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## A relationship study of parenting styles and body composition among female adolescents

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### Abstract

The objective of this study was to study the relationship of different parenting styles with the body composition of female adolescents. The subjects were selected from the various schools of three districts of Punjab viz. Amritsar, Gurdaspur and Hoshiarpur. The total number of subjects were 646 female students. The age of the subjects ranged from 13 to 18 years. Parenting style questionnaire was filled by parents and % body fat was examined by measuring two-site skinfolds. Slaughter's equation was used for % body fat computation. Relationships between the variables were examined by using Spearman's correlation. Results revealed that no significant correlation was found between three styles of parenting viz. authoritative, authoritarian and permissive and % body fat. Hence, it can be concluded that there is no relationship between parenting style and body composition.

**Keywords:** Parenting, style, authoritative, authoritarian, permissive, body fat

### Introduction

The style of parenting indicates the way a parent connects with his/her kid. The three basic classifications of parenting style were introduced by Baumrind (1967) <sup>[1]</sup> viz. Authoritative style which give positive direction and sincere discipline; Authoritarian style which is characterized as having dictatorial approach and obedience submission; and Permissive style which gives the liberty of decision making with nominal castigation. Another classification was presented by Maccoby & Martin (1983) that was characterized by permissiveness and less warmth, he called it "Uninvolved" style of parenting. The parents of this category are not much demanding and have very less control on their kid's behaviour.

Recently, study of relationship parenting style with child growth and development has been advancing very well (DeVore *et al.* 2005). There have been various interventions tested that revealed instantaneous and long-lasting effects on risk manners among adolescents. A bond between parent and child are thought to be protecting in adolescence age. Consistent surveillance by parents is considered as effective on various risk behaviors among both upper- and middle-class populace. At the same time, lack of leading the child can increase the chances of sexual behavior and lack of communication between child and parents can lead to augmentation of sexual risk behaviors.

Generally perceived as a genuine general wellbeing concern, the issue of youth overweight/adiposity has been connected to long-lasting risks for health (Cruz *et al.*, 2003) <sup>[3]</sup>, with adiposity being termed an ailment in 2013 by the AMA. Significantly, numerous intake practices and propensities among children are found out and created with regards to a family domain molded to a great extent by guardians (Birch and Fisher, 1998). In this way, parent dispositions and practices identified with sustenance and kid encouraging could be vital elements to focus to advance kids' adhering to a good diet and to counteract youth heftiness (Birch and Davison, 2001; Faith, Scanlon, Birch, Francis, and Sherry, 2004). Different parental nurturing practices are utilized to deal with the sum and sort of nourishment that kids eat (Ventura and Birch, 2008) <sup>[5]</sup>. Specifically, developing investigations recommend that parental control in feeding children negatively affects their weight, especially for young girls (Carper, Fisher, and Birch, 2000).

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## Methodology

**Sample:** The subjects were selected from the various schools of three districts of Punjab viz. Amritsar, Gurdaspur and Hoshiarpur. The total number of subjects were 646 female students. The age of the subjects ranged from 13 to 18 years.

## Variables of the study

### Demographics

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:

- Authoritative parenting style
- Authoritarian parenting style
- Permissive parenting style

Parenting Style & Dimension Questionnaire (PSDQ – Short Version) constructed by Robinson *et al.* (1995) was used to examine 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). 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 presented as a mean and standard deviation. BMI was described in frequencies and percentages for each category. Descriptive statistics were presented for % body fat and different parenting styles. Spearman's rank ordered correlation was applied to assess the relationship between % body fat and parenting style. The alpha level was at 0.05.

## Results

**Table 1:** Demographic characteristics of female adolescents (N=616)

| Characteristics | Mean   | Standard deviation |
|-----------------|--------|--------------------|
| Age (Years)     | 16.08  | 1.41               |
| Height (Meters) | 1.59   | 0.06               |
| Weight (Kgs)    | 49.81  | 6.24               |
| BMI             | Counts | Percentage         |
| Underweight     | 214    | 34.74              |
| Normal          | 363    | 58.93              |
| Overweight      | 34     | 5.52               |
| Obese           | 5      | 0.81               |

Table 1 states the mean and standard deviations of demographic characteristics of female sample. Mean values of age, height and weight were 16.08, 1.59 and 49.81 respectively. The standard deviation of age, height and weight were 1.41, 0.06 and 6.24 respectively. It was found that 34.74% were underweight, 58.93% normal, 5.52% and 0.81% were obese.

**Table 2:** Descriptive Statistics of % Body fat and Parenting styles among female adolescents (N=616)

| Variable                | Mean  | Std. Deviation | Min. | Max.  |
|-------------------------|-------|----------------|------|-------|
| % Body fat              | 21.86 | 5.21           | 6.18 | 31.52 |
| Authoritative parenting | 4.74  | 0.33           | 1.00 | 5.00  |
| Authoritarian parenting | 3.55  | 1.12           | 1.00 | 5.00  |
| Permissive parenting    | 1.22  | 0.32           | 1.00 | 2.78  |

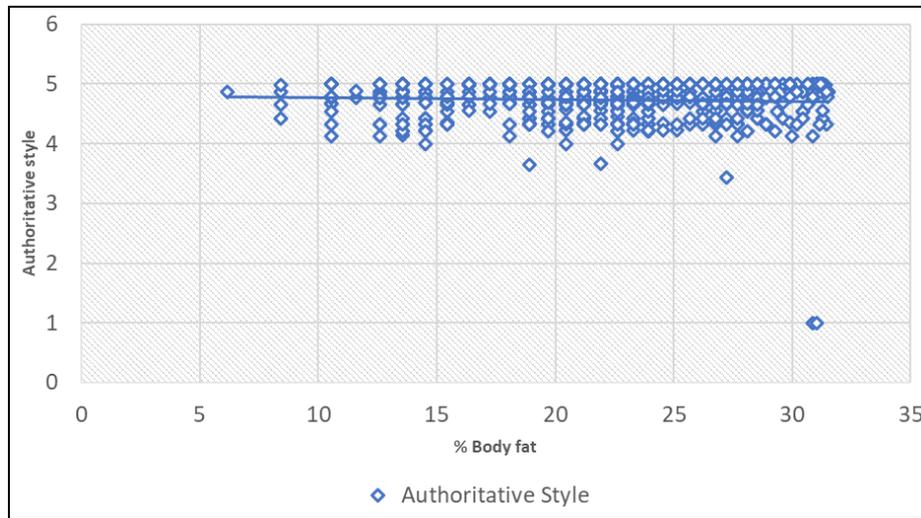
It is evident from table 2 that score of % body fat of female adolescents ranged from 6.18 to 31.52 with a mean score of 21.86 and standard deviation of 5.21. The scores for the variable speed ranged from 6.51 to 15.19 with mean value of 9.45 and standard deviation of 1.75. The values for the variable strength ranged from 0.91 to 2.02 with mean score of 1.29 and standard deviation of 0.15. The score for the variable flexibility ranged from 8.00 to 50.00 with the mean score of 26.10 and standard deviation of 6.80. The range of scores for the variable agility ranged from 18.56 to 35.03 with the mean value of 26.68 and standard deviation of 2.88. The range of scores for the variable endurance ranged from 136.00 to 355.00 with the mean value of 210.44 and standard deviation of 44.87. The scores for physical activity level ranged from 1.02 to 5.00 with the mean score of 3.24 and standard deviation of 1.06. The scores for authoritative parenting style ranged from 1.00 to 5.00 with a mean score of 4.74 and standard deviation of 0.33. For authoritarian parenting style, score ranged from 1.00 to 5.00 with a mean value of 3.55 and

standard deviation of 1.12. For permissive parenting style, the minimum score was 1.00, and the maximum score was 2.78 with a mean value of 1.22 and standard deviation of 0.32.

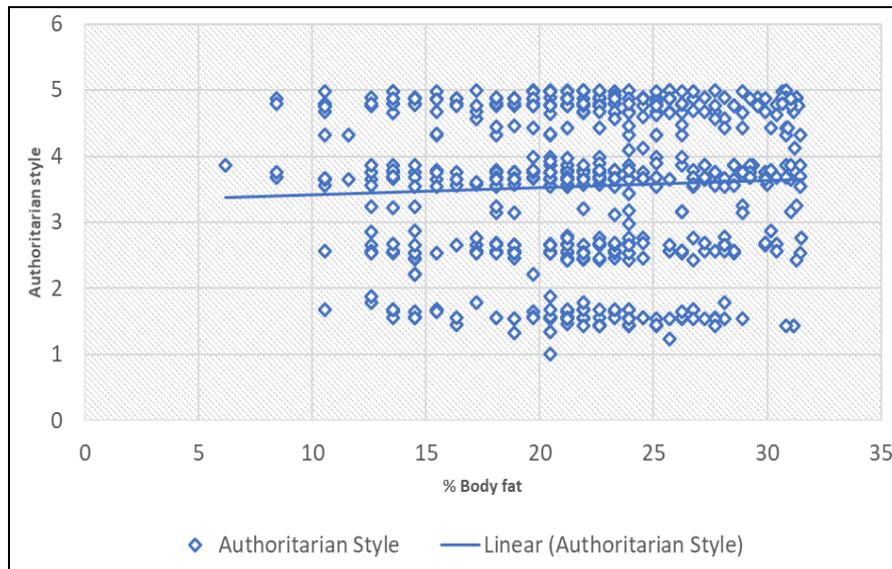
**Table 3:** Correlations between % Body fat and parenting styles among female adolescents

| Variable                | % Body fat                 |         |
|-------------------------|----------------------------|---------|
| Parenting style         | Coefficient of correlation | p-value |
| Authoritative parenting | 0.034                      | 0.400   |
| Authoritarian parenting | 0.060                      | 0.139   |
| Permissive parenting    | 0.075                      | 0.160   |

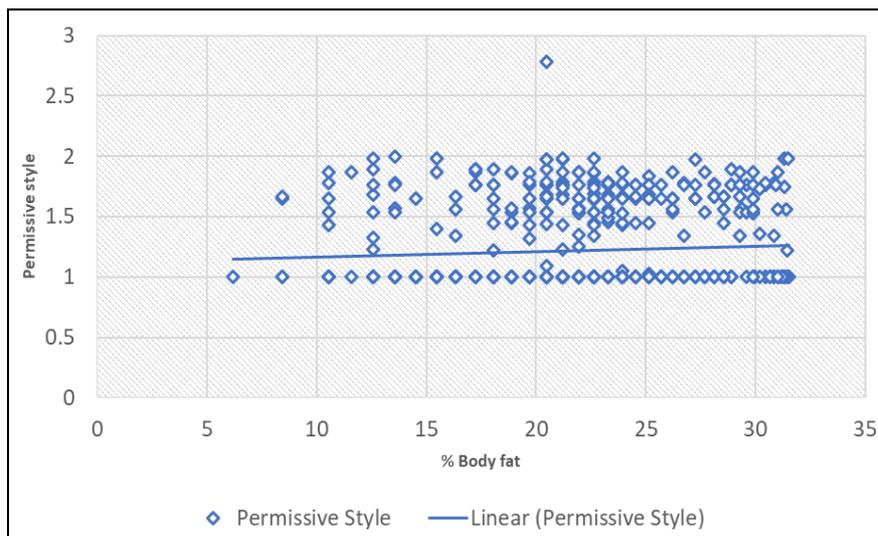
Above table 3 shows the coefficient of correlation between % Body fat and Parenting styles among female adolescents. Correlation coefficient between % Body Fat and Authoritative Parenting Style was 0.034 (p=0.400), Authoritarian Parenting Style was 0.060 (p=0.139), and Permissive Parenting Style was 0.075 (p=0.160). No evidence of correlation was found in any of the parenting styles with % body fat.



**Fig 1:** Graphical representation of correlation of Authoritative parenting style with % Body fat among female adolescents



**Fig 2:** Graphical representation of correlation of Authoritarian parenting style with % Body fat among female adolescents.



**Fig 3:** Graphical representation of correlation of Permissive parenting style with % Body fat among female adolescents.

**Discussion**

This study was designed to examine the association of parenting style with Body composition, Physical Activity Level and Physical Fitness among the adolescents. It was found that about one fourth of the overall sample were

underweight. However, the prevalence of overweight and obesity constituted about 5-6 percent. The epidemic of underweight population was more severe among girls as 34.74% were found underweight. A systematic review representing 25 studies from 10 countries revealed that

obesity and overweight was highly prevalent among adolescents (Bibiloni *et al.*, 2013) [8]. Another study on Kuwaiti children found that 30.07 and 14.6 percent of the subjects were overweight and obese respectively (El-Bayoumy *et al.*, 2009) [7]. A study by Prasad *et al.* (2016) [6] found 9.7 and 4.3 percent of adolescents were overweight and obese respectively. The results of this study are in contrast with the Brazilian study that found only 2.8% underweight adolescents (Silva *et al.*, 2016) [11]. With regard to the associations of parenting style with % Body fat, it was found that there were no significant associations of % body fat with any of the parenting styles. A previous study has suggested the significance of authoritative parenting in checking the obesogenic behaviour among adolescents (Schneider *et al.*, 2013) [9]. One more study by Nele *et al.* (2014) [10] highlighted the role parenting in determining the health related behaviour of adolescents and insisted to manage the activities of their children. More studies are required in this field in order to get new insights.

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