is in opposition to previous researches. Adolescents with overweight have high tendencies to be communally isolated and have more marginal roles in than adolescents with normal weight (Beuhring, Falkner, Jeffery, Neumark-Sztainer, Story& Resnick, 2001; Strauss and Pollack 2003). It is possible because of peer rejection and peer teasing experienced by overweight adolescents (Beuhring, Falkner, Jeffery, Neumark-Sztainer, Story &Resnick, 2001; Strauss and Pollack 2003; Hayden-Wade, Stein, Ghaderi, Saelens, Zabinski&Wilfley,2005). In this sample, it is possible that peer rejection and teasing may be prevalent for underweight group. It is also possible that people in overweight group are more resilient and can cope in a better way. This can be explained through the type approach of personality by Sheldon, which states that endomorph (rounded and soft) are happy-go-lucky and extroverts (Sheldon, Stevens & Tucker, 1940; Sheldon & Stevens, 1942).

There were no studies found on the relationship between BMI and Dysfunctional attitude. However, there are studies on BMI and depression which suggests that obesity and being underweight are linked to a high level of depression (Cuijpers, De Wit, Penninx, Van Herten & Van Straten, 2009). Dysfunctional attitudes are evident in depression. Thus findings of the present study, “Dysfunctional attitude (dependency, avoidance, social approval) increases as BMI of a person increases” is in accord with depression and BMI studies. Yondem (2007) revealed that there are significant and positive correlations between anxiety and dysfunctional attitudes, and the need for approval. The finding of this study regarding the relationship between social avoidance and dysfunctional attitudes don’t match previous researches. Social avoidance increases as dysfunctional attitudes decrease.

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Ekta Soni, Ph.D., Assistant Professor, Department of Psychology, Govt. College, Hansi, Hisar. Email: ektapsychology@gmail.com

Rakesh Kumar Behmani, Ph.D., Associate Professor, Department of Applied psychology, Guru Jambheshwar University of Science and Technology, Hisar. Email: rakeshgjust@gmail.com