



## Multiple risk behaviors and suicidal ideation and behavior among Israeli and Palestinian adolescents

Yossi Harel-Fisch<sup>a</sup>, Ziad Abdeen<sup>b</sup>, Sophie D. Walsh<sup>c,\*</sup>, Qasrowi Radwan<sup>b</sup>, Haya Fogel-Grinvald<sup>a</sup>

<sup>a</sup>International Research Program on Adolescent Well-being and Health, School of Education, Bar Ilan University, Ramat Gan 52900, Israel

<sup>b</sup>Al-Quds Nutrition and Health Research Department, Al Quds University, Jerusalem, Palestinian Authority

<sup>c</sup>Department of Criminology, International Research Program on Adolescent Well-being and Health, Bar Ilan University, Ramat Gan 52900, Israel

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### ABSTRACT

Based conceptually on Problem Behavior Theory, Normalization Theory and theories of adolescent ethnic identity formation this study explores relationships between individual and cumulative multiple risk behaviors and suicidal ideation and behavior among mid-adolescents in three different populations in the Middle East. Data from the 2004 Health Behavior in School-Aged Children in the Middle-East (HBSC-ME) study included 8345 10th-grade pupils in three populations: Jewish Israelis (1770), Arab Israelis (2185), and Palestinians in Gaza and the West Bank (4390). We considered risk behaviors and factors including tobacco use, bullying, medically-attended injuries, excessive time with friends, parental disconnectedness, negative school experience, truancy and poor academic performance. Substantial population differences for suicidal tendency and risk behaviors were observed, with notably high levels of suicidal ideation and behavior among Arab-Israeli youth and higher levels of risk behaviors among the Jewish and Arab-Israeli youth. For all populations suicidal tendency was at least 4 times higher among adolescents reporting 4+ risk behaviors, suggesting that similar psychosocial determinants affect patterns of risk behaviors and suicidal tendency. Results highlight the importance of understanding cultural contexts of risk behaviors and suicidal ideation and behavior.

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### Introduction

Israeli figures from the 2008 report on suicide from the Central Bureau of Statistics, between 1996 and 2004, show attempted suicide rates among children and youth at 14.5 per 100,000 for children aged 10–14 years, and 124.2 per 100,000 for adolescents aged 15–24. Suicide was recorded as the second most frequent cause of death among boys aged 15–24 (following unintentional injuries) and the third highest for girls. In line with international literature, girls (13–18 years) attempted suicide more than boys (e.g. at a rate of 8:1 for 14 year olds), although fatal suicides were more prevalent for boys (at a rate of 6:1 for 15–24 year olds). The importance of examining suicidality among young people in the Middle East is reinforced by statistics showing that while 17% of suicides among Jewish Israelis were of youth, this figure stood at 45% for Arab Israelis (Sheleg Mey-Ami, 2010). However, while formal statistics focus on the actual suicide attempt, such attempts can be seen as the end-point of a continuum that begins with suicide ideation, followed by planning and preparing for suicide and then involving threats, attempts, attempts with injury and

completed suicide (Barrios, Everett, Simon, & Brener, 2000; O'Carroll, Harel, & Waxweiler, 1993; Steele & Doey, 2007).

The paper stems from previous research showing that adolescent suicidal ideation and behavior are an expression of mental distress associated with living a daily life saturated with risk behaviors and a lack of resiliency resources and examines this relationship across three different cultural contexts. We examine the prevalence of suicidal ideation and behaviors as well as involvement in a number of risk behaviors and factors (tobacco use, injuries, bullying, truancy, low school grades, negative school experiences, excess time spent with friends and parental disconnectedness) among three different populations living next to each other in the Middle East (Jewish and Arab Israelis and Palestinians from the West Bank and Gaza). The relationship between risk behaviors and suicidal behavior has been studied up until now in mainly Western societies and this paper is an opportunity to explore the suicide–risk behavior relationship for adolescents in different cultural contexts.

#### *Risk behaviors and suicidal behaviors among adolescents*

Risk behaviors have been seen as behaviors that compromise well-being and health and can be considered as risk factors for

\* Corresponding author. Tel.: +972 522877609.

E-mail address: [sophiewalsh@gmail.com](mailto:sophiewalsh@gmail.com) (S.D. Walsh).

personally, socially or developmentally undesirable outcomes (Jessor, 1998, p. 2). Risk taking behaviors can be seen as a vehicle through which adolescents start to make the transition to adulthood (Pickett et al., 2002), as an opportunity for challenge and excitement (Chassin, Presson, Morgan-Lopez, & Sherman, 2007; Dworkin, 2005 and, as such, part of a normative developmental process). Experimentation can also be seen to serve developmentally appropriate functions (Maggs, Almeida, & Galambos, 1995), such as facilitating peer interactions, teaching youth to negotiate adult behaviors and enabling identity achievement (Dworkin, 2005).

A Problem Behavior framework in which risk behaviors are considered in a psychosocial framework emphasizes both the costs and benefits of risk behaviors for adolescents (Jessor, 1998). Problem Behavior Theory (Jessor, 1998; Jessor & Jessor, 1977) holds a covariate perspective in which risk behaviors exist in an organized constellation and are strongly correlated. Empirical evidence for a problem behavior perspective (Donovan, Jessor, & Costa, 1993) has suggested that covariance of risk behaviors is particularly evident with problem risk behaviors (e.g. drug use, alcohol, delinquency and sexual precocity) and characteristic of deviance prone youngsters.

Suicidal behavior has been linked to a variety of risk factors such as age, sex, ethnicity, psychiatric disorders, psychological factors, family factors, life stressors, sexuality, firearms and biological factors and to a number of protective factors such as positive family and peer relationships (for a comprehensive review see Steele & Doey, 2007). Empirical work in the area of suicidal ideation and behavior has also strengthened a problem behavior framework in which suicidal behavior has been seen to be related to a variety of health and social behaviors such as sexual activity, drug, alcohol and cigarette use, injuries, physical fighting, knife carrying, shop lifting and gambling (Afifi, Cox, & Katz, 2007; Flisher et al., 2000; King et al., 2001). Daily smoking has been found to be related to suicide attempts (Makikyro et al., 2004; Riala et al., 2007) and with suicidal ideation in high school boys (Park, Schepp, Jang, & Koo, 2006). School violence, both for the perpetrator and for the victim has been associated with both suicidal ideation and attempts (Brunstein Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Rigby & Slee, 1999).

The current study also examines the relationship between suicidal ideation and behavior and time with friends, parental disconnectedness and school experiences. This follows research showing that social connectedness (Rew, Thomas, Horner, Resnick, & Beuhring, 2001), family attention, positive feelings toward school, parental expectations, and caring exhibited by family and adults (Pharris, Resnick, & Blum, 1997) and a range of adverse childhood experiences (Dube et al., 2001) are also related to suicidal ideation and behavior. Suicidal thoughts and attempts have been related to a lack of positive peer relations and social support (Bearman & Moody, 2004; D'Attilio, Campbell, Lubold, Jacobson, & Richard, 1992). Parental relations and support have also been seen as directly and indirectly (as a buffer or protective factor) related to suicidal ideation and behavior (Cheng & Chan, 2007; Sun & Hui, 2007). As such, it is clear that it is not only health risk behaviors but also a lack of protective factors (e.g. social, familial and environmental) that are related to suicidal tendencies. School achievement has been seen both as a protective factor (Fergusson, Beautrais, & Horwood, 2002) against suicidal tendencies and also as directly related to suicide attempts (Angst & Clayton, 1998; Lewis, Johnson, Cohen, Garcia, & Noemi Velez, 1988) and ideation (Ulusoy & Demir, 2005).

Previous literature has examined the relationship between particular risk behaviors and suicidal behavior but, in addition to the wide range of risk factors (risk behaviors – smoking, bullying

and injuries; social and family relations – excess time with friends, disconnectedness from parents and negative school experience; and low school achievement – truancy and low grades), this paper also adds a new dimension of examining the cumulative impact of risk behaviors. As such, it was hypothesized that not only would individual risk behaviors and factors be related to suicidal behavior but that a cumulative impact would be observed whereby suicidal tendency would be related to the number of risk behaviors (regardless of which ones in particular).

#### *Suicidal behavior and risk behavior in a cultural context*

For the first time, this paper explores the social epidemiology of suicidal ideation and behavior among Israeli and Palestinian adolescents. Previous literature examining the relationship between suicidal ideation and behavior and risk and protective factors among diverse populations (Borowsky, Resnick, Ireland, & Blum, 1999; Pharris et al., 1997; Rew et al., 2001) emphasizes a need to examine suicidal tendencies in different cultural realities. The unique reality of the Middle East in which groups of adolescents live side by side geographically but in very distinct cultural, economic and political realities makes this particular dataset unusual and important. Recent statistics emphasize the social, welfare and economic differences between the Jewish and Arab populations in Israel (Israel Central Bureau of Statistics, 2010) in areas including life expectancy, infant mortality, unemployment, affluence and poverty (Chernichovsky & Anson, 2005). It has also been suggested that Arab adolescents are growing up within a more collectivist culture (Sagy, Orr, Bar-On, & Awwad, 2001). Previous research (Harel-Fisch et al., 2010) has pointed to the relationship between exposure to armed conflict in the Middle East and risk behaviors such as tobacco use and youth violence and the importance of understanding developmental processes in such a politically complex region.

The three adolescent populations share a close geographical proximity but very diverse cultural realities. Each cultural reality has its own cultural values, and norms of age appropriate behavior. What is interesting with these three populations is that they represent a mixture of cultural and sovereign realities: Jews and Arabs living under Jewish sovereignty and Palestinians living in the Palestinian Authority. While the two Arab populations may share cultural values, the adolescents are growing through a developmental phase in very different societal and political realities.

Over the past 15 years, a growing body of literature has examined what has been termed the “normalization thesis” (Parker, 2005; Parker, Williams, & Aldridge, 2002). Parker et al. (Parker, 2005; Parker et al., 2002), in their conceptualization of the normalization thesis, studied substance use among young people in England and found that more than 50% had experimented with some kind of illicit drug use before the age of 18. In addition, Parker (1997) noted that as opposed to being part of deviant and delinquent identities, substance users in England are “well-adjusted and successful goal-oriented, non-risk taking young persons, who see drug taking as part of their repertoire of life” (Parker, 1997, p. 25). For them, illegal drug consumption had become a “normal” feature of post-modern life.

The normalization thesis has examined whether the use of cannabis and to a lesser extent other drugs (e.g. amphetamines, ecstasy and LSD) has become normalized (Duff, 2005; Hammersley, Khan, & Ditton, 2002; Riley, James, Gregory, Dingle, & Cadger, 2001). More recently, it has been suggested that the normalization process may be applied to adolescents' binge drinking (Pape, Rossow, & Storvoll, 2008). Normalization refers to the situation in which risk behavior has or is in the process of entering mainstream youth culture, attracting ordinary, and well-adjusted as opposed to

deviant youth. Although the normalization thesis has been used to examine substance use, we would like to suggest that it may be a useful framework within which to examine cross-cultural differences in the relationship between risk behaviors and suicidal behaviors. On the basis of the normalization thesis we would assume that frequency and degree of particular risk behaviors has a cultural basis. As such, in a particular cultural reality a certain degree of, for example smoking or truancy, would be seen as normative and not part of a risky life style. Consequently, we would expect such behaviors to be related to emotional distress and suicidal ideation and behavior primarily in societies in which they are not considered normative.

Adolescence is an age of identity formation (Erickson, 1968) of which ethnic identity formation is a pivotal element (Phinney, 1989). Phinney (1989) in her analysis of the development of ethnic identity suggests that in adolescence concerns about ethnicity shift from learning one's ethnic label to understanding the significance of one's ethnic membership. This is due to increased cognitive abilities, more interactions outside their community and greater concern with appearance and social life. Developmental ethnic identity theory assumes that what is crucial for good adjustment is not just a strong sense of ethnic belonging but rather ethnic identity achievement, i.e. a *positive attitude* toward their ethnic group (Phinney & Ong, 2007). Exploration and commitment (Marcia, 1980) must be accompanied by a positive internal ethnic identity representation. Positive ethnic identity development has been found to be pivotal in understanding self esteem and adjustment among late adolescents (Phinney & Alipuria, 1990). The three different groups of adolescents in this study represent three different contexts in which adolescents are developing an ethnic identity: Jewish adolescents in a Jewish country, Arab adolescents living in a Jewish country, and Palestinian adolescents living in the Palestinian Authority. Phinney (1989) in her examination of ethnic identity development emphasizes the complexity of developing a positive and integrated identity for minority adolescents. This study gave us the opportunity to examine whether the challenges for specific adolescent populations would lead to potential vulnerability for distress and risk behaviors. The study includes two majority populations (Jewish Israelis in Israel and Palestinians in the West Bank and Gaza) and one minority group (Arab Israelis in Israel). We hypothesized that ethnic identity formation would be particularly complex for Arab Israelis developing an ethnic identity as a minority group in a Jewish country leading to higher levels of suicidal ideation and risk behavior.

#### *Aims of the current study*

The current research includes three major aims: a) to explore levels of suicidal ideation and behavior and a variety of risk behaviors (tobacco use, bullying, medically-attended injuries, excessive time with friends, parental disconnectedness, negative school experience, truancy and poor academic performance) among adolescents in three different cultural realities: Jewish and Arab adolescents in Israel and Palestinian adolescents in Gaza and the West Bank; b) to examine whether the previously studied relationship between diverse risk behaviors and suicidal tendencies would be similar across the populations; c) To explore whether a cumulative impact would be observed whereby suicidal tendency would be related to the number of risk behaviors (regardless of which ones in particular).

It was hypothesized that higher levels of suicidal and risk behaviors would be found among the Arab adolescents in Israel due to the complexity of ethnic identity formation for Arab adolescents in a Jewish country than among the other two groups. It was also hypothesized that the relationship between risk and suicidal

behavior would be found in all three populations. However, according to the normalization thesis, risk behaviors would be connected to emotional distress and suicidal ideation and behavior primarily in societies in which they are not normative (i.e. in populations with low frequencies of such behaviors). Jewish Israeli adolescents are growing up in a Western society in which certain risk behaviors may be considered normative. However, due to the limited previous research on cultural context of risk behaviors and suicidal ideation, this element of the research was exploratory.

#### **Method**

The study is based on survey data from the 2004 Health Behavior in School-Aged Children in the Middle-East (HBSC-ME) cross-cultural study. The 2004 HBSC-ME survey is modeled according to the World Health Organization's HBSC cross-national survey in European and North American countries, implemented every 4 years to nationally representative samples of 11, 13 and 15 years old school children. The HBSC-ME was developed as a new Middle-East HBSC cross-cultural research network tailored to the unique circumstances and needs of the Palestinian-Israeli region. The overall goal of the HBSC study is to "gain insights into and to increase our understanding of health behaviors, life styles and their context in young people" (Currie et al., 2002). Major categories of variables addressed in the survey include: family culture and parental support, school experience and school climate, community involvement, leisure-time activities, health related risk taking behaviors (e.g., smoking, drug use, nutrition, physical activity, violence), physical and mental health, exposure to armed conflict, and socioeconomic inequality (Harel-Fisch & Abdeen, 2003).

The HBSC-ME is conducted by research teams at Bar Ilan and Al-Quds universities, in full collaboration with education ministries of both Israel and the Palestinian Authority. Both Palestinian and Israeli research teams subjected the research proposal to IRB clearance at their respective ministries of education. The research protocol and draft questionnaire was approved by the respective offices of the Chief Scientists. Due to the anonymous nature of the questionnaire "passive" parental consent was required and obtained. The granted approvals were followed by full cooperation and collaboration of the Ministries in sampling the schools and acquiring access for data collection.

#### *Target populations and samples*

The HBSC-ME target populations included children ages 11 (6th grade), 13 (8th grade) and 15 (10th grade) enrolled in Palestinian and Israeli public schools during the 2003–4 school year belonging to 3 populations: Jewish Israelis, Arab Israelis and Palestinians living in the West Bank and Gaza. Representative samples were drawn from each of the populations, using identical sampling techniques: Using the lists of classes and schools obtained from the Israeli and Palestinian ministries of education, a random stratified two-stage cluster sample was obtained from each individual population. Stratum included region, type of school and grade level. The sample unit was a classroom, with a maximum of 2 classrooms within each sampled school allowed (see Harel-Fisch & Abdeen, *in press* for detailed sampling methods). All students enrolled in a sampled classroom and present at data collection day were included as sampled children. To overcome possible clustering effects due to classroom and school shared experiences, a design effect was introduced so that a minimum of 1500 sampled students per age group per population were sought (Harel-Fisch & Abdeen, 2003; Roberts et al., 2007). The resulting cross-cultural sample included 24,935 students, of them 5255 Jewish Israelis, 6033 Arab Israelis 7430 Palestinians living in the West Bank and 6217

Palestinians living in Gaza. The suicidal ideation and behavior questions were only asked to 10th-grade students – limiting this paper to a sub-sample including 8345 students aged 15: 1) Jewish Israelis (1770), 2) Arab Israelis (2185), and 3) Palestinians living in Gaza (2008) and the West Bank (2382). The Palestinian adolescents from Gaza and the West Bank were combined together using population weights (60% Gaza).

Demographic data can be seen in Table 1. Socioeconomic level was assessed through an index created by six perceptions: at least one parent does not have a job; my family is not well off; I always go to school/bed hungry; I don't sleep in my own bed; I don't have a comfortable space for homework; I don't have my own bedroom. Socioeconomic level was considered High for 0–1 perceptions; medium for 2–3 and low for 4–6 perceptions (for full details of demographic index items see Harel-Fisch & Abdeen, in press). Academic achievements were assessed by 4 perceptions: Perceiving school perception as one of the best in the class, grades on recent report card being A's or B's, no fails on report card and not feeling pressured from school work. As can be seen in Table 1, significant differences were seen for the three populations on socioeconomic level, academic achievement and percentages of children living with both parents. Jewish Israeli children reported significantly lower levels of self perceived academic achievement and living with both parents, than both Arab populations. Jewish Israelis reported highest socioeconomic levels and Palestinian adolescents reported the lowest.

#### Data collection and questionnaire

Data were collected using a standardized in-class self-administered questionnaire. The HBSC-ME questionnaire is an adaptation of the WHO-HBSC instrument used in Europe with some additional packages (e.g. exposure to armed conflict) measuring topics of unique regional interests and needs. After the adaptation to the Middle East, including double cross-translation to Arabic and Hebrew, the survey instrument was tested in two independent preliminary studies (2002, 2003) using in-class administration as well as focus-group discussions to demonstrate reliability and validity (Harel-Fisch & Abdeen, 2003).

#### Measures

Suicidal ideation and behavior: The HBSC uses a package of 4 items measuring suicidal ideation and behavior that were developed by a panel of experts led by Harel, O'Carroll and Waxweiller

during the development of the USA Centers for Disease Control's Youth Risk Behavior Surveillance System (YRBS) (Harel-Fisch, Molcho, & Tilinger, 2004; O'Carroll et al., 1993). The measures represent a "Guttman type scale" depicting 4 levels of severity in the suicidal ideation and behavior continuum, all relating to a 12 month recall period, from "have you seriously thought of attempting suicide", through "have you made a plan to commit suicide", followed by "did you make a suicide attempt" and finally, "...did you make a suicide attempt that resulted in an injury or overdose that needed medical attention...". All 4 items are dichotomous (Yes or No) and have been well-used and validated (O'Carroll et al., 1993). The elements rest on Fishbein and Ajzen's (1975) Theory of Reasoned Action which emphasizes attitudes and behavior, with intention to act as connecting between them.

Pilot testing of these measures during the early nineties demonstrated a clear "gateway gradient" in which respondents who planned, also thought, those who attempted also planned and thought and those who were injured also attempted, planned and thought. However, it is important to note that results can deviate from a traditional Guttman scale since, while it is theoretically derived, there can also be numbers of impulsive, unplanned suicide attempts, characteristic of adolescent suicide attempts (Baca-Garcia et al., 2005; Spirito, Brown, Overholser, & Fritz, 1989). In the current study, only the first three items were used due to the small numbers who answered positively on "suicide attempt which resulted in an injury" and since the item also behaved similarly to the previous category (suicide attempt).

#### Risk behavior

- 1) Health related risk behaviors: a) Smoking: "How often do you smoke tobacco at present?" (1 – every day, 4 – I do not smoke); b) Bullying: "How often have you taken part in bullying another student at school in the past couple of months?" (1 – I have not bullied another student at school in the past couple of months, 5 – several times a week); and c) Injuries: "During the last 12 months how many times were you injured and had to be treated by a doctor or nurse?" (1 – I was not injured in the past 12 months, 5 – 4 times or more);
- 2) Negative influence in social settings: a) Excess time spent with friends: "How many evenings per week do you usually spend out with your friends?" (0 – no evenings, 7 – 7 evenings); b) Parental disconnectedness: "How easy it is for you to talk to your mother/father about things that really bother you?" (1 – very easy, 5 – don't have or see this person); and c) Negative school

**Table 1**  
Gender, socioeconomic level, academic achievements and living situation.<sup>a</sup>

		Jewish Israeli		Arab Israeli		Palestinians	
		N	%	N	%	N	%
Gender	Boy	747	42.2%	916	41.9%	2159	49.2%
	Girl	1023	57.8%	1269	58.1%	2231	50.8%
Socioeconomic level	High	1536	88.1%	1535	72.2%	2221	50.9%
	Medium	187	10.7%	480	22.6%	1641	37.6%
	Low	20	1.1%	112	5.3%	498	11.4%
Academic achievements	0–1 Perceptions	1216	69.5%	1310	61.2%	2689	61.7%
	2–3 Perceptions	523	29.9%	798	37.3%	1589	36.4%
	4 Perceptions	10	.6%	31	1.4%	82	1.9%
Live with parents	Neither	18	1.1%	24	1.2%	36	.9%
	One parent	219	12.9%	112	5.5%	233	5.7%
	Both parents	1460	86.0%	1908	93.3%	3843	93.5%

<sup>a</sup> Differences between the three populations were significant for all demographic variables.

experiences: "I feel that I 'belong' at this school" (1 – strongly agree, 5 – strongly disagree)

- 3) School Achievement: a) Truancy: "How many days did you skip classes or school this school year?" (1 – no days, 5 – 4 or more days); and b) School grades: "How many failing grades did you have in your last report card?" (1 – I didn't fail at all, 5 – I failed in 4 or more subjects)

For each measure a dichotomous variable was created, as has been common practice in HBSC research (Harel-Fisch et al., in press; Pickett et al., 2002) along the following lines: Smoking (currently smoking at least once a week); Bullying (more than once or twice); injuries (1+ times); Excess time with friends (5–7 evenings); Parental disconnectedness (difficult or very difficult with both parents); Negative school experiences (disagree or strongly disagree); Truancy (2+ days); School grades (2+ fails). The eight available risks were combined into an un-weighted multiple risk behavior frequency score (ranging from 0 to 8).

### Statistical analysis

#### The epidemiology of suicidal ideation and behavior and of risk behaviors

Gender-specific prevalence rates (per 100) of suicidal ideation (thinking and planning) and behavior (attempts) during the past 12 months were calculated for each of the 3 target populations together with their respective 95% confidence intervals. In addition, prevalence rates of the 8 individual risk behaviors were calculated and presented in a similar manner together with the distribution of the cumulative scale of risk behaviors ranging from 0 to 5 or more.

#### Bi-variate relations between risk behaviors and suicidal outcomes

Independent logistic regression was used to examine each individual risk behavior as a potential predictor of suicidal ideation,

planning and attempts respectively. The relationships between multiple risk behaviors and suicidal ideation and behavior were analyzed using multivariate logistic regression in which respondents with zero risk behaviors were used as the reference group. Odds ratios with 95% confidence intervals were calculated for each gradient in the cumulative risk behavior scale, including ORs adjusted for gender where appropriate.

## Results

### Epidemiology

Table 2 presents prevalence rates per 100 for suicidal ideation, planning and behavior and for eight individual risk behaviors, as well as chi-square statistics and *P*-values for the differences between the three populations.

- a) *Suicidal ideation, planning and behavior.* As can be seen in Table 2, the highest suicidal ideation and behavior rates were found for Arab-Israeli youth. Rates for Arab-Israeli adolescents were 20.5/17.2/17.7 (ideation/planning/behavior) per 100, for the Jewish Israelis 17.4/9.1/7.8 per 100) and for Palestinians 14.5/11.2/11.4 per 100. Chi-square tests showed significant differences between all three populations for suicidal ideation and attempt and significant differences between Arab Israelis and the other two groups on suicidal planning.

While no gender differences were found in the Jewish Israeli population for suicidal ideation, planning or attempts, Arab Israeli and Palestinian boys were found to have significantly higher suicidal planning and behavior rates as compared to girls from their respective populations (see Table 2).

- b) *Individual risk behaviors.* As can be seen in Table 2, Chi-square tests showed significant differences between the three populations for all risk behavior variables. Significant differences

**Table 2**  
Frequency distributions (per 100) of respondents reporting the presence of selected health risk behaviors and suicide.

Variable	Jewish Israeli			Arab Israeli			Palestinians			
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	
<b>Health risk behavior</b>										
Type	Pearson $\chi^2$									
Smoking	104.05***	19.6 (1.5)	14.3 (1.1)	16.6 <sup>a</sup> (.9)	16.8 (1.2)	3.0 (.5)	8.8 <sup>a</sup> (.6)	14.1 (.8)	2.1 (.3)	8.0 <sup>a</sup> (.4)
Bullying	59.64***	30.4 (1.7)	14.9 (1.1)	21.6 <sup>a</sup> (1.0)	42.6 (1.7)	22.6 (1.2)	31.0 <sup>a</sup> (1.0)	37.1 (1.0)	25.5 (.9)	31.2 <sup>a</sup> (.7)
Excess time with friends	421.56***	24.9 (1.6)	25.3 (1.4)	25.1 (1.0)	19.0 (1.3)	4.2 (.6)	10.3 <sup>a</sup> (.7)	12.2 (.7)	1.2 (.2)	6.6 <sup>a</sup> (.4)
Parental disconnectedness	11.99**	21.5 (1.5)	16.4 (1.2)	18.5 <sup>a</sup> (.9)	16.5 (1.3)	15.0 (1.0)	15.6 (.8)	11.7 (.7)	18.1 (.8)	15.0 <sup>a</sup> (.5)
Negative school experiences	9.55**	17.6 (1.4)	14.2 (1.1)	15.7 <sup>a</sup> (.9)	19.4 (1.4)	15.5 (1.0)	17.1 <sup>a</sup> (.8)	14.4 (.8)	13.9 (.7)	14.1 (.5)
Truancy	1482.2***	60.3 (1.8)	60.6 (1.5)	60.5 (1.2)	36.1 (1.6)	19.1 (1.1)	26.1 <sup>a</sup> (1.0)	23.8 (.9)	1.7 (.3)	12.5 <sup>a</sup> (.5)
School grades	260.17***	28.1 (1.7)	25.1 (1.4)	26.4 (1.1)	43.0 (1.7)	40.2 (1.4)	41.3 (1.1)	23.7 (.9)	20.8 (.9)	22.3 <sup>a</sup> (.6)
Injuries	190.72***	52.6 (1.8)	35.0 (1.5)	42.4 <sup>a</sup> (1.2)	62.2 (1.6)	51.6 (1.4)	56.0 <sup>a</sup> (1.1)	46.6 (1.1)	29.9 (1.0)	38.1 <sup>a</sup> (.7)
<b>No. of behaviors</b>										
0	446.11***	8.8 (1.0)	14.6 (1.1)	12.1 <sup>a</sup> (.8)	9.2 (1.0)	18.8 (1.1)	14.7 <sup>a</sup> (.8)	18.5 (.8)	32.8 (1.0)	25.8 <sup>a</sup> (.7)
1		19.3 (1.4)	27.6 (1.4)	24.1 <sup>a</sup> (1.0)	21.3 (1.4)	30.7 (1.3)	26.7 <sup>a</sup> (.9)	30.1 (1.0)	34.9 (1.0)	32.5 <sup>a</sup> (.7)
2		27.3 (1.6)	25.8 (1.4)	26.4 (1.0)	25.0 (1.4)	27.0 (1.2)	26.1 (.9)	23.6 (.9)	22.7 (.9)	23.2 (.6)
3		20.6 (1.5)	16.2 (1.2)	18.1 <sup>a</sup> (.9)	20.6 (1.3)	14.7 (1.0)	17.2 <sup>a</sup> (.8)	15.0 (.8)	7.4 (.6)	11.1 <sup>a</sup> (.5)
4		12.3 (1.2)	9.0 (.9)	10.4 <sup>a</sup> (.7)	12.9 (1.1)	5.8 (.7)	8.8 <sup>a</sup> (.6)	7.9 (.6)	1.7 (.3)	4.7 <sup>a</sup> (.3)
5+		11.6 (1.2)	6.8 (.8)	8.9 <sup>a</sup> (.7)	11.0 (1.0)	3.1 (.5)	6.4 <sup>a</sup> (.5)	4.9 (.5)	.5 (.1)	2.7 <sup>a</sup> (.2)
<b>Suicide</b>										
Suicide ideation	35.26***	15.8 (1.4)	18.6 (1.3)	17.4 (.9)	21.7 (1.4)	19.7 (1.2)	20.5 (.9)	15.0 (.8)	14.0 (.8)	14.5 (.6)
Suicide planning	63.92***	9.5 (1.1)	8.7 (.9)	9.1 (.7)	19.1 (1.4)	15.9 (1.1)	17.2 <sup>a</sup> (.9)	12.7 (.8)	9.9 (.7)	11.2 <sup>a</sup> (.5)
Suicide attempt	87.76***	8.6 (1.1)	7.1 (.8)	7.8 (.7)	22.5 (1.5)	14.3 (1.0)	17.7 <sup>a</sup> (.9)	13.1 (.8)	9.8 (.7)	11.4 <sup>a</sup> (.5)
<b>N</b>		<b>747</b>	<b>1023</b>	<b>1770</b>	<b>916</b>	<b>1269</b>	<b>2185</b>	<b>2159</b>	<b>2231</b>	<b>4390</b>

\*\*\**P* < 0.001, \*\**P* < 0.01.

<sup>a</sup> Significant differences between boys and girls.

were shown between all three groups for truancy, poor performance at school, injuries and excess time with friends, with Jewish Israelis reporting the highest levels of truancy and excess time with friends and Arab Israelis reporting the highest levels of poor school performance and injuries. Jewish Israelis showed significantly higher levels of smoking and parental disconnectedness but significantly lower levels of bullying than the other two groups. Arab Israelis showed significantly higher levels of negative school experiences than Palestinians.

Between 22 and 31 percent of all youth were engaged in bullying others 3 times or more during the previous couple of months. These rates are quite high as compared with the average rate in Europe which stands at 12 per 100 and ranges across 40 countries from 2% for Sweden to 27% for Latvia (Currie et al., 2008, pp. 163–164). Unintended injuries ranged from 42.4% (Jewish Israelis) to 56% (Arab Israelis). These injury rates are remarkably high across all the target populations as compared to the levels of unintended injuries in Europe which were found to range from 27% for Macedonia and Poland to 57% for Spain, with a mean of about 40% (Currie et al., 2008) which places the Arab-Israeli rate very high as compared with 45 countries in Europe and North America. One quarter of Jewish Israeli students reported spending excess time with friends after school and in the evenings as compared to less than 7% of Palestinians. Similarly, truancy behavior was reported by 61% of Jewish Israelis as compared to 13% and 26% for Palestinians and Arab Israelis.

As can be seen in Table 2 gender differences were seen for smoking, bullying and injuries in all three populations, for excess time with friends and truancy in the two Arab populations, and negative school perceptions in the two Israeli populations. Boys consistently showed higher levels of all these risk behaviors. For example, gender differences can be seen in smoking levels in the Arab populations whereby the ratio of boys to girls reporting

smoking is approximately 7 to 1. Boys showed more involvement in bullying in all populations ranging from 1.4 to 1 in the Palestinian population to 2 to 1 among Jewish Israelis.

c) *Cumulative risk behaviors.* The findings presented in Table 2 suggest that multiple risk behaviors are more common among Israeli youth – both Jewish and Arab as compared to Palestinians. For example, 63.8% of Jewish Israelis, and 58.5% of Arab Israelis reported 2 or more risk behaviors as compared to 41.7% of Palestinian youth. Similarly, the percent of students reporting 5 or more risk behaviors is about 8.9% for Jewish and 6.4% for Arab Israelis but only 2.7% for Palestinians. As can be seen in Table 2, Chi-square tests showed significant differences between the three populations for cumulative risk behaviors.

As to gender differences in multiple risk behavior patterns, as can be seen in Table 2, there are more girls reported zero risk behaviors (between 14.6% and 32.8%) as compared to boys (8.8–18.5%), and a higher proportion of boys that report 5 or more risk behaviors (4.9–11.6%) as compared to the proportion of girls (.5–6.8%).

*The relationship between individual risk behaviors and suicidal ideation, planning and behavior*

As can be seen from Table 3, adjusted ORs (with 95% confidence intervals) that describe risks for suicidal ideation, planning and attempt for individual risk behaviors were almost all significantly larger than 1.0 (unity) for both genders across all populations. Risk estimates that were consistently higher across the three populations for suicidal ideation, planning and behavior included smoking (especially for Arab Israeli and Palestinian girls), parental disconnectedness (especially for Arab girls in both populations), negative school experiences, bullying (especially for Arab-Israeli boys and

**Table 3**  
Logistic regression models examining bi-variant relations between individual health risk behaviors and suicide.<sup>b</sup>

Health risk behavior	Jewish Israeli			Arab Israeli			Palestinians		
	Boys	Girls	Total <sup>a</sup>	Boys	Girls	Total <sup>a</sup>	Boys	Girls	Total <sup>a</sup>
<b>Suicide ideation</b>									
1. Smoking	3.7 (2.4, 5.8)	3.9 (2.6, 5.8)	3.8 (2.8, 5.1)	2.5 (1.7, 3.8)	7.1 (3.5, 14.5)	3.3 (2.3, 4.6)	2.4 (1.8, 3.2)	5.5 (2.9, 10.2)	2.8 (2.1, 3.6)
2. Bullying	1.6 (1.1, 2.5)	1.5 (1.0, 2.3)	1.6 (1.2, 2.1)	2.6 (1.8, 3.7)	2.4 (1.8, 3.4)	2.5 (2.0, 3.2)	1.6 (1.2, 2.1)	1.7 (1.3, 2.3)	1.7 (1.4, 2.0)
3. Excess time with friends	1.5 (1.0, 2.4)	1.5 (1.0, 2.1)	1.5 (1.1, 2.0)	1.7 (1.1, 2.5)	1.4 (0.7, 2.7)	1.6 (1.1, 2.3)	1.9 (1.4, 2.7)	1.1 (0.4, 3.3)	1.8 (1.3, 2.5)
4. Parental disconnectedness	3.7 (2.4, 5.8)	2.3 (1.5, 3.4)	2.8 (2.1, 3.8)	2.9 (2.0, 4.4)	3.2 (2.2, 4.5)	3.1 (2.4, 4.0)	1.8 (1.3, 2.5)	3.8 (2.9, 4.9)	2.8 (2.3, 3.4)
5. Negative school experiences	2.4 (1.5, 3.8)	3.3 (2.2, 5.0)	2.9 (2.1, 3.9)	2.7 (1.9, 4.1)	2.8 (2.0, 4.0)	2.8 (2.2, 3.6)	2.8 (2.1, 3.8)	2.2 (1.6, 3.1)	2.5 (2.0, 3.1)
6. Truancy	2.7 (1.7, 4.2)	2.4 (1.7, 3.5)	2.5 (1.9, 3.4)	2.1 (1.5, 3.0)	2.7 (2.0, 3.8)	2.4 (1.9, 3.1)	3.6 (2.8, 4.7)	3.3 (1.6, 6.9)	3.6 (2.8, 4.6)
7. Poor performance at school	2.3 (1.5, 3.6)	2.1 (1.4, 3.0)	2.2 (1.7, 2.9)	1.6 (1.1, 2.2)	1.3 (1.0, 1.8)	1.4 (1.1, 1.8)	1.6 (1.2, 2.1)	1.4 (1.1, 1.9)	1.5 (1.2, 1.8)
8. Injuries	1.0 (0.7, 1.5)	1.5 (1.1, 2.1)	1.3 (1.0, 1.6)	1.8 (1.2, 2.5)	1.6 (1.2, 2.2)	1.7 (1.3, 2.1)	1.6 (1.3, 2.1)	1.3 (1.0, 1.7)	1.5 (1.2, 1.8)
<b>Suicide planning</b>									
1. Smoking	3.2 (1.9, 5.4)	3.8 (2.3, 6.3)	3.5 (2.4, 5.0)	2.5 (1.6, 3.8)	5.0 (2.5, 10.0)	3.0 (2.1, 4.3)	2.5 (1.8, 3.4)	6.1 (3.2, 11.5)	2.9 (2.2, 3.9)
2. Bullying	1.9 (1.1, 3.2)	1.5 (0.8, 2.7)	1.7 (1.2, 2.5)	2.2 (1.6, 3.2)	2.7 (1.9, 3.8)	2.5 (1.9, 3.2)	1.5 (1.2, 2.0)	1.3 (1.0, 1.8)	1.5 (1.2, 1.8)
3. Excess time with friends	2.1 (1.2, 3.5)	1.7 (1.0, 2.7)	1.8 (1.3, 2.6)	2.0 (1.3, 3.0)	2.0 (1.0, 3.9)	2.0 (1.4, 2.8)	1.8 (1.3, 2.6)	2.6 (1.0, 6.7)	1.9 (1.4, 2.6)
4. Parental disconnectedness	2.7 (1.6, 4.6)	2.0 (1.2, 3.3)	2.3 (1.6, 3.3)	2.6 (1.7, 4.0)	3.4 (2.3, 4.9)	3.0 (2.3, 4.0)	1.5 (1.0, 2.2)	3.5 (2.6, 4.8)	2.4 (1.9, 3.1)
5. Negative school experiences	1.8 (1.0, 3.3)	2.3 (1.3, 3.9)	2.0 (1.4, 3.0)	2.8 (1.9, 4.2)	2.6 (1.8, 3.8)	2.7 (2.1, 3.6)	2.9 (2.1, 4.0)	2.0 (1.4, 2.8)	2.4 (1.9, 3.1)
6. Truancy	2.4 (1.3, 4.3)	1.8 (1.1, 3.0)	2.1 (1.4, 3.0)	2.2 (1.5, 3.2)	3.3 (2.3, 4.6)	2.7 (2.1, 3.5)	3.5 (2.7, 4.6)	2.8 (1.2, 6.6)	3.4 (2.6, 4.5)
7. Poor performance at school	3.0 (1.8, 5.0)	2.3 (1.5, 3.7)	2.6 (1.9, 3.7)	1.2 (0.8, 1.7)	1.5 (1.1, 2.1)	1.4 (1.1, 1.7)	1.7 (1.2, 2.2)	1.9 (1.4, 2.6)	1.8 (1.4, 2.2)
8. Injuries	1.0 (0.6, 1.7)	1.8 (1.1, 2.8)	1.4 (1.0, 1.9)	1.8 (1.2, 2.6)	1.6 (1.1, 2.2)	1.6 (1.3, 2.1)	1.6 (1.3, 2.2)	1.6 (1.2, 2.2)	1.6 (1.3, 2.0)
<b>Suicide attempt</b>									
1. Smoking	3.8 (2.2, 6.5)	4.8 (2.8, 8.2)	4.3 (2.9, 6.2)	2.9 (2.0, 4.4)	11.0 (5.4, 22.4)	4.0 (2.9, 5.7)	2.2 (1.6, 3.0)	5.6 (2.9, 10.6)	2.5 (1.9, 3.4)
2. Bullying	2.3 (1.3, 3.9)	2.1 (1.2, 3.9)	2.2 (1.5, 3.3)	2.8 (2.0, 4.0)	2.7 (1.9, 3.8)	2.7 (2.1, 3.5)	1.8 (1.3, 2.3)	1.6 (1.1, 2.1)	1.7 (1.4, 2.0)
3. Excess time with friends	2.3 (1.3, 4.1)	1.9 (1.1, 3.2)	2.1 (1.4, 3.0)	2.2 (1.5, 3.2)	1.6 (0.7, 3.4)	2.0 (1.4, 2.9)	2.2 (1.5, 3.0)	3.2 (1.3, 7.8)	2.3 (1.6, 3.1)
4. Parental disconnectedness	2.4 (1.4, 4.2)	2.5 (1.4, 4.3)	2.4 (1.7, 3.6)	2.8 (1.9, 4.1)	3.0 (2.0, 4.4)	2.9 (2.2, 3.8)	2.0 (1.4, 2.9)	3.0 (2.2, 4.1)	2.5 (2.0, 3.2)
5. Negative school experiences	1.7 (0.9, 3.2)	2.8 (1.5, 5.0)	2.2 (1.4, 3.3)	2.4 (1.6, 3.5)	2.6 (1.8, 3.8)	2.5 (1.9, 3.3)	2.8 (2.1, 3.9)	1.5 (1.0, 2.2)	2.1 (1.7, 2.7)
6. Truancy	2.1 (1.1, 3.7)	1.7 (0.7, 3.0)	1.9 (1.3, 2.8)	2.9 (2.1, 4.1)	3.8 (2.7, 5.5)	3.3 (2.6, 4.3)	4.3 (3.3, 5.7)	2.7 (1.2, 6.4)	4.1 (3.2, 5.4)
7. Poor performance at school	3.4 (2.0, 5.9)	4.1 (2.5, 6.9)	3.8 (2.6, 5.5)	2.0 (1.4, 2.8)	1.8 (1.3, 2.5)	1.9 (1.5, 2.4)	1.9 (1.5, 2.6)	1.9 (1.4, 2.6)	1.9 (1.5, 2.4)
8. Injuries	1.0 (0.6, 1.7)	1.5 (0.9, 2.6)	1.3 (0.9, 1.8)	1.9 (1.3, 2.8)	1.9 (1.3, 2.7)	1.9 (1.5, 2.5)	2.1 (1.6, 2.8)	1.9 (1.4, 2.6)	2.0 (1.7, 2.5)

<sup>a</sup> Odds ratio were adjusted for gender.

<sup>b</sup> Data are given as adjusted odds ratio (95% confidence interval).

girls) and truancy (Table 3). All adolescents, but especially Jewish Israeli were at risk for suicidal attempt if they reported poor performance at school. Yet, no other consistent gender differences were found.

*The relationship between cumulative risk behaviors and suicidal behavior*

The findings regarding the relationship between multiple risk behaviors and the probability of ideating, planning or attempting suicide were significant ( $P < 0.001$  for trend) and consistent across all gender and population groups. As can be seen in Table 4, the probability of suicidal ideation, planning or behavior for adolescents who reported only 2 risk behaviors exceeded 2.0. The Odds Ratios increase dramatically in accordance to the increase in the number of risk behaviors for all 3 populations.

Increased risk for suicide attempts was seen for two or more risk behaviors among the Arab populations (OR > 3) but only four or more for the Jewish Israeli population (OR > 3). For all populations and genders, the risk of suicidal ideation and behavior was 4–13 times higher among adolescents who reported 4 risk behaviors and 9–19 times higher among those who reported 5 or more risk behaviors as compared to those who reported zero. This strong association (with suicidal ideation) is presented graphically in Fig. 1.

In summary, findings suggest that for adolescents living in Israel and the Palestinian authorities, the burden of mental distress that manifests itself through suicidal ideation and behavior is significant in all three populations, with highest levels shown for Arab-Israeli youth. In addition, results demonstrated a significant increase in the probability of suicidal ideation, planning and behavior in parallel to an increase in multiple risk behaviors. This finding was found to be universal across gender and all four target populations.

**Discussion**

This study set out to examine the relationship between a wide range of risk factors, individually and cumulatively, and suicidal

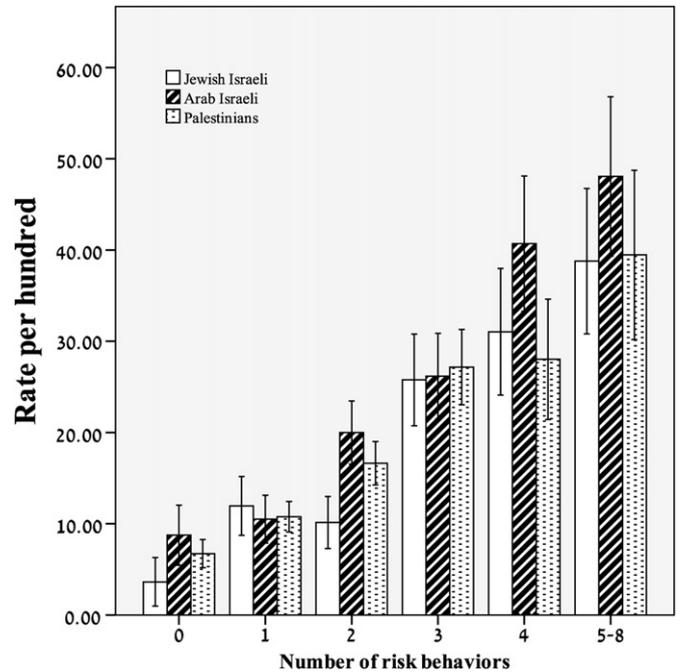


Fig. 1. Percent of students reporting suicidal ideation by the number of risk behaviors, by population (the error bars represent 95% confidence intervals).

ideation, planning and behavior in a unique sample of three groups of adolescents from the Middle East. Findings of the current study show suicidal ideation, planning and behavior levels for the Jewish Israeli youth to be 17.1%, 9.1% and 7.8% respectively which are, interestingly almost identical to the rates found in the 1994–5 HBSC-WHO study of school-aged children (17%, 9%, 6% – Harel-Fisch, Kanny, & Rahav, 1997), but lower than those found in the same study for US 10th grade (27%, 18% 9%). While this study, a first of its kind to examine Palestinian adolescents, shows that

**Table 4**  
Adjusted logistic regression analysis for health risk behaviors and suicide.<sup>b</sup>

No. of health risk behavior	Jewish Israeli			Arab Israeli			Palestinians		
	Boys	Girls	Total <sup>a</sup>	Boys	Girls	Total <sup>a</sup>	Boys	Girls	Total <sup>a</sup>
<b>Suicide ideation</b>									
0 Risk behaviors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1	1.2 (0.4, 3.9)	7.1 (2.1, 23.5)	3.6 (1.6, 8.2)	0.7 (0.3, 2)	1.5 (0.8, 2.6)	1.3 (0.8, 2.1)	1.2 (0.7, 2)	2.1 (1.4, 3)	1.7 (1.3, 2.3)
2	1.2 (0.4, 3.9)	5.8 (1.7, 19.5)	3.2 (1.4, 7.1)	2.4 (1, 5.9)	2.8 (1.6, 4.8)	2.7 (1.7, 4.4)	2.3 (1.4, 3.7)	3.2 (2.2, 4.7)	2.9 (2.1, 3.9)
3	4.3 (1.4, 12.7)	17.2 (5.2, 56.8)	9.9 (4.4, 22)	3.7 (1.5, 9.3)	3.7 (2.1, 6.6)	4 (2.5, 6.5)	4.7 (2.9, 7.6)	5.9 (3.7, 9.3)	5.7 (4.1, 7.9)
4	6 (2, 18.1)	21.4 (6.3, 73)	13 (5.7, 29.6)	5.8 (2.3, 14.7)	10.1 (5.1, 19.7)	8.1 (4.8, 13.6)	4.4 (2.5, 7.6)	10.3 (4.8, 22.2)	6.3 (4.1, 9.5)
5–8 Risk behaviors	7.4 (2.4, 22.4)	36 (10.4, 125)	18.7 (8.2, 43)	8.3 (3.3, 21)	16 (6.9, 37)	11.4 (6.6, 19.9)	7.7 (4.4, 13.7)	30.8 (7.3, 129.3)	10.8 (6.8, 17.3)
<b>Suicide planning</b>									
0 Risk behaviors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1	0.8 (0.2, 3.3)	2.4 (0.7, 8.5)	1.6 (0.6, 4)	1.3 (0.5, 3.8)	2 (1, 4.1)	1.8 (1, 3.3)	1.1 (0.7, 1.9)	2 (1.3, 3.2)	1.6 (1.1, 2.3)
2	1.8 (0.5, 6.4)	2.4 (0.7, 8.7)	2.3 (0.9, 5.5)	2.2 (0.8, 6)	4.5 (2.2, 9)	3.7 (2.1, 6.6)	1.8 (1.1, 3)	3.8 (2.4, 6.1)	2.8 (2, 4)
3	1.7 (0.5, 6.4)	7.3 (2.1, 24.8)	4.1 (1.7, 10)	3.3 (1.2, 8.9)	6.3 (3, 13.1)	5.3 (3, 9.6)	3.8 (2.3, 6.4)	6.2 (3.7, 10.7)	5.3 (3.7, 7.6)
4	3.6 (1, 13.1)	4.3 (1.1, 16.6)	4.4 (1.7, 11.1)	6.9 (2.5, 18.6)	15.6 (7, 34.6)	11.9 (6.4, 21.9)	3.4 (1.9, 6.1)	9.6 (4.1, 22.3)	5.3 (3.3, 8.5)
5–8 Risk behaviors	6.2 (1.8, 22.1)	18.5 (5.3, 65.3)	11.6 (4.7, 28.3)	8 (2.9, 21.7)	21.7 (8.5, 55.1)	14.1 (7.4, 26.9)	7.7 (4.3, 13.8)	26.2 (6.7, 102.1)	11.6 (7, 19)
<b>Suicide attempt</b>									
0 Risk behaviors	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
1	0.2 (0, 1.2)	2.1 (0.6, 7.5)	0.9 (0.4, 2.3)	2 (1.1, 3.7)	1.9 (0.5, 6.9)	2.2 (1.1, 4.2)	2.2 (1, 4.8)	2 (1.3, 3.1)	2 (1.4, 2.8)
2	0.9 (0.3, 2.9)	4.1 (1.2, 13.8)	1.1 (0.4, 2.7)	3.5 (1.9, 6.5)	1.1 (0.3, 4.4)	3.8 (2, 7.1)	3.6 (1.7, 7.6)	3.2 (2, 5)	3.3 (2.3, 4.8)
3	1.7 (0.5, 5.3)	6.7 (2, 22.5)	3 (1.3, 7)	6.9 (3.7, 12.7)	4.8 (1.4, 17)	6 (3.2, 11.4)	5.4 (2.5, 11.8)	4.6 (2.7, 8)	5.9 (4, 8.7)
4	2.6 (0.8, 8.4)	18.1 (5.3, 61.2)	4.3 (1.8, 10.2)	9 (4.7, 17.3)	6.2 (1.7, 22.8)	17.4 (9, 33.7)	16.8 (7.3, 38.4)	12.1 (5.4, 27.1)	9.2 (5.9, 14.6)
5–8 Risk behaviors	3.9 (1.2, 12.1)	22.3 (6.6, 75.9)	8.5 (3.7, 19.9)	15.9 (8, 31.3)	17.3 (4.9, 61.4)	25.5 (12.8, 50.6)	39.9 (15.1, 105)	74.6 (14.8, 376)	17.3 (10.5, 28.6)

<sup>a</sup> Odds ratio were adjusted for gender.

<sup>b</sup> Data are given as adjusted odds ratio (95% confidence interval).

Palestinian youth have similar rates to those found for Jewish Israelis, figures for Arab-Israeli adolescents are noticeably higher. These findings suggest that Arab-Israeli youth are experiencing much higher levels of mental distress, as compared to Palestinian and Jewish Israeli youth, manifested through suicidal tendencies. On an epidemiological level, results in both the Palestinian and Israeli populations support previous literature pointing to high levels of various risk behaviors among adolescents world wide (Laufer, Harel, & Molcho, 2006; Pickett et al., 2002) but particularly high levels of certain risk behaviors, such as injuries and bullying.

A central finding of this study is the replication of previous studies showing a strong and consistent relationship between suicidal ideation and behavior and involvement in other risk behaviors, in this case across three diverse populations. Though relationships were high for most individual risk behaviors, the probability of suicidal ideation and behavior increased dramatically for adolescents who reported multiple risk behaviors. The results highlight that suicide cannot be considered an issue independent of general risk behavior of adolescents. As such, results support Problem Behavior Theory (Jessor & Jessor, 1977) and previous research (Affi et al., 2007; Flisher et al., 2000) pointing to a clustering effect between various risk behaviors/factors among youngsters with destructive life styles. This strong relationship to suicidal ideation and behavior points to the fact that risk behaviors should not only be considered as developmentally appropriate behaviors involved in identity formation, experimentation and assertion of independence, but rather as potentially pointing to high levels of emotional distress. As such, risk behaviors may serve as external “indicators” of internal pain, suffering and risk for suicidal danger. The relationship can be seen between both individual and cumulative risk behaviors. Of particular note was the strong relationship between suicidal ideation, planning and attempts with smoking, truancy and negative experiences at school and at home. In particular, the increased risk for Arab girls for all three suicidal aspects for parental disconnectedness should be emphasized and is discussed below.

Findings also showed the increased association of cumulative risk behaviors with suicidal tendencies. The relevance of cumulative risk, over and above specific risk behaviors and factors is important in understanding negative outcomes and adaptation of adolescents (see Harel-Fisch et al., *in press*). For all populations and genders, the risk for all three suicidal gradients was 3–8 times higher among adolescents who exhibited 4 or more risk behaviors. In addition to several risk behaviors which seem to be of particular significance (e.g. smoking), what seems important is the total number of risk behaviors that are experienced.

The study examined the relationship between risk behaviors and suicidal tendency across three populations. Interestingly, a population difference was noted whereby for Jewish Israelis, especially boys, a certain number of risk behaviors (approximately up to 3) did not lead to an increased risk for suicidal behavior, whereas among the Arab populations, even two or more risk behaviors significantly increased suicidal behavioral risk. These findings may be understood in the light of the “normalization thesis” (Parker, 2005; Parker et al., 2002), which suggests that “risky” or deviant nature of risk behaviors needs to be assessed in a cultural context. The results may suggest that a higher level of cumulative risk behaviors may be considered part of normative development in Jewish Israeli society, as compared with Arab society, and not as a manifestation of a problem behavior life style. Results could suggest that a limited number of risk behaviors is normative or even developmentally appropriate in the identity development of Western adolescent boys.

We also hypothesized that, according to the normalization thesis, individual risk behaviors would not be related to suicidal

behavior in societies in which they are normative. Although frequencies for individual risk behaviors vary across the three populations, it was only levels of truancy (Jewish Israelis), poor school performance (Arab Israelis) and injuries (all three populations) that were above 40%, suggesting that few individual risk behaviors can be considered normative for any of the three populations. While odds ratios for injuries were not high as related to suicidal behavior in any of the three populations and poor school performance was not highly related to suicidal behaviors among Arab Israelis, truancy was still related to suicidal ideation among Jewish Israelis (as well as the Arab populations) suggesting that the normalization theory cannot fully explain the relationship between high frequency risk behaviors and suicidal behavior.

However, results do suggest the particular danger of low frequency risk behaviors as can be seen by looking at the relationship between smoking (and parental disconnectedness) and suicidal behavior among Arab girls (boys reported much higher levels of smoking than girls). Rates of smoking were found to be low among Arab girls, suggesting that smoking is rare (and socially unacceptable) for girls in Arab society, but to have a very significant relationship with suicidal attempts. As such, smoking for Arab girls can be considered a culturally strong risk factor. In general, the findings could highlight the particular vulnerability of adolescents partaking in societally prohibited risk behaviors. Chassin et al. (2007), in their analysis of changing patterns of smoking from 1980 to 2001, stress the cultural context of risk behaviors and how the psychosocial meaning of the behavior may change over time as a function of socio-cultural changes. Results of this study may reflect an Arab culture which is less accepting of female smoking. However, further research is needed to understand these relationships. In addition, higher levels of bullying and injuries across all populations could be a manifestation of the high levels of conflict in the Middle East (Harel-Fisch et al., 2010).

It was hypothesized that Arab-Israeli adolescents would show higher levels of suicidal tendency and risk behaviors. Arab-Israeli adolescents did indeed show higher rates of suicide ideation, planning and attempts than the other populations. The importance of culture and cultural context has been examined both in research on risk behaviors (Arnett & Balle-Jensen, 1993; Piko, Fitzpatrick, & Wright, 2005) and suicidal behavior (Bertolote et al., 2005; Groves, Stanley, & Sher, 2007). Hjelmeland et al. (2006) suggest that there may be a different meaning for suicidal behavior in different countries. In particular, research in Israel and Arab countries has stressed the lower incidence of suicidal behavior among Arab populations (Lubin, Glasser, Boyko, & Barell, 2001; Morad, Merrick, Schwarz, & Merrick, 2005). This has been explained by parameters such as village versus urban life, extended versus nuclear family living, years of education and degree of religiosity (Levav & Aisenberg, 1989; Lubin et al., 2001). Indeed Dublin (1963) found a positive correlation between urbanization and suicide rates. However, in this study, results showed particularly high levels of suicidal ideation and behavior among Israeli Arab boys, a finding which seems to contradict previous literature. This is a worrying finding that demands understanding. Possible explanations may be connected to the fact that adolescent Arab Israelis are trying to consolidate an ethnic identity as a minority (Kwak, 2003; Phinney, 1990; Schwartz, Zamboanga, & Jarvis, 2007) and may be struggling between their identities as Israelis and as Arabs, whereas for Palestinian adolescents their identity as Palestinians is more coherent and thus may involve less turbulence. In addition, it may be that on a personal level, the average Arab-Israeli adolescent may judge his or her daily life in comparison to Jewish Israeli teens with greater opportunities (e.g. financial, academic, social), whereas Palestinian youth may compare themselves to other adolescents in the Arab world. The former comparison can lead to a greater perception of

personal–environment miss-fit creating stress and negative feelings. For the Palestinian teens, the perceptions of personal–environment fit might be less negative.

In contrary to our hypothesis, while Arab-Israeli adolescents did show significantly higher levels of poor school performance, injuries and negative school experiences, Jewish Israelis showed higher levels of smoking, parental disconnectedness, truancy and excess time with friends. We can hypothesize that these differences are due to cultural norms and expectations, such that the more individualistic Western culture evident in Jewish Israelis society (Sagy et al., 2001) may manifest in distancing from parents, more time with friends and less sanctions against (and greater permissiveness toward) truancy and smoking than in Arab culture.

Some gender related cultural differences were also found. Parental disconnectedness was associated with increased risk for suicidal ideation, planning and attempts for Arab (Israeli and Palestinian) girls. Dabbagh (2005) in her book on “Suicide in Palestine” stresses that suicide is seen as a “Western Phenomenon” among Palestinians and goes against religious beliefs, but in her narrative analysis on stories of men and women who attempted suicide, she points to the feelings of the women as feeling controlled by others, many having experienced physical and/or sexual abuse (often by family members) and feeling powerless in their family life. These narratives seem to give support for the finding of the critical role of family in the suicidal behavior of Arab women in the study. Douki, Ben Zineb, Nacef, and Halbreich (2007) in their study of women’s mental health in the Muslim world stress the role of family related variables (such as family honor, virginity, unmarried pregnancy and abuse) in suicidal tendencies of women. Results of the study are also in keeping with Abu-Hijleh (1998), who, in his study on stressful life events and suicidal behavior in Jordanian adolescents, notes that conflict with families, scholastic failure and breaks with close friends are the most frequent events which precipitate suicidal behavior in adolescents.

On a gender level, for most risk behaviors, girls across the populations showed fewer risk behaviors than boys in keeping with previous studies (Brady & Randall, 1999; Rodham, Hawton, Evans, & Weatherall, 2005; Wallace et al., 2003). Boys also showed greater levels of bullying (Veenstra et al., 2005). Arab girls showed lower levels of suicide planning and attempts than boys, which is, in part, explained by the alarmingly high levels of suicide attempts reported by Arab-Israeli boys.

Implications for the results should be considered on the levels of adolescent suicide prevention and intervention. Results suggest that risk behaviors (especially as they accumulate) may be used as “external indicators” or early warning signs, signaling increased risk for suicidal ideation and behavior and, as such, should be incorporated into suicide prevention programs in schools and youth frameworks and brought to the awareness of parents, teachers, counselors, youth workers and other significant adults in young people lives. Findings also suggest that the same psychosocial determinants may affect patterns of risk behavior and suicidal ideation and behavior. As such, intervention programs for suicide prevention should not focus on suicide as a “stand alone” issue but rather should take a wider perspective looking at adolescent health and well-being. Results suggest the need to develop community based intervention programs that target the promotion of well-being as a strategy to reduce both risk behaviors and suicidal ideation and behavior. Results also point to the need to understand the cultural context behind risk behaviors as a whole and suicidal behavior in particular. While this study points to the importance of cultural context and ethnic identity development, much more research is needed to understand the complex culturally-related dynamics involved in adolescent risk behavior. For example, further research is imperative to understand the particularly

worrying findings among Arab-Israeli adolescents and to understand whether they are a result of conflictual ethnic identity formation, restricted opportunities or other culturally specific variables.

There are several limitations to this study that should be mentioned, in particular the cross-sectional nature of the study, which prevents us from being able to determine directionality of relationships. We are left with the question as to whether there is a causal relationship between risk behaviors and suicidal ideation and behavior or whether they are all part of cluster of distress. Longitudinal research could attempt to explore this question. This study examines a limited number of variables. There are additional important potentially related measures such as measures of psychopathology, exposure to trauma and family adversity which would be important to examine in future work. Results also suggest the importance of examining relevant cultural, religious, political and economic variables which may be related to the differences between the populations. In addition, for common health outcomes such as suicide ideation, one should be cautious in inferring that odds ratios provide accurate estimates of relative risk, as odds ratios tend to over-estimate the strength of effects in such situations. However, the strengths of the research (including the cross-cultural examination of risk behaviors, suicidal ideation, planning and attempt and the relationship between them, the large sample, and the first look at the relationship between cumulative risk behaviors and suicide) provide a starting point for continuing research and building positive intervention programs encompassing a broad perspective of adolescent well-being.

To conclude, the study findings show a considerable number of adolescents in all three populations, especially Arab-Israeli adolescents, showing high levels of distress, as reflected in levels of suicide ideation and behavior and numbers of risk behaviors. Results emphasize that a life style characterized by a large number of risk behaviors is associated with suicidal ideation and behavior. Educational frameworks and parents need to be aware that adolescents showing large numbers of risk behaviors may also be experiencing high levels of emotional distress. As such, the findings stress the importance of preventing cumulative risk behaviors and identifying adolescents exhibiting multiple risk behaviors as part of prevention of emotional distress and suicide.

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## References

- Abu-Hijleh, N. (1998). Stressful life events and suicidal behavior in adolescents. *Arab Journal of Psychiatry*, 9, 94–98.
- Affi, T. O., Cox, B. J., & Katz, L. Y. (2007). The associations between health risk behaviours and suicidal ideation and attempts in a nationally representative sample of young adolescents. *Canadian Journal of Psychiatry*, 52(10), 666–674.
- Angst, J., & Clayton, P. J. (1998). Personality, smoking and suicide: a prospective study. *Journal of Affective Disorders*, 51(1), 55–62.
- Arnett, J., & Balle-Jensen, L. (1993). Cultural bases of risk behavior: Danish adolescents. *Child Development*, 64(6), 1842–1855.
- Baca-Garcia, E., Diaz-Sastre, C., Garcia Resa, E., Blasco, H., Braquehais Conesa, D., Oquendo, M. A., et al. (2005). Suicide attempts and impulsivity. *European Archives of Psychiatry and Clinical Neuroscience*, 255(2), 152–156.
- Barrios, L. C., Everett, S. A., Simon, T. R., & Brenner, N. D. (2000). Suicide ideation among US College Students Associations with other injury risk behaviors. *Journal of American College Health*, 48(5), 229–233.
- Bearman, P. S., & Moody, J. (2004). Suicide and friendships among American adolescents. *American Journal of Public Health*, 94(1), 89.
- Bertolote, J. M., Fleischmann, A., De Leo, D., Bolhari, J., Botega, N., De Silva, D., et al. (2005). Suicide attempts, plans, and ideation in culturally diverse sites: the

- WHO SUPRE-MISS community survey. *Psychological Medicine*, 35(10), 1457–1465.
- Borowsky, I. W., Resnick, M. D., Ireland, M., & Blum, R. W. (1999). Suicide attempts among American Indian and Alaska native youth: risk and protective factors. *Archives of Pediatrics and Adolescent Medicine*, 153(6), 573.
- Brady, K. T., & Randall, C. L. (1999). Gender differences in substance use disorders. *The Psychiatric Clinics Of North America*, 22(2), 241–252.
- Brunstein Klomek, A., Marrocco, F., Kleinman, M., Schonfeld, I. S., & Gould, M. S. (2007). Bullying, depression, and suicidality in adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(1), 40–49.
- Chassin, L., Presson, C., Morgan-Lopez, A., & Sherman, S. J. (2007). "Deviance proneness" and adolescent smoking 1980 versus 2001: has there been a "hardening" of adolescent smoking? *Journal of Applied Developmental Psychology*, 28(3), 264–276.
- Cheng, S., & Chan, A. C. M. (2007). Multiple pathways from stress to suicidality and the protective effect of social support in Hong Kong adolescents. *Suicide and Life-Threatening Behavior*, 37(2), 187–196.
- Chernichovsky, D., & Anson, J. (2005). The Jewish and Arab divide in life expectancy in Israel. *Economics and Human Biology*, 3(1), 123–137.
- Currie, C., Nic Gabhainn, S., Godeau, E., Roberts, C., Smith, R., Currie, D., et al. (2008). Inequalities in young people's health: health behaviour in school-aged children (HBSC) international report from the 2005/2006 survey. In C. Currie, et al.
- Currie, C., Roberts, C., Morgan, A., Smith, R., Settertobulte, W., Samdal, O., et al. (2002). *Young people's health in context. Health behaviour in school-aged children (HBSC) study: International report from the 2001/2002 survey*. Geneva: WHO.
- Dabbagh, N. T. (2005). *Suicide in Palestine: Narratives of despair*. Northampton, MA: Olive Branch Press.
- D'Attilio, J. P., Campbell, B. M., Lubold, P., Jacobson, T., & Richard, J. A. (1992). Social support and suicide potential: preliminary findings for adolescent populations. *Psychological Reports*, 70(1), 76–78.
- Donovan, J. E., Jessor, R., & Costa, F. M. (1993). Structure of health-enhancing behavior in adolescence: a latent-variable approach. *Journal of Health and Social Behavior*, 34(4), 346–362.
- Douki, S., Ben Zineb, S., Nacef, F., & Halbreich, U. (2007). Women's mental health in the Muslim world: cultural, religious, and social issues. *Journal of Affective Disorders*, 102(1–3), 177–189.
- Dube, S. R., Anda, R. F., Felitti, V. J., Chapman, D. P., Williamson, D. F., & Giles, W. H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: findings from the adverse childhood experiences study. *JAMA*, 286(24), 3089.
- Dublin, L. I. (1963). *Suicide: A sociological and statistical study*. New York: Ronald Press Co.
- Duff, C. (2005). Party drugs and party people: examining the 'normalization' of recreational drug use in Melbourne, Australia. *International Journal of Drug Policy*, 16(3), 161–170.
- Dworkin, J. (2005). Risk taking as developmentally appropriate experimentation for college students. *Journal of Adolescent Research*, 20(2), 219–241.
- Erickson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.
- Fergusson, D. M., Beutrais, A. L., & Horwood, L. J. (2002). Vulnerability and resiliency to suicidal behaviours in young people. *Psychological Medicine*, 33(1), 61–73.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Fisher, A. J., Kramer, R. A., Hoven, C. W., King, R. A., Bird, H. R., Davies, M., et al. (2000). Risk behavior in a community sample of children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39(7), 881–887.
- Groves, S. A., Stanley, B. H., & Sher, L. (2007). Ethnicity and the relationship between adolescent alcohol use and suicidal behavior. *International Journal of Adolescent Mental Health*, 19(1), 19–25.
- Hammersley, R., Khan, F., & Ditton, J. (2002). *Ecstasy and the rise of the chemical generation*. London: Routledge.
- Harel-Fisch, Y., & Abdeen, Z. (2003). *The middle east regional health behavior in school aged children (ME-HBSC) cross-cultural survey – Research protocol for the 2004 survey*. Bar Ilan University and Al Quds University.
- Harel-Fisch, Y., Abdeen, Z. *Growing up in the middle east: The daily lives and well-being of Israeli and Palestinian youth*. Bar Ilan University & Al Quds University, in press.
- Harel-Fisch, Y., Kanny, D., & Rahav, G. (1997). *Youth in Israel: Social well-being, health and risk behaviors from an international perspective*. Jerusalem, Israel: JDC-Brookdale and Bar Ilan University. (in Hebrew).
- Harel-Fisch, Y., Molcho, M., & Tilinger, E. (2004). *Youth in Israel: Mental and social well-being and trends of risk behaviors 1994–2002, findings from the 3rd international HBSC survey*. Ramat Gan, Israel: Bar Ilan University. (in Hebrew).
- Harel-Fisch, Y., Radwan, Q., Walsh, S. D., Laufer, A., Amitai, G., Fogel-Grinvald, H., et al. (2010). Psychosocial outcomes related to subjective threat from armed conflict events (STACE): findings from the Israeli–Palestinian cross-cultural HBSC study. *Child Abuse & Neglect*, 34, 623–638.
- Harel-Fisch, Y., Walsh, S. D., Grinvald-Fogel, H., Amitai, G., Pickett, W., Molcho, M., et al. Negative school perceptions and involvement in school bullying: a universal relationship across 40 countries. *Journal of Adolescence*, in press.
- Hjelmeland, H., Kinyanda, E., Knizek, B. L., Owens, V., Nordvik, H., & Svarva, K. (2006). A discussion of the value of cross-cultural studies in search of the meaning (s) of suicidal behavior and the methodological challenges of such studies. *Archives of Suicide Research*, 10(1), 15–27.
- Israel Central Bureau of Statistics. (2010). *Statistical abstract of Israel*, 61. Jerusalem, Israel.
- Jessor, R. (1998). *New perspectives on adolescent risk behavior*. Cambridge, UK: Cambridge University Press.
- Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychosocial development: A longitudinal study of youth*. New York: Academic Press.
- King, R. A., Schwab-Stone, M., Flisher, A. J., Greenwald, S., Kramer, R. A., Goodman, S. H., et al. (2001). Psychosocial and risk behavior correlates of youth suicide attempts and suicidal ideation. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(7), 837–846.
- Kwak, K. (2003). Adolescents and their parents: a review of intergenerational family relations for immigrant and non-immigrant families. *Human Development*, 46, 115–136.
- Laufer, A., Harel, Y., & Molcho, M. (2006). Daring, substance use and involvement in violence among school children. *Journal of School Violence*, 5(3), 71–88.
- Levav, I., & Aisenberg, E. (1989). The epidemiology of suicide in Israel: international and intranational comparisons. *Suicide and Life-Threatening Behavior*, 19(2), 184–200.
- Lewis, S. A., Johnson, J., Cohen, P., Garcia, M., & Noemi Velez, C. (1988). Attempted suicide in youth: its relationship to school achievement, educational goals, and socioeconomic status. *Journal of Abnormal Child Psychology*, 16(4), 459–471.
- Lubin, G., Glasser, S., Boyko, V., & Barell, V. (2001). Epidemiology of suicide in Israel: a nationwide population study. *Social Psychiatry and Psychiatric Epidemiology*, 36(3), 123–127.
- Maggis, J., Almeida, D., & Galambos, N. (1995). Risky business: the paradoxical meaning of problem behavior for young adolescents. *Journal of Early Adolescence*, 15(3), 344–362.
- Makikyro, T. H., Hakko, H. H., Timonen, M. J., Lappalainen, J. A. S., Lomaki, R. S., Marttunen, M. J., et al. (2004). Smoking and suicidality among adolescent psychiatric patients. *Journal of Adolescent Health*, 34(3), 250–253.
- Marcia, J. E. (1980). *Identity in adolescence, Vol. 1*. New York: Wiley.
- Morad, M., Merrick, E., Schwarz, A., & Merrick, J. (2005). A review of suicide behavior among Arab adolescents. *The Scientific World Journal*, 5, 674–679.
- O'Carroll, P. W., Harel, Y., & Waxweiler, R. J. (1993). Measuring adolescent behaviors related to intentional injuries. *Public Health Reports*, 108(Suppl. 1), 15–19.
- Pape, H., Rossow, I., & Storvoll, E. E. (2008). Wetter and better? *European Addiction Research*, 14(2), 61–70.
- Park, H. S., Schepp, K. G., Jang, E. H., & Koo, H. Y. (2006). Predictors of suicidal ideation among high school students by gender in South Korea. *Journal of School Health*, 76(5), 181–188.
- Parker, H. (1997). *Adolescent drug pathways in the 1990's. Tackling drugs together: One year on*. London: ISTD.
- Parker, H. (2005). Normalization as a barometer: recreational drug use and the consumption of leisure by younger Britons. *Addiction Research & Theory*, 13(3), 205–215.
- Parker, H., Williams, L., & Aldridge, J. (2002). The normalization of 'sensible' recreational drug use. *Sociology*, 36(4), 941–964.
- Pharris, M. D., Resnick, M. D., & Blum, R. W. (1997). Protecting against hopelessness and suicidality in sexually abused American Indian adolescents. *Journal of Adolescent Health*, 21(6), 400–406.
- Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*, 9(1–2), 34.
- Phinney, J. S. (1990). Ethnic identity in adolescents and adults: review of research. *Psychological Bulletin*, 108(3), 499–514.
- Phinney, J. S., & Alipuria, L. L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence*, 13(2), 171–183.
- Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: current status and future directions. *Journal of Counseling Psychology*, 54(3), 271–281.
- Pickett, W., Schmid, H., Boyce, W. F., Simpson, K., Scheidt, P. C., Mazur, J., et al. (2002). Multiple risk behavior and injury: an international analysis of young people. *Archives of Pediatrics and Adolescent Medicine*, 156(8), 786–793.
- Piko, B. F., Fitzpatrick, K. M., & Wright, D. R. (2005). A risk and protective factors framework for understanding youth's externalizing problem behavior in two different cultural settings. *European Child & Adolescent Psychiatry*, 14(2), 95–103.
- Rew, L., Thomas, N., Horner, S. D., Resnick, M. D., & Beuhring, T. (2001). Correlates of recent suicide attempts in a tri-ethnic group of adolescents. *Journal of Nursing Scholarship*, 33(4), 361–367.
- Riala, K., Alaraisanen, A., Taanila, A., Hakko, H., Timonen, M., & Rasanen, P. (2007). Regular daily smoking among 14-year-old adolescents increases the subsequent risk for suicide: the Northern Finland 1966 birth cohort study. *The Journal of Clinical Psychiatry*, 68(5), 775–780.
- Rigby, K., & Slee, P. (1999). Suicidal ideation among adolescent school children, involvement in bully-victim problems, and perceived social support. *Suicide and Life-Threatening Behavior*, 29(2), 119–130.
- Riley, S. C. E., James, C., Gregory, D., Dingle, H., & Cadger, M. (2001). Patterns of recreational drug use at dance events in Edinburgh, Scotland. *Addiction*, 96(7), 1035–1047.
- Roberts, C., Currie, C., Samdal, O., Currie, D., Smith, R., & Maes, L. (2007). Measuring the health and health behaviours of adolescents through cross-national survey research: recent developments in the health behaviour in school-aged children (HBSC) study. *Journal of Public Health*, 15(3), 179–186.
- Rodham, K., Hawton, K., Evans, E., & Weatherall, R. (2005). Ethnic and gender differences in drinking, smoking and drug taking among adolescents in

- England: a self-report school-based survey of 15 and 16 year olds. *Journal of Adolescence*, 28(1), 63–73.
- Sagy, S., Orr, E., Bar-On, D., & Awwad, E. (2001). Individualism and collectivism in two conflicted societies. *Youth & Society*, 33(1), 3.
- Schwartz, S. J., Zamboanga, B. L., & Jarvis, L. H. (2007). Ethnic identity and acculturation in Hispanic early adolescents: mediated relationships to academic grades, prosocial behaviors, and externalizing symptoms. *Cultural Diversity and Ethnic Minority Psychology*, 13(4), 364–373.
- Sheleg Mey-Ami. (2010). *Suicide in Israel according to ethnic group: Jews and Arabs*. Jerusalem, Israel: Parliamentary Center for Research and Information. (in Hebrew).
- Spirito, A., Brown, L., Overholser, J., & Fritz, G. (1989). Attempted suicide in adolescence: a review and critique of the literature. *Clinical Psychology Review*, 9(3), 335–363.
- Steele, M. M., & Doey, T. (2007). Suicidal behaviour in children and adolescents. Part 1: etiology and risk factors. *Canadian Journal of Psychiatry*, 52(6), 215–33S.
- Sun, R. C. F., & Hui, E. K. P. (2007). Psychosocial factors contributing to adolescent suicidal ideation. *Journal of Youth and Adolescence*, 36(6), 775–786.
- Ulusoy, M. D., & Demir, N. O. (2005). Suicidal ideation in Turkish adolescents. *Social Behavior and Personality: An International Journal*, 33(6), 541–552.
- Veenstra, R., Lindenberg, S., Oldehinkel, A. J., De Winter, A. F., Verhulst, F. C., & Ormel, J. (2005). Bullying and victimization in elementary schools: a comparison of bullies, victims, bully/victims, and uninvolved preadolescents. *Developmental Psychology*, 41(4), 672–682.
- Wallace, J. M., Jr., Bachman, J. G., O'Malley, P. M., Schulenberg, J. E., Cooper, S. M., & Johnston, L. D. (2003). Gender and ethnic differences in smoking, drinking and illicit drug use among American 8th, 10th and 12th grade students, 1976–2000. *Addiction*, 98(2), 225–234.