



Psychological Issues in Adolescent Females : Role of Body Mass Index and Group Counseling

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ABSTRACT

Background : Adolescence is a stormy period of life as an adolescent is exposed to a variety of stress on account of intense competitive environment, rapidly changing lifestyle, peer pressure, that have a major impact as regards adjustment and academic performance of the child. Counseling is one of the many strategies adopted to address psychological problems in adolescents.

Objective : To study and compare the level of various psychological issues (Anger, Frustration and optimism-pessimism) between BMI groups (Underweight/ Healthyweight/ Overweight) in adolescent girls and Impact of group counseling on the above parameters.

Method : A random sample of 450 adolescent girls (aged between 14-18 years) was drawn from 3 schools with entirely different ambience: one private English medium school, one Government hindi medium and one Government central school, reflecting students from all socioeconomic strata of society. Pre counseling assessment in form of exact age, height, weight was taken and BMI calculated using standard formula. The girls were then categorized into three BMI groups i.e Underweight (UW), Healthyweight (HW) and Overweight (OW) as per WHO classification. They were asked to fill respective questionnaires with objective type questions (pre counseling and after 12 weeks, following a counseling session).

Results : Post counseling questionnaire data shows highly significant decrease in anxiety level in all three BMI groups, positive results on frustration scale and significant improvement in optimism (development of pessimism) in UW and OW adolescent girls. These results were confirmed statistically significant.

Conclusion : Group counseling is an excellent way to tackle psychological issues in adolescent females and should be included in the school curriculum at regular intervals.

KEYWORDS : adolescent females, anxiety, frustration, counseling, overweight, healthyweight, underweight.

INTRODUCTION

Adolescence is a vulnerable period for overweight and obesity related issues, as during adolescence multiple social, cognitive, and emotional transitions occur as a normal part of development(1). Depression, anxiety and frustration are common in adolescents and young adults, with anxiety mostly preceding depression(2). These problems have strong root in the psychosocial environment. It is believed that deviation in psychosocial behavior is a multidisciplinary issue, abnormal body weight in the form of both overweight and underweight is one of them(3). Obesity carries a large social taboo in our society. Counseling is one of the many strategies adopted to address psychological problems in adolescents, which is above all a cost effective method. Counseling can make significant contribution in prediction of psychosocial problems by allowing free discussion to bring out hidden conflicts, anxiety, guilt or anger and helps them to deal effectively with these problems and stressful life events/depression (4). Pediatricians are in a unique position to understand and discuss the problems of teenagers.

The mode of intervention in current study was group counseling sessions by Pediatricians to promote healthy body image among adolescent and evaluation of the concept of school based group counseling for helping adolescents to cope up with the psychosocial issues of abnormal bodyweight (5).

AIMS AND OBJECTIVES

To study and compare the level of psychological issues (Anxiety, Frustration and Optimism-Pessimism) between the three BMI groups (Underweight/ Healthyweight/ Overweight) in adolescent girls and Impact of group counseling on the above parameters.

MATERIAL AND METHODS

450 adolescent girls between the ages of 14-18 years during the period of one & half year constituted the material for this study. A ran-

dom sample of 450 adolescent girls was drawn from 3 schools with entirely different ambience: one private English medium school, one Government hindi medium and one Government central school, reflecting students from all socioeconomic strata of society. A formal request was made to the heads of the institutions for permission to carry out this study. Protection of individual identity and confidentiality of responses were ensured by maintaining anonymity and allotting code number to each subject. Having ensured our acceptance the girls were approached at school in small batches not exceeding 40 at a time, in the absence of teachers and other staff.

Pre counseling assessment

Pre counseling assessment was done in form of documentation of exact age of children from school register, measurement of weight in kg using electronic weighing scales to nearest 100 grams, measurement of height in cm using stadiometer to nearest 1mm, anthropometric assessment for BMI (based on standard technique)(6) and filling of different questionnaire for psychological scales.

The questionnaire technique was used to gather information in 2 sections-

Section I : This section included information regarding exact age, height, weight. Height and weight of the girls was measured using standard techniques. BMI was calculated by the formula $\text{wt (kg)} \times 100 / \text{height}^2$ (meter) and matched for the ideal BMI for age/sex. The girls were then categorized into three BMI groups i.e Underweight (UW, BMI less than the 5th percentile), Healthyweight (HW, BMI 5th percentile up to the 85th percentile) and Overweight (OW, BMI 85th and more percentile).

Section II: included questionnaire for assessing psychological aspects. The following psychological test were utilized.

Neuroticism Scale Questionnaire (NSQ) for anxiety (7)

Optimistic / Pessimistic scale (8)

Frustration scale (9)

These tests are standard tests which are reliable, approved and commonly used tests for diagnosis of psychological disorder.

These are simple scales which can be administered individually as well as in group of about 40 subjects. These scales help in diagnosis by giving a quantitative evaluation of psychological aspects without requiring the time of skilled practitioners, leaving them free to concentrate on guidance, therapy etc. there are definitive number for each test. But the scoring scheme and scoring key's varies with the different scales.

Neuroticism scale questionnaire (NSQ)

The NSQ is a brief, standard, easily administered and scored inventory-measuring degree of neuroticism or neurotic trend. It is suitable for normal and abnormal adults and adolescents.

The scale is designed by Institute of Personality and Ability Testing (IPAT). It is brief (40 items, 5 -10 minutes) easy to administer in individual or mass group form, and easy to score by a standard key scoring system. NSQ scale also measures four neurotic associated personality factors, which are

Factor I i.e. Overprotection: Tenderminded, culture, protected, emotionally sensitive (vs. toughminded).

Factor F i.e. Depressiveness: inhibited, sober, seriousness (vs. happy-go-lucky, cheerfulness).

Factor E i.e. Submissiveness: suggestibility, Dependance (vs. Dominance).

Anxiety: worry, guilt proneness (vs. Assured self confidence), ergic tension from frustration (vs. calm, relaxation).

Test was hand scored with a stencil (punched) key to obtain raw scores. Standardized tables were used to convert the raw scores into sten (standard ten) scores, distributed over 10 equal intervals. Anxiety scores were measured and subjects were categorized as having low 0-4, moderate 5-6 and high 7-10 level of anxiety.

Optimistic Pessimistic scale

Human behavior depends upon personality which is determined by family, cultural practices, environment, education, confidence etc. The scale consists of 40 statement 1 mark is allotted for 'Yes' and 0 for 'No' in response to each statement. In the end the scores are interpreted as low (Pessimistic) 16 -20, moderate (equivocal) 21-25 and high (optimistic) 26-30.

Frustration scale

Frustration is a state of emotional stress which is characterized by confusion, annoyance and anger. It occurs whenever goal seeking behavior is interfered with, the person is aware of his inability to satisfy his drives and desires, and his failure to reach the goals he has set for himself, and so he feels helpless and suffers from injured pride. There are 48 statements. 1 mark is given for 'Yes' and 0 for 'No' as response. Interpretation of scores is done in 3 categories, defining the level of frustration as:

Low = 23-27

Moderate = 28-32

High = 33-37

Counseling session

Group counseling of adolescent girls, in groups of 30-40 was done by a senior pediatrician with more than 30 years of experience in field of adolescent counseling, essentially covering all problems prevalent in students revealed by pretest session. Twenty- seven girls did not come for counseling (dropout cases).

Post counseling assessment

level of stress was reassessed using identical questionnaire, 12 weeks after counseling.

Statistical Analysis

Data collected was then tabulated and subjected to statistical analysis. Statistical analysis was performed using SPSS 17 Software. Mean values were calculated & appropriate univariate and bivariate analysis were carried out using the Student 't' test for the continuous variable (age) and two-tailed Fisher exact test or chi-square (χ^2) test for categorical variables. The critical levels of significance of the results were considered at 0.05 levels i.e. $P < 0.05$ was considered significant & <0.01 as highly significant.

RESULTS

Out of total 423 females included in study, 93 (21.98%) were found underweight, 304 (71.87%) healthy weight and 26 (6.15%) overweight based on BMI. Age wise distribution of adolescent females depicted that majority of females fall in age group 15-16 years (62.64%). Highest percentage of underweight as well as overweight females were seen in age 16 years category, respectively 37.63% and 34.62%. For anxiety, pre-counseling observations showed significantly higher level of anxiety in UW & OW adolescent girls as compared to HW adolescent girls. Post counseling observations revealed significant reduction in the level of anxiety in all the three groups studied i.e. UW/HW/OW. On frustration scale, pre-counseling level of frustration was found to be high and moderate in OW and UW adolescent girls respectively while HW adolescent girls showed low level of frustration. Marked reduction in the level of frustration was observed in all the three group i.e. UW/HW/OW adolescent girls after counseling. Pre-counseling optimism level was significantly low in OW & UW adolescent girls as compared with HW. After counseling the same group of OW and UW adolescent girls showed statistically significant improvement in positive thinking while no significant change was observed in HW girls.

Table 1. DISTRIBUTION OF ADOLESCENT GIRLS ACCORDING TO BMI

BMI	Frequency	Percentage
UW	93	21.98
HW	304	71.87
OW	26	6.15
TOTAL	423	100.00

Table 2. AGE WISE DISTRIBUTION OF ADOLESCENT GIRLS ACCORDING TO BMI

AGE (in years)	UW	HW	OW	TOTAL
14	16 (17.20 %)	54 (17.76 %)	2 (7.69 %)	72 (17.02 %)
15	20 (21.50 %)	99 (32.57 %)	4 (15.38 %)	123 (29.07 %)
16	35 (37.63 %)	98 (32.24 %)	9 (34.62 %)	142 (33.57 %)
17	17 (18.28 %)	49 (16.12 %)	8 (30.77 %)	74 (17.49 %)
18	5 (19.35 %)	4 (1.32 %)	3 (11.54 %)	12 (2.87 %)
TOTAL	93	304	26	423

Table 3. IMPACT OF COUNSELING ON LEVEL OF "ANXIETY" IN ADOLESCENT GIRLS

BMI	Sten score	pre counseling	post counseling	p value
UW (n = 93)	Mean	6.86	5.73	<0.05
	SD	3.11	2.23	
HW (n = 304)	Mean	6.00	5.42	<0.05
	SD	2.89	2.69	
OW (n = 26)	Mean	7.33	5.50	<0.05
	SD	3.16	2.45	
Underweight Vs Healthyweight				<0.05
Underweight Vs Overweight				>0.05
Overweight Vs Healthyweight				<0.05

Table 4. IMPACT OF COUNSELING ON LEVEL OF "FRUSTRATION" IN ADOLESCENT GIRLS

BMI	Score	pre counseling	post counseling	p value
UW (n = 93)	Mean	29.33	25.98	<0.05
	SD	7.46	6.69	
HW (n = 304)	Mean	26.9	23.13	<0.05
	SD	7.65	7.68	
OW (n = 26)	Mean	34.1	26.9	<0.05
	SD	7.78	6.99	
Underweight Vs Healthyweight				<0.05
Underweight Vs Overweight				<0.05
Overweight Vs Healthyweight				<0.05

Table 5. IMPACT OF COUNSELING ON LEVEL OF "OPTIMISM-PESSIMISM" IN ADOLESCENT GIRLS

BMI	Score	pre counseling	post counseling	p value
UW (n = 93)	<0.01	20	22.89	<0.01
		4.94	4.1	
HW (n = 304)	>0.05	21.91	22.08	>0.05
		4.45	4.76	
OW (n = 26)	<0.001	19.01	22.67	<0.001
		4.16	4.5	
Underweight Vs Healthyweight				<0.05
Underweight Vs Overweight				>0.05
Overweight Vs Healthyweight				<0.05

DISCUSSION

We conducted this study at our centre to assess the effect of counseling on the various psychological issues (anger, frustration and optimism-pessimism) in adolescent girls of different BMI groups (Overweight vs Healthyweight vs Underweight). We evaluated 423 adolescent females in the age group 14-18 years during the study time frame.

COMPARISON OF ANXIETY WITH BMI: PRE & POST COUNSELING

was measured from the NSQ scale designed by the Institute for Personality and ability Testing (IAPT). Anxiety is one of the components of this questionnaire. All the three study groups showed high anxiety level. Score was highest in overweight adolescent. UW & OW girls showed significant higher level of anxiety as compared to HW girls. Analysis of post counseling data revealed highly significant decrease in anxiety level in all the three study groups. In a study conducted by Gilbert Villa (10) they observed a higher number of obese children were having anxiety disorders which also support the present study. Pine et al longitudinally examined the relationship between

psychopathology and obesity in both male and female adolescents. Depression and obesity were directly associated in females, but not in males(11). Similar

results depicting relationship between anxiety and obesity were also seen in other studies(12,13).

COMPARISON OF OPTIMISM-PESSIMISM WITH BMI: PRE & POST COUNSELING

When optimism-pessimism score was measured with optimism-pessimism scale, we observed that the pre counseling scores were low (pessimistic) in underweight and overweight girls, while healthyweight adolescent girls showed moderate scores. Statistically significant low score was observed in underweight and overweight girls compared to healthyweight groups. Analysis of post counseling data showed significant improvement in the underweight and overweight adolescents towards optimism, while no statistically significant change was observed in healthyweight adolescent girls. Overweight girls were more anxious, stressed and pessimistic. These could be explained by the fact that females want to remain slim, slender, young and youthful, and boys prefer to be well build. In girls it could also be due to the belief that fat girls look older and there is a rapidly increased popularity of the so called "zero figure". Perhaps these are the reason for overweight girls to have high level of stress, anxiety and pessimism. There is paucity of literature on the effect of counseling on improvement in adolescent psychometric scores. Hence our study justifies its unique places in comparison with other similar studies.

COMPARISON OF FRUSTRATION WITH BMI: PRE & POST COUNSELING

Before counseling HW girls showed low level of frustration while UW girls showed moderate and OW girls showed high level of frustration. Pre counseling scores were significantly different between all the three study groups. On analysis of Post counseling data the frustration levels reduced in all the three groups studied and it was found statistically significant. In underweight girls moderate frustration is changed to low level of frustration. In overweight adolescent girls it became low from high score while in healthy weight it remained as low frustration. Several studies as by Rutter (14) showed that family also plays an important role, because there are some risk factors within the families that can contribute to the negative life outcome of the adolescent. In our studies we were not able to remove these confounding factors.

Role of counseling:

Group counseling is an excellent way to assess the effect of some important influence on adolescent. Interacting with youth in a very friendly manner seems to change their entire perspective towards life. Counseling is the process of interpersonal interaction with the specific purpose of enabling the adolescents to find out various solutions for the problems. Counseling helps in differentiating normal and abnormal, improving decision making, modification of behaviors, improving personal effectiveness, improving achievement and promoting mental, emotional and social health. The idea behind the group counseling was not to categorize these students into normal and abnormal, rather it was based on fact that individual counseling would take them away from their adolescent peer group and may result in social isolation. The group counseling of the adolescents in the current study as well as previous studies is equally rewarding (15-21). The Indian literature is so far focusing mainly on the physical aspect of adolescent development. Negligible studies have been conducted to study the impact of deviant physical growth and development on psychosocial behavior including various aspects of adolescent personalities. Hence our study justifies its unique places in comparison

with other similar studies because perhaps it's the pioneer study of its own kind in this country which is studying the effect of weight and impact of counseling on level of stress and scholastic performance on different BMI groups among adolescent girls. Our study justifies its unique position because of its originality, being applied to Indian urban adolescents and the remarkable effect achieved by group counseling on most of these parameters, which is a cost-effective way for a developing country like ours.

The limitation of our study were that we had organized only a single counseling session which generated few unseen areas of concern among adolescents, thus contributing to increase concern for few parameters. So we need to have repetitive counseling sessions and further studies of this kind in future.

CONCLUSION

Post counseling questionnaire data shows highly significant decrease in anxiety level in all three BMI groups, positive results on frustration scale and significant improvement in optimism (development of pessimism) in UW and OW adolescent girls. Group counseling is an excellent way to tackle psychological issues in adolescent females. Counseling sessions should be arranged regularly for adolescent girls in school curriculum.

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