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## Association of parenting styles with body composition among adolescents

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### Abstract

The purpose of this study was to find out the association between parenting styles and body composition. For this purpose, 388 male students were selected from the various schools of three districts of Punjab, India. Parenting style questionnaire was filled by parents and % body fat was assessed by taking two-site skinfolds. Associations were examined by employing Spearman's correlation of coefficient. It was found that no significant correlation was found between three styles of parenting viz. authoritative, authoritarian and permissive and % body fat. Hence, no association was found between parenting style and body composition.

**Keywords:** Authoritative, authoritarian, permissive, body fat

### Introduction

Child Developmental theorists have long been pondering on how parents influence the development of their child. Though, discovering the definite cause-effect relation between the particular behaviour of parents and future behavior of children is very challenging. Some children raised in dramatically different environments can later grow up to have remarkably similar personalities. Contrariwise, children who grow up in the same home and up bring in the same environment may be raised up to have surprisingly unlike personalities to each other. In spite of these encounters, psychologists have revealed essential relationships between parenting styles and the impact of these styles on children. In initial 60s, psychologist Diana Baumrind carried out a study on over hundred preschool-age children (Baumrind, 1967) [2]. By observing naturalistically, interviewing parents and using different research approaches, she recognized four central parenting dimensions viz. Disciplinary Strategies, Warmth and Nurture, Communication Styles and Expectations of Maturity and Control. From these dimensions, Baumrind put forward that the most parents practice one of three different parenting styles (Baumrind, 1967) [2]. Previous research has associated the occurrence of obesity with a particular style of parenting (Fuemmeler *et al.* 2012) [9]. This study is aimed to find out the association between various styles of parenting and body composition.

### Methods

#### Selection of subjects

The subjects were selected from the various schools of three districts of Punjab viz. Amritsar, Gurdaspur and Hoshiarpur. The total number of subjects were 388 male students. The age of the subjects ranged from 13 to 18 years.

#### Selection of Variables

##### Demographic characteristics

The data on age, height and weight were collected from all the subjects. The age was self-reported by the subjects, the height was measured by using a steel measuring tape, and weight was measured by using a digital weighing scale. Body mass index (BMI) was calculated by dividing the weight by height in meters squared.

##### Parenting style

The parenting style is a construct in Psychology that represents standard approaches used by parents in their child upbringing. It is classified into three categories:

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Authoritative – The parents have high demanding and responsiveness accordingly. Parents followed a child-centered approach that holds high expectations of maturity. Authoritative parents can visualize their children’s emotional state and teach them how to manage their emotions. Even with high expectations of maturity, authoritative parents are usually forgiving of any possible shortcomings. (Baumrind, 1991) [1]

**Authoritarian**

Authoritarian children rearing is prohibitive, discipline overwhelming parenting style in which parents make their children youngsters take after their bearings with practically no clarification. Authoritarian parents are highly demanding and less responsive; the parents tend to demand obedience without explanation and focus on status. (Baumrind, 1991) [1]

Permissive – The parents are accountable but not demanding. It is likewise called Indulgent child rearing, non-mandate or tolerant. It is described as having a couple of behavioural demands for the child. Permissive parenting is a style of child-rearing in which parents are very much involved with their children but place few demands or controls on them. (Baumrind, 1991) [1]

**Body composition**

Body composition is a health-related component of Physical fitness. It describes the percentages of fat mass (visceral and subcutaneous) and lean mass (bones, muscles and water) of the body. In this study % body fat was taken as a measure.

**Tools of Data Collection**

**Parenting style**

Parenting Style & Dimension Questionnaire (PSDQ – Short Version) prepared by Robinson *et al.* (1995) [4] was utilized to assess the parenting style.

**Body composition**

Two-site skinfold measurements were taken: triceps and subscapular. A standardized skinfold caliper was used for measurements. The skinfold data was subjected to Slaughter’s

equation in order to estimate the % body fat (Mariana *et al.* 2014) [3]. The equations used for boys and girls are presented below:

% Body fat for Boys = 1.21 (Triceps + Subscapular) - 0.008 (Triceps + Subscapular) 2-1.7

% Body fat for Girls = 1.33 (Triceps + Subscapular) - 0.013 (Triceps + Subscapular) 2- 2.5

**Statistical procedure**

Demographic characteristics were described as a mean and standard deviation. BMI was presented in counts and percentages to each category. Descriptive statistics were presented for % body fat and different parenting styles. The data were found skewed, therefore, Spearman’s rank ordered correlation was employed to find out the association between % body fat and parenting style. The significance level was at 0.05.

**Results**

**Table 1:** Demographic characteristics of male students (N=388)

Characteristics	Mean	Standard deviation
Age (Years)	15.72	1.27
Height (Meters)	1.65	0.07
Weight (Kgs)	56.95	8.48
BMI	Counts	Percentage
Underweight	46	11.86
Normal	324	83.51
Overweight	13	3.34
Obese	5	1.29

Table - 1 presents the mean and standard deviations of demographic characteristics of male students. Mean values of age, height and weight were 15.72, 1.65 and 56.95 respectively. The standard deviation of age, height and weight were 1.27, 0.07 and 8.48 respectively. It was found that 11.86 % were underweight, 83.51% normal, 3.34% and 1.29% were obese.

**Table 2:** Descriptive Statistics of body composition and parenting styles (N=388)

Variable	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
% Body fat	5.28	29.52	17.71	5.56	0.174	-1.014
Authoritative parenting	1.69	5.00	4.6	0.43	-2.8	10.85
Authoritarian parenting	1.00	5.00	2.83	0.82	.326	-0.041
Permissive parenting	1.00	4.00	1.23	0.51	2.401	5.939

It is evident from table-2 that score of % body fat of male adolescents ranged from 5.28 to 29.52 with a mean score of 17.71 and standard deviation of 5.56. The scores for authoritative parenting style ranged from 1.69 to 5.00 with a mean score of 4.6 and standard deviation of 0.43. For authoritarian parenting style, score ranged from 1.00 to 5.00 with a mean value of 2.83 and standard deviation of 0.82. For permissive parenting style, the minimum score was 1.00, and the maximum score was 4.00 with a mean value of 1.23 and standard deviation of 0.51.

**Table 3:** Correlations between % body fat and parenting styles

Variable	% Body fat	
	Coefficient of correlation	p-value
Authoritative	-0.052	0.309
Authoritarian	0.003	0.947
Permissive	0.017	0.735

Table - 3 shows the coefficient of correlation between % body fat and parenting styles. Correlation coefficient between % body fat and authoritative parenting style was -0.052 (p=0.309), authoritarian parenting style was 0.003 (p=0.947), and permissive parenting style was 0.017 (p=0.735). It can be noted that none of the parenting styles was significantly correlated with % body fat.

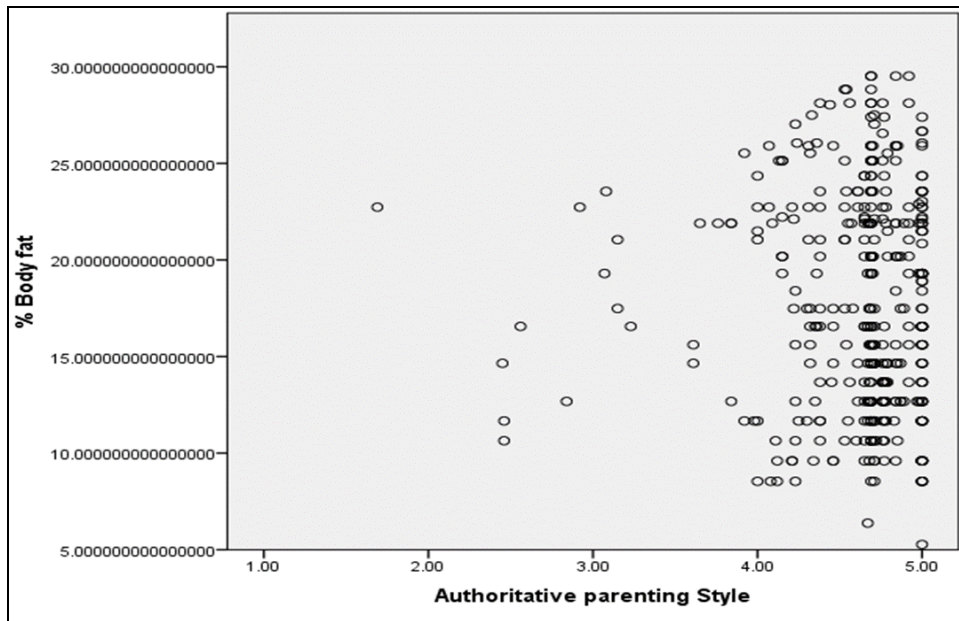


Fig 1: Scatter diagram of % body fat and authoritative parenting style

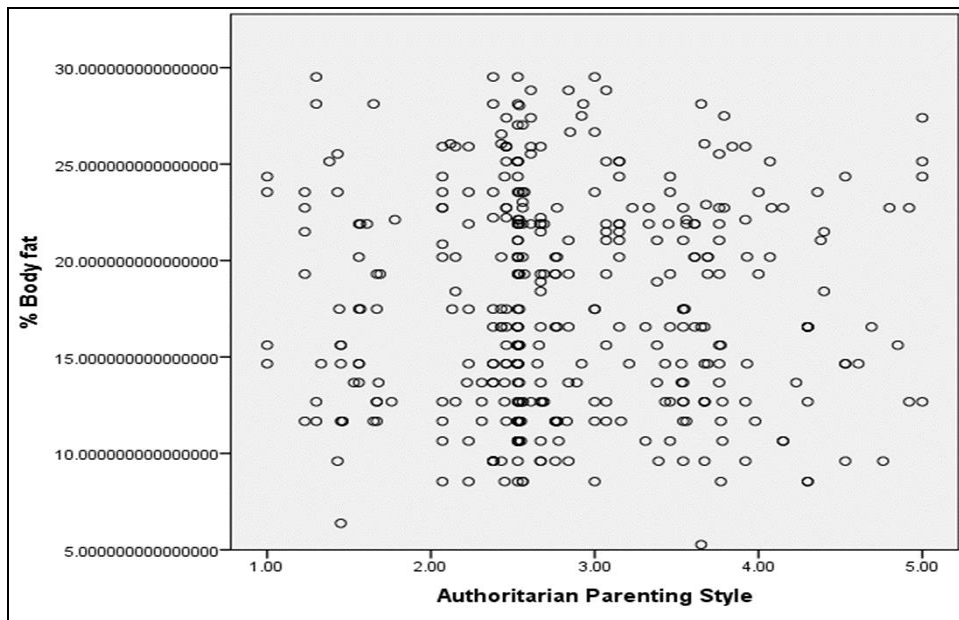


Fig 2: Scatter diagram of % body fat and authoritarian parenting style

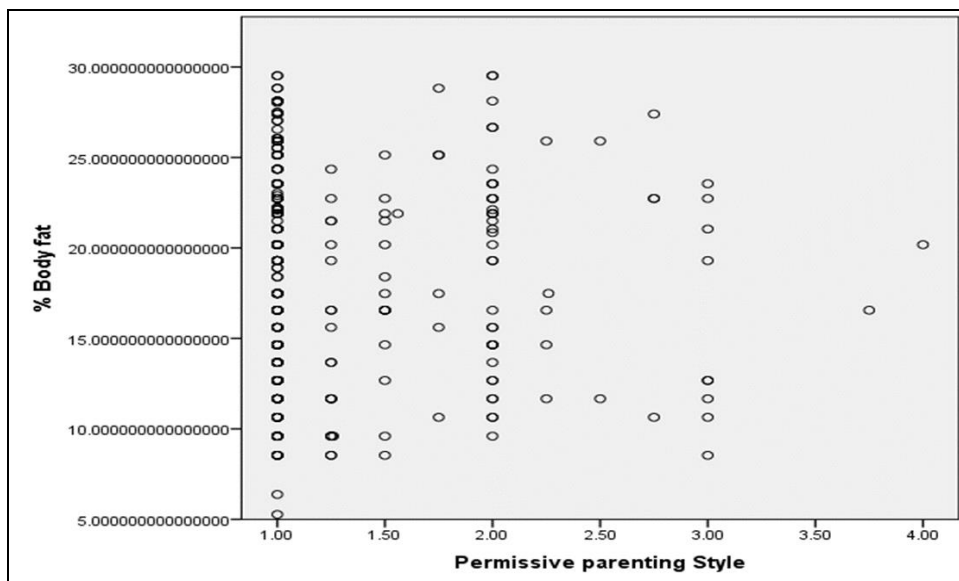


Fig 3: Scatter diagram of % body fat and permissive parenting style

## Discussion

The purpose of the study was to find out the association between three types of parenting styles and body composition. It was found that none of the parenting styles was associated with the body composition of adolescents. Majority of the parents have authoritative parenting style followed by authoritarian and permissive styles. Authoritarian and permissive parenting styles are considered to be associated with higher risk of adiposity among adolescents as compared to an authoritative style (Fuemmeler *et al.* 2012) <sup>[9]</sup>. However, previous researches have related parental risk perceptions, limit setting, and nurturance to adolescent BMI (Schneider *et al.*, 2013) <sup>[6]</sup>. Israel *et al.* (1994) <sup>[7]</sup> suggested that interventions focused at improving self-regulation were linearly associated with lessened adiposity. A study suggests that parenting style is associated with childhood obesity, but may be moderated by poverty (Kakinami *et al.* 2015) <sup>[8]</sup>. However, in this study, income level was not added as a moderator variable. The present study is inconsistent with the findings of the above-discussed studies. The inconsistency of the results might be due to different approaches used for measuring adiposity and parenting style. The previous studies have used BMI as their reference point whereas we directly measured fatness with skinfold approach. However, more methodological consensus should be explored to reach a general conclusion.

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