

Multiple Mediators for Peer-Directed Aggression and Happiness in Arab Adolescents Exposed to Parent–child Aggression

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Abstract This study aimed to examine a multi-mediator model explaining how exposure to parent-child physical aggression may link with adolescents' peer-directed physical aggression and their own subjective happiness, in an understudied Israeli Arab population. Mediators included hostility, anger, need to belong, and self-control. Arab adolescents from northern Israel ($N=155$; 62 % girls, aged 16-17) completed questionnaires regarding parents' physical violence toward them, their own aggression toward peers, need to belong, happiness, positive emotions, and self-control skills. (a) Parent-child physical aggression linked positively with peer-directed aggression through the mediating associations of hostility with anger; (b) parent-child physical aggression linked negatively with peer-directed aggression and happiness through the mediation of adolescents' increased need to belong; and (c) parent-child physical aggression was not directly linked with self-control, but self-control directly linked negatively with peer-directed aggression and positively with happiness. Findings highlight pathways through which parent-child physical aggression may simultaneously influence adolescents' aggressive behavior and happiness. The mediation detected possible process variables (e.g., yearning for belonging, self-control skills, hostile thoughts, and angry feelings) that researchers and clinicians can consider in designing prevention and treatment interventions to break the inter-generational cycle of violence.

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Adolescence is characterized by rapid changes due to physical, psychological, social, and cognitive development (Steinberg 2007; Steinberg and Morris 2001). In this intense period, cultural and environmental transformations occur as a result of adolescents' increased family responsibilities, rising academic and social demands, separation and individuation from the family unit, and exploration of new roles and experiences with peers (Davies 1999; Helsen et al. 2000; Steinberg 2005, 2007; Vasta, Haith, and Miller 1995). Within this developmental context, adolescents who are exposed to parent-child aggression (i.e., physical maltreatment by a caregiver) may not only face increased risk for engaging in physical aggression toward peers (Futa, Nash, Hansen, and Garbin 2003; Jouriles, Vu, McDonald, and Rosenfield 2014; Mathis, Mueller, Zhang, and Becker 2010) but may also suffer from poor well-being (Kazdin and Weisz 2010; Ronen, Abuelaish, Rosenbaum, Agbaria, and Hamama 2013). Focusing on an understudied sample of Israeli Arab adolescents, the current study aimed to examine a new multiple mediator model attempting to explain how adolescents' exposure to physical maltreatment by a caregiver may simultaneously link to their physical aggression toward peers on the one hand, and to their own experience of subjective happiness on the other hand – through mediators of hostility, anger, need to belong, positive emotions, and self-control.

Generally, mediational models are concerned with “how” or “why” a predictor variable (e.g., parent-child physical aggression) may predict or lead to an outcome variable (e.g., peer-directed physical aggression, happiness). Mediator variables are mechanisms that can explain the relation between a predictor and an outcome (Frazier, Tix, and Barron 2004). The mediators examined in the present study correspond with two lines of research on child and adolescent peer-directed aggression (Orpinas and Horne 2006). One line of research, predominant in the past 50 years, almost exclusively focused on “risk factors” that may predispose youngsters to behave aggressively. Consistent with this approach, the present study examined hostility and anger as possible mediators between exposure to parent-child physical aggression and youngsters' own peer-directed aggression. Another line of research emerged relatively recently, as researchers began to study “protective factors” that have the “potential to improve the well-being of youth and to reduce peer-directed aggression” (Orpinas and Horne 2006, p. 34). Consistent with this newer approach, the present study examined the need to belong, positive emotions, and self-control skills as possible mediators between exposure to parent-child physical aggression and youngsters' happiness.

In short, the current study integrates these risk- and protection-focused approaches into one multi-mediator model. Investigating a relatively overlooked sample of Israeli Arab adolescents, the findings contribute to the literature by highlighting potential mechanisms through which exposure to parent-child physical aggression may simultaneously influence adolescents' peer-directed aggression and subjective happiness. The findings bear practical implications for the design of treatment interventions targeting the reduction of aggression toward peers and the promotion of happiness in this understudied non-Western minority population.

1 The Israeli Arab Context

During recent decades, studies have examined parent–child aggression in Western and non-Western societies (Ben-Arieh and Haj-Yahia 2006; De Zoysa 2006; Haj-Yahia and Abdo-Kaloti 2003; Haj-Yahia and Ben-Arieh 2000; Mathis et al. 2010; Mohr et al. 2000; Simonelli et al. 2005). Research on general population samples in the USA indicate that 16–25 % of children and adolescents are exposed to parent–child aggression of varying degrees (Osofsky 2003). Millions of children in the USA live in households in which physical intimate violence has occurred in the previous year (Jouriles et al. 2014).

The Israeli Arab minority population is a non-Western traditional society characterized by a collectivist cultural orientation that, in the face of persistent exposure to the dominant majority culture of the more Western Israeli Jewish population, is undergoing a slow but steady process of change toward more individualism (Sagy et al. 2001). Israeli Arab families uphold a hierarchical structure and authoritarian parenting styles, where physical punishment is viewed as a legitimate instrument toward both children and women (Dwairy et al. 2006; Haj-Yahia 1995). Although studies on physical aggression in Israeli Arab families are scarce (Haj-Yahia and Ben-Arieh 2000; Haj-Yahia and Clark 2013; Haj-Yahia et al. 2002), the rare available data demonstrated that Israeli Arab children and adolescents reported prevalence rates of physical abuse (parent–child aggression) ranging from 0.3 to 31 % by fathers and 0.3 to 27 % by mothers, at least once during the prior year (Haj-Yahia et al. 2002). Among Israeli Arab adolescents in particular (ages 16–18), 17 to 34 % reported experiencing physical aggression from the father and 25 to 31 % from the mother (Haj-Yahia and Abdo-Kaloti 2003; Haj-Yahia and Ben-Arieh 2000). In another study, female Israeli Arab high-school students (aged 14–18) indicated that they had experienced physical aggression by their father (37.1 %) and by their mother (43.7 %) at least once during the previous month (Elbedour et al. 2006). These researchers contended that, for sociocultural and familial reasons, it is likely that not all cases of parent–child aggression were reported and that the actual frequencies are higher.

Regarding adolescents' own peer-directed aggression, a national representative study among 16,604 Jewish and Arab adolescents in Israel (Grades 7–11) revealed that 28 % of Arab students kicked or pushed another student (vs. 20.93 % among Jewish students), and 23.22 % (vs. 20.83 % among Jewish students) threatened to hurt or hit another student (Khoury-Kassabri et al. 2009). To date, we know of no study that examined the association between exposure to parent–child physical aggression and adolescents' own peer-directed aggression and/or happiness among Israeli Arab samples.

2 Parent–child Aggression and Peer-Directed Aggression

Ample research has suggested that children and adolescents who experience parent–child aggression are at risk for long-term deleterious developmental consequences (Espelage et al. 2014; Graham-Bermann 2002; Margolin and Gordis 2003; Jouriles et al. 2001; Osofsky 2003). These include feelings of danger, fear, and threat toward oneself or another that may develop into posttraumatic reactions, and high-risk

behaviors such as running away from home, drug abuse, premature sexual behavior, self-abuse, suicide, and deviant behaviors (Espelage et al. 2014; Margolin and Gordis 2000; Jouriles et al. 2008; Voisin and Hong 2012). Exposure to parent–child aggression was also positively linked with engagement in physical aggression toward peers (Futa et al. 2003; Mahoney et al. 2003; Mathis et al. 2010).

Scholars highlighted the need to identify the processes by which children’s externalizing problems emerge as an outcome of exposure to physical maltreatment by parents (Jouriles et al. 2014), viewing this as the cycle of violence whereby being abused at home increases risk in the next generation (Milaniak and Widom 2014). Along these lines, to examine the links between exposure to parent–child aggression and adolescents’ peer-directed aggression, we focused on the multiple mediating roles of hostility, anger, need to belong, and self-control.

3 Hostility, Anger, and Peer-Directed Physical Aggression

The present study based on Buss (1961) and Buss and Perry’s (1992) model, which depicts a tendency to respond aggressively when facing difficulties, rejection, or stress. This unitary model of aggression combines cognitive, emotional, and behavioral components. The cognitive component refers to hostile thoughts, which are perceptions that the world is a menacing, unfair place where nobody can be trusted because everybody acts out of selfish motives. The emotional component refers to angry feelings, which comprise emotional responses to frustration, provocation or, occasionally, anxiety, typically coupled with physiological arousal. Others have also considered anger as a predictor of tendencies toward aggressive behavior (Arsenio et al. 2000; Milaniak and Widom 2014). The behavioral component refers to actual acts of physical aggression, which include inflicting injury on someone else with the intention of causing pain. Research has shown that these three components are interrelated in a sequence, so that hostile thoughts contribute to angry feelings that in turn contribute to physical aggression; namely, anger acts as a mediator between hostile thoughts and physical aggression (see Buss and Perry 1992). Studies have also shown that abused children develop a hostile interpretation bias that contributes to increased anger and consequently increased aggression (Dodge et al. 1995; Dodge et al. 2006). A study focusing on Palestinian Arab adolescents in Gaza and Israel, as well as Jews in Israel, showed that hostility and anger mediated physical aggression (Rosenbaum et al. 2015). Similarly, the present study examined whether exposure to parent–child physical aggression may link to adolescents’ physical aggression toward peers (behavioral component) through the mediation of hostility and anger (the cognitive and emotional components), as well as through the need to belong and self-control skills, as discussed next.

4 The Need to Belong

Attachment theory suggests that responsive and nurturing parents provide a secure base from which children can develop positive regard for themselves and for others in their social world (Bowlby 1973). Correspondingly, parent–child aggression may impair the

basic connection between parent and child and even the child's basic sense of belonging (Downey et al. 2000; Downey et al. 1998). However, according to Baumeister and Leary's belongingness hypothesis (1995, p. 500), the "need to belong can, in principle, be directed toward any other human being, and the loss of relationship with one person can to some extent be replaced by any other." Indeed, belonging is a fundamental human motivation for interpersonal attachment (Baumeister and Leary 1995), the basic human need to be loved and socially accepted (Leary et al. 2001).

A strong need for social belonging is not only highly prevalent during adolescence (Leary et al. 2013) but is also crucial to adolescents' healthy development and the establishment of growth-oriented life goals (Dumont and Provost 1999; Ronen and Seeman 2007). As conceptualized by Leary et al. (2013), the "need to belong" refers to individuals' longing for a sense of belonging to different social groups and yearning for acceptance by others. Higher need to belong is a prosocial motivation to preserve social relationships (Baumeister and Leary 1995; Leary et al. 2013); therefore, in our study we expected need to belong to link with lower physical aggression toward peers.

Yet, at the same time, the need to belong construct was previously shown to be associated with negative emotions, depression, anxiety, emotional reactions to rejection, neuroticism, and subclinical manifestations of some personality disorders (Leary et al. 2013). It might be that if adolescents fail to feel that they belong to a desired social group, this may give rise to a sense of frustration and may also impair their sense of mental well-being, which is especially important in adolescence (Anderson and Bushman 2002; Joireman et al. 2003). This claim was reinforced by Agbaria et al.'s (2012) study, which found that Arab adolescents who reported a stronger need to belong also reported less self-control and lower positive feelings. Because interpersonal relationships are a major component in human happiness, and because a high need to belong appears to negatively impact well-being, we also expected that those adolescents with a higher need to belong would report lower happiness due to their stronger desire for social acceptance, their sensitivity to rejection, and their concerns with others' evaluations of them (Leary et al. 2001).

5 Self-Control Skills

Another mediator that we examined in our investigation of the links between exposure to parent–child physical aggression and adolescents' peer-directed aggression and happiness was self-control. According to Hirschi and Gottfredson's (2001) criminological theory, high self-control in youngsters results from successful socialization by parents in terms of care, role-modeling, monitoring, recognition of misconduct, and correction. Therefore, we also sought to explore the mediating role of self-control skills in the parent–child aggression.

Rosenbaum (1980, 1990, 2000) defined self-control as a learned set of goal-directed skills that enable people to achieve their aims. It combines the abilities for modifying cognitions, coping with emotional and physiological responses, selecting and applying problem-solving strategies, and implementing self-instruction in order to change behaviors (Ronen and Rosenbaum 2001). A growing body of evidence indicates that poor self-control in adolescents links with more aggression toward peers and antisocial behavior (Luchies et al. 2011; Tangney et al. 2004), including in Arab adolescents

(Ronen et al. 2013). On the other hand, high self-control has been associated with the ability to exert control over emotions, and thus with increased positive emotions and happiness (Diener 2009; Orkibi et al. 2015; Orkibi et al. 2014; Ronen et al. 2013; Ronen et al. 2014; Ronen and Seeman 2007). Based on the aforementioned findings, we tested whether an indirect link between parent–child physical aggression and happiness would be mediated through adolescents' ability to exercise self-control skills to increase positive emotions and consequently their overall experience of subjective happiness.

6 Happiness in Adolescence

As mentioned above, another study aim was to explain how parent–child aggression links to adolescents' subjective happiness. Generally, happiness is viewed as a major life goal important for the optimal flourishing and functioning of people, groups, and institutions (Carr 2004; Fredrickson 2009; Gable and Haidt 2005). Keyes et al. (2008) suggested that happiness incorporates two abilities: achieving well-being by experiencing positive emotions, and achieving positive functioning toward oneself and one's environment. Thus, happy individuals are characterized by experiencing higher levels of positive emotions and good social relationships (Keyes 2006).

In this study, we follow the conceptualization of subjective happiness as a cognitive component referring to the general and subjective *judgment* of the extent to which one is a happy or an unhappy person (Lyubomirsky and Lepper 1999). In contrast, positive emotions refer to the experience of *feeling* inspired, enthusiastic, proud, and so forth during a certain timeframe (Fredrickson 2009; Magyar-Moe 2009; Watson et al. 1998). A number of studies showed the importance of positive emotions for increasing well-being (Diener 2009; Fredrickson 2009; Lyubomirsky et al. 2005; Watson et al. 1998). Lyubomirsky et al. (2005) found that positive emotions are strongly linked to the experience of subjective happiness. Therefore, in our multi-mediator model, we proposed that among adolescents exposed to parent–child aggression, ability to exert self-control over unpleasant thoughts and emotions would positively link with the experience of increased positive emotions that would in turn positively link with happiness.

7 Study Hypotheses

In this study, we formulated five hypotheses to examine a multiple mediator model that may explain how parent–child aggression simultaneously links with adolescents' peer-directed aggression (through hostility, anger, and the need to belong) and with adolescents' subjective happiness (through the need to belong, self-control, and positive emotions). In other words, we examined risk- and protection-focused mediators that may act as potential mechanisms through which parent–child aggression may influence each of these outcome variables.

Hypotheses 1 is derived from prior theory and research showing that abused children develop a hostile attribution bias that leads to increased anger and consequently increased peer-directed aggression (Dodge et al. 2006). Hypotheses 2 and 3 are based on theory and research considering the need to belong as a prosocial motivational force,

the fulfillment of which is essential for happiness (Baumeister and Leary 1995; Leary et al. 2013). Thus, these hypotheses examined the simultaneous mediational role of adolescents' need to belong in linking parent–child aggression with physical peer-directed aggression as well as with happiness. Hypotheses 4 and 5 are derived from theory and research showing that self-control is a learned set of skills that are strongly related to more positive emotions and happiness and to less peer-directed aggression (Orkibi et al. 2014, 2015; Ronen and Rosenbaum 2001). The following hypotheses were examined:

1. The link between parent–child aggression and adolescents' peer-directed aggression will be mediated through the positive association of hostility with anger, as two mediators intervening in a series.
2. The link between parent–child aggression and adolescents' peer-directed aggression will be mediated by the need to belong, such that parent–child aggression will relate to a stronger need to belong, which in turn will relate to lower peer-directed aggression.
3. The link between parent–child aggression and happiness will be mediated by the need to belong, such that parent–child aggression will relate to a stronger need to belong, which in turn will relate to lower happiness.
4. The link between parent–child aggression and adolescents' happiness will be mediated through the positive association of self-control and positive emotions, as two mediators intervening in a series.
5. The link between parent–child aggression and peer-directed aggression will be mediated by self-control skills.

8 Method

8.1 Participants and Procedures

The research sample included 155 Israeli Arab adolescents in the 11th grade: 97 girls and 58 boys, ages 16 to 17 years ($M=16.21$, $SD=.41$). In Israel, there are three kinds of schools: public homogenous schools for only Jews or only Arabs typically located in homogenous communities, public mixed schools typically located in mixed communities, and private homogenous schools. The current study was conducted in four homogenous public high schools serving a middle-class Muslim population, with Arabic as their official language. All four public schools are under formal supervision from the Israeli Ministry of Education and utilize the Ministry's national curricula. Two of the schools serve residents of rural villages ($n=87$), and two schools serve residents of cities ($n=66$) in the Northern Triangle region of Israel. Each school contained two 11th-grade homeroom classes.

The current questionnaire set was administered as part of a broader study on reducing peer-directed aggression among adolescents. Questionnaires were approved by the Chief of Research at the Israel Ministry of Education, and then by the ethical committee of Tel-Aviv University. After approval, four schools in the Arab educational sector were located in the Northern Triangle region of Israel. Meetings with the school administrators were followed by letters sent to the parents explaining the purpose of the

study and requesting consent for their children's participation. None of the parents declined to allow their adolescent children to participate. Next, the first author (an Israeli Arab) entered the homerooms, explained the study aims to the students in Arabic, assured them of anonymity and confidentiality, and told them that participation was voluntary and they could decline to complete the questionnaires with absolutely no repercussions. They were specifically assured that no harm would come to their family members or themselves if they reported aggression or violence; they were told that this anonymous study aimed to obtain a realistic picture of their lives. Cooperation was very high; all adolescents in the target classes who attended school on the day of the research agreed to complete the questionnaire set. Completion of the anonymous questionnaire set took about 30 min.

8.2 Measures

Adolescents completed seven self-report questionnaires in Arabic. All were previously adapted to Arabic using back-and-forth translation from Hebrew by bilingual professionals in accordance with Brislin's classic back-and-forth translation model (Cha, Kim, and Erlen 2007), and all measures were used in previous studies of the Arab population in Israel and in Gaza. Prior studies of the Arab population in Israel demonstrated the validity and reliability of the Arabic versions of these scales using similar translation methods (e.g., Ronen and Rosenbaum 2010; Ronen et al. 2013; Rosenbaum et al. 2015; Walters et al. 2010). To avoid confusion due to the use of differing rating scales within the questionnaire set, participants received a written explanation on the rating scale for each questionnaire in Arabic. Participants completed a questionnaire providing information on their age, sex, and residential area (urban or rural).

Exposure to Parent-child Aggression Participants completed the physical violence subscale of the self-reported Parent-child Conflict Tactics Scale (Straus et al. 1998). The 8-item subscale utilized here assessed the frequency of severe physically violent assault by parents toward the respondent during the last year, as in the original scale. Adolescents rated items like "My parents threw something at me" on a scale ranging from 1 (*Never*) to 7 (*More than 20 times during the last year*). In the current study, the physical violence subscale's reliability (Cronbach's alpha) was .84.

Hostility, Anger, and Physical Aggression Measures We utilized three subscales from the 29-item self-reported Aggression Questionnaire (Buss and Perry 1992; Arabic adaptation: Agbaria et al. 2012), assessing adolescents' general propensity for aggression toward peers. These subscales consisted of *hostility* (the 8-item cognitive component of aggression, e.g., "I know that kids talk about me behind my back"); *anger* (the 7-item emotional component of aggression, e.g., "Sometimes I feel as if I'm about to explode"); and *physical aggression* (the 9-item behavioral component of aggression, e.g., "If I am provoked enough I may strike another kid"). We did not include the 5 items relating to verbal aggression due to their low reliability. Adolescents rated how well each item generally described them on a scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). Scores were computed separately for each subscale and overall. The overall questionnaire's reliability (Cronbach's alpha)

was .80 in the original English version, .82 in previous research using the Hebrew version (Ronen and Rosenbaum 2010), and .80 in the current study. Cronbach's alphas for these three subscales in the Ronen and Rosenbaum (2010) study were: .72 for physical aggression, .78 for anger, and .77 for hostility. In the current study, the reliabilities were .73 for physical aggression, .61 for anger, and .60 for hostility.

The Need to Belong The self-reported Need to Belong scale (Leary et al. 2013; Arabic adaptation: Agbaria et al. 2012) assessed adolescents' longing for a sense of belonging to different social groups and yearning for acceptance by others. A factor analysis by Kelly (1999) reduced the questionnaire from the original 23 items to the currently used 10 items, for example: "It bothers me a great deal when I am not included in other people's plans." Adolescents rated items on a scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*), with 2 inverse items. Higher scores indicated a higher unfulfilled need to belong. Reliability (Cronbach's alpha) was .80 in the original study and .60 in the current study.

Subjective Happiness To assess adolescents' self-reported happiness, we used the 4-item Subjective Happiness Scale (Lyubomirsky and Lepper 1999; Arabic adaptation: Agbaria et al. 2012). Adolescents circled the number that best characterized them on a 7-point scale with different anchors. For example: "In general I consider myself to be: 1 (*not a very happy person*) to 7 (*a very happy person*). Higher scores indicated higher levels of happiness. Reliabilities of different samples ranged from .79 to .94 (Lyubomirsky and Lepper 1999). The Cronbach's alpha in the current study was .60.

Positive Emotions We utilized the 15-item positive emotions subscale of the self-reported Positive and Negative Affect Schedule for Children (Watson et al. 1998; adaptation to children and adolescents by Laurent et al. 1999; adaptation to Arabic by Agbaria et al. 2012). Adolescents rated the extent to which they experienced positive emotions (e.g., "proud," "calm," "cheerful") in the preceding two weeks on a scale from 1 (*Very little*) to 5 (*Very much*). Previous reliabilities ranged between .89 and .90 for the positive emotions subscale (Orkibi et al. 2014; Ronen and Seeman 2007). The Cronbach's alpha for positive emotions in the current study was .76.

Self-Control Skills The 32-item self-reported Adolescents' Self-Control Scale (Rosenbaum and Ronen 1991; Arabic adaptation: Agbaria et al. 2012), assessing individual differences in self-control skills, was adapted for children and adolescents from Rosenbaum's (1980) scale for adults. Adolescents rated their usage of cognitions and problem-solving strategies while coping with emotional and physiological responses (e.g., self-instruction, planning, deferring gratification, overcoming pain). Items like "When the idea crossed my mind and bothered me, I tried to think of something funny" were rated along a 6-point Likert-type scale ranging from -3 (*Very uncharacteristic of me*) to 3 (*Very characteristic of me*), with 9 inverse items. The scale's reliability was relatively high among adults and adolescents ($\alpha=.87$) but lower for children ($\alpha=.69$), showing higher Cronbach's alphas with age (Rosenbaum 1998). The Cronbach's alpha in the current study was .72.

8.3 Data Analysis

We computed correlational analyses to explore the relations among all study variables, followed by several sets of analysis of variance (ANOVA) to examine possible differences on sociodemographic variables. We used structural equation modeling (SEM) to conduct a path analysis that tested the study's theoretical model (Byrne 2010), particularly the hypothesized mediations. Our model's fit to the data was evaluated through SEM analysis, using the traditional indices of model fit (Schreiber et al. 2006): $\chi^2/df \leq 3$, comparative fit index (CFI) $\geq .95$, Tucker Lewis index (TLI) $> .95$, normed fit index (NFI) $> .95$, and root mean square error of approximation (RMSEA) $< .008$. The bootstrap test method of indirect effect, which derives a confidence interval for effect-size estimation and hypothesis testing, was used with confidence level set at 0.95 and bootstrap bias-corrected samples set at 5000 (see Preacher and Hayes 2004). Drawing on a recommended procedure for the analysis of multi-path mediational models (Taylor et al. 2008), we also calculated a separate *z* score for each mediation.

9 Results

The ANOVAs conducted to examine possible differences on sociodemographic variables revealed no significant differences for age, for the urban versus rural comparison, and for most of the variables regarding sex differences. Males differed from females on only two study variables: Males reported significantly higher physical peer-directed aggression ($M=25.31$) than females ($M=21.16$, $p < .001$) and a lower need to belong ($M=34.42$) than females ($M=36.19$, $p < .05$).

Table 1 presents the correlations, means, standard deviations, and reliabilities for the study variables. As can be seen, whereas parent-child aggression negatively correlated with happiness ($r = -.29$, $p < .01$), parent-child aggression positively correlated with hostility ($r = .21$, $p < .01$), anger ($r = .27$, $p < .01$), and need to belong ($r = .22$, $p < .01$). Parent-child aggression did not significantly correlate with adolescents' physical peer-directed aggression. Unexpectedly, parent-child aggression did not significantly correlate with self-control skills. Whereas self-control negatively correlated with physical peer-directed aggression ($r = -.28$, $p < .01$) and positively correlated with happiness ($r = .24$, $p < .01$), it did not significantly correlate with positive emotions.

9.1 Model Fit and Mediators

We examined a multiple mediator model attempting to explain how adolescents' exposure to parent-child physical aggression may simultaneously link to their physical peer-directed aggression on the one hand, and to their own experience of subjective happiness on the other hand – through mediators of hostility, anger, need to belong, positive emotions, and self-control. The SEM analysis indicated that our model (see Fig. 1) had good fit with the observed data according to the following indices: $\chi^2/df = 1.127$ ($p = .339$), CFI = .933, TLI = .979, NFI = .948, and RMSEA = .029. Note that we first conducted two different models for boys and for girls, but because the model was similar for both we established one model for the entire sample.

Table 1 Pearson correlations, means, standard deviations, and reliabilities for the study variables

	1	2	3	4	5	6	7	8
1. Parent–child aggression	–							
2. Need to belong	.22**	–						
3. Hostility	.21**	.05	–					
4. Anger	.27**	.00	.38**	–				
5. Peer-directed aggression	.05	–.18*	.25**	.55***	–			
6. Self-control skills	–.03	–.16*	.09	–.06	–.28**	–		
7. Positive emotions	–.07	–.03	–.11	–.04	–.05	.14	–	
8. Happiness	–.29**	–.31**	–.36**	–.16*	–.14	.24**	.25**	–
<i>M</i>	3.8	35.54	21.18	19.42	22.76	10.23	32.80	18.25
<i>SD</i>	7.33	5.32	4.63	4.92	6.67	22.61	7.15	.34
Cronbach's α	.84	.60	.60	.61	.73	.72	.76	.60

* $p < .05$. ** $p < .01$. *** $p < .001$

The bias-corrected bootstrap analysis indicated the existence of an indirect effect between parent–child aggression and physical aggression toward peers (95 % CI=[.017, .240], $p < .01$). As the confidence interval did not include zero, the null hypothesis of no mediation was rejected, thus confirming our first hypothesis. This result was further confirmed by testing the entire mediation chain as suggested by Taylor et al. (2008), revealing a significant three-path mediation model with two mediators intervening in a series. The link between parent–child aggression and adolescents' own peer-directed physical aggression was indeed mediated through the association of hostility with anger ($z = 2.263$).

The second hypothesis was also confirmed, as the link between parent–child aggression and lower peer-directed physical aggression was mediated by the need to belong ($z = -2.061$). The need to belong also mediated the link between parent–child aggression and lower happiness ($z = -2.092$), thus confirming our third hypothesis.

Contrary to expectations, because no significant relation emerged between parent–child aggression and self-control skills (standardized direct effect with confidence interval including zero: 95 % CI=[–.187, .129], $p < .70$), the association of self-control skills with positive emotions (as two mediators intervening in a series) failed to mediate the relation between parent–child aggression and happiness, thus refuting the fourth hypotheses. Likewise, for the fifth hypothesis, self-control skills failed to mediate the relation of parent–child aggression with adolescents' physical peer-directed aggression.

10 Discussion

This study examined a multiple mediator model attempting to explain how adolescents' exposure to parent–child physical aggression may simultaneously link to their own physical aggression toward peers on the one hand (through hostility, anger, and the need to belong), and to their own experience of subjective happiness on the other hand

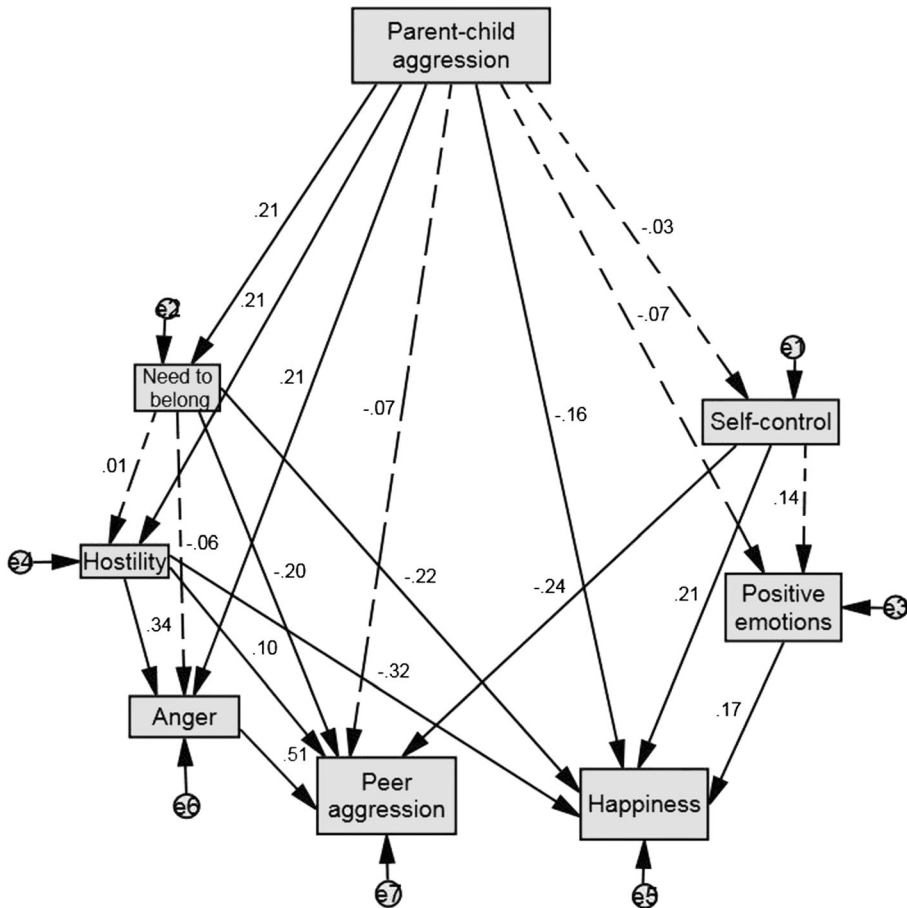


Fig. 1 SEM results of pathways from parent–child aggression to adolescents’ peer-directed aggression and happiness. Dashed paths are non-significant

(through the need to belong, self-control, and positive emotions). In terms of the link between parent–child aggression and adolescents’ peer-directed aggression, whereas our findings support past claims about the link between maltreatment by a parent and adolescents’ higher risk for behaving aggressively themselves (e.g., Graham-Bermann et al. 2010; Jouriles et al. 2001; Mathis et al. 2010), the current findings extend these claims by focusing on a previously understudied population of Israeli Arab adolescents and by considering the mediating role of adolescents’ need to belong.

The present findings corroborate the processes underlying aggression, highlighting that exposure to parent–child aggression per se is not necessarily directly related to adolescents’ aggressive behavior, but rather the adolescents’ own cognitive and emotional patterns in response to that violence – namely hostile thoughts and angry emotions – play a crucial role (Buss and Perry 1992; Hamama and Ronen-Shenhav 2012; Ronen et al. 2013; Ronen and Rosenbaum 2010; Weisbrod et al. 2009). Considering the importance of cognitive, emotional, and behavioral variables, further empirical investigation should explore additional kinds of emotional responses such as

helplessness, frustration, and so forth, along with optimism and hope that might highlight other pathways through which adolescents' aggressive behavior may be linked.

Our novel findings regarding the mediating role of adolescents' need to belong expand on past research by shedding light on how adolescents who are exposed to parent–child aggression may have an increased yearning for acceptance and belonging, for social inclusion and connectedness, which appear to link with lower physical peer-directed aggression and concurrently with lower levels of subjective happiness. Indeed, adolescents with a higher need to belong are more sensitive to social cues and information that can help them foster connections with others (Pickett et al. 2004), and sometimes they may interpret social situations positively in ways that validate their sense of belonging (Carvalho and Pelham 2006).

Regarding adolescents' need to belong as mediating the link between parent–child aggression and happiness, our expectations were confirmed. A possible explanation may be associated with studies that showed positive links between perceived social support, satisfying interpersonal relationships, and happiness indicators (Gallaher et al. 2007; Lyubomirsky et al. 2005; Orkibi et al. 2014; Ronen et al. 2013; Ronen and Seeman 2007). Keyes et al. (2008) suggested that happiness incorporates two abilities: achieving subjective well-being by expressing positive emotions, and achieving positive functioning toward oneself and one's environment. Thus, this finding reflects the central role of need to belong in adolescents who are exposed to parent–child aggression.

In addition, no direct link was found between parents' physical maltreatment and adolescents' self-control. This can derive from our conceptualization of self-control as a set of basic skills that begin to develop with birth and depend during childhood and adolescence. Various variables can influence the acquisition of self-control. The current findings do not enable conclusions as to whether exposure to traumatic behavior like parents' physical abuse relates to decreases in adolescents' self-control skills due to lack of proper modeling but concurrently increases self-control skills due to the need to survive and cope, or whether adolescents do possess skills but do not use them. More studies are needed to understand the basic components that might influence the acquisition of self-control skills under these specific family conditions.

Whereas self-control did not directly link with positive emotions, it did link with happiness. This finding calls for additional investigation to determine if the possible similarities between the two positive variables led to a non-significant finding. Importantly, however, the direct relation found between self-control skills and increased subjective happiness in the current study supports Gilbert's (2005) claims that given human beings' innate desire for control, a sense of control associates with happiness whereas the loss of control associates with being unhappy, hopeless, depressed, or aggressive. Indeed, the current findings highlight the role of self-control skills in helping adolescents who are exposed to parent–child aggression to avoid engaging in peer-directed aggression and, notwithstanding, to experience happiness.

Like in prior studies, the current findings revealed a connection between better self-control skills and fewer aggressive behaviors among adolescents (Ozden and Koksoy 2009; Ronen and Rosenbaum 2010; Ronen et al. 2013; Weisbrod et al. 2009). A possible explanation for the link with lower peer-directed aggression may be related to how self-control skills operate, including adolescents' ability to identify automatic

negative thoughts, generate alternative thinking, and find alternative solutions leading to the choice of more controlled, planned, and adaptive rather than aggressive behavior.

10.1 Study Limitations

This study is not without limitations. First, the current sample was a non-probabilistic convenience sample because the four public homogenous schools of Muslim Arab adolescents were selected from the Northern Triangle, which represents only about 10 % of the Israeli Arab population, and not all schools were examined (although within those schools all adolescents who were present that day participated). Thus, the study did not comprise a representative sample of Israeli Arabs in that it did not sample other geographical regions in Israel and did not include the smaller minorities of Arab Christians, Druze, and Bedouins, thereby limiting the findings' generalizability. Another methodological limitation is the reliance on cross-sectional data, which prevents strong conclusions with respect to causality and limits testing of mediational hypotheses. Thus, future studies should include a longitudinal design with several time points of data collection to tackle the nature and directionality of the relations between variables. Furthermore, in order to identify the unique effects of the current variables, researchers should conduct similar studies that examine exposure to aggression from additional sources other than parents, as well as the impact not only on physical peer-directed aggression but also on generalized aggression.

Furthermore, all of the current questionnaires were self-reports reflecting adolescents' own perspectives. This methodology is warranted inasmuch as the study variables all assess internal components such as thoughts, feelings, and experiences. However, peer or teacher reports could add complementary information. Moreover, low reliabilities were found for the anger, hostility, and need to belong measures, suggesting the necessity for future validation with Arab children and adolescents. Considering cultural differences, this may also call for complementary qualitative research to determine how Arab youngsters exposed to parent-child aggression may respond to and interpret the different questionnaire items.

In addition, parent-child aggression was measured during the last year; thus, long periods of severe ongoing parent-child aggression were not directly captured by the instrument. Relatedly, the measures of hostility, anger, and peer-directed physical aggression assessed adolescents' general tendencies rather than their experiences or behaviors in a specific timeframe. Finally, in view of the present results, future researchers should examine adolescents' actual aggressive behaviors using observational methods and peer/teacher sources and should also measure actual belonging (peer acceptance or social support) in order to assess the mismatch or degree to which participants' needs were actually being met.

10.2 Research Implications

To better understand whether the current outcomes are specific to Israeli Arabs or generalizable to all adolescents, further comparative research is warranted. Bergeron and Schneider (2005) explained that members of individualistic societies are more likely to use aggression for achieving personal goals than members of collectivistic societies, such as an Arab society where collectivism is highly

valued (Whitaker 2009). However, Israeli Arabs live among Israeli Jews in a modern Western society, raising the question of whether they more resemble their Jewish neighbors or their culturally similar traditional Arab peers in neighboring countries. Hence, a similar study should be conducted while including cross-cultural comparisons. Beyond the cultural issues, future research should also focus on deepening our understanding about the role of parent–child aggression, antecedents of peer-directed aggression, and factors enhancing young persons' ability to develop happiness. Indeed, Milaniak and Widom (2014) found that the cycle of violence is not inevitable; about 30 % of the group they studied did not develop any type of violence despite undergoing maltreatment as children (physical and sexual abuse and/or neglect). They therefore highlighted the increasing need to learn about the mechanisms that lead to these outcomes.

10.3 Clinical and Policy Implications

The current findings hold implications for Israeli Arab adolescents. Namely, it is important to consider cultural elements within a unified intervention approach. Adolescent minority groups' sense of being part of society and their understanding of cultural norms hold critical importance for their adequate social adjustment, prosocial behavior, positive communication, and interpersonal skills. Involvement in society necessitates a set of skills for adjustment and adaptation within that society (Dorfman-Zukerman et al. 2004). Moreover, the findings highlight the need for families, educators, teachers, and therapists to help adolescents feel that they are a part of society and to provide them skills for establishing and maintaining social support, which will reduce their own aggressive tendencies and enhance their sense of belonging and positive emotions. Furthermore, we found that those adolescents with higher levels of self-control skills – such as the ability to postpone gratification, plan the future, and use cognitions to guide actions – reported higher levels of happiness. This link is important during the adolescent period. Thus, by training adolescents in self-control skills they can be helped to feel happier (Fredrickson 2009; Lyubomirsky 2007). Likewise, with regard to the mediated chain reaction of negative cognitive and emotional responses found in this study, it is also important to design interventions that will help adolescents overcome their hostile thoughts and angry emotions in order to ameliorate tendencies toward physical acts of aggression toward their peers.

The current findings can clearly be applied toward developing social policies and programs aimed at reducing exposure of children and adolescents to physical maltreatment by a caregiver. Nevertheless, it is important to take into account the serious shortage of child and family services in the Arab sector in Israel, as well as the poor quality of existing services compared with those provided in Jewish localities in Israel (Haj-Yahia and Ben-Arieh 2000; Haj-Yahia et al. 2002). This issue should be considered when studying parent–child aggression in Arab society.

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