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Adolescent Non-Involvement in Multiple Risk Behaviors: An Indicator of Successful Development?

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Based on the conceptualization of successful development as the joint maximization of desirable outcomes and minimization of undesirable outcomes (Baltes, 1997), the present study examined connections between adolescent non-involvement in multiple risk behaviors and positive developmental status. Results from a survey of 7290 high school students were used to define four profiles of risk behavior involvement (complete non-involvement, some involvement, some high-risk involvement, predominantly high-risk involvement) based on self-reported involvement in nine risk behaviors (alcohol, smoking, marijuana, hard drugs, sexual activity, minor and major delinquency, direct and indirect aggression). Groups were compared across intrapersonal (risk behavior attitudes, temperament, well-being, religiosity, academic orientation), interpersonal (parental relations, parental monitoring, friendship quality, victimization, unstructured activities), and environmental (school climate, neighborhood conditions) domains. Despite some similarities between the complete non-involvement and some involvement groups, the complete non-involvement group had the most positive self-reports compared to each of the other groups in each developmental domain. At the same time, higher levels of positive development were not exclusive to the complete non-involvement group. Implications for research and theory related to connections between adolescent non-involvement in risk behaviors and successful development are discussed.

A large amount of research has focused on adolescent 'risk behaviors' or 'problem behaviors' such as alcohol use, smoking, sexual activity, delinquency, and aggression (e.g., Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1998; Willoughby, Chalmers, & Busseri, 2004). Increasingly, attention also is being paid to positive aspects of adolescent development including strengths, assets, and successes (e.g., Damon, 2004; Mahoney & Lafferty, 2003; Roth & Brooks-Gunn, 2000). Although limited risk behavior involvement is considered a goal of healthy adolescent development, few studies have directly examined adolescents who are not involved in

multiple risk behaviors. Indeed, despite its relevance to social policy and to our understanding of successful development, little direct consideration has been given to the connection between non-involvement in risk behaviors during adolescence and successful development. The present study seeks to address this gap. Based on responses from a large group of high school students, non-involvement was examined in the context of a wide range of typical risk behaviors including various forms of substance use, delinquency, aggressive acts, and sexual activity. Profiles of risk behavior involvement were used to define four groups: complete non-involvement, some involvement, some high-risk involvement, and predominantly high-risk involvement. These groups were compared across a variety of intrapersonal, interpersonal, and environmental domains as well as in terms of the prevalence of relative strengths within and across developmental domains.

Some researchers have suggested that adolescents can be described as 'resilient' to the extent

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that they avoid forms of risk behavior involvement (e.g., Blinn-Pike, 1999). Others have noted, however, that the absence of risky behavior involvement is insufficient as a criterion for healthy development. Within the emerging positive youth development (PYD) framework (e.g., Lerner, Dowling, & Anderson, 2003), priority is placed on understanding and promoting positive developmental features, as opposed to eliminating or preventing negative features. For example, Leffert, Benson, and colleagues (e.g., Benson, Leffert, Scales, & Blyth, 1998; Leffert, Benson, Scales et al., 1998) propose that the development of assets will protect against, or inhibit the emergence of risk behaviors and thus advocate for attention and priority to be given to intrapersonal, interpersonal, and community-level asset development. Relatedly, some evidence suggests that the extent of adolescent asset development is inversely related to the degree of risk behavior involvement; that is, youth who report less involvement in risk behaviors also tend to report more developmental assets (e.g., Benson et al., 1998; Leffert et al., 1998). Yet the broad goals of asset promotion or risk behavior prevention/reduction need not be considered in isolation. In their conceptualization of human developmental across the lifespan, Baltes and colleagues (e.g., Baltes, 1997; Baltes, Staudinger, & Lindenberger, 1999) have proposed that successful development be defined in terms of the maximization of desirable outcomes *and* the minimization of undesirable outcomes. From this perspective both the fostering of strengths and the avoidance of risk behaviors can be construed as complementary indicators of successful adolescent development.

The complete absence of risk behavior involvement, however, may not be synonymous with health and well-being (e.g., Roth & Brooks-Gunn, 2000; Roth, Brooks-Gunn, Murray, & Foster, 1998; Topolski et al., 2001). In fact, there is growing recognition among researchers that some degree of risk behavior involvement is normative during adolescence and is not inevitably linked with poorer outcomes (e.g., Eccles & Barber, 1999; Leifman, Kuhlhorn, Allebeck, Andreasson, & Romelsjo, 1995; Lerner & Galambos, 1998; Paglia & Room, 1999; Williams, Holmbeck, & Greenley, 2002). Moore and Gleib (1995), for example, propose the successful development be defined in terms of avoiding, “all forms of *serious* risk taking” (p. 17; italics added). Similarly, Jessor, Turbin, and Costa (1998) propose that a key indicator of developmental success during adolescence is, “the avoidance of *heavy* involvement in or *commitment* to problem behavior” (p. 195; italics added). The implications are that risk behavior

involvement is to be expected during adolescence and that some limited form of involvement is not likely to have negative developmental implications. Further, the prevention of risk behavior will not necessarily ensure that adolescents will have the strengths and resources they need to ensure healthy development (Damon, 2004).

Despite the implications of these issues for our understanding of healthy human development, researchers have yet to adopt an intentional approach to studying adolescent non-involvement in risk behaviors. Discussion of the relative merits of non-involvement vs. harm reduction approaches to intervention is not uncommon (e.g., Marlatt & Witkiewitz, 2002; Paglia & Room, 1999). As noted by Leifman et al. (1995) and Weiss & Moore (1995), however, non-involvement in risk behaviors rarely has been the direct focus of investigation. Consequently, the connection between non-involvement in risk behaviors and successful adolescent development is not well understood.

As Hillman and Haskin (2002) observed, most information on adolescent abstainers is a by-product of investigations focusing on risk behavior involvement. Typically, when a discrete group of adolescents not involved in risk behaviors is identified in research studies, they serve as a comparison group for contrasts involving adolescents reporting some level of involvement. For example, some studies have compared adolescents identified as abstaining from substance use to those reporting other types and degrees of involvement across various psychosocial domains (e.g., recent examples include Colder & Chassin, 1999; Hillman & Haskin, 2000; Kerr, Fillmore, & Bostrom, 2002; Mitchell & Plunkett, 2000; Wills, McNamara, Vaccaro & Hirky, 1996; see Piquero, Brezina, & Turner, 2005, for a study on delinquency abstention). Small and often non-significant differences are commonly found between abstainers and those reporting limited substance use, while both groups usually are characterized by more positive adjustment compared to those reporting high frequency involvement (e.g., Leifman et al., 1995; Topolski et al., 2001; Wills et al., 1996). Such evidence suggests, therefore, that compared to heavy substance use, a limited degree of involvement may not have negative developmental indications relative to non-involvement. Given the focus of much of this research on substance use, however, implications for adolescent non-involvement in terms of other forms of risk behavior (such as delinquent acts, sexual activity, and aggression) are uncertain.

Yet adolescents are rarely confronted with choices concerning involvement in single, isolated risk behaviors. Indeed, a large volume of research

has focused on inter-relations and co-occurrence among risk behaviors during adolescence (for a recent review, see Willoughby et al., 2004). An important implication of this research is that attention to *multiple* risk behaviors is required in order for studies to reflect the complexity of choices actually faced by adolescents. Even in studies measuring several risk behaviors within the same sample, however, investigators typically analyze the risk behaviors separately or as a single class of behaviors (e.g., Beal, Ausiello, & Perrin, 2001; Kaukinen, 2002; Topolski et al., 2001). Yet the percentage of adolescents reporting non-involvement in multiple risk behaviors would necessarily be much smaller than those reporting no involvement with any individual type of risk behavior. Among adolescents reporting no substance use (e.g., smoking, alcohol use, marijuana, hard drugs), for example, those *also* reporting no involvement in sexual activity, delinquency, and aggression would comprise only a subset. Indeed, we would expect that the decision to abstain from a wide range of risk behaviors may be quite unusual. Information concerning the prevalence of non-involvement in a multiple risk behaviors during adolescence, however, is unavailable. Further, little is known about whether avoidance of multiple risk behaviors has different developmental implications than non-involvement in any single risk behavior.

Paralleling the limited direct empirical focus on non-involvement in risk behaviors is a lack of theory directly addressing the connection between non-involvement and adolescent development. According to the PYD perspective, risk behavior avoidance is not considered a developmental asset or strength. Nonetheless, a greater number of assets may lead to non-involvement in a greater number of risk behaviors (e.g., Benson et al., 1998; Leffert et al., 1998). And according to the lifespan development framework (Baltes et al., 1999), successful adolescent development may be indicated by the maximization of assets *in combination with* the minimization of undesirable outcomes such as serious or heavy forms of risk behavior involvement. Thus, non-involvement would be expected to be positively linked with other positive developmental features such that the joint occurrence of multiple non-involvement and assets would provide strong evidence of successful adolescent development. On the other hand, based on the empirically-supported expectation that some degree of risk behavior involvement is a normal part of adolescence, one might expect that some degree of risk behavior (particularly if accompanied by avoidance of serious or heavy involvement) would not be linked to

developmental disadvantages compared to complete non-involvement.

The Present Study

The goals of the present study were to identify the prevalence of adolescent non-involvement in multiple risk behaviors and to specifically examine connections between non-involvement and developmental status. To do so, we examined non-involvement in risk behaviors in relation to multiple ecological domains (see Bronfenbrenner, 1989). Recent formulations of PYD, in which attention is given to assets in an adolescent's personal and interpersonal lives as well as in promoting, supporting, and fostering strengths in the multiple environments in which they live (e.g., Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; Damon, 2004; Lerner et al., 2005; Mahoney & Lafferty, 2003; Scales, Benson, Leffert, & Blyth, 2000) have been consistent with this holistic, ecological framework.

Using a self-report survey of high school students, we assessed involvement in a wide range of risk behaviors including various forms of substance use (smoking, alcohol, marijuana, hard drugs), delinquent acts (minor and major in severity), aggression (direct and indirect forms), and sexual activity. Multiple ecological domains also were assessed including intrapersonal characteristics and functioning, interpersonal relationships, and environmental conditions. In addition, drawing on the PYD approach, we identified youth reporting particularly positive levels for each domain as an indication of the presence of relative internal (e.g., well-being, academic engagement, prosocial values) and external strengths (e.g., familial bonds, friendships, connection to one's school, opportunities to get involved, and perceptions of one's community).

In light of the limited amount of empirical and theoretical work focusing directly on non-involvement, an exploratory approach was deemed appropriate for addressing several foundational questions related to the connection between non-involvement in risk behaviors and developmental status during adolescence. First, how common is it for adolescents to report various degrees of non-involvement across a range of risk behaviors? Second, what is the relation between non-involvement in risk behaviors and developmental status during adolescence across a variety of ecological domains?

In the present study, adolescents identified as not involved in multiple risk behaviors were examined relative to youth reporting some involvement (but no high-risk involvement), some involvement

including high-risk involvement, or predominantly high-risk involvement in the examined risk behaviors. Compared to adolescents with predominantly high-risk patterns of risk behavior involvement, the adolescents reporting non-involvement were expected to have more positive self-reports. Of greater interest was the comparison between the adolescents reporting non-involvement and those reporting some risk behavior involvement (but no high-risk involvement) as well as those reporting some degree of high-risk involvement. If some risk behavior involvement during adolescence is normative and not developmentally risky, we would expect that this group would report similar developmental status as the adolescents who are not involved in multiple risk behaviors. If some degree of high-risk involvement was also normative, then we might expect minor differences among the adolescents reporting non-involvement, some involvement, and some high-risk involvement. Alternatively, complete non-involvement may constitute an abnormal and, therefore, developmentally risky profile compared to the more normative profiles of risk behavior involvement such as limited involvement.

Method

Participants

Students from 25 high schools encompassing a school district in Ontario, Canada, took part in the study. The overall participation rate was 76% of students enrolled in the participating schools ($N = 7430$). A passive parental consent procedure was used in this study to ensure a representative sample (see Weinberger, Tublin, Ford, & Feldman, 1990, for a discussion on how active parental consent procedures may result in overrepresentation of well-functioning adolescents and families). Active informed assent, however, was obtained from the adolescent participants. Several strategies were applied in order to ensure parental awareness of the study. First, parents were provided with a written description of the study mailed directly to each student's home prior to the survey administration. This letter indicated that parents could request that their child not participate in the study. Second, several parent information sessions were held throughout the school district. Third, there was extensive media coverage outlining the study. In total, 3% of the parents and 4% of students chose not to participate.

Additional nonparticipation was due to student absenteeism (17% of enrolled students). A small group of the remaining respondents (1.9% of the

students) were screened out because they showed no variability on at least three out of seven multi-item scales containing positively-worded and negatively-worded items. On these scales, screened-out respondents gave the same response for every item, including those framed in opposite directions. Therefore, analyses were based on 7290 participants (98% of 7430 survey respondents).

Participants (49% male) ranged in age from 13 to 18 years ($M = 15.71$, $SD = 1.39$). Consistent with the broader Canadian population (Statistics Canada, 2001), 91% were born in Canada as were 79% of their mothers and 75% of fathers. The survey did not assess respondent race. However, the most common ethnic backgrounds other than Canadian were British (18%), German (15%), French (13%), and Italian (11%). The most common self-identified religion included Protestant (37%), Catholic (27%), and 'no religious affiliation' (11%). Mean levels of education for mothers and fathers fell between "some college, university or apprenticeship program" and "a college/apprenticeship/technical diploma."

Procedure

A 23-page self-report questionnaire was administered to students in classrooms by trained research staff. A total of two hours was allotted for survey administration. To ensure that all students could participate regardless of their literacy level, the survey was read to students with literacy difficulties. Students were informed that their responses were completely confidential.

Measures

The study questionnaire was developed as part of a larger project examining adolescent lifestyle choices. Risk behaviors were chosen based on a review of the adolescent 'problem behavior' literature (see Willoughby, 2004). The survey also contained measures encompassing multiple life domains, including demographics, intrapersonal, interpersonal, and environment. The study measures are described below. Scale properties are provided in Table 1. Given the large number of variables examined and the covariation among variables within a given developmental domain, study measures were combined according to content overlap as detailed. All measures were reverse-coded and standardized before combining as applicable.

Demographics

Age, sex, and parental education (one item per parent, averaged for those reporting on both parents, $r = .51$) were assessed.

ADOLESCENT NON-INVOLVEMENT IN MULTIPLE RISK BEHAVIORS

Table 1. *Summary of Study Measures*

Domain	Variable	Measure	Items	Scale Range	Alpha	Mean	SD
Demographics	Age	Age	1	10 years old to 18+ years old	–	15.71	1.39
	Sex	Sex	1	1 (male) or 2 (female)	–	49%	male
	Parental education	Educational attainment	2	1 (not finish hs) to 6 (professional/grad degree)	–	3.24	1.25
Intrapersonal	Risk behaviors	Alcohol – frequency	1	1 (never) to 8 (every day)	–	2.32	1.31
		Alcohol – amount	1	1 (less than 1) to 6 (10+ drinks)	–	2.77	1.52
		Smoking	1	1 (none) to 8 (more than a pack)	–	1.68	1.45
		Marijuana use	1	1 (never) to 6 (every day)	–	2.19	1.61
		Hard drugs use	6	1 (never) to 6 (every day)	.92	1.21	0.62
		Sexual activity	3	1 (never) to 6 (every day)	.92	2.42	1.46
		Condom Use	1	1 (always or not applicable) to 5 (never)	–	1.27	0.80
	Risk behavior attitudes	Number of Sexual Partners	1	0 (none) to 5 (5 people or more)	–	0.46	0.73
		Delinquency – minor	4	1 (never) to 4 (more than 5 times)	.63	1.43	0.55
		Delinquency – major	3	1 (never) to 4 (more than 5 times)	.71	1.11	0.34
		Aggression – direct	4	1 (never) to 5 (every day)	.83	1.76	0.84
		Aggression – indirect	4	1 (never) to 5 (every day)	.79	1.23	0.48
		Tolerance of deviance	11	1 (very wrong) to 4 (not at all wrong)	.89	1.97	0.56
	Temperament	How risky for you	5	1 (very high) to 5 (very low)	.90	2.77	1.06
		How risk for others	5	1 (very high) to 5 (very low)	.92	2.65	0.99
		Parents would be upset	5	1 (very upset) to 4 (not at all)	.82	1.65	0.59
		Friends would be upset	5	1 (very upset) to 4 (not at all)	.90	2.85	0.84
		Difficult temperament	24	1 (always) to 4 (never)	.76	2.77	0.33
	Psychological functioning	Depression	20	1 (none of the time) to 5 (most of the time)	.92	2.03	0.60
		Social anxiety	14	1 (almost never) to 4 (almost always)	.93	1.74	0.49
		Self-esteem	10	1 (strongly agree) to 5 (strongly disagree)	.89	2.28	0.68
		Daily hassles	25	1 (never bothers me) to 3 (often bothers me)	.88	1.79	0.32
		Optimism	4	1 (almost always) to 4 (almost never)	.65	2.10	0.55
Academic orientation		Typical grades	1	1 (A+) to 6 (below 50%)	–	2.86	1.01
		Educational aspirations	1	1 (not finish hs) to 6 (professional/grad degree)	–	4.97	1.40
		Daily planfulness	1	1 (almost always) to 4 (almost never)	–	2.64	0.86
		Bored at school	1	1 (all the time) to 4 (almost never)	–	2.19	0.84
		Importance of success	1	1 (very important) to 5 (not at all important)	–	1.70	0.79
Religiosity	Importance of religion	1	(1=yes, 2=not sure, 3=no)	–	1.95	0.78	
	Church attendance	1	(1=every day) to 5 (never)	–	4.28	0.99	
Interpersonal	Parental relationship	Maternal attachment	17	1 (almost always) to 4 (almost never)	.89	1.97	0.57
		Paternal attachment	17	1 (almost always) to 4 (almost never)	.87	2.13	0.59
		Parental warmth	10	1 (usually true) to 2 (usually false)	.75	1.21	0.22
		Parental knowledge	9	1 (they always know) to 4 (they never know)	.91	2.20	0.71
		Parental involvement	15	see Method for details	.85	3.10	0.45
	Parental monitoring	Curfew	2	1 (not allowed out) to 9 (as late as I want)	–	5.34	1.75
	Friendship quality	Best friends	18	1 (almost always) to 4 (almost never)	.90	1.82	0.45
		Friendship attachment	18	1 (almost always) to 4 (almost never)	.94	1.84	0.47
	Unstructured activities	Hanging out with friends	1	1 (every day) to 5 (never)	–	2.16	1.00
		Dating	1	1 (every day) to 5 (never)	–	3.63	1.34

(Continued)

Table 1. Continued

Domain	Variable	Measure	Items	Scale Range	Alpha	Mean	SD
		Partying	1	1 (every day) to 5 (never)	–	3.69	1.00
		Skipping classes	1	1 (6 or more times) to 5 (never)	–	4.14	1.14
	Victimization	Direct victimization	4	1 (never) to 5 (every day)	.81	1.83	0.85
		Indirect victimization	4	1 (never) to 5 (every day)	.73	1.33	0.52
Environment	School environment	School culture	30	1 (strongly agree) to 5 (strongly disagree)	.94	2.64	0.51
	Neighborhood	Neighborhood climate	4	1 (strongly agree) to 5 (strongly disagree)	.75	2.06	0.72

Note. $N = 7290$.

Intrapersonal Variables

Risk Behaviors

Alcohol use was measured by a composite of standardized indices of frequency of use and average consumption per drinking episode ($r = .69$). Smoking was indicated by the typical number of cigarettes smoked each day. Marijuana use was assessed by the frequency of use in the past year. Using the same time frame, hard drug use was assessed by a composite measure of cocaine, stimulants, depressants, heroin, acid, and club drug use. Sexual activity was assessed by a composite measure of the frequency of oral sex, intercourse, and sexual touching in the previous 12 months. In order to specifically assess high-risk sexual behavior (see the Risk Behavior Profile Groups section), participants also were asked to indicate how frequently over the last 12 months they used a condom during sexual intercourse, as well as how many sexual partners they had in the last month. Delinquent activity was assessed based on past year involvement for both minor delinquency (sneaking out at night, joyriding, shoplifting, wrecking other's property) and major delinquency (joined a gang, carried a gun as a weapon, carried a knife as a weapon). Both direct (e.g., pushed and shoved someone) and indirect (e.g., spread rumors and untrue stories) aggressive acts in the past year also were assessed. For each risk behavior index, higher scores indicated greater involvement.

Risk Behavior Attitudes

Attitudes, beliefs, and expectations regarding risk behavior were assessed using five scales: attitudes concerning how wrong it is to engage in unconventional and anti-social behaviors (Jessor, Donovan, & Costa, 1991); cognitive evaluations of how risky the respondents believed it was for them to engage in various behaviors (such as drinking alcohol, smoking cigarettes, having sex) and how risky the respondents believed it was for other people their own age to engage in these behaviors; perceived social approval of risk behavior

involvement was assessed in terms of how upset one's parents and friends would be by one's involvement with problem behaviors. Scales were averaged ($\alpha = .82$) such that higher composite scores indicated *more permissive* risk-related attitudes, beliefs, and expectations.

Temperament

Temperament assessed (DOTS-R, Windle & Lerner, 1986) activity level, rhythmicity, approach/avoidance, affect/mood, distractibility, and persistence. Ratings were averaged such that higher composite scores indicated a *more difficult* temperament.

Psychological Functioning

Five aspects of psychological functioning were assessed, including depression-related symptoms (CES-D scale, National Institutes for Mental Health, 1972); social anxiety-related symptoms (Ginsberg, LaGreca, & Silverman, 1998); self-esteem (Rosenberg Self-Esteem Scale, Rosenberg, 1965); frequency of experiencing daily hassles with friends, peers, school work, or self-image; optimism (e.g., "I expect the best"). Scales were averaged ($\alpha = .81$) such that higher composite scores indicated *greater* well-being.

Academic Orientation

Several aspects of academic engagement were assessed, including: typical grades; educational aspirations; daily planfulness (i.e., Do you plan ahead for the things you have to do each day?); frequency of feeling bored at school; perceived importance of doing well at school. Ratings were averaged ($\alpha = .64$)¹ such that higher composite scores indicated *stronger* academic orientation.

¹Given the relatively low internal consistency of the composite scales of academic orientation and religiosity, we reran the analyses with only one item from the academic orientation (i.e., grades) and one item from the religiosity (i.e., importance of religion) composites. The pattern of results did not change.

Religiosity

Religiosity assessed the importance of religion to one's life ("Religion is an important part of my life") and the frequency of church/synagogue/temple attendance in the past month. Ratings were averaged ($r = .57$)¹ such that higher scores indicated *stronger* religiosity.

Interpersonal Variables

Parental Relationship

Several aspects bearing on the quality and strength of a respondent's relationships with his or her parents (or guardian) were assessed. Paternal and maternal attachment were measured separately using the Inventory of Parent and Peer Attachment (Armsden & Greenburg, 1987). Parental warmth was a composite based on ratings of parental support and encouragement (derived from Lamborn, Mounts, Steinberg, & Sandford, 1991). Parental knowledge was assessed using items related to how much one's parents/guardians really know about how the respondent spends their free time. Parental involvement was a composite based on frequencies of talking and having fun with parents (1–*almost every day*, to 4–*almost never*) as well as the amount of time spent with parents on an average school day in 13 other activities such as sports, reading books, doing chores, and eating together (1–*more than 2 hours*, to 4–*none at all*). Scales were averaged ($\alpha = .79$) such that higher composite scores indicated *more positive* parental relationships.

Parental Monitoring

Monitoring efforts were assessed based on curfews on school nights and on weekends. Ratings were averaged ($r = .64$) such that higher scores indicated *greater* monitoring.

Friendship Quality

Two scales were used to assess friendship quality. Items adapted from Gauze, Bukowski, Aquan-Asse, and Sippola (1996), relating to the quality of companionship, support, security, closeness, and conflict were used to assess relationships with one's "best friend." Attachment to friends was assessed based on items adapted from Armsden and Greenburg (1987). Scales were averaged ($r = .69$) such that higher composite scores indicated *more positive* friendship quality.

Unstructured Activities

Frequency of involvement in unstructured social activities (hanging out with friends, partying, dating

and skipping classes) in the previous month was assessed. Ratings were averaged ($\alpha = .67$) such that higher composite scores indicated *more* unstructured activity involvement.

Victimization

Victimization by peers was a composite of two sub-scale scores from Marini et al. (1999) assessing the frequency of experiencing direct (e.g., being pushed or shoved) and indirect (e.g., being excluded) forms of bullying in the past year. Sub-scales were averaged ($r = .60$) such that higher composite scores indicated *more* peer victimization.

Environmental Variables

School Culture

School culture (Kelly et al., 1986) assessed opportunities for school involvement, peer behavioral values, instructional management, relationships with teachers, student academic orientation, and quality of school administration. Ratings were averaged such that higher scores indicated *more positive* perceptions of school culture.

Neighborhood Climate

Perceived neighborhood quality assessed feelings of safety, pride, belongingness, and cultural/racial acceptance in one's neighborhood (adapted from Health Canada Community Action Programs for Children, 1994). Ratings were averaged such that higher scores indicated a *more positive* perception of neighborhood quality.

Missing Data

Some students did not finish the entire study questionnaire. Missing data varied across survey sections, ranging from a low of 5% (aggression measures) to a high of 42% (sexual activity measure). Earlier sections of the survey showed the smallest amount of missing data. Thus, it appeared that missing data was the result of survey length. However, as detailed in Willoughby et al. (2004), the amount of missing data per participant was largely unrelated to scores on the study variables such that none of the measures predicted more than 2% of the variance in the amount of missing data per participant. Composite (average) scale scores were computed for participants who responded to at least 50% of the items within a scale. For students who did not give a sufficient number of responses within a scale, composite scores were imputed. Missing data were imputed using the EM (expectation-maximization) algorithm in SPSS. Methodological research has demonstrated that this method of

dealing with missing data is preferable to more common methods such as pair-wise deletion, list-wise deletion, or mean substitution (see Schafer & Graham, 2002). In total, 19% of the data were imputed.

Risk Behavior Profile Groups

Participants were categorized into one of three levels of involvement with each behavior: no involvement, some involvement, and high-risk involvement. Criteria used to define high-risk levels were based on the extant research literature (see Willoughby et al., 2004 for full details). The criteria captured a heightened level of risk exposure due to repeated involvement or a pattern of commitment to a given behavior and included the following: (a) typically consuming four or more drinks per drinking occasion (high-risk alcohol use); (b) daily cigarette smoking (high-risk smoking); (c) using marijuana a few times a month or more often (high-risk marijuana use); (d) using any of the six hard drugs more than once in the past year (high-risk hard drug use); (e) not always using a condom during sexual intercourse or having more than one sexual partner in the past month (high-risk sexual activity); (f) involvement with any of the minor delinquent activities more than once in the past year (high-risk minor delinquency); (g) involvement with any of the major delinquent activities in the past year (high-risk major delinquency); (h) engaging in at least one aggressive act a few times a month or more often in the past year (high-risk direct and high-risk indirect aggression).

Participants reporting no involvement in a given risk behavior were categorized as 'no involvement.' Those not categorized as 'high-risk involvement' or 'no involvement' on a given risk behavior were categorized as 'some involvement.' For each participant, the number of 'no involvements,' 'some involvements,' and 'high-risk involvements' were summed across the nine risk behaviors to create three 'risk behavior profile' scores: degree of non-involvement, degree of some involvement, and degree of high-risk involvement.

Four analysis groups were then defined based on joint consideration of the three risk behavior profile scores. The first group comprised respondents indicating no involvement with all of the risk behaviors, that is, adolescents who were not involved in any of the risk behaviors (NON). The second group comprised respondents indicating some degree of risk behavior involvement but no high-risk involvement, labeled as 'some involvement' (SOM). The third group comprised respondents reporting some level of risk behavior involvement, which included high-risk

involvement on at least one risk behavior, labeled as 'some high-risk' (SHR). The fourth group comprised respondents indicating 'predominantly high-risk' involvement (PHR) defined as high risk involvement in six or more risk behaviors (out of nine).

Identifying Developmental Assets

In order to identify respondents indicating particularly positive levels on each of the 12 developmental indices, those falling in the top 33% of the distribution for a given index were categorized as being at an "asset-level" for that variable (e.g., Jessor et al., 1995; Moore & Gleib, 1995). In addition to identifying participants at the asset-level on a given developmental index, the number of relative assets was summed for each respondent across domains (scores ranged from 0 to 12).

Results

Levels of Risk Behavior Involvement

The percentage of respondents classified into each level of involvement (no involvement, some involvement, high-risk involvement) was assessed by risk behavior. Non-involvement was most common for smoking (74%), hard drug use (72%), sexual activity (77%), and major delinquency (76%). Some involvement was most common for alcohol use (41%) and direct aggression (41%). Similarly, high-risk involvement was most common for alcohol use (34%) and direct aggression (33%), as well as minor delinquency (31%).

Risk Behavior Profile Groups

The typical risk behavior profile comprised five non-involvements, some involvement with two risk behaviors, and high-risk involvement with one or two risk behaviors (full details concerning the distribution of each risk behavior profile score, i.e., number of non-involvements, some involvements, and high-risk involvements, are available from the first author). As described above, participants were categorized into one of four groups based on the joint consideration of the three risk behavior profile scores. Respondents indicating no involvement in all nine risk behaviors (NON group; $N = 428$) represented 6% of the sample. At the other extreme, nearly 8% of respondents ($N = 545$) reported high-risk involvement with 6 or more risk behaviors (PHR group). High-risk involvement was reported by at least 75% of respondents in this group for alcohol use, smoking,

marijuana use, hard drug use, minor delinquency, and direct aggression. In between these two groups, 22% of the sample ($N = 1621$) reported some degree of risk behavior involvement which did not include high-risk involvement (SOM group). Among the SOM group, the most commonly reported risk behaviors were alcohol use and direct aggression (at least 59% of respondents). The remaining 64% of the sample ($N = 4696$) reported some degree of risk behavior involvement which included some high-risk involvement (SHR group). At least 34% of respondents in this group were classified as some involvement in alcohol use, minor delinquency, and direct aggression. Similarly, at least 39% of these respondents reported high-risk levels of involvement in alcohol use, minor delinquency, and direct aggression.

Across the four risk behavior profile groups, the distribution of participants differed significantly by sex ($p < .001$ in χ^2 test). For males, the frequency distribution was 4%, 16%, 70%, and 10% for NON, SOM, SHR, and PHR groups respectively; for females, the frequency distribution was 8%, 28%, 59%, and 5%, respectively. Overall, females were twice as likely as males to be classified into the complete non-involvement group (NON) and substantially more likely to be classified into the some involvement group (SOM). In contrast, males were twice as likely as females to be classified into the predominantly high-risk (PHR) group.

The groups also differed in terms of respondent age ($p < .001$ in a one-way ANOVA) wherein the average ages of the NON and SOM groups were significantly lower than the SHR and PHR groups ($M_s = 15.38, 15.42, 15.80, 16.02$ for NON, SOM, SHR, and PHR groups respectively). The magnitude of this trend, however, was modest ($\eta^2 = .02$). Similarly, although the groups differed in terms of average level of parental education ($p < .001$ in a one-way ANOVA; $M_s = 3.47, 3.41, 3.20, 2.83$ for NON, SOM, SHR, and PHR groups, respectively), the magnitude of this trend was modest ($\eta^2 = .02$).

Comparing Risk Behavior Profile Groups Across Developmental Domains

To compare the risk behavior profile groups in terms of the various intrapersonal, interpersonal, and environmental indices, a multivariate analysis of covariance (MANCOVA) was computed in which the four groups (NON, SOM, SHR, PHR) were contrasted in terms of the 12 developmental indices. The three demographic variables (age,

sex, parental education) were included as covariates. In light of the number of statistical comparisons computed, only effects for which $p < .001$ were considered statistically significant. The overall multivariate test was significant ($p < .001$) and the multivariate effect size (1-Wilk's λ) indicated that 37% of the total variance in the developmental indices could be accounted for by differences among the four groups (independent of participant age, sex, and parental education).

A series of one-way analyses of covariance (ANCOVA) were then computed in which the four groups were compared on each of the individual developmental indices, controlling for age, gender, and parental education. For all twelve indices, the univariate ANCOVAs were statistically significant ($p < .001$). Further, for each index, the relative ordering of the groups was the same; respondents in the NON group had the most positive reports (on average), followed by the SOM, SHR, and PHR groups. Adjusted means and standard deviations for each group on each index are shown in Table 2 along with results from pair-wise group contrasts. For three indices (parental monitoring, friendships, and neighborhood conditions), the NON and SOM groups did not differ significantly ($p > .001$). These exceptions aside, group means differed between each pair of groups across all 12 developmental indices.

As indicated in Table 2, regardless of developmental domain, the NON group had the most positive reports. Of the three remaining groups, the SOM group was most similar to that of the NON group. In contrast, the largest differences were found between the NON and PHR groups. In addition, the magnitude of the between-group differences varied widely across the 12 developmental indices. As shown in Table 2, the univariate effect sizes (partial η^2 s) ranged from small values (e.g., .01 to .03) for friendships, religiosity, and neighborhood conditions to relatively larger values (e.g., .12 or greater) for risk behavior attitudes, academic orientation, and unstructured activity involvement.

To gauge the magnitude of the pair-wise group differences, Cohen's d effect sizes were computed between pairs of group means (see Table 3). For the comparison between NON and SOM groups, the primary differences were found for risk behavior attitudes, well-being, parental relationships, and unstructured activity involvement. For the comparisons between SOM and SHR groups and between SHR and PHR groups, the largest relative differences were found for the same set of indices in addition to academic orientation and (for SHR vs. PHR) school climate.

Table 2. *Adjusted Developmental Index Means and Standard Deviations by Risk Behavior Profile Group*

Developmental indices	NON		SOM		SHR		PHR		ES
	M	SD	M	SD	M	SD	M	SD	
<i>Intrapersonal</i>									
Risk behavior attitudes	-1.02	0.80	-0.54	0.81	0.13	0.80	1.24	0.81	.27
Temperament	-0.54	0.97	-0.25	0.98	0.07	0.96	0.54	0.97	.05
Well-being	0.61	0.96	0.22	0.97	-0.08	0.96	-0.42	0.97	.05
Academic orientation	0.64	0.88	0.39	0.89	-0.10	0.88	-0.83	0.88	.12
Religiosity	0.48	0.98	0.19	0.98	-0.06	0.97	-0.39	0.98	.03
<i>Interpersonal</i>									
Parental relationships	0.74	0.94	0.31	0.95	-0.09	0.94	-0.71	0.95	.09
Parental monitoring	0.35 _a	0.88	0.18 _a	0.88	-0.04	0.87	-0.45	0.88	.04
Friendships	0.24 _a	0.90	0.08 _a	0.90	-0.02	0.89	-0.21	0.90	.01
Unstructured activities	-0.90	0.88	-0.50	0.89	0.12	0.88	1.12	0.88	.20
Victimization	-0.48	0.94	-0.24	0.95	0.07	0.94	0.41	0.94	.04
<i>Environmental</i>									
School climate	0.62	0.96	0.26	0.97	-0.06	0.96	-0.72	0.96	.08
Neighborhood	0.31 _a	0.99	0.16 _a	1.00	-0.04	0.98	-0.40	0.99	.02

Note. *Ns* = 428, 1621, 4696, and 545 for NON, SOM, SHR, and PHR groups, respectively. Means and standard deviations are adjusted for age, gender, and parental education. Within a row, means are significantly different in pair-wise contrasts at $p < .001$ except those sharing the same subscript. ES = partial η^2 effect sizes.

Comparing Developmental Assets Across Risk Behavior Profile Groups

The percentage of respondents in each risk behavior profile group classified at the “asset-level” for each developmental index is displayed in Table 4. For each developmental index, the relative frequency of assets differed significantly across the groups ($ps < .001$ in χ^2 tests). Across indices, a median of 60% of respondents in the NON were classified at the asset-level, compared to 45%, 30%, and 16% of respondents in the SOM, SHR, and PHR groups, respectively.

The profile groups also differed in terms of the number of assets per respondent (summed across

the 12 developmental indices). When examined in an ANCOVA model with age, gender, and parental education as covariates, the overall difference between the risk behavior profile groups in mean number of assets per respondent was statistically significant ($p < .001$) and substantive (partial $\eta^2 = .20$). Adjusted means (and *SDs*) for NON, SOM, SHR, and PHR groups were 7.23 (2.32), 5.46 (2.34), 3.61 (2.33), and 2.13 (2.33), respectively. Each of the groups differed significantly from each other in pair-wise contrasts ($ps < .001$). Further, the standardized difference between each pair of adjacent groups’ (adjusted) means was substantive ($ds = 0.76$ for NON vs.

Table 3. *Effect Sizes for Pair-wise Comparisons Between Risk Behavior Profile Groups by Developmental Index*

Developmental Indices	Adjacent Groups			Non-Adjacent Groups		
	NON vs. SOM	SOM vs. SHR	SHR vs. PHR	NON vs. SHR	NON vs. PHR	SOM vs. PHR
<i>Intrapersonal</i>						
Risk behavior attitudes	0.60	0.83	1.36	1.43	2.79	2.19
Temperament	0.30	0.33	0.48	0.63	1.11	0.81
Well-being	0.40	0.31	0.35	0.71	1.06	0.66
Academic orientation	0.29	0.55	0.83	0.83	1.67	1.38
Religiosity	0.30	0.26	0.33	0.55	0.88	0.59
<i>Interpersonal</i>						
Parental relationships	0.45	0.42	0.65	0.87	1.52	1.07
Parental monitoring	0.19	0.25	0.47	0.44	0.91	0.72
Friendships	0.18	0.11	0.21	0.30	0.50	0.32
Unstructured activities	0.45	0.70	1.12	1.15	2.27	1.82
Victimization	0.25	0.33	0.35	0.58	0.93	0.69
<i>Environmental</i>						
School climate	0.37	0.34	0.68	0.71	1.38	1.01
Neighborhood	0.15	0.20	0.36	0.35	0.71	0.56
<i>Mdn</i> effect size	0.30	0.33	0.48	0.67	1.09	0.76

Note. *Ns* = 428, 1621, 4696, and 545 for NON, SOM, SHR, and PHR groups, respectively. Cell entries are Cohen’s *d* effect size estimates showing the standardized differences between groups based on adjusted means and standard deviations.

Table 4. *Asset-level Frequencies by Risk Behavior Profile Group*

Developmental Indices	Full Sample			
	NON	SOM	SHR	PHR
<i>Intrapersonal</i>				
Risk behavior attitudes	83	62	24	2
Temperament	55	43	31	17
Well-being	55	40	32	20
Academic orientation	66	52	28	10
Religiosity	61	47	34	17
<i>Interpersonal</i>				
Parental relationships	66	48	29	11
Parental monitoring	53	40	24	13
Friendships	53	42	31	25
Unstructured activities	73	55	27	4
Victimization	69	43	30	25
<i>Environmental</i>				
School climate	59	44	30	15
Neighborhood	53	47	37	30
<i>Mdn</i> frequency	60	46	30	16

Note. *N*s = 428, 1621, 4696, and 545 for NON, SOM, SHR, and PHR groups, respectively. Results should be read by row. Cell entries show the percentage of respondents in a given group (column variable) classified at the ‘asset-level’ for a given developmental index (row variable). Percentages are rounded to nearest whole number.

SOM, 0.79 for SOM vs. SHR, and 0.64 for SHR vs. PHR).

Discussion

Complete non-involvement in all nine of the risk behaviors examined was found among only 6% of the high school sample. Despite the rarity of complete non-involvement, however, respondents indicated (on average) non-involvement in five out the nine behaviors we examined. Non-involvement was most common for smoking, hard drug use, sexual activity, and major delinquency. Concerning the first of the two main goals of the present study, therefore, we conclude that while complete non-involvement is rare, adolescent non-involvement in *multiple* risk behaviors is common.

Although reported by substantial numbers of male and female adolescents, multiple non-involvement was more likely among females than among males as seen in the greater relative percentage of female vs. male youth in the complete non-involvement (NON) and some involvement (SOM) groups. This trend is consistent with results from previous research indicating that, with the exception of smoking, adolescent females tend to report lower levels of involvement in many risk behaviors compared to males (e.g., Barnes, Welte, & Hoffman, 2002; Brener & Collins, 1998).

Studies specifically examining non-involvement in risk behaviors have found mixed results in terms of gender differences. For example, Piquero et al. (2005) found that females were more likely than males to report non-involvement in delinquent activities while Toposki et al. (2001) indicated that the proportion of males and females reporting non-involvement in substance use and sexual activity was approximately equal. As noted by Zweig, Linberg, and McGinley (2001), however, little is known about how profiles and configurations of multiple risk behaviors may differ across sex. The present results are novel in this respect in suggesting that females may be more likely to report non-involvement in *multiple* forms of risk behavior. Also of interest, youth in the NON and SOM groups were younger, on average, compared to those in the some high-risk (SHR) and predominantly high-risk (PHR) groups. The magnitude of this age-related trend was modest, however, suggesting that age differences did not play a substantive role in distinguishing among the study groups.

The second major goal of the present study was to compare youth reporting different profiles of risk behavior involvement across a wide range of developmental domains. Results based on group mean comparisons and the relative frequency of developmental assets indicated that youth categorized as not involved in multiple risk behaviors reported the most positive concurrent developmental status compared to each of the other study groups. This was true for each domain we assessed, including intrapersonal factors, peer-related factors, family-related factors and environmental conditions. Therefore, despite the rarity of complete non-involvement, indications of successful development were consistent among the NON group.

Previous research comparing adolescents who abstain from substance use to those reporting some limited degree of involvement have been equivocal (e.g., Leifman et al., 1995; Topolski et al., 2001; Wills et al., 1996). The present results suggest that some degree of risk behavior involvement may be normative and perhaps even developmentally appropriate (e.g., Eccles & Barber, 1999; Lerner & Galambos, 1998; Paglia & Room, 1999; Williams et al., 2002). However, compared to adolescents reporting complete non-involvement, we found no advantage for adolescents reporting the normative configuration of risk behavior involvement. Similarly, we found no advantage among adolescents reporting the normative risk behavior profile compared to those in the some involvement group.

Our results may seem to be at odds with previous proposals noted above concerning the developmental implications of limited risk

behavior involvement. Recall, however, that previous research has identified non-involved youth in terms of individual risk behaviors or a class of behaviors such as substance use. The present study, in contrast, assessed multiple risk behaviors simultaneously and respondents were categorized based on their profile of risk behavior involvement. The two largest groups in the present study, the SOM and SHR groups, each contained substantial numbers of youth reporting some degree of non-involvement. Many of the adolescents in these two groups would have been classified as non-involved in studies focusing on individual risk behaviors. Assessment of multiple risk behaviors, however, resulted in these youth being identified as involved in at least some risk behaviors. Given the relative rarity of complete non-involvement, and given the limited number of studies examining multiple risk behaviors simultaneously, the NON group in the present study likely represents a unique group of adolescents that have not been identified in previous research.

Results have implications for conceptualizations of the role of adolescent non-involvement in risk behaviors for successful adolescent development. Consistent with the formulation of successful development as the joint maximization of desirable outcomes and the minimization of undesirable outcomes (e.g., Baltes, 1997; Baltes et al., 1999), we found that indicators of positive developmental status were strongest and most consistent among those who reported complete non-involvement in a wide array of adolescent risk behaviors. That is, joint maximization and minimization was most typified by the NON group. Therefore, we propose that non-involvement in multiple risk behaviors may be an indicator of successful development.

At the same time, however, although the complete non-involvement group was characterized by the most positive self-reports, present results do not indicate that highly positive self-reports were found only among adolescents reporting no involvement in multiple risk behaviors. For example, on average close to half of the some involvement group were classified at the 'asset-level' on the developmental indices. Therefore, higher levels of positive development were not exclusive to the complete non-involvement group.

Among the other three study groups, youth in the PHR (predominantly high-risk) group reported the most negative developmental status and the lowest frequency of assets in each domain examined. These results are consistent with previous research indicating that high-risk involvement is associated with significant developmental challenges (e.g., Leifman et al., 1995; Topolski

et al., 2001; Wills et al., 1996). Of the domains examined, the PHR group was most distinct in terms of two areas: risk behavior attitudes and unstructured activity involvement. Past research has indicated that beliefs and attitudes towards risk behaviors are among the most consistent predictors of risk behavior involvement (e.g., Jessor et al., 1998) and other work has implicated involvement in unstructured activities (e.g., Mahoney & Cairns, 1997; Mahoney & Stattin, 2000). Such factors have been conceptualized as having direct, proximal influences on risk behavior involvement since they represent thoughts, attitudes, and beliefs *about* risk behavior involvement, as well as related behaviors (e.g., partying) that likely provide access, opportunity, and a permissive environment (Petraitis, Flay, & Miller, 1995).

More novel to the extant literature are results from the comparison of the NON, SOM, and SHR groups. Although the magnitude of the mean differences between the NON and SOM groups were parallel across the developmental domains we examined, these differences were substantive and statistically significant for nine of the 12 developmental domains assessed as well as for the number of relative assets per respondent in each group. Differences also were notable across developmental domains between SOM and SHR groups. The SHR group represented the statistically normative risk behavior profile. However, the self-reports of these youth were (on average) less positive in each developmental domain compared to the NON and SOM groups and the prevalence of developmental assets was lower in the SHR group compared to either of the other two groups.

Some proponents of the PYD framework have argued that asset development leads to lower levels of risk behavior involvement in youth (e.g., Benson et al., 1998; Leffert et al., 1998). From this perspective, non-involvement may be an outcome of positive development. Yet deciding to avoid a wide range of risk behaviors also may expose adolescents to a different group of friends and peers, as well as encourage stronger bonds with positive adult mentors, role models, and social institutions. In this way, non-involvement may lead to positive developmental changes. In addition, non-involvement and developmental assets may have *reciprocal* relations over time. That is, non-involvement may be a product of PYD, and PYD may be fostered by relatively greater degrees of non-involvement. Finally, consistent with Baltes (1997) and colleagues (Baltes et al., 1999), the association between non-involvement in risk behaviors and PYD may reflect a common cause: successful development. From this perspective, non-involvement and assets may be intercorrelated

within-time and across-time because they both are manifestations of successful development. Given the cross-sectional nature of our study design, however, we make no claims as to the role of non-involvement as a cause of positive developmental status, an effect of successful development, or both. Further, the long-term developmental implications of complete non-involvement relative to more common risk behavior profiles such as limited or some high-risk involvement needs to be carefully explored in longitudinal analyses.

Indeed, since very few adolescents indicated avoidance of all of the risk behaviors we assessed, one may question whether promotion of multiple non-involvement in risk behaviors is a reasonable goal. To directly examine these issues, longitudinal investigations are needed in which multiple risk behaviors and multiple developmental domains are measured across time and reciprocal relations are assessed between non-involvement in risk behaviors and developmental strengths, assets, and resources. In addition, longitudinal analyses are required in order to directly evaluate the developmental consistency of our findings. It remains to be seen, for example, whether complete abstainers just starting high school will continue to exhibit a non-involvement-based risk behavior profile as they age, and continue to have the most positive self-reports over time compared to the youth reporting normative profiles of risk behavior involvement. A related key issue includes how non-involvement in multiple risk behaviors develops (e.g., what influences such decisions). Further, previous research has indicated that developmental assets and strengths may be more prevalent among adolescent females compared to males (e.g., Lerner et al., 2005; Scales et al., 2000).² Although beyond the scope of the present article, to fully understand the basis for these sex-based effects, in future studies researchers will need to test models of successful development separately for males and females.

In addition to the limitation of the cross-sectional study design, an important consideration is our reliance on self-report. Results were uncorroborated by other informants (e.g., friends,

parents, and teachers). It is possible, therefore, that the positive reports of the complete non-involvement group were unjustifiably optimistic. Any limitations that are a consequence of using self-reports, however, are not unique to the complete non-involvement group. That is, if results are to be discounted as a methodological artifact or attributed solely to an overly-positive report bias (i.e., a 'halo effect'), then results from each of the other groups would need to be similarly discounted. We are unaware, however, of other risk behavior studies in which reports from adolescents reporting a high degree of risk behavior involvement have been interpreted as simply reflecting an overly-negative report bias. Nonetheless, future work in this area would benefit from the inclusion of multiple informants.

Further, although our study sample included the majority of enrolled students from a school district, findings may not generalize to other geographic regions, including those with differing ethnic and/or demographic mixes. We also note that the time frames for the various survey items and scales varied considerably. An additional limitation is the relatively low internal consistency of some study measures such as minor delinquency, academic orientation, religiosity, and optimism. Further, as suggested by the pattern of missing data, the length of the study survey may have led to respondent fatigue. These issues may have introduced measurement error into the study data.

In summary, it is clear that non-involvement in risk behaviors is linked to positive developmental status. At the same time, complete non-involvement in multiple risk behaviors is rare—found among only 6% of the 7290 respondents in the present study. Although critical questions concerning the causative role of non-involvement need to be addressed, and although higher levels of positive development were not exclusive to the complete non-involvement group, adolescents not involved in multiple risk behaviors may be well prepared to successfully navigate challenges and maximize their potential in intrapersonal, interpersonal, and environmental contexts. We propose, therefore, that adolescent non-involvement in multiple risk behaviors may be an indicator of successful development.

References

- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, 5, 427–453.
- Barnes, G. M., Welte, J. W., & Hoffman, J. H. (2002). Relationship of alcohol use to delinquency and illicit drug

²The mean number of assets per respondent in the NON group was significantly lower for males than females in the present study ($M = 6.58$ and 7.83 for males and females, respectively, $p < .001$). In addition, the percentage of males in the NON group classified at the asset level was significantly lower than females for the risk attitudes, academic orientation, religiosity, parental monitoring, friendship quality, and peer victimization domains (all $ps < .001$). At the same time, however, with the exception of friendship quality, the percentage of males in the NON group classified at the asset level for these domains was higher than the percentage of their peers classified at the asset level in the SOM, SHR, PHR groups.

- use in adolescence: Gender, age, and racial/ethnic differences. *Journal of Drug Issues*, 22, 153–178.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny. *American Psychologist*, 32, 366–380.
- Baltes, P. B., Staudinger, U. M., & Lindenberger, U. (1999). Lifespan psychology: Theory and application to intellectual functioning. *Annual Review of Psychology*, 50, 471–507.
- Beal, A., Ausiello, J., & Perrin, J. M. (2001). Social influences on health-risk behaviors among minority middle school students. *Journal of Adolescent Health*, 28, 474–480.
- Benson, P. L., Leffert, N., Scales, P. C., & Blyth, D. (1998). Beyond the “village” rhetoric: Creating healthy communities for children and adolescents. *Applied Developmental Science*, 2(3), 138–159.
- Blinn-Pike, L. (1999). Why abstinent adolescents report they have not had sex: Understanding sexually resilient youth. *Family Relations*, 48, 295–301.
- Brener, N. D., & Collins, J. L. (1998). Co-occurrence of health-risk behaviors among adolescent in the United States. *Journal of Adolescent Health*, 22, 209–211.
- Bronfenbrenner, U. (1989). Ecological Systems Theory. *Annals of Child Development*, 6, 187–249.
- Catalano, R. F., Berglund, M. L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, D. (2002). Positive youth development in the United States: Research findings on evaluation of positive youth development programs. *Prevention and Treatment*, 5, article 15.
- Centre for Epidemiological Studies Depression Scale (CES-D). (1972). *National Institute of Mental Health*, USA.
- Colder, C. R., & Chassin, L. (1999). The psychosocial characteristics of alcohol users versus problem users: Data from a study of adolescents at risk. *Development and Psychopathology*, 11, 321–348.
- Damon, W. (2004). What is positive youth development? *Annals of the American Academy of Political and Social Science*, 591, 25–39.
- Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band: What kind of extracurricular involvement matters? *Journal of Adolescent Research*, 14, 10–43.
- Gauze, C., Bukowski, W. M., Aquan-Asse, J., & Sippola, L. K. (1996). Interactions between family environment and friendship and associations with self perceived well-being during early adolescence. *Child Development*, 67, 2201–2216.
- Ginsburg, G., LaGreca, A., & Silverman, W. (1998). Social anxiety in children with anxiety disorders: Relation with social and emotional functioning. *Journal of Abnormal Child Psychology*, 26, 175–185.
- Health Canada’s Community Action Programs for Children (CAP-C). *National evaluation of the Brighter Futures programs* (see Web site: capc-cnp@www.hc-sc.gc.ca).
- Hillman, S. B., & Haskin, J. M. (2000). Personality and drug abstinence in adolescents. *Psychological Reports*, 87, 1023–1026.
- Jessor, R., Donovan, J. E., & Costa, F. M. (1991). *Beyond adolescence: Problem behavior and young adult development*. New York, NY: Cambridge University Press.
- Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Risk and protection in successful outcomes among disadvantaged adolescents. *Applied Development Science*, 2, 194–208.
- Jessor, R., Van Den Bos, J., Vanderryn, J., Costa, F. M., & Turbin, M. S. (1995). Protective factors in adolescent problem behavior: Moderator effects and developmental change. *Developmental Psychology*, 31, 923–933.
- Kaukinen, C. (2002). Adolescent victimization and problem drinking. *Violence and Victims*, 17, 669–689.
- Kelly, E. A., Glover, J. A., Keefe, J. W., Halderson, C., Sorenson, C., & Speth, C. School Climate Survey. Reston, Va.: NASSP.
- Kelly, E. A., Glover, J. A., Keefe, J. W., Halderson, C., Sorenson, C., & Speth, C. (1996). *National Association of Secondary School Principals School Climate Survey—Form A*. Contact information: 1904 Association Drive, Reston, Virginia, 22091, United States.
- Kerr, W. C., Fillmore, M.K., & Bostrom, A. (2002). Stability of alcohol consumption over time: Evidence from three longitudinal surveys from the United States. *Journal of Studies on Alcohol*, 63, 325–333.
- Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development*, 62, 1049–1065.
- Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. R., Drake, D. R., & Blyth, D. A. (1998). Developmental assets: Measurement and prediction of risk behaviors among adolescents. *Applied Developmental Science*, 2, 209–230.
- Leifman, H., Kuhlhorn, E., Allebeck, P., Andreasson, S., & Romelsjo, A. (1995). Abstinence in late adolescence—Antecedents to and covariates of a sober lifestyle and its consequences. *Social Science and Medicine*, 41, 113–121.
- Lerner, R. M., Dowling, E. M., & Anderson, P. M. (2003). Positive youth development: Thriving as a basis of personhood and civil society. *Applied Developmental Science*, 7, 172–180.
- Lerner, R. M., & Galambos, N. L. (1998). Adolescent development: Challenges and opportunities for research, programs, and policies. *Annual Review of Psychology*, 49, 413–446.
- Lerner, R. M., Lerner, J. V., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S. et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents: Findings from the first wave of the 4-H study of positive youth development. *Journal of Early Adolescence*, 25, 17–71.
- Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology*, 33, 241–253.
- Mahoney, C. A., & Lafferty, C. K. (2003). Positive youth development. *American Journal of Health Behavior*, 25, 3–5.
- Mahoney, J. L., & Stattin, H. (2000). Leisure activities and adolescent antisocial behavior: The role of structure and social context. *Journal of Adolescence*, 23, 113–127.
- Marini, Z., Spear, S., & Bombay, K. (1999). Peer victimization in middle childhood: Characteristics, causes, and consequences of bullying. *Brock Education*, 9, 32–47.
- Marlatt, G. A., & Witkiewitz, K. (2002). Harm reduction approaches to alcohol use: Health promotion, prevention, and treatment. *Addictive Behaviors*, 27, 867–886.
- Mitchell, C. M., & Plunkett, M. (2000). The latent structure of substance use among American Indian adolescents: An example using categorical variables. *American Journal of Community Psychology*, 28, 105–125.
- Moore, K. A., & Gleit, D. (1995). Taking the plunge: An examination of positive youth development. *Journal of Adolescent Research*, 10, 15–40.
- Paglia, A., & Room, R. (1999). Preventing substance use problems among youth: A literature review and recommendations. *Journal of Primary Prevention*, 20, 3–50.
- Petraitis, J., Flay, B. R., & Miller, T. Q. (1995). Reviewing theories of adolescent substance use: Organizing pieces in the puzzle. *Psychological Bulletin*, 117, 67–86.
- Piquero, A.R., Brezina, T., & Turner, M.G. (2005). Testing Moffitt’s account of delinquency abstinence. *Journal of Research on Crime and Delinquency*, 42(1), 27–54.

- Rosenberg, M. (1965). *Society and the adolescent self image*. Princeton, NJ: Princeton University Press.
- Roth, J., & Brooks-Gunn, J. (2000). What do adolescents need for healthy development? Implications for youth policy. *Social Policy Report, 14*, 3–19.
- Roth, J., Brooks-Gunn, J., Murray, L., & Foster, W. (1998). Promoting healthy adolescents: Synthesis of youth development program evaluations. *Journal of Research on Adolescence, 8*, 423–459.
- Scales, P. C., Benson, L., Leffert, N., & Blyth, D.A. (2000). Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science, 4*, 27–46.
- Schafer, J. L., & Graham, J. W. (2002). Missing data: Our view of the state of the art. *Psychological Methods, 7*, 147–177.
- Statistics Canada (2001). *Population by ethnic origin* [on-line]. Available: www12.statcan.ca.
- Topolski, T. D., Patrick, D. L., Edwards, T. D., Huebner, C. E., Connell, F. A., & Kiomi Mount, K. (2001). Quality of life and health-risk behaviors among adolescents. *Journal of Adolescent Health, 29*, 426–435.
- Weinberger, D., Tublin, S., Ford, M., & Feldman, S. (1990). Preadolescents' social-emotional adjustment and selective attrition in family research. *Child Development, 61*, 1374–1386.
- Weiss, S., & Moore, M. (1995). Reasons for abstinence among Moslem, Druze, and Christian adolescents in Israel. *International Journal of the Addictions, 30*, 1499–1508.
- Williams, P. G., Holmbeck, G. N., & Greenley, R. N. (2002). Adolescent health psychology. *Journal of Consulting and Clinical Psychology, 70*, 828–842.
- Wills, T. A., McNamara, G., Vaccaro, D., & Hirky, A. E. (1996). Escalated substance use: A longitudinal grouping analysis from early to middle adolescence. *Journal of Abnormal Psychology, 105*, 166–180.
- Willoughby, T., Chalmers, H., & Busseri, M. A. (2004). Where is the syndrome? Where is the risk? Co-occurrence among multiple adolescent problem behaviors in adolescence. *Journal of Consulting and Clinical Psychology, 72*, 1022–1037.
- Windle, M., & Lerner R. M. (1986). Reassessing the dimensions of temperamental individuality across the life span: The revised Dimensions of temperament survey (DOTS-R). *Journal of Adolescent Research, 1*, 213–230.
- Zweig, J. M., Lindberg, L. D., & McGinley, K. A. (2001). Adolescent health risk profiles: The co-occurrence of health risks among females and males. *Journal of Youth and Adolescents, 30*, 707–728.

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