

# Physical Activity Among Israeli-Arab Adolescent Males: How Do Parenting Styles Matter?

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## Abstract

Physical activity contains many benefits for adolescents' physical and mental health, and also for building healthy living routines and habits for the future. The current study examined the associations between parenting styles and adolescents' physical activity among Israeli-Arab families of male adolescents, in seeking to boost the limited information on this most important topic. Participants consisted of 177 male Israeli-Arab adolescents ( $M = 13.93$ ,  $SD = 1.42$ ) with normal weight. Controlling for the participants' age, weight, and grades in school, parenting styles explained about 30% of the variance in the participants' reports of their physical activity, with the authoritative and authoritarian parenting inversely correlated with the latter variable. Adolescents who perceived their parents as authoritative were reportedly more physically active than their counterparts who perceived their parents as authoritarian. In common with previous studies, the findings suggest that authoritative parenting may be a cross-culturally preferable style in fostering a desired physical activity rate among adolescents.

## Keywords

physical activity, BMI, parenting styles, Israeli-Arab, adolescents

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The current study focuses on the specific topic of the relationship between parenting styles and physical activity during adolescence. Physical activity is defined by the World Health Organization (WHO) as a bodily movement produced by the skeleton's muscles, which requires energy expenditure (WHO, 2014). Physical activity is often challenging, as in sports competitions, although it is very often a component of personal and social activities such as group ball games. The relevant literature suggests that physical activity contains many benefits for adolescents' physical and mental health in the present time, as well as for building healthy living routines and habits for the future. While a physically active lifestyle is strongly associated with a balanced and normal body weight in adolescence and youth (Strong et al., 2005), the increase in sedentary behaviors (i.e., the absence of physical and sports activity) among the latter constitutes a major risk factor for obesity which is, in turn, associated with several nontransferable chronic degenerative diseases, including diabetes, hypertension, and atherosclerosis, and the increase in the incidence of cardiometabolic disease (CMD) (Allcock, Gardner, & Sowers, 2009; Santos

et al., 2016; Stabelini Neto, Castilho, Sena, & Campos, 2013). Studies report that overweight adolescents tend to be physically inactive and, apart from being more likely to experience chronic physical health problems (as mentioned above), they tend to experience lower economic success and negative psychological outcomes compared to their peers (e.g., Puhl & Latner, 2007; Simpkins, Schaefer, Price, & Vest, 2013). Given the importance of this health factor, the WHO has published global recommendations on physical activity for health, advising moderate-intensity physical activity for at least 150 min a week, which is equivalent to 30 min a day, 5 days a week (Stabelini Neto et al., 2013).

The phenomenon of obesity in children and adolescents has grown rapidly during the past few decades to

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become a worldwide epidemic and a source of concern for the public health authorities. A vast international survey on children's overweight, encompassing 34 countries from Europe, the United States, and Israel, revealed a widespread phenomenon whose extent reaches 20% to 30%, especially in North America, Britain, and south-western Europe (Janssen et al., 2005). Data accumulated until 2006 reveal that since 1980, the prevalence of obesity has more than doubled itself among children aged 6–11 years and has more than tripled itself within the same period among adolescents aged 12–19 years (Hwang & Kim, 2013; Ogden, Carroll, & Flegal, 2008). In most of North America, Great Britain, and south-western Europe countries, overweight children were less physically active than children with normal weight, and the former were more engaged in sedentary activities—mostly watching television (Janssen et al., 2005). With the dramatic growing trend of digital technology during the past decade, more recent evidence unveils a growing sedentary inclination among children and youth, indicating that adolescents in high-income countries are currently spending up to 60% of their waking hours engaging in sedentary behaviors such as playing computer games (Saunders, Chaput, & Tremblay, 2014). About 80% of adolescents around the world do not accomplish the recommended physical activity guidelines for children, which is 60 min of moderate-to-vigorous of physical activity per day (Santos et al., 2016). However, prior research indicates that male children are more physically active than female children in various degrees of physical activity, with those gender differences increase during adolescence (Stabelini Neto et al., 2013; Troiano et al., 2008; Trost et al., 2002).

Given the discussed educational and health importance of physical activity in childhood and adolescence, it is essential to identify empirically and elucidate the factors that promote exercise and physical activity among these groups. This goal becomes even more crucial when considering the immense spread of digital technology, whose implications are strongly related to sedentary behaviors among teenagers and adults. Draper, Grobler, Micklesfield, and Norris (2015) have pointed out in this regard that the literature lacks an adequate view of the impact of social norms and social support on various health behaviors (e.g., physical activity) among adolescents. One of the main social factors that was discussed in this context of adolescences' physical activity is parenting styles and practices in the family.

The concept of parenting styles refers to the extent to which the parent sets rules and provides guidance, explains and justifies demands and expectations, exerts control, and grants autonomy and emotional support (Yaffe, 2013, 2017). Baumrind (1971) conceptualized three main overall types of parenting styles, which

include the authoritative (consistent discipline and limit setting, autonomy granting, and emotional support), authoritarian (strict control alongside emotional distance and low acceptance), and permissive (lax control alongside emotional closeness).

Two comprehensive reviews from the current decade that encompassed this specific issue offered some support for the positive link between authoritative parenting styles and children's physical activity (Draper et al., 2015; Trost & Loprinzi, 2011). The authors of each review recommended further systematic research efforts to improve understanding of the strength of this relationship. Trost and Loprinzi's (2011) review identified consistent evidence for the effectiveness of parental practices supporting physical activity as a means of facilitating this habit among children and youth. While these parental practices (e.g., actively playing with the child, reinforcing the child's performance in sports activities, and encouraging and supporting physical activity) may characterize the authoritative parent's typical behavior (as an expression of parental support and autonomy granting), the authors noted that too few studies have actually examined the relationship between parenting styles and children's physical activity to allow firm conclusions to be drawn in this regard. Draper and colleagues (2015) reviewed a considerable body of work specifically supporting the effectiveness of the authoritative parenting in fostering healthy behaviors among adolescents (specifically obesity and diet), but with less evidence directly linking this parenting style with physical activity and sedentary behaviors. Since all the papers included in this review pertained to both male and female adolescents, the authors argue that its findings are equally applicable to both male and female adolescents. Hence, while authoritative parenting is presumably best at enhancing physical activity behaviors in children and adolescents of both genders, due to the fostering of a communicative, connected, and well-functioning family climate (Trost & Loprinzi, 2011), both reviews concluded that more research is required in order to further establish this specific association.

Recent evidence has partially demonstrated the advantage of authoritative parenting in promoting physical activity among adolescents also in ethnic minority families, suggesting that the beneficial parental effect in the current context may be cross-culturally valid. In this regard, Huffman, Wilson, Van Horn, and Pate (2018) have reported an association between the general authoritative parenting style, tangible support, and light physical activity (but not moderate-to-vigorous physical activity) in overweight African American adolescents.

The current study strives to expand upon the previous literature on this specific issue, by examining the linkage between parenting styles and adolescents' physical

activity among Israeli-Arab families of male adolescents. As physical activity plays a key role in respect to several aspects of children's emotional and physical well-being, in both the short and the long terms, it is vital to establish and expand further its motivating factors. A few empirical indications suggest that this link varies among genders (Huffman et al., 2018), and accordingly this study focuses solely on male adolescents. Like in other developmental and educational outcomes among children of all ages (e.g., Spera, 2005; Steinberg, 2001; Yaffe, 2018), parenting styles also seem to play an influential factor with respect to health-related behaviors, although this link lacks some more supportive evidence for the specific context of physical activity. Filling this gap is even more needful with respect to children and youth from various ethnic and cultural groups, where this specific issue had received even less empirical attention.

Based on the review of the literature discussed above, in the current study it was hypothesized that the authoritative parenting style would be positively associated with increased physical activity among Israeli-Arab adolescents. It was hypothesized that adolescents who perceive their parents as authoritative would report a higher physical activity rate than their counterparts, adolescents who perceive their parents as non-authoritative. In order to refine the unique link between parenting and adolescents' physical activity, a few specific correlates of the latter variable were accounted for and controlled as part of this interrogation of hypotheses. Specifically, as weight status is strongly inversely associated with physical activity (e.g., Chung, Skinner, Steiner, & Perrin, 2012), the participants' body mass index [BMI] was calculated and controlled as part of the hypothesis testing. Age and grades (i.e., academic achievements) were also accounted for in the current study, due to their previously recognized theoretical and empirical association with physical activity rate among children (see Stabelini Neto et al., 2013; Strong et al., 2005).

## Method

### *Participants and Procedure*

The study consisted of 177 Israeli-Arab male adolescents whose age ranges from 12 to 16 ( $M = 13.93$ ,  $SD = 1.42$ ), who self-reported their physical activity habits, their height and weight (for BMI calculations), and their parents' parenting styles (via the Parental Authority Questionnaire). The sample's BMI scores range from 19.56 to 30.08, with an average of  $22.21 \pm 1.50$ , which represents a normal weight group. Of the sample's participants, only 7 (3.9%) exceeded the upper level of the normal BMI score (24.9) that is considered as overweight.

The participants were conveniently sampled from five Arab villages in northern and central Israel, through a few Arab research assistants who visited the participants' homes, schools, and some informal venues in their villages. For the study's purposes, the participants were also asked to give an estimation of their most recent grade point average (GPA) in school. The means, standard deviations, and zero-order correlations for all of the research variables appear in Table 1. Upon the authorization of an institutional Research Ethics Committee of Ohalo Academic College, the potential participants were contacted by the research assistants and informed about the research objectives. Those Hebrew-speaking adolescents who expressed their interest were recruited to actually take part in filling in the research questionnaires. Subject to their parental approval, the participants were given a link to online Hebrew questionnaires, which they were requested to complete anonymously using their cell phones, subject to their written informed consent (which was given through the online form). The research assistants were present during the procedure of filling out the questionnaires, in order to guide the participants and address any possible problem or question.

The submitted forms were tested and the valid responses were transformed into SPSS data for analysis. Missing values on independent variables were handled using casewise deletion. Due to the negligible rate of reported learning disabilities (10 participants—about 6% of the whole sample), these participants were included in the general research group.

### *Measure*

*Parental Authority Questionnaire.* The Parental Authority Questionnaire (PAQ) (Buri, 1991) contains 30 items and is used to classify parents into one of Baumrind's three parenting styles (Baumrind, 1971), based on the child's self-report: *Authoritative* (10 items, e.g., "As I was growing up, once family policy had been established, my parents discussed the reasoning behind the policy with the children in the family"), *Authoritarian* (10 items, e.g., "As I was growing up my parents did not allow me to question any decision they had made"), and *Permissive* (10 items, e.g., "As I was growing up my parents seldom gave me expectations and guidelines for my behavior"). The response scale for an item ranges from 1 (*strongly disagree*) to 5 (*strongly agree*). The index for each parenting style is the sum of the relevant items of each scale. Thus, the total score for each parenting scale ranges from 10 to 50, with a higher score reflecting a higher specification of the style. It is a valid questionnaire with relatively high internal consistency and test-retest reliabilities (0.74 to 0.78) (see: Buri, 1991; Smetana, 1995), widely used in Israel (e.g., Enten & Golan, 2009; Mayseless, Scharf, & Sholt, 2003; Yaffe, 2018) and around the

**Table 1.** Correlation Matrix, Means, and Standard Deviations for the Demographics and the Research Variables in the General Sample of Israeli-Arab Adolescents.

Variable	1	2	3	4	5	6	7
1. Adolescents' age	–	–.11	.41***	–.44***	–.16*	–.32***	.28***
2. BMI		–	–.14	.03	.33***	–.07	–.16*
3. Mean grades (GPA)			–	–.09	–.22**	.38***	.28***
4. Permissive parenting style				–	–.11	.38***	.16*
5. Authoritarian parenting style					–	–.45***	–.50***
6. Authoritative parenting style						–	.58***
7. Physical activity							–
Mean	13.93	22.21	80.84	27.27	29.28	31.60	5.86
SD	1.42	1.50	10.45	6.45	7.55	7.41	2.25

Note.  $N = 177$ . BMI = body mass index; SD = standard deviation; GPA = grade point average.

\* $p < .05$ . \*\* $p < .005$ . \*\*\* $p < .001$ .

world to measure Baumrind's (1971) three basic styles of parenting. Previous research has reported supportive evidence for the PAQ's validity in its Hebrew version, with adequate rates of reliability and internal consistency (Yaffe, 2018). The current study recorded Alpha coefficients for the permissive, authoritarian, and authoritative scales of .85, .91, and .92 (respectively), which are consistent with the reliability data reported for the tool in past research. The scores obtained in the current sample for the instrument's scales appear in Table 1.

## Physical Activity

The participants' physical activity level was evaluated through a three-item questionnaire (Berliner, 2015), which asks about the frequency and intensity of one's activity in a particular week (e.g., "in the last 7 days, have you been exercising for at least 60 minutes a day?"). The responses for an item were measured on a five-point Likert scale. By summing up the participants' responses on the three statements, a single index representing one's physical activity rate was generated. The index total scores range from 3 to 15, with higher responses reflecting a stronger engagement with sports and a higher physical activity level. The index yielded a good internal consistency reliability indication, with an Cronbach  $\alpha$  coefficient of .95.

## Results

First, the zero-order correlations and the general scores of the research variables are considered. As presented in Table 1, the parenting scales are alternately correlated, with the permissive scale positively associated with the authoritative scale, and the authoritarian scale negatively associated with the authoritative scale. That is, the sample's adolescents link authoritative parenting with patterns of permissive parenting, while viewing the former as considerably contrary to parental authoritarianism.

The parenting styles' mean scores, which are also displayed in this table, indicate that the sample's adolescents (Israeli-Arab males) tend to perceive their parents as more authoritative than permissive and authoritarian ( $F = 15.11, p < .001$ ).

As the participants' age, grades, and BMI scores were significantly correlated with the independent and dependent research variables (i.e., parenting styles and physical activity), a further examination was required in order to inspect the parenting styles' unique contribution to explaining the adolescents' physical activity level. A multivariate regression analysis predicting the physical activity scores from the parenting styles was conducted, while controlling for these demographic variables.

Table 2 displays the results of the regression analysis predicting Arab adolescents' physical activity from the parenting styles (entered as second cluster), while controlling for the participants' age, BMI, and grades (entered as first cluster). After accounting for the controls, parenting styles uniquely explain 30% of the variance of the physical activity scores in the current sample, with the authoritative parenting (partial  $r = .32$ ) and the authoritarian parenting (partial  $r = -.31$ ) inversely significantly predicting the dependent variable. Authoritative parenting is associated with higher physical activity among the sample's adolescents, whereas authoritarian parenting is associated with lower physical activity. Although significantly correlated with physical activity, permissive parenting does not have a unique contribution to explaining the variance of the former variable's scores in the current sample.

In order to further examine the relationship between parenting styles and physical activity among Israel-Arab adolescents, the sample was sorted into one of the three parenting styles groups and compared their scores on the dependent variable using univariate analysis of covariance (Table 3). The aim was to determine the difference, and its size, between children of authoritative and non-authoritative

**Table 2.** The Regression Analyses Results of Predicting Israeli-Arab Adolescents' Physical Activity From the Parenting Styles.

	$\beta$	SE	t	$R^2$	F
Dependent variable—Physical activity					
Control variables				12.3%	8.06**
Adolescent's age	.19	.12	2.47*		
BMI	-.11	.11	1.52		
Mean grades (GPA)	.19	.02	2.36*		
Parenting styles				30.0%	28.75**
Permissive parenting style	.04	.03	.51		
Authoritarian parenting style	-.30	.02	-4.26**		
Authoritative parenting style	.37	.03	4.30**		

Note.  $N = 177$ . BMI = body mass index; GPA = grade point average.

\* $p < .05$ . \*\* $p < .001$ .

**Table 3.** Means, Standard Deviations, and the Results of a Univariate Analysis of Covariance for the Differences Between Parenting Styles' Groups in Israeli-Arab Adolescents' Physical Activity ( $N = 158$ ).

	Permissive ( $n = 30$ )		Authoritarian ( $n = 55$ )		Authoritative ( $n = 73$ )		F	Partial $\eta^2$	Observed power
	M	SD	M	SD	M	SD			
Physical activity	5.37	1.53	5.09	1.83	6.66	2.45	10.75***	.124	.99

Note. Partial  $\eta^2$  is a measure of effect size after accounting for the covariates of age, grades, and BMI. BMI = body mass index; SD = standard deviation.

\*\*\* $p < .001$ .

parents in physical activity rate. The sorting procedure into the groups was carried out by using the participants' highest score of the PAQ scales as the dominant type (as advised by the instrument's manual), which reduced the sample size due to the omission of participants with undifferentiated parenting style (who scored equally on at least two scales). Holding participants' age, grades, and family size as covariates, a significant effect for parenting styles on physical activity was observed, whose source is in the individual differences between the authoritative group and the permissive group (mean difference = 1.29,  $p < .001$ ; 95% CI [.39, 2.18]), and between the authoritative group and the authoritarian group (mean difference = 1.56,  $p < .001$ ; 95% CI [.86, 2.26]). This indicates that Arab adolescents who perceived their parents as authoritative reported doing more physical activity than their counterparts who perceived their parents as either permissive or authoritarian.

## Discussion

As sedentary behaviors among children and youth grow more prevalent and gradually dominate their leisure activities, most frequently with usage of digital technology, the necessity to boost our understanding of the factors that motivate alternative physical-based activities have become a crucial undertaking. It is unnecessary to

mention the developmental merits of regular physical activity, yet the health implications of its absence in youngsters and adults are concerning.

In light of the above, the current study focused on the physical activity of male Israeli-Arab adolescents, attempting to explain its rate among this group of reference uniquely (while accounting for their age, BMI, and academic achievements) by the latter's parenting styles. The study's main finding indicates that parenting styles explain a considerable proportion of the variance in the participants' reports of physical activity (about 30%), with authoritative parenting positively associated with the latter variable and authoritarian parenting inversely related with it. This finding significantly strengthens the previous moderate evidence linking authoritative parenting with increased physical activity among children and adolescents (Draper et al., 2015; Trost & Loprinzi, 2011). Consistent with Morton, Wilson, Perlmutter, and Beauchamp's (2012) findings, it suggests that family leadership processes may play an important role in adolescent health-enhancing behaviors. As is the case with various other developmental outcomes in adolescents (e.g., Steinberg, 2001), these findings offer an indication that the family context is most salient for the socialization of physical activity-based behaviors, with authoritative parenting constituting a key factor in fostering these

desired behaviors throughout adolescence. Considering the relatively large proportion attributed in the current study's findings to parenting styles in explaining the participants' physical activity, developing and imparting authoritative parental tools in families might serve as a measure to establishing forms of educational interventions designed to enhance physical activity among children. This might be especially useful and essential with respect to children suffering from overweight and obesity, whose parents are less likely to employ authoritative parenting at home (Kitzman-Ulrich et al., 2010; Regber & Mårild, 2005; Sleddens, Gerards, Thijs, de Vries, & Kremers, 2011).

Consistent with the study's above finding, it was found (after sorting the sample into three separate parenting styles groups, by complying with the PAQ's manual instructions) that adolescents who perceive the parents as authoritative are reportedly more physically active than their counterparts who perceive their parents as authoritarian. The current study's findings extend the evidence supporting the favorability of the authoritative parenting style also across families from conservative ethnic groups (Masud, Thurasamy, & Ahmad, 2015; Pinquart & Kauser, 2018), particularly with respect to physical activity and other health-related behaviors among adolescents (Huffman et al., 2018). The current results, drawn from an Israel-Arab sample, somewhat reduce the moderating role played by culture in relation to the adverse effect of authoritarian parenting, which was previously identified in several studies across a few Arab societies (Dwairy, 2004; Dwairy et al., 2006; Dwairy & Menshar, 2006). In line with Pinquart and Kauser's (2018) conclusion, the findings suggest that authoritative parenting may be a cross-culturally preferable style in various adolescents' developmental and educational contexts, although authoritarian and permissive parenting, to some extent, might be more tolerable in a few cultural climates.

Some methodological limitations should be addressed. First, all the self-report indexes used here are based solely on a single-informant's subjective perceptions and, hence, are vulnerable to measurement biases and correlational inflation (Campbell & Fiske, 1959). The study's conclusions referring to the relationships between parenting styles and physical activity among Israeli-Arab adolescents should be accordingly restrained. Reinforcing the associations that underlie these conclusions requires, therefore, further examination while using separate reports for parents and children. Moreover, since the study's questionnaires refer to both parents at the same time, the findings, which do not distinguish between mothers and fathers, might be deficient and not apply to both parents equally. While the link between parenting styles and adolescents' physical activity in Arab families

may vary for mothers and fathers, these possible gender differences should be inspected in a following study.

### Author's Note

The study was conducted in accordance with the ethical standards of the American Psychological Association (APA).

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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