



Effect of Behavior Modification on Psychological Profile of Obese School Boys

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ABSTRACT

The present study was an experimental study, conducted to examine the psychological profile of obese school boys treated with a behavior modification programme. Forty subjects were selected from two different schools at Ashokenagar, West Bengal, India. All the subjects were randomized by www.randomizer.org into two groups: Experimental Group (N = 20) and Control Group (N = 20). The Experimental Group received 12 weeks behavior modification (BM) programme. The Behavior modification programme consisted of two components, namely a Physical activity component and a Nutrition education component. Control Group did not receive any treatment. The Self esteem, Depression and Body image dissatisfaction were selected as variables. The collected data were analyzed by using ANCOVA. The results showed that there were significant effect on Self esteem, Depression and Body image dissatisfaction. This finding strongly supports that behavior modification programme improved psychological profile such as self esteem, depression and body image dissatisfaction significantly of obese school boys.

KEYWORDS : Obesity, BMI, Body Composition, Behavior modification.

1 INTRODUCTION

Obesity is such abnormal body condition in which excesses body fat accumulated to the extent that it may have an adverse effect on health. The World Health Organization (WHO) defines overweight and obesity as "abnormal or excessive fat accumulation that may impair health" (World Health Organization, 2006). Childhood obesity has been called "one of the most serious public health challenges of the 21st century", (WHO, 2012). Obesity can harm nearly every system in a child's body—heart and lungs, muscles and bones, kidneys and digestive tract, as well as the hormones that control blood sugar and puberty and can also take a heavy social and emotional toll (Ebbeling et al., 2002).

Obesity also has an adverse impact on the psychological well being of the children and adolescents. A recent study investigated the relationship between obesity and psychological well being in children and examined the mediation effect of body dissatisfaction on mental health of obese Korean children. A total of 413 Korean children in grades 5 and 6 from 3 elementary schools completed self-reporting questionnaires on body dissatisfaction, self-esteem, and level of depressive symptoms. The obese children with body dissatisfaction had significantly lower self-esteem and higher levels of depressive symptoms than the obese children without body dissatisfaction and normal weight children. The findings suggest that childhood obesity may be linked to body dissatisfaction, leading to low self-esteem and high levels of depressive symptoms (Shin and Shin, 2008). There were many other studies that support the findings of Shin and Shin, 2008 (Pedro Miguel Lopes de Sousa, 2008; Claire and Claire, 2009; Bin et al., 2010; Malette et al., 2013; Mohamed et al., 2013).

Very little effort had been made so far examined the Behavior modification effect on Self esteem, Depression and Body image dissatisfaction of obese school boys. Furthermore no such evidence was found which evaluating the treatment containing a behavior modification programme on psychological well being of Indian obese population. Thus the researcher was interested to investigate in this area.

2 METHODS

For the present study 40 subjects were selected from two different schools at Ashokenagar, North 24 parganas, West Bengal, India. The age of the subject was 10 to 13 years. The percentile value of Body Mass Index (BMI) of all the subjects was 95th to 100th percent. In the present study the criterion measures were Self esteem, Depression and Body image dissatisfaction. Self esteem- Self esteem was measured by the Rosenberg Self-Esteem Scale developed by Rosenberg (1965). Depression- Depression was measured by the Major Depression Inventory (MDI), developed by Psychological research unit, Hil-

lerod. Body image dissatisfaction- Body image dissatisfaction was measured by the Children's Body Image Scale (CBIS), developed by Truby and Paxton (2002).

2.1 Study design

In total, 40 subjects were included in the study on the basis of inclusion and exclusion criteria. All the subjects were randomized by www.randomizer.org into two equal groups: Experimental Group (N = 20) and Control Group (N = 20). The Experimental Group received 12 weeks behavior modification (BM) treatment and Control Group did not receive any treatment.

2.2 Behavior Modification Training Programme

The duration of the behavior-modification programme was 12 weeks and took place five times a week after school hours. It consisted of two components, namely a Physical activity component that was offered four days a week and a Nutrition education component which took place once a week.

2.2.1 Physical activity component

The physical activity component, with the aim of promotes a pleasant exercise experience with the company of their peers. The investigators chose not to emphasize training intensity and did not request heart rate monitoring or a rating of perceived exertion. The emphasis instead focused on attaining a high degree of calorie expenditure. The physical activity session was given once a day, 4 days per week (Monday to Thursday) after school hours. All physical activity sessions included a warm-up, aerobic activities, a recreational activity and a cool-down exercise supervised by investigator. Children of the training group participated 40 to 70 minutes supervised physical activity session for 12 week. There was a 10-min warm-up at the beginning of each session, which included Jogging, stretching, bending and rotation exercise. Aerobic activities included in the program were walking and running. These activities were organized into five minute bouts of each exercise. Five minutes were added to the aerobic phase each two weeks until the total duration of aerobic phase reached 30 minutes. In each session there was a recreational programme of 15 minutes duration followed by the aerobic phase with a view to refresh the children and reenergize for the next day. Recreational activities included playing basketball, football, hand ball, volley ball, badminton and various minor games. At the end of each session, there was a 5minutes cool-down with light activities which relaxed subjects to their resting condition.

2.2.2 Nutrition education component

The nutrition education component, with the aim of adapting the

healthy lifestyle of the subjects, took place over a period of three months, generally from month of February to May. There are twelve lessons each lesson should last about 30 minutes and last five minutes of each lesson was interactive. The purpose of the program is to influence obese children to think about what they are eating and to make wise choices. The children are introduced to the concepts of major components of food (proteins, fats and carbohydrates), to the food pyramid and a balanced diet and to the relationship of exercise to health. It also consisted of lessons on healthy eating habits, nutrition choices, self-perception, methods to increase physical activity and addressing physical activity goals.

2.3 Statistical procedure

Analysis of co-variance (ANCOVA) statistical technique was used to test the differences among the experimental and control groups.

3 RESULTS AND DISCUSSION

3.1 Results

The statistical analysis comparing the initial and final means of experimental group and control group on Self Esteem is presented in table 1.

TABLE 1 COMPUTATION OF ANALYSIS OF COVARIANCE ON SELF ESTEEM (Scores in Numbers)

Test	Exp. Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre-Test Mean ± SD	11.850 ±02.681	12.550 ±03.000	Between	4.9	1	4.9	0.6055
			Within	307.5	38	8.0921	
Post Test Mean ± SD	17.050 ±02.743	12.400 ±02.583	Between	216.23	1	216.23	*30.46
			Within	269.75	38	7.0987	
Adjusted Mean	17.277	12.173	Between	256.49	1	256.49	*67.79
			Within	139.99	37	3.784	

*Table value of 'F' Indicates Significant at 0.05 level of confidence for df (1, 38) = 04.10 and for df (1, 37) = 04.11

The statistical analysis comparing the initial and final means of experimental group and control group on Depression is presented in table 2.

TABLE 2 COMPUTATION OF ANALYSIS OF COVARIANCE ON DEPRESSION (Scores in Numbers)

Test	Exp. Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre-Test Mean ± SD	23.100 ±03.582	23.250 ±03.611	Between	0.225	1	0.225	0.0174
			Within	491.55	38	12.936	
Post Test Mean ± SD	17.150 ±02.777	23.050 ±02.874	Between	348.1	1	348.1	*43.584
			Within	303.5	38	7.9868	
Adjusted Mean	17.198	23.002	Between	336.75	1	336.75	*120.24
			Within	103.62	37	2.801	

*Table value of 'F' Indicates Significant at 0.05 level of confidence for df (1, 38) = 04.10 and for df (1, 37) = 04.11

The statistical analysis comparing the initial and final means of experimental group and control group on Body Image Dissatisfaction is presented in table 3.

TABLE 3 COMPUTATION OF ANALYSIS OF COVARIANCE ON BODY IMAGE DISSATISFACTION (Scores in Numbers)

Test	Exp. Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre-Test Mean ± SD	02.600 ±00.883	02.650 ±00.933	Between	0.025	1	0.025	0.0303
			Within	31.35	38	0.825	
Post Test Mean ± SD	01.300 ±00.801	02.750 ±00.851	Between	21.025	1	21.025	*30.788
			Within	25.95	38	0.6829	
Adjusted Mean	01.312	02.738	Between	20.34	1	20.34	*39.39
			Within	19.1	37	0.516	

*Table value of 'F' Indicates Significant at 0.05 level of confidence for df (1, 38) = 04.10 and for df (1, 37) = 04.11

3.2 Discussions:

This study investigated the effect of twelve weeks behavior modification programme on Self esteem, Depression and Body image dissatisfaction of obese school boys. The results showed that there were significant effect of behavior modification programme on Self esteem, Depression and Body image dissatisfaction. This effect may be due to the fact that through Behavior Modification programme they involved a regular routine of exercise and nutrition education classes that may help them to feel happier, more relaxed, feel better about their bodies, boost their confidence, reduces stress and a greater improvement in mental well-being. Mohamed et al. (2013), Yngvild et al. (2013), Katherine et al. (2013), Amir et al. (2012), Aida et al. (2012), Bhuwan et al. (2012), Duncan et al. (2009), Mara et al. (2009), Shin and Shin (2008), Huang et al. (2007), Amanda et al. (2006), Sung et al. (2005), Jane and Lucy (2005), Wisotsky and Swencionis (2003) and Traverso et al. (2000) findings support the findings of the present study.

4 CONCLUSIONS

Within the limitations of the study, the following conclusions were drawn:

- i. Participation in twelve weeks of behavior-modification programs resulted significantly improves Self esteem.
- ii. Participation in twelve weeks of behavior-modification programs resulted significantly decreases Depression.
- iii. Participation in twelve weeks of behavior-modification programs resulted significantly decreases Body image dissatisfaction.

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