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**Cross-cultural comparisons in exercise participation, attitude  
toward aggression and violence:  
Reported violent acts among young German and Israeli  
Students**

Sportpartizipation, Gewalteinrichtung und –verhalten bei Jugend-  
lichen im deutsch-israelischen Kulturvergleich

**Summary**

A large survey of German ( $N = 3\,403$ ) and Israeli ( $N = 2\,513$ ) younger (age 11-14 yrs) and older (age 14-18 yrs) adolescents was conducted to reveal (a) their opinions and attitudes towards violence and aggression, (b) their personal engagement in aggressive and violent behaviors in and outside the school environment, (c) their attitudes toward physical activity, (d) their engagement in physical activity, and (e) the linkage between physical activity engagement and conductance of violence and aggression. The findings point out that there are more similarities than differences between German and Israeli adolescents concerning violence and aggression in and outside schools. No linkage between physical activity involvement and the extent of violent and/or aggressive acts is found. The findings pertaining adolescents' opinions and attitudes toward aggression and violence and their behaviors in and outside school are encouraging.

**Zusammenfassung**

Ein großvolumiger Survey wurde an deutschen ( $N=3403$ ) und israelischen ( $N=2513$ ) Heranwachsenden im Alter von 11-18 Jahre durchgeführt, um a) ihre Einstellungen zu Aggression und Gewalt, b) ihr eigenes Gewaltverhalten, c) ihre Einstellung zu Sport und Bewegung, d) ihr eigenes Sportengagement und dem Zusammenhang von Sport und Gewalt zu eruieren. Die Befunde zeigen, dass es mehr Gemeinsamkeiten als Unterschiede zwischen deutschen und israelischen Jugendlichen gibt. Zusammenhänge zwischen Sport und Gewaltverhalten in nennenswerten Ausmaßen wurden nicht festgestellt. Die Ergebnisse zu Gewalteinrichtung und -verhalten der Jugendlichen sind in pädagogischer Perspektive eher ermutigend als besorgniserregend.

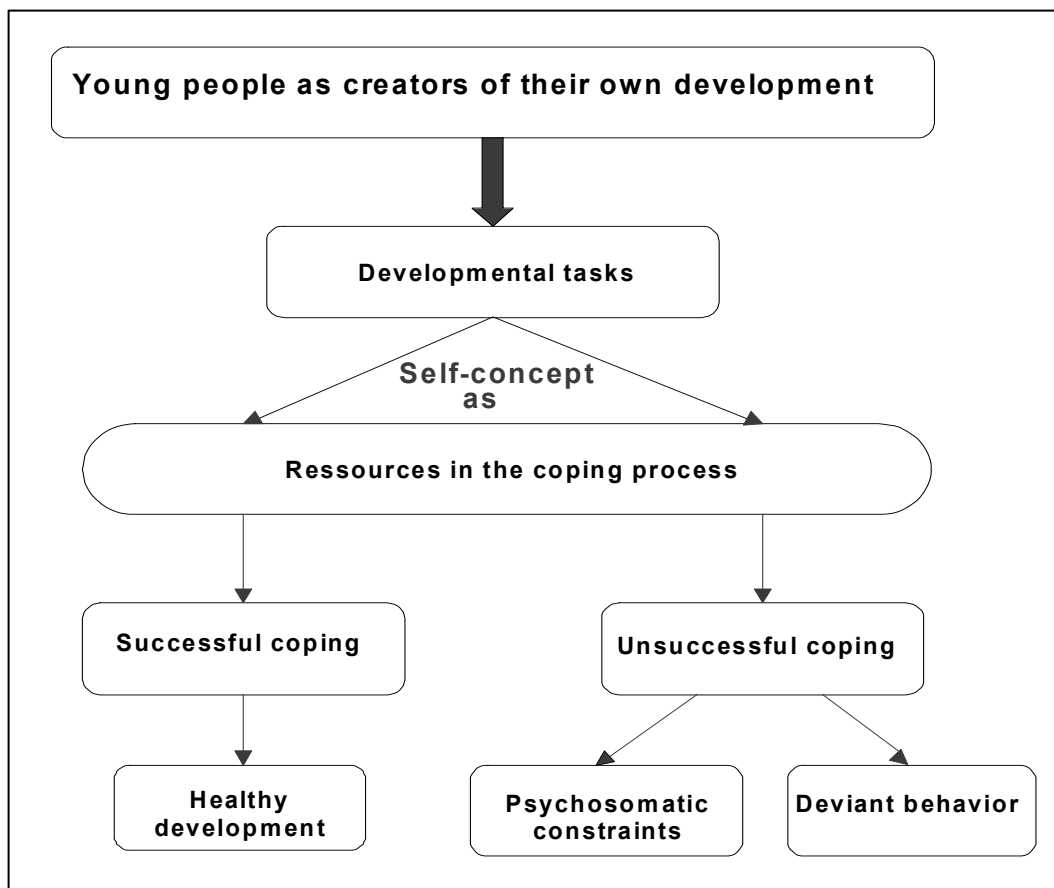
**1 Theoretical framework**

Crime rates are currently increasing in many industrial societies, including Israel and Germany, whereby statistics are showing a particularly notable increase of violent acts among adolescents. Both Israel and Germany are now not only attempting to decipher the reasons for the increase in violence but also searching for intervention programs and prevention measures. Besides governmental bodies, sport organizations are involved in the development of suitable measures. In promotional brochures and on billboard ads, sport is not infrequently considered or recommended as a panacea

against societal maldevelopments: Sport promotes social integration and protects against drugs and racism. It is also supposed to deter violence (Brettschneider, 2001). The commonality of these slogans is that assumptions are formulated, promises made, and expectations generated, which are not based on evidence. The above thus raises the question as to how sport involvement and violence among adolescents are linked.

Violence refers specifically to the physical component of aggression. It is harm-inducing behavior bearing no direct relationship to any specific goals, and is outside the rules' boundaries of social environments (Terry & Jackson, 1985). Violent acts are illegal and hostile acts. Violence has been explained and defined in many ways. There are a number of psychological and sociological approaches that either emphasize the personality of the individual and thereby neglect the social environment or, conversely, that stress social influences and thereby underestimate psychological aspects. In this study, violence is (1) integrated into a socialization-theoretical approach that overcomes the one-sided point of view and (2) tightly linked with the concept of developmental tasks, which is of particular importance in adolescence. Socialization encompasses the process of personality development as conflict between the physical and psychological features ("inner reality") and the social and material environment ("outer reality") (Hurrelmann, 2002). In the context of this dialectic interrelation, the role of the subject is important. The subject is neither exclusively at the mercy of the apparatus of socialization conditions nor is it solely the product of biogenetic processes. Rather, individuals are considered as "producers of their own development" (Lerner & Busch-Rossnagel, 1981) that, though not equipped with an unlimited variety of options, have considerable decision and action space for the design of their own life.

The conflict between inner and outer reality is mirrored in the concept of developmental tasks (Havighurst, 1981), which are considered as something in between societal demands and individual needs and which young people are confronted within the life phase of adolescence. Whether the coping of adolescence-typical developmental tasks (e.g. acceptance of their own body, detachment from home, building up a circle of friends, preparation for a job, or development of a personal value system) succeeds and whether the psychosocial development takes a positive or problematic course depends on the quality and quantity of personal and social resources at a person's disposal. Successful coping improves the mental health of adolescents whereas failure causes stress to which adolescents generally react with psychosomatic complaints or deviant behavior (Hurrelmann, 2002). Coping with developmental tasks and its consequences is presented in Figure 1.



*Figure 1: Coping with developmental tasks and its consequences.*

Deviant behavior may thus be interpreted as a consequence of young people's failure to cope with developmental tasks. Accordingly, violence does not occur as a life-course-persistent delinquency, but rather as a temporally limited delinquency and normal part of teen life (Moffit, 1993).

The increase in leisure time and multinational leisure culture as well as the estrangement of adolescents from the social value system handed down by adults do not only mark specific changes of young people's life situation, but also reflect globalization tendencies which are to be found in New York, Jerusalem and Berlin alike.

In marked contrast to the bund of internalization in youth and sport culture(s) research on these social phenomena is still nationally oriented. Cross-cultural research as a way out of parochial isolation faces methodological problems. There is broad agreement that functional, conceptual, linguistic and sample equivalences are essential categories for cross-cultural studies (Brettschneider, Brandl-Bredenbeck & Rees,

2005). Relevant phenomena such as school, sport and violence share functional equivalence in our study. They are constructs that map by means of multiple indicators. Conceptual equivalence concerns the problem of differing significance and cultural variation in concepts, values and behavior. A further criterion that has to be met is linguistic equivalence. This is fulfilled when the wording of items in the questionnaires has been checked by the translation method. Problems of equivalence can also arise with respect to the selection of samples. Once correspondence on the macro level for age, gender and SES is met, other aspects of the micro level can be usefully compared with one another. In our study all these criteria have been considered, thus allowing for cross-cultural issues to be reliably studied.

The current survey is aimed at eliciting the extent aggressive and violent actions are present in the Israeli and German schools, and examining the mediating role of physical activity and sport attitudes and involvement on aggressive and violent behaviors.

## 2 Current perspectives

A recent survey (Harel, Kinney & Rahav, 1997) on youth (ages 11-15 years) violence in Israel ( $N = 7\,637$ ) has indicated that more than half of the students were victims of bullying and harassment at least once during the school year. One of five students has experienced these acts three or more times inside or outside the school environment. Moreover, about 45 % of the students were personally involved in such behaviors once during the school year, and 17% were involved 3 times or more; 25 % of the males and 10 % of the female students reported they were physically attacked. More than 20 % of male and 7 % of female students carried weapons (e.g. knives, guns, and hatchets) to school; 40% of the males and 25 % of the females have witnessed someone else carrying a weapon in the school surrounding. These findings were evident across socio-economic and immigration statuses of the student. A complementary survey (Benbenishty, Astor & Zeira, 1998) using 15,916 students from 603 classes in 232 schools has shown that 25-33 % of the students perceived the violence in schools as a severe or very severe problem; pronounced violent actions were: cursing (65-82 %), pushing (32-57 %) throwing objects (16-30 %), and use of weapons (5-7 %); 16 % of elementary, 7 % in middle, and 5 % of high school students missed at least one day per month schooling to prevent personal harm.

These recent findings indicate a substantial increase in the frequency and severity of youth violence in Israel. Older survey (Horowitz & Amir, 1981) on a limited sample of 16 schools has indicated that violent behaviors were limited to the following actions: stealing, robbing, intra-individual disputes, blackmailing, property damaging, and law disobedience. Another survey (Horowitz, Frankel & Inon, 1990), on 4,500 students from 15 schools, reported that the most frequent acts of violence at that time were cursing, pushing, and threatening others. Less frequent acts were punching/hitting, and slapping and stealing. The least frequent were stabbing, and physical

extortion. These statistics were representative across all ethnic groups. Violence occurred mainly in the school or the school neighborhood; 60% of the males and 40% of the female students admitted they were personally involved in verbal assaults, and about 33% and 10% of the males and females, respectively were involved in physical violence. The reasons for the violent actions were attributed to lack of self-control, revenge, and self-defense.

In Germany, Holtappels et al. (1999) found a moderate increase in violent actions during the last 20 years. In a replication of the 1972 study conducted in 1995 they reported that delinquency could not be considered a serious problem in Germany. Summarizing all violent acts, increases in every facet of violence were as follows: frays increase from 5 % in 1972 to 12.5% in 1995; similarly burglary, 1 % to 5.3 %; automobile breaking; 4 % - 8.6 %, and affiliation with a gang 6 % - 16 %.

Pfeiffer and Wetzels (1999) provided data on juvenile violence in German youth aged 14-18 years ( $N = 12\ 882$ ). It was found, that the data the police provided underestimates the occurrence of violent acts in Germany; the severity of violence is on a decrease trend; violence increase rate is related to changes in cultural orientation (i.e. moves towards outcome orientation), minority youth are socially marginalized, and not socially integrated; youth experiencing physical violence at home are much more likely to commit violent acts; the majority of violent action are committed by males; low SES, unprivileged family, and violence in the family are the main determinant of youth violence.

The main purpose of this study was to compare youth physical activity attitudes and participation in the two countries, and examine the effect of such an engagement on the perceptions and personal involvement in aggressive and violent acts. The research pertaining to the effect of sport activities on aggressive and violent behaviors is equivocal. Early research has indicated that children aged 10-12 participating in Little League baseball developed cooperation, social consciousness, and leadership skill more than their typical age children (Seymour, 1956). In contrast, sport participation was also related to anti-social behaviors (Sherif et al., 1961, 1967). Later studies have shown positive outcomes of sport engagement in children (Grineski, 1989; Orlick, 1981; Mender et al., 1982), but weak relationship was obtained between sport participation and altruistic behaviors (Kleiber & Roberts, 1983). Sport was also found to reduce delinquent behaviors (Donnelly, 1981; Hastad et al., 1984; Melnick et al., 1988).

The involvement in sport or any other rigorous physical activity was believed to sublimate aggressive tendencies and thus, reduce the prevalence of aggression in daily life (Bushman, Baumeister, & Stack, 1999). Furthermore Trulson (1986) found that criminal adolescents participating in martial arts activities reduced aggressive tendencies through the increase of self-esteem. Sport activities consist of obedience to rules and therefore lead participants to pay attention, delay gratification, and honor authority

(McPherson, 1981) as well as control oneself, cooperate and become patient to others' needs (Eldar, 1999). Athletes were found to be less aggressive than any other group not engaged in sport activities (Nosanchuk, 1981). However, socialization in sport tends to make legitimate aggression outside the boundaries of legal play (Bredemeier, 1994; Silva, 1983), thus its effect on aggression reduction remains unclear.

Other research findings showed that aggressive acts lead to aggressive thoughts that in turn evoke anger and increase in violent engagements (Bushman, 2002). Baseball and tennis players displayed higher level of violent behaviors (Young, 1990), and college athletes were more aggressive and dominant than their non-athlete counterparts (Fletcher & Dowell, 1971; Valliant, Simpson-Housley & McKelvie, 1981). Football players in the college showed higher aggressive values (Patterson, 1974), and these were prominent more in males than in females (Bredemeier, 1984). Violence and aggression are more frequent in societies with more exposure to aggression and violent actions (Coakley, 1990). Furthermore, children who perceived themselves more aggressive in sport described themselves as more aggressive in outside-sport activities (Bredemeier, 1994). In Germany, Brettschneider (2001) reported that sport club participation failed to show any systematic and consistent relations to psychological and social health in adolescents.

Findings' inconsistencies were attributed to the environmental contexts aggression and violence were studied, and the limited scope within which they were carried out.

Furthermore, Hofmann (2007) failed to obtain any linkage between sport involvement, self-concept and violence in young people; neither was there evidence for a mediating role of sport involvement on the effect of self-concept on violence.

The purpose of this study is to examine differences between very young students in two countries, Israel and Germany, in their perceptions and engagement in physical activities and sport, and their attitudes and engagement in violent and aggressive actions in and outside the school environment. The theoretical framework of this study is based on current socialization theories and developmental psychology views on adolescence. On the threshold of adolescence young people are engaged and cope with unique psychosocial and developmental tasks; their engagement in aggression and violence depends largely on their successful coping mechanisms and their involvement in physical activity and sports.

### 3 Method

#### Sampling procedures and participants

*Israeli Sample.* The sample consisted of 2 513 students from grades 6, 8, and 10. The sample was derived from 20 schools located in the center, and 20 schools located in the northern parts of the country. Of the 600 schools located in the center area, 20 schools were randomly selected, and all the students designated in the respective clas-

ses were sampled. Similar procedure was applied with the northern schools. All students were selected from the public sector; 54% were males, and 45.6% were female, 55.5% were young (age range: 11 – 13:11years; months), and 44.5 % were older adolescents (age range: 14-17 years). The majority of the students (64.3%) were designated as “moderate” in socioeconomic status (SES), while only 3.8% were “low” and “extremely low” SES, and 31.9% as “high” or “very high” SES. The majority of the adolescents’ mothers (34.9 %) held a BA, MA or a PhD degree from a higher education institute, 26.7% graduated from high-school, and only 1.3% had an elementary education only; 30.7% of the fathers had higher education degree, 26.5 % high-school, and 1.3 % elementary education.

*German Sample.* The sample consisted of 3 403 adolescents (49.8% female and 50.2% males), aged 11-16 (class 6, 8, 10) from Northrhine-Westfalia (33 schools) and from Saxony-Anhalt (26 schools). The process for selecting the participant schools consisted of the sociogeographic status (city, towns, and countryside), unemployment rate and size of the school. Schools were then been chosen randomly in the two county-site 35.8% were young (age range: 11 – 14 years), and 64.2 % were older adolescents (age range: 14-17). The majority of the students (57.4%) were designated as “high” in socioeconomic status (SES), 26.5% were “moderate,” 12.9% lived in “very high” SES families, and only 3.2% belonged to “low” and “extremely low” SES strata. The majority of the adolescents’ mothers (42.8%) held a BA, MA or a PhD degree from a higher education institute, 12.6 % graduated high-school, and 11.9 % had an elementary education only; 50.7% of the fathers had an academic education degree, 9.9% high-school, and 12.7% elementary education.

### **Instrumentation**

To assess aggression and violence, different scales were use, which were validated and successfully applied in German surveys (Heitmeyer et al., 1998<sup>3</sup>). This study incorporated some items concerning the general attitudes of young people towards violence (e.g. “Violence undoubtedly belongs to human nature”, and some items pertaining to the use of violence (e.g., “We use violence for the fun of it”).

From Tillmann et al. (2000) we adopted the items for self-practiced violence (e. g. “In the last six month, how often did you had a fight?”). Internal consistencies for these scales were: physical violence (Alpha = .88), psychological violence (Alpha = .81) and delinquency (Alpha = .82). The third approach to violence and aggression was derived from Little et al. (2000). This approach differentiates forms (overt vs. relational) and functions (dispositional, relational, instrumental) of aggressive behavior. Several items were derived from scales that operationalize this approach.

The selected items of the questionnaire were explicitly discussed within a national frame of the researcher groups (ZUMA Mannheim, University of Bielefeld, University of Halle) and shared with the Israeli cooperation partner. To elicit a Hebrew ver-

sion of the questionnaire, which is conforming to international requirements, the questionnaire has been translated from English into Hebrew and back into German. Cross-cultural differences and problems were detected and solved. A pilot study was carried out in some classes with the same age-groups to refine wording and possible comprehension problems. Following this procedures the questionnaire was finalized and ready to deliver.

The current study consists of seven main variables, of which some are unidimensional and others are multidimensional. The variables selected are derived from a larger survey conducted on the current Israeli and German samples. The variables were selected to meet the concerns of the current study, i.e., to explore the differences between adolescents in the Germany and Israel on attitudes, opinions, and conductance of violent and aggressive acts, their involvement in physical activity, and the pattern of relations between attitudes and participation in physical activity and attitudes towards aggression and violence, and personal involvement in such acts.

After items were derived and administered to the adolescents in the two countries, principal component analyses followed by factor analysis using oblimin rotation were performed for the Israeli and German samples separately. The derivation of the number of factors was determined by an *eigenvalue* > 1.0 criterion. Factor loadings smaller than .40 were excluded from each factor they loaded on. Once this procedure was completed two experts in methodology and exercise sciences read and selected the items, which remained after completion of the exclusion process. The selected items were those, which loaded on the same factors in the two samples. In general, both the number of factors and the items, which loaded on them, were quite similar, though in cases not in the same sequence. The number of factors for each variable in the study, and their percent of accounted variance are presented in Table 1. The final selection of items, factors' names, and Alpha internal consistency coefficients for the unified sample are presented in Table 2.



*Table 1: Summary of EFA original principle component analysis Using Oblimin Rotation in the Israeli and German samples.*

Variable	# of factors	% of variance accounted for
<b>Attitude toward violence</b>		
Israel	1	49.70
Germany	1	51.74
<b>Opinions about violence</b>		
Israel	1	67.31
Germany	1	58.17
<b>Perceived own aggressive behaviors*</b>		
Israel	1	64.34
Germany	1	60.67
<b>Aggressive behaviors</b>		
Israel	3	61.81
Germany	4	68.79
<b>Violent behaviors</b>		
Israel	3	66.48
Germany	3	63.45
<b>Opinions about PE and sport</b>		
Israel	3	62.97
Germany	2	53.50

\* Many items on the two factors resulted in loadings < .30.

Table 2: Final solution for scale construction based on Commonalities between Israeli and German samples.

Variable	Dimension	# of items	$\alpha$ -coefficient
Attitude toward violence*	one	4	.65
Opinions about violence*	one	4	.79
Perceived own aggressive	one	5	.72
Aggressive behaviors*	Threats/physical verbal ag-	6	.83
	Revenge	3	.69
	Ignorance	1	--
Violent behaviors*	Conduct physical damage	8	.85
	Annoyance	3	.75
	Teasing and fighting	2	.63
Perceived PA importance**	one	4	.77
Opinions about PE and sport*	Practice/competitiveness	2	.42
	Fun and involvement	2	.19

\* Each item is rated on a 4-rating scale ranging from 1 ("false") through 2 ("mostly false"), and 3 ("mostly true") to 4 ("true"). \*\* Each item is rated on a ten-point continuum ranging from 1 ("not important") to 10 ("very important").

*Attitude toward violence.* The scale consists of four items such as "our life is regulated by nothing but violence," "violence is part of human nature," and "violence is something normal, since it happens everywhere."

*Opinion about violence.* The scale consists of 4 items, which pertain to the role of violence in everyday life. Sample items are: "violent behavior is the only way to let off steam," "we are only taken notice of if we are violent," and "violent behavior is the only way to measure our strength."

*Perceived own Aggressive behaviors.* This scale contains five items, which describe one's own aggressive behaviors. Each item begins with the anchor, "I am a kind of person who" and ends with the behaviors: "kicks and punch others" "says mean things to others" "threatens others," "tells others I won't be their friend anymore" and "gossip and spreads rumors".

*Aggressive behaviors.* This scale consists of three dimensions, which describe aggressive behaviors conducted when one is angry, frustrated or wishes badly to achieve goals. The first dimension, "threats, physical, and verbal aggression" contains six items such

as, “I threaten others to get what I want” and “to get what I want, I say mean things to others.” The second dimension, “revenge” consists of three items, such as, “when I am threatened by someone, I threaten back” and “if others have angered me, I strike out (kick, hit, and punch) at them”. The last dimension, “ignorance” consisted of one item, “when I am angry at others, I ignore them” with four-point grades similarly to the other dimensions.

*Violent behaviors.* This scale has three dimensions, which pertain to violent behaviors: (a) conductance of physical damage, (b) “annoyance” and (c) “teasing and fighting”. The first dimension consisted of eight items, such as “damage things belonging to others on purpose”, “bring weapons (guns, knives, irritant gas, etc) along to School” and “steal things or money”. The second dimensions contain three items such as “annoy or provoke a teacher” throw things on others” and “annoy, pelt or bombard someone during a class.” The third dimension has two items “tease others or make fool of them” and “swear at others.”

*Perceived sport importance.* This scale consists of one-factor comprising four items, which stress the importance of sport and physical activity to health and functioning. Items are in the form of statements such as “doing sport in general is important for me” and “physical education classes are important for me”.

*Opinions about sport.* This variable consists of two dimensions: (a) practice-competitiveness, and (b) fun and involvement.” Practice-competitiveness relies on two items: “in sport you need to be ready to practice even if you do not feel like doing so” and “competition undoubtedly is part of sport”. Fun and involvement had also two items: “having fun is more important to me than being successful” and “physical activity that is not very strenuous also counts as sport”.

### Procedure

After permission, the selected schools were asked to provide three classes (one from each grade; 6th, 8th, 10th). Several students who were trained as teachers administered questionnaires during physical education classes with the presence of a school teacher. Anonymity was secured in that students have not provided names.

### Statistical Analysis

The dependent variables in the study were clustered into three categories corresponding to their theoretical relevance. These categories were: (a) opinions and attitudes toward violence, (b) Aggressive and violent behaviors, and (c) Perception of and involvement in physical activity. Within each of the three clusters were variables, which share common content and factor loadings. Each of these clusters of variables was subjected to multiple analysis of variance (MANOVA) using the variables within clusters as dependent measures, and nation, gender, age-category, socio-economic status (SES), and physical activity as independent measures. Paired t-tests were performed

on the variables within each cluster when significance main or interactive effects reached  $p < .05$ . In a large sample as the one we used in this study, one should consider the magnitude of the effect size as the main source of effect rather than the significance level per-se. Thus, standardized effect sizes (ES) were computed to estimate the magnitude of the effects, and avoid the reliance on significance level. Effect sizes were  $(X_i - X_j)/S_p$ , where  $X_i$  and  $X_j$  are the respective means of the two populations, and  $S_p$  is their pooled standard deviation. Pearson bi-variate correlations were computed to test the relation between violent-aggressive attitudes and actions and physical activity.

## 4 Results

### Opinions and attitude towards violence

Nation's effect,  $F(2, 5729) = 6.90, p < .00$  revealed lower rates given to attitudes and opinions toward violence and aggression by Israeli's than by German adolescents. German believe more than Israeli adolescents that violence is normal and inherited in human life ( $M = 1.96, SD = 0.69$  vs.  $M = 2.12, SD = 0.64$ , respectively;  $ES = .23$ ), and that violence is a means to survive and achieve goals ( $M = 1.56, SD = 0.60$  vs.  $M = 1.70, SD = 0.61$ , respectively,  $ES = .23$ ). One should note that adolescents of both countries selected mainly the "false" and "mostly false" responses on the two factors.

In both nations, older adolescents endorsed more violent opinions and attitudes than younger adolescents  $F(2, 5729) = 3.24, p = .04$ . On average older adolescents believe violence is inherited in human beings more than the younger adolescents ( $M = 1.96, SD = 0.64$  vs  $M = 2.12, SD = 0.67$ , respectively,  $ES = .24$ ), and in violence as a means for survival ( $M = 1.57, SD = 0.58$  vs.  $M = 1.69, SD = 0.62$ , respectively;  $ES = .19$ ). Females less than males endorsed these attitudes,  $F(2, 5729) = 3.14, p = .04$ , though these differences were marginal ( $M = 1.94, SD = 0.62$  vs.  $M = 2.16, SD = 0.69$ , respectively;  $ES = .32$  for violence inherited in human nature, and  $M = 1.50, SD = 0.52$  vs.  $M = 1.78, SD = 0.65$ , respectively,  $ES = .43$  for violence as a means for survival). SES was also found to be a significant factor,  $F(4, 458) = 4.83, p < .00$ . Endorsement of violent opinions increased gradually with decreases in SES.

The MANOVA resulted in nation by age-category significant effect,  $F(2, 5729) = 3.18, p = .04$ . Both Israeli and German older adolescents endorse violent opinions more than their younger counterparts. However the standardized differences between the Israeli and German aged groups were somewhat different: The ESs between the Israeli and German young adolescent and old adolescent on "opinion about violence" were 0.21 and 0.16, respectively, indicating increase similarity with age increase. With respect to "attitudes toward violence," the ESs were 0.26 and 0.11, respectively. These results indicate that Israelis and Germans become more similar to each other in their opinions about the functionality of violence in everyday life as they become older, more than their beliefs about the nature of violence within the human nature. In

both countries, however, opinions about violent human nature and its functionality increase with age. Also, the age-category by gender effect resulted in a significant effect,  $F(4,11,458) = 3.62, p < .03$ .

Males adolescents endorse opinions about the nature of violence more than females as they become older: ESs = .28 vs. .24, respectively. These differences are smaller with respect to the functionality of violence: ESs = .24 vs. .20, respectively. One should note that females perceive violence as functional in everyday life less than males do, and age increase does not change these opinions and attitudes much at all.

### Aggressive and violent behaviors

Aggressive and violent behaviors consist of seven categories: perceived own behaviors, threats-physical-verbal assaults, revenge, physical damage, annoyance, ignorance, and teasing-fighting. The MANOVA results revealed significant ( $p < .05$ ) effects for nation, age category, gender, SES, and nation by age-category interaction.

The nation effect,  $F(7,5634) = 8.64, p < .00$ , and post-hoc independent  $t$ -test revealed that German perceive their own behaviors as more aggressive than Israeli adolescents ( $M = 1.67, SD = 0.50$  vs.  $M = 1.49, SD = 0.53$ , respectively; ES = .34), and use more annoyance behaviors ( $M = 1.86, SD = 0.99$  vs.  $M = 1.65, SD = 0.90$ , respectively; ES = 0.21). In contrast Israeli adolescents tease and fight more than their German counterparts ( $M = 2.48, SD = 1.16$  vs.  $M = 2.27, SD = 1.12$ , respectively; ES = .18). No differences between adolescents in the two countries were obtained in the use of threats – physical or/and verbal aggression ( $M = 1.39$ ), Revenge ( $M = 2.10$ ), conductance of physical damage ( $M = 1.24$ ), and ignorance ( $M = 2.45$ ). Adolescents in both countries use more “ignorance”, “teasing and fighting” or “revenge” behaviors than the other three violent categories. On average all responses were within the “false” to “mostly false” response categories.

Age-category significant effect,  $F(7, 5634) = 4.25, p < .00$ , followed by independent  $t$ -tests revealed that overall, older adolescents reported higher rates of aggressive and violent actions than younger adolescents. Significant ( $p < .05$ ) differences, however, were obtained only on behaviors such as “revenge” ( $M = 2.15, SD = 0.72$  vs.  $M = 2.05, SD = 0.75$ ; ES = .13), conductance of physical damage ( $M = 1.27, SD = 0.54$  vs.  $M = 1.21, SD = 0.48$ ; ES = .11), annoyance ( $M = 1.92, SD = 1.01$  vs.  $M = 1.58, SD = 0.83$ ; ES = .34), and teasing and fighting ( $M = 2.46, SD = 1.17$  vs.  $M = 2.22, SD = 1.10$ ; ES = .20). No age differences were obtained for perceived aggression ( $M = 1.39$ ), and ignorance ( $M = 2.46$ ).

The gender effect,  $F(7, 5634) = 2.12, p = 0.4$ , revealed that males perceived and reported higher occurrence of six of the seven categories than females: perceived aggression ( $M = 1.67, SD = 0.55$  vs.  $M = 1.52, SD = 0.47$ ; ES = .27), threats – physical – verbal aggression ( $M = 1.46, SD = 0.55$  vs.  $M = 1.32, SD = 0.41$ ; ES = .25), revenge ( $M = 2.27, SD = 0.75$  vs.  $M = 1.95, SD = 0.68$ ; ES = .43), conductance of

physical damage ( $M = 1.34$ ;  $SD = 0.63$  vs.  $M = 1.56$ ,  $SD = 0.80$ ;  $ES = .41$ ), and teasing and fighting ( $M = 2.54$ ,  $SD = 1.20$  vs.  $M = 2.19$ ,  $SD = 1.05$ ;  $ES = .29$ ). Females more than males use ignorance ( $M = 2.49$ ,  $SD = 0.95$  vs.  $M = 2.41$ ,  $SD = 0.98$ ;  $ES = .08$ ). The SES significant effect,  $F(28, 20\ 315) = 2.40$ ,  $p < .00$ , revealed that as SES decreases, aggression and violent behaviors increase. Adolescents with very low and low SES tease and fight ( $M = 3.02$  and  $M = 2.65$ , respectively), use revenge ( $M = 2.45$  and  $M = 2.20$ , respectively), annoyance ( $M = 2.52$  and  $M = 1.95$ , respectively), conduct physical damage ( $M = 1.97$  and  $M = 1.26$ , respectively), and use threats – physical and verbal ( $M = 1.71$  and  $M = 1.45$  respectively) much more than their high and very high SES counterparts.

The nation by age-category interaction was significant,  $F(7, 5634) = 2.64$ ,  $p = .01$ . German adolescents reported committing more violent and aggressive behaviors than Israeli adolescents in all categories though it should be noted that the prevalence for committing such acts is low. Also, the differences between the two age-categories remained stable within both cultures, i.e., the older adolescents perceived their own aggressive behaviors as higher, and used more “revenge” type responses, as well as annoyance. The younger adolescents cause slightly more physical damage, and substantially more teasing and fighting behaviors than their older counterparts. Both age-categories were found to be equal in using threats and verbal aggression.

#### Perception of and involvement in physical activity

The MANOVA pertaining to the three factors entitled perceptions of and involvement in physical activity (i.e., perceived importance, practice/competitiveness, and fun/involvement), revealed several significant ( $p < .01$ ) effects. Nation effect,  $F(3, 5711) = 13.42$ ,  $p < .00$ , was the strongest among them. Independent  $t$ -tests revealed Israeli adolescents perceive physical activity as more important than their German counterparts ( $M = 7.33$ ,  $SD = 2.20$  vs.  $M = 6.42$ ,  $SD = 2.05$ ;  $ES = .41$ , and view it more in terms of practice and competitiveness ( $M = 3.09$ ,  $SD = 0.78$  vs.  $M = 2.87$ ,  $SD = 0.76$ ;  $ES = .28$ ), but were similar in their views on fun and involvement ( $M = 2.90$ ,  $SD = 0.69$ ). Since age-category and nation by age-category resulted in non-significant effects, these findings are evident across the adolescent’s years.

Gender significant effect,  $F(3, 5711) = 7.89$ ,  $p < .00$ , and subsequent  $t$ -tests resulted in males perceiving physical activity as more important than females ( $M = 7.11$ ,  $SD = 2.15$  vs.  $M = 6.53$ ,  $SD = 2.13$ ;  $ES = .27$ ), placing higher value on practice and competitiveness ( $M = 3.09$ ,  $SD = 0.78$  vs.  $M = 2.87$ ,  $SD = 0.76$ ;  $ES = .28$ ), but were equal in fun and involvement associated with physical activity and sport ( $M = 2.88$ ,  $SD = 0.69$  vs.  $M = 2.94$ ,  $SD = 0.69$ ).

The SES significant effect,  $F(12,15\ 110) = 4.07$ ,  $p < .00$ , resulted from a declined importance of physical activity as SES lowers, and higher value placed by lower SES adolescents for practice and competitiveness, but similar perceptions of fun and in-

volvement. In addition, the nation by gender by age-category resulted in a significant interaction effect,  $F(3, 5711) = 3.92, p = .01$ .

The 3-way interaction shows a similar trend in both the Israeli and German samples; males place more importance on physical activity and sport than females, but this is more pronounced in the younger age-category (11-14 years) than the older age-category (15-18 years). In the Israeli sample however, the ratings were higher than in the German samples for both males and females in both age categories. Similar trend was evident for "practice/competition". Males place more importance on practice and competitiveness than females, and this trend remains similar for gender in the older age, though the mean ratings for both males and females decline with age. In contrast, physical activity for fun and involvement is similar in males and females, with slightly higher ratings given by males than females in the Israeli sample, but higher ratings given by German females than their male counterparts. In the German sample, females in both age-categories, value fun and involvement more than males in contrast to the Israeli sample.

#### Physical activity, attitudes, aggression, and violent behaviors

To further link exercise engagement and violent and aggressive attitudes and behaviors in both samples, additional MANOVAs were performed, using nation, gender, age-category, SES, and engagement in formal exercise activities outside the school curriculum as independent variables, and attitude toward violent/aggressive and such actions as dependent measures. Of 6 155 cases, only 103 (1.7 %) could not be classified as either physically active or non-active. Of the 6 052 valid cases, 56.7 % were not physically active and 41.7 % were active.

The first MANOVA pertained to attitude towards violence in life and opinion about attitude. Two effects resulted in significant differences: (1) activity,  $F(2, 5770) = 4.77, p = .008$ . Though significant, the differences between the non-active and active adolescents were quite marginal. Non active adolescents had a slightly more positive attitude toward violence than active adolescents ( $M = 2.07, SD = 0.66$  vs.  $M = 1.99, SD = 0.67$ ;  $ES = .12$ ), and positive opinions about its functionality ( $M = 1.65, SD = 0.57$  vs.  $M = 1.59, SD = 0.61$ ;  $ES = .09$ ); and (2) nation by activity interaction, which is presented in Figure 2 and 3.

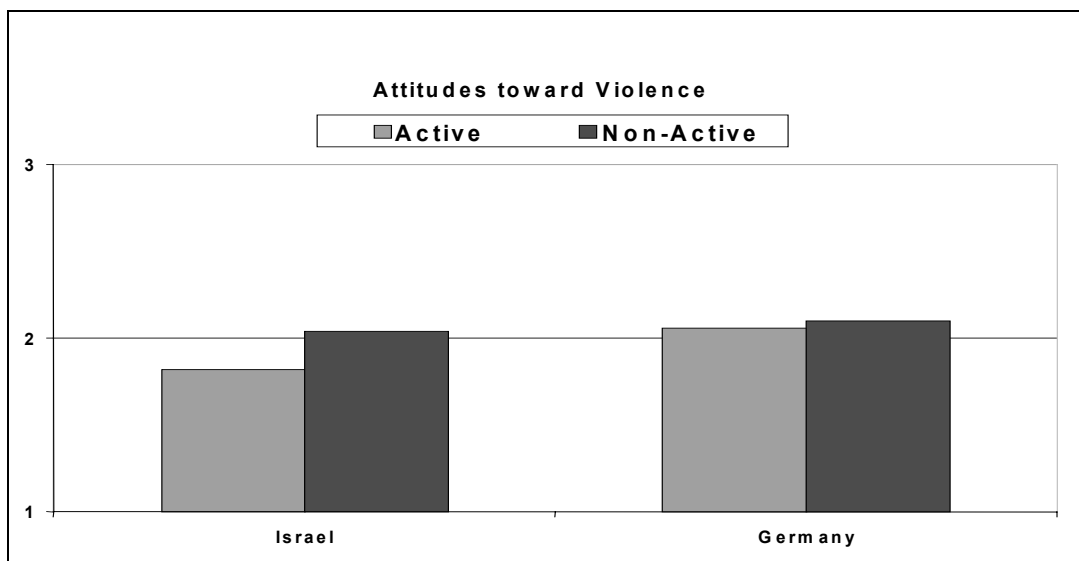


Figure 2: Means of attitude and opinion about violent behaviors and its functionality in Israeli physically active and non-active adolescents.

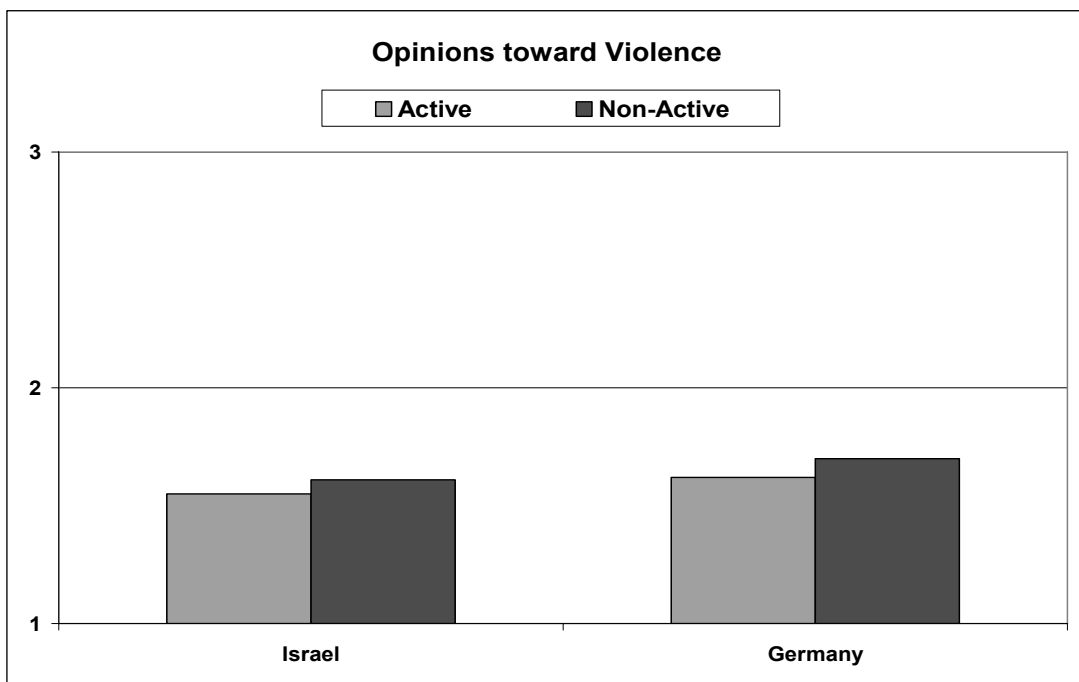


Figure 3: Means of attitude and opinion about violent behaviors and its functionality in German physically active and non-active adolescents.



Attitudes towards violence, i.e., perceptions about its integral part of human nature, is higher in non-active than in active adolescents, more so in Israeli than in German adolescents. Opinion about its functionality is higher in non-active adolescents, and the differences between active and non-active adolescents are equal in both countries. The analysis performed on violent and aggressive behaviors revealed activity effects,  $F(7, 5671) = 4.11, p < .00$ , and nation by activity effect,  $F(7, 5671) = 2.65, p = .01$ . The activity effect resulted from very slight differences between active and non-active adolescents, i.e., non-active ones were engaged more than active ones in annoyance, teasing and fighting and conductance of physical damage. They were equal in perceiving their own aggressive behaviors, using threats and verbal aggression, revenge, and ignorance type of responses. The nation by activity interaction is presented in Figure 4 and 5.

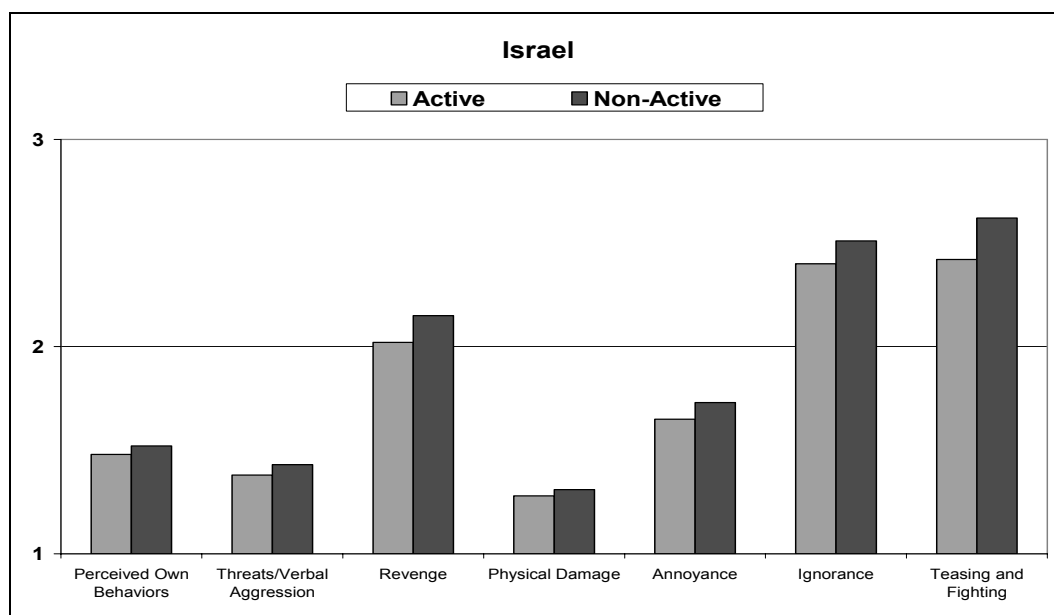
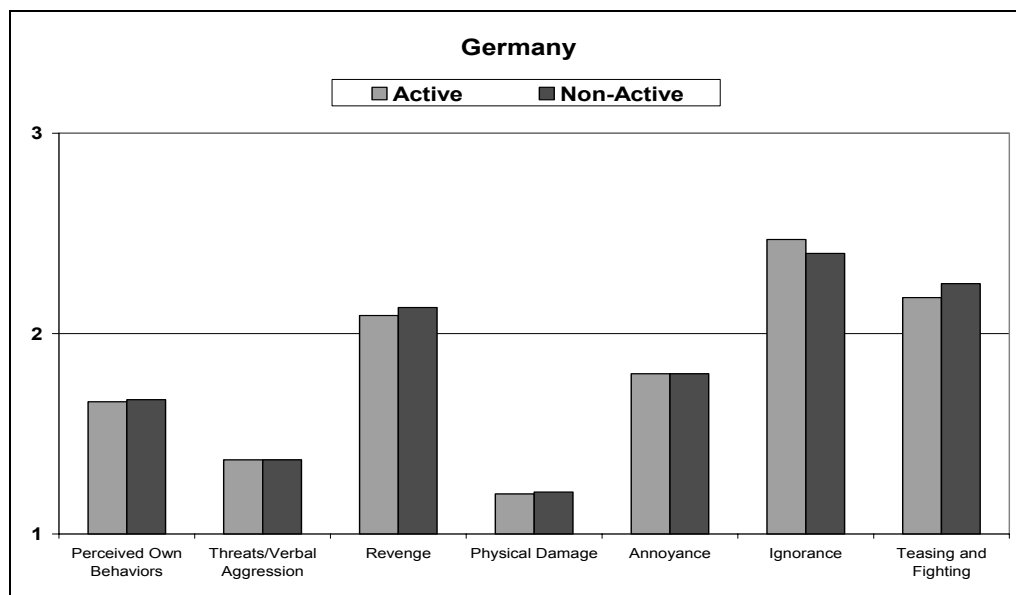


Figure 4: Means of Israeli adolescents active and non-active in exercising on aggressive and violent behaviors.



*Figure 5: Means of German adolescents active and non-active in exercising on aggressive and violent behaviors.*

German active and non-active adolescents reported very similar behaviors, except two: non-active ones use less ignorance and more teasing and fighting behaviors than active ones. In contrast, non-active adolescents conduct more violent behaviors than their active counterparts in all categories, except physical damage. Both German and Israeli adolescents refrain from conducting physical damage and use threats and verbal aggression, either active or not.

Finally, bi-variate correlations were computed between attitudes towards sport and physical activity, and attitudes and conductance of aggressive and violent actions. These correlations are presented in Table 3 for both German and Israeli samples. Though significance emerged from sample sizes, the magnitude of the correlations indicates clearly a lack of relationship between attitudes about physical activity and its aims, and violent behaviors in adolescents. The correlations among the variables in both nations were lower than 0.10 (cp. Table 3).

## 5 Discussion

The current survey has incorporated large German and Israeli samples of younger and older adolescents to elicit data on the opinions and attitudes they hold on aggressive and violent actions, their involvement in such actions, and their opinions and involvement in physical activity. Furthermore, the survey was aimed at examining the

mediating effect that physical activity may have on aggressive and violent acts as reported by these adolescents.

Surveys conducted in Israel on youth within the last 20 years (Harel et al., 1997; Benbenishty et al., 1998; Horowitz & Amir; Horowitz et al., 1990) indicated that the prevalence of adolescent students to be a victim of aggression and violence ranges between 25-60%, dependent on gender and severity. Indeed the majority of aggressive acts were cursing and other verbal assaults, pushing, threatening and such, but slapping, stealing were also present; less frequent were very violent actions such as stabbing. Similar surveys in Germany (Holtappels et al., 1999; Pfeiffer & Wetzels, 1999) indicate lower prevalence rates of such actions, though slight increase in aggressive acts and affiliation with gangs were noted. Previous surveys sought to present alarming data on adolescents' delinquent behaviors in the Israeli and German cultures, not accounting for physical activity involvement affecting such actions.

Though physical activity was found to reduce delinquent behaviors (Donnelly, 1981; Hastad et al., 1984; Melnick et al., 1988), it was also found to increase anti-social behaviors (Sherif et al., 1961, 1967). Conflicting findings were also reported in that rigorous physical activity reduced the prevalence of daily life aggression (Bushman et al., 1999), violent acts of criminal adolescents (Trulson, 1986), increased abiding by rules, delay gratification, honor authority (McPherson, 1981), and self control (Eldar, 1999). On the other hand, engagement in competitive sports resulted in conducting more violent behaviors (Young, 1990), aggressive actions (Valliant et al., 1981), and holding aggressive values. Furthermore, aggression was believed to be transferable from one situation to another, thus learning aggression in sport transfers in higher prevalence of aggression in daily life (Bredemeier, 1994). It should be noted however, that most of the studies were of micro scale orientation, and thus were of limited generalization to the adolescent population. The transfer or inhibition of violence and aggression from a particular sport or activity may be evident, but such findings are limited and depend on the convenient sample and the sport group. These usually fail to represent the range of activities adolescent population is engaged in. The limited scope of these studies' findings within the psychosocial environment necessitated a larger scale orientation of inquiry on the relationship between involvement in physical activity and behaviors within and outside the school environment. Both German and Israeli adolescents live in societies of large-scale immigration, ethnographic diversity, and mixed westernized but also oriental influences.

*Table 3: Bivariate correlations between perceived importance of exercise and its aims (practice, competition, fun and involvement) and attitudes toward violence and aggressive/violent actions in Israeli and German samples.*

perceived actions of aggression/violences	Israel (N = 2 636)			Germany (N = 3 490)		
	perceived sport importance	practice/competitiveness	Fun/involvement	perceived sport importance	practice/competitiveness	Fun/involvement
perceived own aggression	-.09 **	-.02	-.04 *	-.02	.09 **	-.06 **
Threats/verbal aggression	-.05 *	-.01	-.06 **	-.02	.05 **	-.06 **
Revenge	-.00	.03	-.07 **	-.00	.11 **	.08 **
Ignorance	-.01	-.02	.00	-.01	.05 *	.00
domestic violence	-.06 **	-.02	-.05 *	-.00	.06 *	-.07 **
Annoyance	-.05 *	.00	-.04 *	.00	.09 **	-.08 **
physical damage	.12	.04	.05	.02	.01	.01
Teasing/fighting	-.11 **	-.05 *	-.02	.06 **	.04 *	-.04 *
Attitude-violence (human nature)	-.05	.04 *	-.05 *	.01	.16 **	-.06 **
Opinion-violence (functionality)	-.03	.03	-.06 **	.02	.16 **	-.10 **

\*  $p < .05$  \*\*  $p < .01$

Overall, despite several significant cultural effects, mainly due to sample size, the effect sizes attributed to cultural and age differences were small. The vast majority of younger and older adolescents hold opinions that aggression and violence are not required for life goal attainment, though some increase in holding such opinions was noted as adolescents mature; less so in females. Furthermore, though some minor culture differences were noted, the most of the adolescents in both cultures refrain from engaging in violent and/or aggressive acts. In fact “ignorance” is practiced more than any other harmful behavior when adolescents encounter aggression-evoking situations. As adolescents grow, more of them are engaged in acts such as revenge,

physical damage, annoyance, and teasing and fighting, though not to an alarming degree. These behaviors are more prevalent, however, in adolescents of lower SES strata, who use more physical and verbal means of aggression and violence.

Cultural similarities in perceived importance of physical activities and its specific goals (i.e., practice/competitiveness and fun/involvement) were also evident with some expected gender differences; males placing more value than females on competitiveness but equal value on physical activity. Despite these attitudes, only 41.7% of them reported that they were physically active in any physical activity outside the school environment. However, the differences in the opinions, attitudes and engagements in aggression and violence between active and non-active adolescents were marginal. Despite the marginal differences it was evident that both Israeli and German adolescents refrain from conducting physical damage and use of threats and verbal aggression in and outside their school environment. Furthermore, the correlations between physical activity engagement and the aggression and violence variables were extremely low, indicating no link or causality between the two.

In general, the findings show more similarities than differences between German and Israeli adolescents. Emphasis should be put on the result, that the inclination towards violence among the youth samples in both countries is limited. The study further confirms some gender and socio-economic status effects, but the prevalence of engagement in violence and aggression was more in line with the German statistics (Holtappels et al., 1999; Pfeiffer & Wetzels, 1999) than in the recent alarming Israeli statistics (Harel et al., 1997; Benbenishty et al., 1998; Horowitz & Amir; Horowitz et al., 1990). Israelis like their German counterparts, tend to refrain from aggressive and violent behaviors and possess values, which do not encourage their use. Given the complex nature there is no evidence for a positive or inverse relationship between physical activity and sport participation on the one hand and aggression and violence on the other hand. It should be noted, however, that this conclusion is based on macro-level analysis. As the individual sports with their codified rules differ from each other and vary in their aggressive nature, an analysis of the individual sports could produce more differentiated results.

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