Adolescents’ Perception of Parental Deterrents of High-Risk Behavior and Prediction of Involvement in Risk Behaviors as Measured by the Risky Behavior Scale

Dissertation

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Abstract

The present study investigated the effectiveness of adolescents’ risky decision-making model in relation to their perceptions of four main prospective parental deterrents: finding-out (detection), punishment, severity of punishment, and expression of disappointment, and examined the dimensionality of a newly developed instrument of high-risk behavior. Participants were 360 high school adolescents in a large Midwestern public school. The results supported that three components of the model (i.e., finding out, punishment, and disappointment) were significant predictors of adolescent risky decision-making. The study also examined a newly developed measure of high-risk behavior (Risky Behavior Scale). Initial psychometric properties of the scale were established via an item analysis, Cronbach’s alpha, and a principal components analysis. Three dimensions emerged from the analysis: problem behaviors, delinquency, and defiance to parental authority. Results related to the scale’s dimensionality are discussed in terms of implications to future research and measurement of the construct.
I would like to dedicate this dissertation to my son Benjamin Campbell. May this document demonstrate to him that all things are possible, and that dreams can be made reality. I love you my son.

“It is never too late to be what you might have been” ~ George Eliot
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Chapter 1: Introduction

Adolescents’ engagement in unprotected sex, alcohol consumption, and other high-risk behaviors can have major adverse repercussions not only for themselves and their immediate families, but as well for society at large. Indeed, the prevalence of serious adolescent risk-taking represents one of the largest health policy and political concerns in the nation (Steinberg, 2008; Males, 2009; Dahl, 2004). Nearly three-fourths (74.3%) of adolescents have had at least one drink of alcohol, and one-fourth (25.6%) have done so before the age of 13 (CDC, 2006). Over one-fourth (28.5%) of adolescents surveyed have ridden in a car with a drunk driver and 9.9% have driven an automobile drunk respectively (CDC, 2006). Over half (54.3%) have tried cigarettes, and approximately one-third have been in a physical fight (35.9%), or have stolen or damaged school property (29.8%) (CDC, 2006).

Although peers exert increasing social influence during the adolescent years, parents can nonetheless play an important role in the reduction of serious adolescent risk-taking (Borkowski, Ramey & Bristol-Power, 2001). Parents who are attentively involved in their children’s lives have cultivated relatively close socioemotional relationships and typically engage in appropriate levels of monitoring, supervision, and limit-setting. High parental involvement was found to be related to lower levels of adolescent drug use,
smoking, delinquency, and alcohol abuse (Moore & Zaff, 2002; Patterson, 1993; Steinberg, 2000).

Parents are pivotal in the psychosocial development of both emotional and behavioral autonomy in their adolescents. As adolescents continue to mature, the parent-adolescent relationship progresses to a more adult-like rapport (Furman & Buhrmester, 1992); likewise parents allow greater involvement in decision-making and even in the teen’s own discipline (Aquilin, 1997). Yet, while adolescents navigate and negotiate greater levels of autonomy, teens still tend to be concerned about how their parents think of them and concurrently use them as edifices of support while exploring these new areas of autonomy (Grotevant & Cooper, 1986; Youniss & Ketterlinus, 1987). Parents not only play a crucial role in governing access to additional levels of autonomy, but are also charged with the regulation and implementation of disciplinary actions when teens violate family rules.

As the progression through adolescence continues, more reports of disagreements with parents regarding interpersonal issues and family rules occurs (Montemayor, 1983; Smetana, 1989), as well as conflicts concerning the obtainment of additional levels of autonomy (Small et al., 1983). Adolescence is also a time of increased questioning of legitimacy and of parental control and of parental rules over certain areas of their lives. Smetana and Daddis (2002) found many early to middle adolescents’ believe parents should have less legitimate control over topics associated with “personal issues” (e.g. Staying out late and choice of own clothes or hairstyle). Conceivably, as conflict arises between parents and their adolescents, including participation in high-risk activities, parents may utilize specific behavioral deterrents and/or consequences for their actions.
Reduced risk-taking by adolescents whose parents are highly involved may reflect a concern with possible adverse consequences, and accordingly a decision not to engage in the behavior. Literature pertaining to adolescent decision-making has focused on adolescent consumer decisions (Moschis & Moore, 1979), decision-making competence (Halpern-Felsher & Cauffman, 2001), and domain-specific decision-making (Worth, 1989). Relatively little attention has been paid, however, to adolescents’ decision-making concerns in relation to parental involvement and high-risk behavior.

**Main Study**

The present study explored the role of anticipated parental consequences and other decision-making concerns as predictors of adolescent risk-taking. Particular emphasis was given to the assumption that adolescents, in their decision-making, engage in a cost-benefit and gist analysis (cf. Tversky & Fox, 1994; Rivers, Reyna & Mills, 2008) that includes anticipation of the possible consequences (finding out, punishment, harshness of the punishment, and disappointing parents) that could ensue from the behavior. These possible consequences were viewed as parental deterrents to engagement in risky behaviors. These decision-making concerns may be prominent decisional factors among adolescents due to their connection to parents’ ability to restrict or limit levels of autonomy or privileges as deterrents to such behavior participation. As levels of autonomy increase (Steinberg, 2000) and as the parent-adolescent relationships develop toward a more peer-like dynamic (Maccoby, 1980), the weight given to these deterrents in relation to adolescent high-risk decision making process may decrease accordingly.
The model of adolescent risk-related decision-making utilized in this study encompassed adolescents’ estimations of the likelihood of their parents finding out (find out); punishing their adolescent (punishment); severity of the punishment (harshness of punishment); and parental expression of disappointment (disappointment). These considerations of the adolescent’s decision-making process are collectively referred to as the Perceived Parental Deterrents (PPD).

![Decision-Making Model of Adolescent Risk-Taking](image)

Figure 1 above, depicts the proposed model of adolescent risk-taking and its relationship to decision-making. An adolescent is presented with a choice between whether or not to participate in a specific high-risk activity. Before a decision is made, as measured in this study, the four considerations of the PPD are taken into account. Although the relationship of particular decision-related variables to adolescent risk-taking has been addressed in previous studies (Gardner & Steinberg, 2005; Commendador, 2003; Alexander, Piazza, Mekos & Valente, 2001) this study was the first to our
knowledge to examine the relationship between the perception of these parent-related
decision-making variables and adolescent risk-taking. The model’s constructs are further
specified below.

*Perceived Parental Deterrents (PPD)*

The PPD consists of four parent-related variables or elements linked closely to an
adolescent’s decision-making process. The variables pertain to considerations, i.e., the
teen’s estimation of PPD, of their parents finding out, being punished, the severity of the
punishment, and expression of parental disappointment for participating in a high-risk
behavior. Research literature concerning these variables is indicated below.

*Finding Out*

The first variable refers to the adolescent’s estimation of the likelihood of
detection; that is, of their parents “finding out.” Moore and Gullone (1996) examined the
relationship of risky behaviors and perceived deterrents related to high-risk engagement.
Utilizing 570 adolescents, participants listed both positive and negative outcome related
to a compiled list of common high-risk behaviors. The most frequent negative outcome
listed by adolescents was “getting into trouble,” while frequent positive outcomes
included not finding out, pleasure, and getting away with it. These anticipated outcomes,
i.e., getting into trouble and not finding out, demonstrate the salient role that detection by
parents play in adolescent’s decision-making process.

Other studies have also evidenced “finding out” versus “getting away with it” as
figuring prominently among considerations mentioned by adolescents in their depiction
of perceived negative and positive consequences related to high-risk activity
(Loewenson, Ireland, & Resnick, 2004; Teevan, 1974; Waldo & Chiricos, 1972). While
other studies have established further support for the variable’s salience, however others have found gender differences in the role this component plays in the decision-making process (Cheng, Savageau, Sattler & DeWitt, 1993; Pearl, Bryan, & Herzog, 1990). In the present study anticipated detection (finding out) was hypothesized to relate to reduced likelihood of participation in high-risk behaviors, especially among males. Indeed, while predicted to be a stronger indicator among males, the variable was also conceived to be a significant component to female’s decision-making.

*Punishment*

Punishment is conceptualized as the introduction of an unpleasant or aversive event in order to stem future high-risk behavior engagement (Wakefield & Giovino, 2003). Punishment for engagement in high-risk behaviors can come from multiple sources within society. For the present study, parental punishment will be examined. In the criminological area of deterrence, researchers (cf. Gibbs, 1965; Wright, 2004) generally find a negative relation between perceived risk of punishment and involvement in illegal acts. Paternoster, Saltzman, Waldo & Chiricos (1983) conducted a longitudinal study examining the relationship of the assessment of risk of punishment and involvement in three illegal behaviors (petty theft, using marijuana, and writing checks with insufficient funds). Findings revealed that participants who had not engaged in a specific high-risk behavior had a higher estimation of parental punishment relative to those who reported engagement in such behavior.

Other studies have shown similar results utilizing different populations such as high school students, licensed drivers, and college students (Piquero & Paternoster, 1998); among these populations, punishment was perceived as a one-time event that can be
avoided with greater vigilance in the future. In contrast, the correlation of the punishment consequence to anticipated subsequent risk-taking behavior may actually be positive (Piquero & Paternoster, 1998). Considering this evidence, it is predicted that adolescents who have higher ratings on the punishment component of the PPD will have lower levels of participation in high-risk behaviors; similarly, adolescents depicting lower ratings will demonstrate higher levels. The proposed study hypothesizes at least a moderate negative correlation between perceived prospective punishment and risk-taking behavior.

*Punishment Severity (Harshness)*

The third variable in the PPD construct pertains to severity of the parental punishment. Although a negative relation between punishment severity and risk-taking behavior might be expected, studies have reported mixed findings within the criminological literature. Waldo and Chiricos (1972; cf. Gibbs, 1965; Tittle, 1980) found that anticipation of harsh penalties (e.g., extended jail sentence and sanctions) evidenced the greater deterrent value given expectations of detection. In other studies (e.g., Bailey & Lott, 1976; Nagin, 1998), however, certainty of detection constituted a stronger deterrent against risk-taking behavior than severity of punishment. Yet, still other researchers (e.g., Nagin & Paternoster, 1993; Piquero & Rengert, 1999) have identified methodological issues and possible artifacts that complicate interpretation of the results from many empirical studies. Heeding such empirical findings, the variable of punishment severity (harshness) was kept in the study for theoretical reasons; however, measurement and methodological issues such as multicollinearity and psychometric instability were expected.
**Parental Disappointment**

The fourth variable comprising the PPD construct is the adolescents’ perceptions of whether their parents would be disappointed in them if they engaged in certain high-risk behaviors. Anticipations of disappointing one’s parents, along with health and self-esteem-related concerns, were found to be prominent among reasons given by adolescents for reducing alcohol intake (Reeves & Draper, 1984). Other researchers have found similar findings related to unwanted pregnancy (Kapinus & Corman, 2004; Lee, 2004) and revealing HIV status (Chin & Krosen, 1993). “Not disappointing one’s parents” also figured prominently among reasons given by female (and some male) adolescents for not engaging in sexual activity (Loewenson, Ireland & Resnick, 2004), and has found to a salient concern to adolescents in drug and alcohol decision-making (Miller-Day & Dodd, 2004). The use of disappointment statements also has been shown to be strongly related to children’s prosocial behavior (Krevans & Gibbs, 1996); indeed it has been correlated to prosocial behavior in both multicultural and college populations (Miller-Day & Lee, 2001; Stewart & McBride-Chang, 2000).

Emphasis on disappointing parents may gain during the adolescent years, especially for females (Maccoby, 1980). A negative correlation between anticipated parental disappointment and risk-taking behavior, especially among younger (9th and 10th grade) adolescents and among females more than males was expected. Given that the parent-adolescent relationship becomes more egalitarian as a function of age (Maccoby, 1980); older adolescents would be expected to be concerned with the variables of finding out and punishment as compared to their younger counterparts.
Aims & Hypotheses

Perceived parental deterrents may loom large in the adolescent’s risk-related decisions, and hence may constitute a major predictor of adolescent risk-taking behavior. As articulated in the above conceptual model, the perceived parental deterrents involve variables (finding out, punishment, harshness of punishment, and parental disappointment) that were hypothesized to represent the salient decision-making considerations for adolescents. The hypotheses in terms of this model are summarized below.

Aim I

The first aim of the study was to examine the amount of the variance accounted for in the proposed decision making model of risk-taking behavior by the PPD. It was first hypothesized that the perceived parental deterrents variables (Finding Out, Punishment, Harshness of Punishment, and Disappointment) will be negatively related to high-risk participation; while capturing a significant amount of the decision-making variance. The second hypothesis was the variable of Punishment will account for the majority of the variance accounted for, ancillary the variable of Finding Out, tertiary the variable of Harshness of Punishment. Finally the third hypothesis was that Disappointment will account for the least amount of variance.

Aim II

The second aim of the study focused on whether the amount of variance accounted for by the components of the PPD would change as a function of age as measured by grade level. The forth hypothesis was the variable of Disappointment and Harshness of Punishment will account for a significant amount of the variance in younger
adolescents (9th graders); whereas the variables of Find Out and Punishment will account for a significant amount of the variances with older (10th, 11th and 12th graders) adolescents’ decision-making. The fifth hypothesis of the study was that the predictiveness of the PPD components in the adolescent’s high-risk decision-making will diminish significantly for 12th graders. This is predicted due to expected continued growth in emotional and behavioral autonomy, and preparation for leaving the home.

Aim III

The final aim examined if the amount of variance accounted for by the components of the PPD would differ as a function of gender. The final, sixth, hypothesis proposes that the variables of Finding Out and Punishment will account for the majority of the variance in adolescent males; whereas the variable of Disappointment will account for the most variance among adolescent females. This hypothesized difference is consistent with findings that the parental attachment history of female adolescents features closer socioemotional parental bonding than does that of male adolescents (Armsden & Greenberg, 1987).

Preliminary Study

Many studies of risky behavior in the literature utilize individual high-risk items (e.g. smoking, sex, and drug use) as dependent variables; the preliminary study was conducted in order to construct a cohesive scale of risky behaviors to be utilized in the main study. Evidence from empirical studies has shown moderate to strong correlations between many risky behaviors (e.g. Byrnes et al., 1999; Zuckerman, 1994). Building off of these findings, fifty-two potential high-risk items were assembled by a review of the literature within both the high-risk and monitoring domains. The fifty-two items were
examined by two groups of eight undergraduate research assistants, in order to reduce the number of items to a list that was relevant for a population of high school adolescents and represented a range of high-risk behaviors that adolescents may have the chance to participate in regardless of age. Items such as “skateboarding without a helmet” and “driving without using a seatbelt” were eliminated from the initial list of items due to their strong gender and age relationship. For example, males tend to engage in skateboarding for recreation more than females (Osberg, Schneps, Di Scala, Guohua, 1998); while the privilege to drive has a minimum age requirement mandated by state law. From the initial fifty-two items, twenty items were selected as possible items in the construction of the Risky Behavior Scale.

Participants

The scale was developed by means of a survey given to undergraduate students at a large Midwestern university enrolled in an introductory psychology course; participation in research of the students’ choice was a part of the course’s requirements. The sample (n = 118) consisted of 57% males (n = 67) and 43% females (n = 51). The age range was 18-22 years, with a mean age of 19.8 years. Approximately 64% of subjects were European-American, 32% were African-American, and 4% of the subjects self-identified as Asian-Pacific Islander.

Measure

Risky Behavior Items. The twenty high-risk behaviors were presented to the participants to rate on two questions: “How common were the behaviors listed below among the teenagers in your high school (all grade levels)?” and “How risky (potentially having negative outcomes) were the behaviors listed below for teenagers in your high school (all grade levels)?”
school (all grade levels)?” Items were rated on a five-point Likert scale in which higher scores represented greater levels of frequency and riskiness of the behavior. Thirteen items were selected to construct the scale in relation to their mean risky and commonness among the participants’ high school years as well as their relevance to the construct of high-risk.

Results

Table 1 depicts the items perceived by participants to be the most common were utilized in the Risky Behavior Scale: items with frequency means of 3.5 or higher were selected for further analysis; 12 items were identified. The means for the 12 items ranged from $M=3.5$ ($SD = 1.21$) to $M=4.8$ ($SD = .98$); as such, items with this range of means were considered to be “somewhat” to “extremely” common to teens in the participant’s high school. The second selection criterion was that of the perceived riskiness of the items. The 12 items riskiness means ranged from $M=1.3$ ($SD = .98$) to $M=4.6$ ($SD = 1.14$). The 15 items’ means were examined in order to select items that ranged from low risk to high risk in nature. Utilizing the item’s risk means as well as the items with stronger perceived construct relevance, 12 items were selected to construct the scale. After further examination of the scale means, the item of “doing an illegal drug” did not score as high as the other higher-risk items. In order to increase the amount of higher-risk items, the variable of shoplifting was added to the scale after the administration to the developmental sample, due to its theoretical and empirical relationship to the construct.

The developed scale consisted of four low-risk, five moderate-risk, and four high-risk items, 13 total items. Bolded items in Table 1 represent the items selected for use in the construction of the Risky Behavior Scale. The four low-risk items include “going to
internet sites,” “going to a party without permission,” “hanging out with friends,” and “lying to parents.” The five moderate-risk items include “sneaking out of the house,” “skipping school,” “smoking cigarettes,” “getting drunk,” and “sexual intercourse.” The four high-risk items selected are “stealing,” “vandalism,” “using an illegal drug,” and “shoplifting.” These items were used to construct the Risky Behavior Scale utilized in the current study.
Table 1
Mean analysis for commonalty and riskiness of the 20 potential items utilized for the construction of the Risky Behavior Scale.

<table>
<thead>
<tr>
<th>High-Risk Items</th>
<th>How Common</th>
<th>How Risky</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoplifting</td>
<td>†</td>
<td>†</td>
</tr>
<tr>
<td>Vandalism</td>
<td>3.9</td>
<td>4.8</td>
</tr>
<tr>
<td>Stealing</td>
<td>4.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Sex</td>
<td>4.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Drugs</td>
<td>3.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Smoking</td>
<td>3.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Drunk</td>
<td>3.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Skip class</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Sneak out of the house</td>
<td>3.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Party w/o permission</td>
<td>3.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Hung out with people not supposed to</td>
<td>3.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>3.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Go to internet sites not supposed to</td>
<td>3.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Physical fighting</td>
<td>1.2</td>
<td>5.0</td>
</tr>
<tr>
<td>Skipping or ditching school</td>
<td>2.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Spend Money: Parent Disapprove</td>
<td>3.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Getting school detention</td>
<td>2.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Watching porn</td>
<td>2.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Failing a test</td>
<td>2.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Posting info on the internet</td>
<td>2.2</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Note. Bolded items were selected for use. † Denotes item added after completion of preliminary study.
Chapter 2: Methods

Main Study

Research Design

The developmental framework of the study is that of a cross-sectional survey design which allowed for the examination of representative age and gender differences. Self-report questionnaires were utilized to capture adolescents’ decision-making variability (e.g. finding out, punishment, severity of punishment, and parental disappointment), self-reported risk-taking, and general demographic information.

Recruitment

Two weeks before the commencement of data collection, two different types of posters were displayed in the high school hallways advertising the study. The first poster consisted of a description of the study; the second described the assent/consent process and incentives for participating in the study. Researchers also visited all English classes to discuss the study in more detail as well as to distribute consent/assent and parental permission forms. Moreover, an information table was established outside the lunch room to address any additional questions or concerns that students may have had. Extra copies of the consent/assent forms were made available to students via the information table. Students returned their completed consent/assent forms at the information table. A two week grace period was given to ensure that all participants had ample time to consider their participation. 491 students returned a completed parental permission and/or consent form within the two week grace period.
Incentives

Participants and the high school faculty received incentives for participation in the study. Every student that returned their consent/assent form received “cruiser cash”; (“Cruiser Cash” represented a school-based incentive program designed to instill pro-social values via operant conditioning thought a token economy) and was entered into a raffle to win one of eight prizes. Students who received “Cruiser Cash” were able to exchange this “cash” for concessions from a school-run snack bar during the lunch period. Raffle prizes included one grand prize of a popular video game system; the other seven prizes, awarded individually, consisted of gift cards from local businesses. Finally, the school received a catered breakfast for all faculty and staff to indicate appreciation for the use of their classrooms and time. Participation was voluntary, and students were free to withdraw their consent/participation in the study at any time without penalty and without affecting their ability to receive the aforementioned incentives.

Participants

From the original 492 consented students, 394 adolescents from a large urban high school participated in the study. 34 participants’ data were removed from the study due the inability to follow directions and copying errors, 19 and 15 respectively. The total effective sample utilized for this study was n=360. Students were recruited from all four grade levels: 9th, 10th, 11th, and 12th. Of the 360 participants, 142 were 9th graders (80 females and 57 males), 93 were 10th graders (71 females and 21 males), 67 were 11th graders (34 females and 31 males), and 54 were 12th graders (26 females and 28 males). Approximately 50.8% of the sample was European-American, 27.5% were African-
American, 4.7% were Hispanic-American, 2.2% were Asian-American, and 12.5% represents other ethnic backgrounds.

Data regarding family demographics were also obtained. Approximately 33% of the sample lived with both biological parents; 48.3% lived with at least one biological parent, while the other 18.6% had other types of living arrangements (e.g. living with relatives or were wards of the state). Further, 21.9% of the sample stated that they had a part-time job, while 4.7% stated having a full-time job. When asked about their total family income, 43.9% of the sample who responded to the question stated having a total family income below $50,000; 40.7% reported an income from $50,000 to $100,000, while 15.4% stating having a total family income of $100,000 or more.

Procedure

Data collection encompassed two full school days. Confirmed participants completed all questionnaires during their mandatory 42 minute English class period. Participants’ names were verified by comparing student names compiled from a list generated from returned consent forms. Once verification had been completed, participating students were given a packet containing all administration materials; administration of the scales was conducted by two research assistants per English class. The research assistants read the questionnaire’s instructions and verbally answered questions as they arose during the administration of the questionnaires.

Each packet consisted of five questionnaires. For this dissertation, only 3 of the 5 were utilized: the Risky Behavior Scale, the Scale of Perceived Parental Deterrents, and the demographic questionnaire. First, students completed and turned in their raffle ticket, and subsequently the researchers administered the questionnaires. Once completion of
the questionnaires and reading of the debriefing form had concluded the packets were collected and the students resumed their normal class period. The entire packet took approximately 35 minutes to complete.

To accommodate students who consented/assented and were absent during the first period of data collection, the research team returned to the school on the following Wednesday in order to ensure their participation. All students who consented/assented and were absent during both data collection days were still entered into the raffle drawing. One week after the last data collection day, a drawing for the raffle was completed and prizes were distributed to raffle winners.

*Measures*

*Risky Behavior Scale*

The Risky Behavior Scale was a rationally and empirically created questionnaire designed to measure a participants’ engagement in 13 different high-risk behaviors. The high-risk items that comprise the scale are: shoplifting, vandalism, stealing, sexual intercourse, illegal drug use, smoking cigarettes, being drunk, skipping class, sneaking out of the house, going to a party without parental permission, hanging out with people you are not supposed to, lying to parents, and going to internet sites you are not supposed to. For each item of the scale, refer to Appendix A, the participants were asked the following stem “In the past year, have you ________?” Responses were recorded on a 5 point Likert scale from “never” to “frequently.” Higher scores corresponded to higher frequency of engagement in the high-risk item.
Perception of Parental Deterrent Questionnaire (PPD Questionnaire)

The PPD Questionnaire was a rationally created questionnaire designed to measure an adolescent’s perception of four parental behaviors related to engagement in the behaviors listed in the aforementioned Risky Behavior Scale. The four perceived parental deterrents include: the adolescent’s estimation of the likelihood of their parents finding out about the behavior; the adolescent’s estimation as to whether their parent would punish them for doing the behavior; their perception of the harshness of the proposed punishment; and, finally, the teen’s estimation as to whether their parents would express disappointment in them for having participated in the high-risk behavior. For each of the Risk Behavior Scale items, refer to Appendix B, the participants were asked the following “How likely is it that your parent(s) would find out?,” “If you parent(s) were to find out, how likely is it that they would punish you?,” “How likely is it that the punishment would be harsh?,” and finally, “If your parent(s) were to find out, how likely is it that they would be disappointed?” The responses were recorded on a 5 point Likert scale from “not at all” to “extremely.” Higher scores corresponded to higher perceptions of receiving the parental deterrent.

Demographic Questionnaire

This 14 item questionnaire included questions focusing on gathering demographic information. Information such as age, gender, SES, and other variables were collected.
Chapter 3: Results

Main Study

The results of the study are distributed across four sections. The first section depicts findings from the preliminary study conducted to construct a measure of high-risk behavior. The second section presents initial psychometric properties and other descriptive analyses of the Risky Behavior Scale. The third section depicts hierarchical regression analysis of the three parental variables illustrating the best predictor of risky behavior engagement, and the fourth section reports additional examination of the scale’s component structure.

Risky Behavior Scale (RBS)

All thirteen items for the Risky Behavior Scale contained the stem “In the past year” to ensure that all participants identified their level of engagement for an identical period in time. Example questions found within the scale include “In the past year, how many times have you been drunk?” and “In the past year, have many times have you smoked cigarettes?” The participant’s engagement in each item was measured on a five-point Likert scale from “no” to “frequently”; higher scores represent higher levels of high-risk engagement. Examination of the scale’s items and initial psychometric properties are presented.

*Initial Psychometric Properties*

*Internal Consistency*

Examination of the scales initial psychometric properties included an examination of scale’s reliability via the calculation of a Cronbach’s alpha (internal consistency
reliability) and a principal-components analysis of the scale as a whole. The Cronbach’s alpha for the scale was observed at \( \alpha = .83 \). Table 2 depicts the summary statistics of the internal consistency analysis. The corrected item-total correlation ranged from \( r = .20 \) to \( .61 \). Further examination of the total alpha score revealed consistency for all of the items except for one, namely: “In the past year, have you visited internet sites that you were not supposed to” – that is, the “Internet” item, whose corrected item-total correlation was found to be \( r = .20 \). The squared multiple correlation, which indicates the proportion of the variance explained by regressing the Risky Behavior Scale items (IVs) on the internet item (DV), was found to be Multiple \( R = .15 \). The Cronbach’s alpha reliability coefficient for internal consistency, if the internet item was removed from the scale, would increase to \( .84 \), while the deletion of any other item would result in the deflation of the alpha statistic.
Table 2

Internal consistency reliability statistics for the 13 item Risky Behavior Scale.

<table>
<thead>
<tr>
<th>Risky Behavior Scale Items</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Corrected item-total correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoplift</td>
<td>1.50</td>
<td>.99</td>
<td>.42</td>
</tr>
<tr>
<td>Vandalism</td>
<td>1.40</td>
<td>.89</td>
<td>.47</td>
</tr>
<tr>
<td>Stealing</td>
<td>1.73</td>
<td>1.07</td>
<td>.49</td>
</tr>
<tr>
<td>Sex</td>
<td>2.64</td>
<td>1.66</td>
<td>.49</td>
</tr>
<tr>
<td>Drugs</td>
<td>1.96</td>
<td>1.38</td>
<td>.55</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.73</td>
<td>1.30</td>
<td>.48</td>
</tr>
<tr>
<td>Drunk</td>
<td>2.08</td>
<td>1.36</td>
<td>.58</td>
</tr>
<tr>
<td>Skip Class</td>
<td>2.68</td>
<td>1.51</td>
<td>.52</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>2.13</td>
<td>1.39</td>
<td>.56</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>2.27</td>
<td>1.43</td>
<td>.61</td>
</tr>
<tr>
<td>Hung Out</td>
<td>2.42</td>
<td>1.57</td>
<td>.49</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>3.48</td>
<td>1.25</td>
<td>.45</td>
</tr>
<tr>
<td>Internet</td>
<td>2.00</td>
<td>1.34</td>
<td>.20</td>
</tr>
</tbody>
</table>

Cronbach’s Alpha = 0.83

*Note. N = 346*
Principal-Components Analysis

A principal-components analysis was conducted in order to examine a possible single component structure of the Risky Behavior Scale, as well as to further examine the internet item’s relationship to the scale as a whole. One component solution was utilized and was confirmed with a single component emerging, accounting for 34.9% of the variance (eigenvalue = 4.54). Evidence for the sampling adequacy and strength of the relationship among variables in order for a principal-components analysis to be performed was established by a Keiser-Meyer-Olkin statistics of .85 and a significant Bartlett’s Test of Sphericity, \( \chi^2 = 1300.98 \) (df = 78, p < .001).

The items of the scale loaded on a single component with loading of .5 and higher (range = .52-.70); the Internet item, as an exception, loaded on the single component at the .28 level. Further principal components analysis of the scale with the Internet item removed showed a single component with an initial eigenvalue of 4.48 and the variance accounted for an increase to 37.3% (change of +2.4%). Table 3 shows the component loadings of the items on a single component as well as the loadings after the deletion of the Internet item. Due to the evidence elucidated from both the internal consistency analysis and the principal component analysis, the Internet item was removed from the scale. Furthermore, the loading patterns suggest a strong and interpretable single component – that is, of risky behavior. For this current study, all analyses using the Risky Behavior Scale will no longer contain the Internet item.
Table 3
Principal components analysis of the 13 item Risky Behavior Scale: Single-component solution.

<table>
<thead>
<tr>
<th>Risky Behavior Items</th>
<th>Component one Loadings</th>
<th>Component one Loadings without Internet Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoplift</td>
<td>.54</td>
<td>.54</td>
</tr>
<tr>
<td>Vandalism</td>
<td>.57</td>
<td>.56</td>
</tr>
<tr>
<td>Stealing</td>
<td>.60</td>
<td>.59</td>
</tr>
<tr>
<td>Sex</td>
<td>.58</td>
<td>.60</td>
</tr>
<tr>
<td>Drugs</td>
<td>.66</td>
<td>.67</td>
</tr>
<tr>
<td>Smoking</td>
<td>.58</td>
<td>.59</td>
</tr>
<tr>
<td>Drunk</td>
<td>.68</td>
<td>.69</td>
</tr>
<tr>
<td>Skip Class</td>
<td>.62</td>
<td>.62</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>.66</td>
<td>.66</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>.70</td>
<td>.71</td>
</tr>
<tr>
<td>Hung Out</td>
<td>.58</td>
<td>.57</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>.52</td>
<td>.51</td>
</tr>
<tr>
<td>Internet</td>
<td>.28</td>
<td>Removed</td>
</tr>
</tbody>
</table>

Variance Accounted For: 34.9% 37.3%

Note. Kaiser-Meyer Olkin Measure of Sampling Adequacy = .85. Bartlett’s Test of Sphericity p < .001
**Item Discrimination by Gender**

Table 4 denotes the means, standard deviations, and MANOVA results for the individual items of the Risky Behavior Scale as a function of gender. Indeed, boys reported significantly more engagement for the items shoplifting $F(1,327) = 3.68, \ p < .001$, vandalism $F(1,327) = 7.89, \ p < .01$, and stealing $F(1,327) = 7.82, \ p < .01$.

**Item Discrimination by Grade**

Table 5 denotes the means, standard deviations, and MANOVA results for the individual items of the Risky Behavior Scale as a function of grade. Grade differences were found for the items skipping class $F(3,335) = 6.57, \ p < .01$ and sex $F(3,335) = 5.05, \ p < .01$. Both items display and increasing function as grade level increases, and both are items in which girls have higher means (non-significant) as compared to boys.

Further analysis of the significant differences depicts interpretable results. For the skipping class item, 9th graders were significantly different from all other grades. The sex item illustrates that 9th and 10th graders were similar to each other yet different from 11th and 12th graders, who also share some paired similarity. Table 6 shows the relationships between means of the skipping class and sex items as a function of grade level.
Table 4
Means, standard deviations, and MANOVA results for the items of the Risky Behavior Scale as a function of gender.

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Boys</th>
<th></th>
<th>Girls</th>
<th></th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Shoplift</td>
<td>1.62</td>
<td>1.08</td>
<td>1.42</td>
<td>0.90</td>
<td>3.68*</td>
</tr>
<tr>
<td>Vandalism</td>
<td>1.59</td>
<td>1.08</td>
<td>1.28</td>
<td>0.73</td>
<td>7.89**</td>
</tr>
<tr>
<td>Stealing</td>
<td>1.94</td>
<td>1.16</td>
<td>1.60</td>
<td>1.01</td>
<td>7.82**</td>
</tr>
<tr>
<td>Sex</td>
<td>2.76</td>
<td>1.73</td>
<td>2.54</td>
<td>1.61</td>
<td>0.72</td>
</tr>
<tr>
<td>Drugs</td>
<td>1.97</td>
<td>1.40</td>
<td>1.96</td>
<td>1.37</td>
<td>0.39</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.60</td>
<td>1.23</td>
<td>1.79</td>
<td>1.34</td>
<td>1.40</td>
</tr>
<tr>
<td>Drunk</td>
<td>2.10</td>
<td>1.39</td>
<td>2.05</td>
<td>1.33</td>
<td>0.06</td>
</tr>
<tr>
<td>Skip Class</td>
<td>2.57</td>
<td>1.51</td>
<td>2.74</td>
<td>1.52</td>
<td>1.43</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>2.15</td>
<td>1.36</td>
<td>2.40</td>
<td>1.40</td>
<td>0.46</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>2.42</td>
<td>1.43</td>
<td>2.14</td>
<td>1.42</td>
<td>2.05</td>
</tr>
<tr>
<td>Hung Out</td>
<td>2.24</td>
<td>1.49</td>
<td>2.54</td>
<td>1.61</td>
<td>1.89</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>3.34</td>
<td>1.26</td>
<td>3.58</td>
<td>1.23</td>
<td>2.67</td>
</tr>
</tbody>
</table>

Note.  *p < .05  **p < .01
Table 5
Means, standard deviations, and MANOVA results for the Items of the Risky Behavior Scale as a function of grade.

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>9th Grade</th>
<th>10th Grade</th>
<th>11th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Shoplift</td>
<td>1.48</td>
<td>0.96</td>
<td>1.41</td>
<td>0.86</td>
</tr>
<tr>
<td>Vandalism</td>
<td>1.50</td>
<td>0.97</td>
<td>1.31</td>
<td>0.84</td>
</tr>
<tr>
<td>Stealing</td>
<td>1.85</td>
<td>1.12</td>
<td>1.66</td>
<td>1.06</td>
</tr>
<tr>
<td>Sex</td>
<td>2.33</td>
<td>1.62</td>
<td>2.42</td>
<td>1.64</td>
</tr>
<tr>
<td>Drugs</td>
<td>1.91</td>
<td>1.33</td>
<td>2.05</td>
<td>1.46</td>
</tr>
<tr>
<td>Smoking</td>
<td>1.69</td>
<td>1.23</td>
<td>1.77</td>
<td>1.40</td>
</tr>
<tr>
<td>Drunk</td>
<td>1.93</td>
<td>1.21</td>
<td>2.03</td>
<td>1.39</td>
</tr>
<tr>
<td>Skip Class</td>
<td>2.25</td>
<td>1.46</td>
<td>2.59</td>
<td>1.57</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>2.15</td>
<td>1.34</td>
<td>2.11</td>
<td>1.46</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>2.13</td>
<td>1.38</td>
<td>2.03</td>
<td>1.32</td>
</tr>
<tr>
<td>Hung Out</td>
<td>2.50</td>
<td>1.58</td>
<td>2.41</td>
<td>1.53</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>3.52</td>
<td>1.31</td>
<td>3.51</td>
<td>1.22</td>
</tr>
</tbody>
</table>

Note.  * p < .05    **p < .01
Table 6
Pairwise comparison of grade differences means for the sex and skipping class items.

<table>
<thead>
<tr>
<th>Items</th>
<th>9th Grade</th>
<th>10th Grade</th>
<th>11th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skipping Class</td>
<td>2.25(^a)</td>
<td>2.59(^b)</td>
<td>2.95(^b)</td>
<td>3.24(^b)</td>
</tr>
<tr>
<td>Sex</td>
<td>2.33(^a)</td>
<td>2.42(^a)</td>
<td>3.03(^b)</td>
<td>3.19(^b)</td>
</tr>
</tbody>
</table>

Note. Means with different superscripts across rows differ significantly; \(p<.05\)

Summary of the Scale Analyses

Analysis of the Risky Behavior Scale’s psychometric properties yielded adequate initial evidence for its psychometric integrity. The 12 item scale exhibited a Cronbach’s Alpha of .84 with a scale mean of 26, standard deviation of 9.67, and a variance of 93.5. Evidence for the sampling adequacy and strength of the relationship among variables in order for a principal-components analysis to be performed was established by a Keiser-Meyer-Olkin statistics of .86 and a significant Bartlett’s Test of Sphericity, \(X^2(66) = 1241.59, p = .001\). Using a signal component solution, a single component emerging, accounted for 37.3% of the variance (eigenvalue = 4.48). The items of the scale loaded on the single component at the .5 level and higher (range = .51-.71). Further analysis of the scale included its relationship with gender and grade of the participants. The analysis of the between-subjects effects exhibited no significant properties with grade, gender, or their interaction.
Perceived Parental Deterrents

Multicollinearity Examination

The first analysis of the four Perceived Parental Deterrents consisted of an examination of the four variables’ intercorrelations. Table 7 depicts Pearson $r$ intercorrelations among the four PPD variables. All correlations between the variables were found to be significant at the $p < .01$ level. The correlation between the variables of punishment, harshness, and disappointment were found to have a Pearson Correlation of $r = .79$ and higher (range = .79 - .94). Such high correlations suggest a multicollinearity concern.

Further examination of these three variables was conducted to examine and address the multicollinearity that exists between them. The calculation of a Variance Inflation Factor (VIF) and examination of a Tolerance statistic helped quantify the harshness of multicollinearity in a least squares regression analysis. This provided a measure of how much variance of an estimated regression coefficient is increased due to colinearity. The above statistic was calculated in relationship to the Risky Behavior Scale and is depicted in Table 8.
Table 7
Intercorrelations among the four perceived parental variables.

<table>
<thead>
<tr>
<th></th>
<th>Finding out</th>
<th>Punishment</th>
<th>Harshness</th>
<th>Disappointment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Out</td>
<td>1.00</td>
<td>.43**</td>
<td>.39**</td>
<td>.41**</td>
</tr>
<tr>
<td></td>
<td>(343)</td>
<td>(342)</td>
<td>(339)</td>
<td>(337)</td>
</tr>
<tr>
<td>Punishment</td>
<td></td>
<td>1.00</td>
<td>.94**</td>
<td>.83**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(347)</td>
<td>(343)</td>
<td>(341)</td>
</tr>
<tr>
<td>Harshness</td>
<td></td>
<td></td>
<td>1.00</td>
<td>.79**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(344)</td>
<td>(338)</td>
</tr>
<tr>
<td>Disappointment</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(342)</td>
</tr>
</tbody>
</table>

*Note.* Total N are in parentheses. **$p < .01$
As a matter of conservative convention, a tolerance of less than 0.20 and/or a VIF above 5 indicates a multicollinearity problem. The high VIF for the variables of punishment and harshness (10.43 and 8.37 respectively) and the variables’ low tolerance levels (.09 and .12 respectively) warrants further statistical examination. Referring back to the literature, studies have reported mixed findings within the criminological literature where researchers have attempted to measure similar operationalization of harshness or harshness of punishment. In fact, researchers (e.g., Nagin & Paternoster, 1993; Piquero & Rengert, 1999) have identified methodological issues and possible artifacts that complicate interpretation of the findings. In congruence with this evidence, the removal of the harshness variable was warranted – below entails the statically method utilized.

Table 8
Collinearity statistics: Variance inflation factor and tolerances.

<table>
<thead>
<tr>
<th>PPD Variable</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Out</td>
<td>0.80</td>
<td>1.24</td>
</tr>
<tr>
<td>Punishment</td>
<td>0.09*</td>
<td>10.43**</td>
</tr>
<tr>
<td>Harshness</td>
<td>0.12*</td>
<td>8.37**</td>
</tr>
<tr>
<td>Disappointment</td>
<td>0.31</td>
<td>3.27</td>
</tr>
</tbody>
</table>

Note. * significant value for Tolerance. ** significant value for VIF. Dependent Variable: Risky Behavior Scale. Independent Variables: Find Out, Punishment, Harshness, and Disappointment
Due to the Punishment variable’s significance to the construct of risky behavior and the Harshness variable’s conflicting issues within the literature, an examination of the partial correlation statistic was calculated for punishment with its relationship to Disappointment controlling for Harshness. The correlation between the Punishment and Disappointment variables controlling for the Harshness variable was calculated to be $r = .43$. A recalculation of the Variance Inflation Factor and Tolerance statistic, with the harshness variable removed, was found to be within adequate levels. Table 9 illustrates the new calculated VIF and Tolerance statistic with the harshness variable removed. All further analyses utilizing the Perceived Parental Consequence variables will no longer contain the Harshness variable due to the above and similar findings from within the literature.

Table 9
Collinearity statistics: Variance inflation factor and tolerances after removal of severity.

<table>
<thead>
<tr>
<th>PPD Variable</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Out</td>
<td>0.81</td>
<td>1.24</td>
</tr>
<tr>
<td>Punishment</td>
<td>0.30</td>
<td>3.32</td>
</tr>
<tr>
<td>Disappointment</td>
<td>0.31</td>
<td>3.26</td>
</tr>
</tbody>
</table>

Note. Dependent Variable: Risky Behavior Scale. Independent Variables: Find Out, Punishment, Harshness, and Disappointment

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**PPD Variable Analyses**

The Cronbach’s Alpha for the Find Out, Punishment, and Disappointment variables were found to be \( \alpha = .85 \), \( \alpha = .90 \) and \( \alpha = .87 \) respectively. Significant MANOVA results of the PPD variables with respect to grade, gender, and their interaction were found. With respect to grade, punishment \( F(3,324) = 13.13, p < .001 \) and disappointment \( F(3,324) = 7.97, p < .001 \) were found to be significant. Table 10 shows the grade pairwise comparison for the three PPD variables. From the table below, 12th graders were significantly different from all other grades for both the Punishment and Disappointment variables. Additionally, 10th graders were similar to both 9th and 11th graders, while 9th graders were significantly different from 11th graders. In reference to gender differences, the only significant variable was Disappointment \( F(1,316) = 6.12, p < .01 \). Further examination of the pairwise comparisons depict girls (M = 3.85) having a significantly higher mean than boy (M = 3.62) with regard to this variable.

<table>
<thead>
<tr>
<th></th>
<th>9th Grade</th>
<th>10th Grade</th>
<th>11th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find Out</td>
<td>2.52(^a)</td>
<td>2.64(^a)</td>
<td>2.48(^a)</td>
<td>2.36(^a)</td>
</tr>
<tr>
<td>Punishment</td>
<td>3.66(^a)</td>
<td>3.70(^a)</td>
<td>3.42(^a)</td>
<td>2.81(^b)</td>
</tr>
<tr>
<td>Disappointment</td>
<td>3.96(^a)</td>
<td>3.89(^{ab})</td>
<td>3.72(^b)</td>
<td>3.36(^c)</td>
</tr>
</tbody>
</table>

**Note.** Means with different superscripts across rows differ significantly \( p < .05 \)
In relation to the interaction between grade and gender, the punishment variable was significant $F(3,316) = 3.75, p < .01$. This significant interaction is depicted in figure 2. Boys tended to show higher means for punishment than girls in the 9th and 10th grades; however for the 11th and 12th grades girl depicted higher means than boys. A test of simple main effects revealed a significant difference between the means of 11th grade girls and boys $t(63) = 2.62, p < .01$.

Note. *11th grade main effect $p < .01$.

Figure 2: Grade by Gender Interaction for the Perceived Parental Deterrent of Punishment
Regression Analysis

A series of multiple (simultaneous inclusion) and hierarchical (stepwise inclusion) regressions were conducted to test the hypotheses in the present study. The results from these regressions are organized by the proposed hypotheses. All regression analyses were performed using the statistical analysis program Predictive Analytics Software (PASW).

Regression for Full Model

Results from the simultaneous inclusion show that the complete model (variables: Grade, Gender, Grade x Gender, Find Out, Punishment, and Disappointment) accounted for 15.2% of the variance in predicting Risky Behavior Scale scores. In reference to the individual components of the PPD, both Punishment and Find Out variables accounted for a significant amount of the variance in predicting Risky Behavior Scale scores –12% and 2.2% respectively. The first column of Table 11 labeled “Total Sample” portrays this analysis.

Regression by Gender

Table 11 also depicts the simultaneous and Hierarchical regression analyses predicting Risky Behavior Scale scores from the 3 PPD variables for the sample by gender controlling for grade. The independent variable of grade (variable controlled for) never reached significance for all regressions utilized in this section. The total model accounted for 19.9% and 12.4% of the variance for boys and girls respectively. Hierarchical regression analyses revealed the PPD component of punishment accounted for the largest amount of variance for boys and girls, 15.6% and 9.8% respectively.
Congruently, the component of finding out was the ancillary best predictor for both boys (2.6%) and girls (2.0%).

Table 11
Simultaneous and hierarchical regression analyses predicting Risky Behavior Scale scores from the three perceived parenting deterrents; depicting beta weights and variance accounted for by Gender controlling for Grade.

<table>
<thead>
<tr>
<th></th>
<th>Total sample</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Simultaneous Inclusion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>-.003</td>
<td>-.055</td>
<td>.001</td>
</tr>
<tr>
<td>Gender x Grade</td>
<td>-.050</td>
<td>-.017</td>
<td>-.013</td>
</tr>
<tr>
<td>Getting Caught</td>
<td>-.160*</td>
<td>-.181</td>
<td>-.150</td>
</tr>
<tr>
<td>Punishment</td>
<td>-.178*</td>
<td>-.269</td>
<td>-.138</td>
</tr>
<tr>
<td>Disappointment</td>
<td>-.120</td>
<td>-.084</td>
<td>-.125</td>
</tr>
<tr>
<td><strong>Stepwise Inclusion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punishment</td>
<td>-.258*</td>
<td>-.330*</td>
<td>-.219*</td>
</tr>
<tr>
<td>Finding Out</td>
<td>-.167*</td>
<td>-.182*</td>
<td>-.164*</td>
</tr>
</tbody>
</table>

Note. Stepwise predictors of gender, grade, and interaction term p > .40. Disappointment component of the PPD did not reach significance in the stepwise inclusion.

*p < .05   **p < .01   ***p < .001
Regression by Grade

Table 12 depicts the simultaneous and hierarchical regression analyses to predict scores on the Risky Behavior Scale via the three PPD variables controlling for gender. From the table below, the stepwise inclusion depicts grade differences for the variables. For 9th graders the most predictive variable was that of Disappointment. Indeed, the importance of the variables is different as a function of grade. 10th graders explicate Punishment and Finding Out accounting for the majority of the variance; while 11th and 12th graders show the PPD variable of Punishment as the significant predictor of scores on the Risky Behavior Scale.

Regression by Grade for Boys

As depicted on table 13, the three PPD variables accounted for 16.9% to 38.8% of the variance when predicating the scores on the Risky Behavior Scale. Similar to the overall grade findings, differences were found per grade level. Finding out was the best predictor in for 9th grade boys, while punishment was the strongest predictors for the 10th and 11th grade boys; yet none of the PPD variables reached significance for the 12th graders.

Regression by Grade for Girls

As depicted in table 14, the three PPD variables account for 5.3% to 21% of the variance when predicating the scores on the Risky Behavior Scale. 9th grade girls depicted the variable of Disappointment as the best predictor, while similar to the boys Punishment and Finding Out was the strongest for 10th graders. None of the PPD variables reached significance for the 11th and 12th grade girls.
Table 12
Simultaneous and Hierarchical Regression Analyses Predicting Risky Behavior Scale Scores from the three Perceived Parenting Consequences Depicting Beta weights and Variance Accounted for by Grade: Controlling for Gender

<table>
<thead>
<tr>
<th></th>
<th>9th Graders</th>
<th>10th Graders</th>
<th>11th Graders</th>
<th>12th Graders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
</tr>
<tr>
<td><strong>Simultaneous Inclusion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find Out</td>
<td>-.174</td>
<td>-.269*</td>
<td>-.081</td>
<td>-.028</td>
</tr>
<tr>
<td>Punishment</td>
<td>.094</td>
<td>-.303</td>
<td>-.298</td>
<td>-.329</td>
</tr>
<tr>
<td>Disappointment</td>
<td>-3.61</td>
<td>-.009</td>
<td>-.136</td>
<td>.114</td>
</tr>
</tbody>
</table>

Note: Stepwise predictors of Gender, Grade, and Interaction Term $p > .40$. * $p < .05$ ** $p < .01$ *** $p < .001$
Table 13

Simultaneous and Hierarchical Regression Analyses Predicting Risky Behavior Scale Scores from the three Perceived Parenting Consequences Depicting Beta weights and Variance Accounted for by Grade for Boys

<table>
<thead>
<tr>
<th></th>
<th>9th Graders</th>
<th>10th Graders</th>
<th>11th Graders</th>
<th>12th Graders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td>Simultaneous Inclusion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find Out</td>
<td>-.353*</td>
<td>-.164</td>
<td>.050</td>
<td>.130</td>
</tr>
<tr>
<td>Punishment</td>
<td>.020</td>
<td>-.804</td>
<td>-.411</td>
<td>-.250</td>
</tr>
<tr>
<td>Disappointment</td>
<td>-.254</td>
<td>.006</td>
<td>-.127</td>
<td>-.013</td>
</tr>
</tbody>
</table>

\[ .209^{**} \quad .404^{*} \quad .311^{*} \quad .143 \]

Stepwise inclusion

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Punishment</td>
<td>-.918*</td>
<td>.388^{**}</td>
<td>-.483*</td>
<td>.306^{**}</td>
</tr>
<tr>
<td>Find Out</td>
<td>-.405*</td>
<td>.169^{**}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappointment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Stepwise predictors of Gender, Grade, and Interaction Term \( p > .40 \). \* \( p < .05 \) \quad ** \( p < .01 \) \quad *** \( p < .001 \)
Table 14

Simultaneous and Hierarchical Regression Analyses Predicting Risky Behavior Scale Scores from the three Perceived Parenting Consequences Depicting Beta weights and Variance Accounted for by Grade for Girls

<table>
<thead>
<tr>
<th></th>
<th>9th Graders</th>
<th>10th Graders</th>
<th>11th Graders</th>
<th>12th Graders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td><strong>Simultaneous Inclusion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find Out</td>
<td>.013</td>
<td>-.262*</td>
<td>-.244</td>
<td>-.172</td>
</tr>
<tr>
<td>Punishment</td>
<td>.151</td>
<td>-.232</td>
<td>-.366</td>
<td>-.370</td>
</tr>
<tr>
<td>Disappointment</td>
<td>-.447</td>
<td>-.067</td>
<td>.105</td>
<td>.246</td>
</tr>
<tr>
<td></td>
<td>.064</td>
<td>.265***</td>
<td>.161</td>
<td>.209</td>
</tr>
<tr>
<td><strong>Stepwise inclusion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Punishment</td>
<td>-.278*</td>
<td>.210***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find Out</td>
<td>-.271*</td>
<td>.53*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disappointment</td>
<td>-.299*</td>
<td>.057*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Stepwise predictors of Gender, Grade, and Interaction Term p > .40.  * p < .05       **p < .01       ***p<.001
Risky Behavior Scale: Dimensionality

Scale Analysis

Exploratory psychometric analyses were conducted on the new devised Risky Behavior Scale. These analyses included additional Principal Component Analyses to explore possible dimensionality of the scale; moreover, grade and gender differences on the scale’s components were also examined. Since the scale was constructed from the results of the preliminary study, and suggested possible correlations between high-risk variables (Byrnes et al., 1999; Zuckerman, 1994), dimensionality of the scale was to be expected.

Principal Component Analysis

Examination the scale’s dimensionality was completed via a principal components analysis using the aforementioned statistical software PASW. In instances of rotated solutions, a Quartimax rotation scheme was utilized for these analyses.

One Component Solution

As stated from above, a one component solution was utilized and was confirmed with a single component emerging, accounted for 37.3% of the variance (eigenvalue = 4.478). Evidence for the sampling adequacy and strength of the relationship among variables in order for a principal-components analysis to be performed was established by a Keiser-Meyer-Olkin statistics of .853 and a significant Bartlett’s Test of Sphericity, $\chi^2 = 1300.98$ (df = 78, p < .001). The items of the scale loaded on a single component with loading of .5 and higher (range = .52-.70). Refer to table 3 for exact component loads for
each item. This component encompassed all of the items and was named “Risk Behavior”, and is now referred to as the Risky Behavior Scale.

**Two Component Solution**

Further analysis of the scale included the examination of a two component solution for the principal component analysis. Using a Quartimax rotation, a two component solution was utilized and was confirmed with two components emerging. Table 15 shows the rotated component matrix illustrating the two component solution which converged in three iterations. Evidence for the sampling adequacy and the strength of the relationship among variables justifying the performance of a principal-components analysis was established by a Keiser-Meyer-Olkin statistics of .858 and a significant Bartlett’s Test of Sphericity, $\chi^2 = 1241.6$ (df = 66, p < .001). The first component consisted of nine of the 12 items, which was named the “Risky-Problem Behavior” component. The Risky-Problem Behavior component accounted for 34.1% of the variance with an eigenvalue of 4.48. These items loaded on the first component with loading of .5 and higher (range = .54-.74). Table 17 depicts the results of the two-component analysis.

The second component consisted of three (Shoplifting, Vandalism, and Stealing) of the 12 items, which was named the “Risky-Delinquent Behavior” component. The “Delinquency” component accounted for 14.4% of the variance with an eigenvalue of 1.34. Both components account for a cumulative 48.5% of the variance. These items loaded on the second component with loading of .6 and higher (range = .64 -.80). Figure
3, found above, depict the plots of the items in rotated space. From the graph, two clusters or components emerge, one above and one below the bisect of the first quadrant.

**Table 15**

Two-component solution for the items of the Risky Behavior Scale.

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>Component 1</th>
<th>Component 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoplift</td>
<td>.27</td>
<td>.80</td>
</tr>
<tr>
<td>Vandalism</td>
<td>.36</td>
<td>.64</td>
</tr>
<tr>
<td>Stealing</td>
<td>.34</td>
<td>.77</td>
</tr>
<tr>
<td>Sex</td>
<td>.56</td>
<td>.20</td>
</tr>
<tr>
<td>Drug</td>
<td>.66</td>
<td>.12</td>
</tr>
<tr>
<td>Smoke</td>
<td>.65</td>
<td>-.05</td>
</tr>
<tr>
<td>Drunk</td>
<td>.74</td>
<td>-.01</td>
</tr>
<tr>
<td>Skip Class</td>
<td>.61</td>
<td>.15</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>.68</td>
<td>.05</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>.73</td>
<td>.07</td>
</tr>
<tr>
<td>Hung Out w/ Friends You're Not Supposed To</td>
<td>.62</td>
<td>-.01</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>.54</td>
<td>.02</td>
</tr>
</tbody>
</table>

Note. Rotated Component Solution. Quartimax Rotation.
Further analysis of the scale included examination of a three component solution for the principal component analysis. Using a Quartimax rotation, a three component solution was utilized and was confirmed with three components emerging. Table 16 shows the rotated component matrix illustrating the three component solution which converged in four iterations.
### Table 16

Three-component solution for the items of the Risky Behavior Scale.

<table>
<thead>
<tr>
<th>Scale Item</th>
<th>Component 1</th>
<th>Component 2</th>
<th>Component 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoplift</td>
<td>.22</td>
<td>.81</td>
<td>.03</td>
</tr>
<tr>
<td>Vandalism</td>
<td>.28</td>
<td>.67</td>
<td>.13</td>
</tr>
<tr>
<td>Stealing</td>
<td>.23</td>
<td>.80</td>
<td>.16</td>
</tr>
<tr>
<td>Sex</td>
<td>.60</td>
<td>.23</td>
<td>.05</td>
</tr>
<tr>
<td>Drug</td>
<td>.78</td>
<td>.14</td>
<td>-.04</td>
</tr>
<tr>
<td>Smoke</td>
<td>.74</td>
<td>-.02</td>
<td>.03</td>
</tr>
<tr>
<td>Drunk</td>
<td>.79</td>
<td>.02</td>
<td>.11</td>
</tr>
<tr>
<td>Skip Class</td>
<td>.49</td>
<td>.20</td>
<td>.34</td>
</tr>
<tr>
<td>Sneak Out</td>
<td>.51</td>
<td>.11</td>
<td>.47</td>
</tr>
<tr>
<td>Party w/o Permission</td>
<td>.55</td>
<td>.14</td>
<td>.49</td>
</tr>
<tr>
<td>Hung Out w/ Friends You’re Not Supposed To</td>
<td>.29</td>
<td>.08</td>
<td>.72</td>
</tr>
<tr>
<td>Lie to Parents</td>
<td>.17</td>
<td>.10</td>
<td>.75</td>
</tr>
</tbody>
</table>

Note. Rotated Component Solution. Quartimax Rotation

Evidence for the sampling adequacy and strength of the relationship among variables in order for a principal components analysis to be performed was established by a Keiser-Meyer-Olkin statistics of .858 and a significant Bartlett’s Test of Sphericity, $\chi^2 = 1241.6$ (df = 66, $p < .001$). The first component consisted of seven of the 12 items, which
was named the “Risky-Problem Behavior” component. The Risky-Problem Behavior component accounted for 27.1\% of the variance with an eigenvalue of 4.48. These items loaded on the first component with loading of .49 and higher (range = .49 -.79). The second component consisted of three (Shoplifting, Vandalism, and Stealing) of the 12 items, which was named the “Risky-Delinquent Behavior” component. This component accounted for 15.9\% of the variance with an eigenvalue of 1.34. These items loaded on the second component with loading of .6 and higher (range = .67 -.81).

The third component consisted of four (sneaking out of the house, going to a party without parental permission, hanging out with people you are not supposed to, and lying to parents) of the 12 items. Yet, Sneaking out of the house (.51 and .47) and Going to a part without parental permission (.55 and .49) were cross-loaded on both the first (risky component) and this third component, respectively. Based on the cross-loading finding of the PCA and theory, the two items were moved to the third component. Taken as a whole, these four items constituted a coherent construct related to disobeying or opposing parental rules. This third component, named “Risky-Oppositional Behavior” (opposition to parental authority) accounted for 14.3\% of the variance with an eigenvalue of 1.34. These items loaded on the third component with loading of .4 and higher (range = .47 -.75). All three components of the scale accounted for a cumulative 57.3\% of the variance. Figure 3 below depicts the plots of the items in rotated space and represent the component structure.
Grade and Gender Differences

With three components identified, additional analyses are called for to explore any grade and gender differences. Significant MANOVA results for the three components with respect to grade and gender were found. With respect to grade, the delinquency component $F(3, 324) = 3.5, p = .02$ was found to be significant. Table 17 shows the grade pairwise comparison for the three components whereas means with different superscripts across rows differ significantly.
Table 17
Pairwise comparison of grade differences level sig for the 3 components of the PPD.

<table>
<thead>
<tr>
<th>Component</th>
<th>9th Grade</th>
<th>10th Grade</th>
<th>11th Grade</th>
<th>12th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risky-Problem Behavior</td>
<td>2.01&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.17&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>2.36&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.51&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Risky-Delinquent Behavior</td>
<td>1.63&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.51&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.65&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.40&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Risky-Oppositional Behavior</td>
<td>2.56&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.54&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.77&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.42&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note. Means with different superscripts across rows differ significantly $p < .05$

For gender differences, the only significant component was for “Delinquency” $F(1,316) = 9.57, p = .002$. Further examination of the pairwise comparisons depict boys ($M = 1.69$) having a significantly higher mean than girls ($M = 1.39$) with regard to this component. There were no significant values for the interaction of Grade and Gender for the three components.
Chapter 4: Discussion

The present study investigated adolescents’ risky decision-making in relation to their perceptions of four main prospective parental deterrents (PPD): Finding Out, Punishment, Severity of Punishment, and Expression of Disappointment. These aspects are rooted in the adolescent’s perceptions of parental action if participation in risky behaviors were to ensue. Yet, via theory and statistical analysis, the Severity of Punishment constituent of the PPD was removed from the study due to issues of multicollinearity and possible operationalization concerns. The present study assessed: the prevalence of self-reported participation in risky behaviors among adolescents; the question of whether the risky behaviors legitimately constitute a unitary construct or valid scale; and the degree of importance of perceived parental consequences as viable deterrents in the decisional process. This study is believed to the first of its kind to explicate the role parents play in adolescent high-risk decision-making. While other studies have measured risk behavior utilizing single, multiple, and even scalar items; a cohesive scale of high-risk behaviors was constructed and the dimensionality of such high-risk behavior items and the scale’s component structure was elucidated.

The results indicated that self-reported risky behaviors were evident at moderate levels; that the behaviors were sufficiently related to one another to permit
the construction of a multi-dimensional but unified scale titled the Risky Behavior Scale; and that all three aspects of PPD played a significant deterrent or predictor role in predicting risky decision-making in regression analyses. Findings (including grade and gender influences) pertaining to the study’s PPD predictive model will be discussed first, followed by discussion of findings concerning construction of the Risky Behavior Scale. The chapter will conclude with an indication of the study’s limitations as well suggestions for future research.

**PPD as Predictors of Risky Decision-Making: Model Effectiveness**

The posited PPD model was found to be effective in the prediction of adolescent risky decision-making. The three perceived parental deterrents (finding out, punishment, and expression of parental disappointment) in the decision-making model accounted uniquely (controlling for gender, grade, and their interaction) for nearly a fifth of the dependent variance collapsing across all participants; while by grade (controlling for gender) the variance accounted for ranged from 8.2% to 26.3%. The amount of variance explained for girls by grade level ranged from 5.7% to 21%; while for boys by grade level the amount of variance accounted for ranged from 16.9% to 38.8%. At one time or another all three constituents of the PPD contributed significantly to the model’s effectiveness, however punishment generally played the greatest role. The model’s effectiveness across grade and gender was also examined, with particular attention to a grade-related trend among the aspects of the PPD.
Impact of Grade and Gender

Of particular interest were how the three deterrents’ relative contributions were influenced by grade and gender. With higher grade levels, the contribution of disappointment declined, whereas the other two deterrents’ contributions increased. Disappointment accounted for a significant amount (8.2%) of the decision-making variance for younger adolescents (9th graders), in contrast to only a negligible contribution by the other two aspects of the PPD, Finding Out and Punishment. With increasing grade level, however, Disappointment drops out while Finding Out and Punishment gained in prominence. At the two highest grade level (11th and 12th grades), only Punishment remained to account for the model’s effectiveness.

These grade-related differences may reflect the widely noted adolescent transition from predominantly emotional reliance on parents to a greater orientation toward peer influences and relationships. As levels of emotional autonomy, individuation, and behavioral autonomy from parents increase for these adolescents, the impact of anticipated parental disappointment on their decision-making declines. It should be noted, despite the attainment of increasing levels of emotional and behavioral autonomy, parents still play a vital role in the psychosocial development of their adolescents. The continued development of the adolescent’s behavioral autonomy may relate to the observed increased importance of the Finding Out and Punishment aspects of the PPD. Adolescent behavioral autonomy trends have been studied in terms of conflicts with parents over issues of parental control or legitimacy.
of parental authority (e.g., Montemayor, 1983; Small et al, 1983, cited in Silverberg & Steinberg, 1987; Smetana, 1988). Parental involvement may extend to other considerations such as the detection of and punishment for the adolescents’ high-risk behaviors.

Yet, the PPD variables of Finding Out and Disappointment play a prominent role in the decision-making process among younger high school adolescents (9th and 10th graders) but not for their older counterparts. Older adolescents may place more value on the loss of autonomy over the costs of being found out or experiencing the expression of parental disappointment. While Finding Out and Disappointment still play a role in their decision-making process, the loss of privileges (e.g. being grounded, loss of allowance and other privileges) may garnish more deterrent effects. Moreover, once an adolescent has engaged in a high-risk activity or has been caught participating in an activity, the relative weight of the Finding Out and Disappointment decisional aspects may begin to lose their effectiveness or at least diminish in magnitude. Whereas, the measured grade related change could also stem from a parental change in deterrent strategies. Parents could use a repertoire of different deterrent methods and then settle on the use of punishment instead of less effective methods (i.e., Finding Out and Disappointment). In other words, methods such as finding out and expression disappointment may lose their effectiveness as adolescents get older.
The impact of gender on the PPD model’s effectiveness was also examined. At the ninth grade, Disappointment accounted for the majority of the decision-making variance for females; while the variable of Finding Out was prominent for males. At the higher grade levels, both Disappointment and Finding Out variables declined appreciably for both genders. In other words, although evidence of emotional and behavioral autonomy were evident for both males and females, emotional sensitivity to parent feelings, which is higher among females than among males, persisted to a greater extent for females. This difference is consistent with findings that the parental attachment history of female adolescents features closer socioemotional parental bonding than does that of male adolescents (e.g., Armsden & Greenberg, 1987); yet in the tenth grade both Finding Out and Punishment account for the major of the female decision-making variance.

In due course, after the eleventh grade, all three of the PPD elements begin to decline in predictability; however Punishment remained to account for a significant amount of the decision-making variance. This grade related difference in the effectiveness of the PPD may be due in part to additional increases in levels of autonomy, which allows for greater freedom and more time spent away from parents’ supervision. The trends of the effectiveness of the decision-making model resemble an inverted U-shaped curve, which parallels parent-adolescent conflict patterns. A relationship between the PPD and family conflict may exist, such is discussed below.
Relationship of the PPD with Family Conflict

As adolescents gain greater control over their lives and decision-making, levels of family conflict begin to escalate especially during early to middle adolescence (Fuligni & Eccles, 1993). Over thirty year of research, as summarized by Montemayor (1983), depicts a developmental trend of conflict over the adolescent years as an inverted U-shaped function. Parent-adolescent conflict increases from early to middle adolescence; and then decreases from middle adolescence to when the adolescent leaves the home. Indeed, congruent with these findings, the trends of the means for the PPD’s variables (Finding Out, Punishment, and Disappointment) parallel such findings. The graph of the Finding Out variable portrays this inverted U-shape curve over the high school years; while the graph of the Punishment and Disappointment variables (i.e., the scales means) parallels the apex and the decreasing functional aspects of the inverted u-shape curve.

Conceivably during early to middle adolescents, as participation in risky behaviors begin to rise, conflict between parents and their adolescents also rise, and congruently so do the elements of the PPD. The reverse is also true for middle to late adolescence. The relationship between these variables may be highly variable and complex. For instance, a family conflict is started by a teen’s participation in a high-risk activity and a punishment is given for such participation; an argument concerning the punishment could ensue. It could be the case that the conflict, at least from the adolescent point of view, is not concerning the high-risk behavior itself, but over the type of punishment given –PPD variables can also be a source of disagreement and
controversy not just a parental response to transgressions. This cyclic association may aid in accounting for such similarities in reference to their inverted U-shaped function.

While levels of parent-adolescent conflict vary from family to family, approximately one fifth of families have serious levels of conflict which is correlated with negative outcomes (Montemayor, 1986; Smetana, 1988). Since there are differences in levels of parent-adolescent conflict, it may be the case that the salience of the constituents of the PPD in relation to high-risk decision making may also differ. For both normative and high conflict families the importance of the PPD may be linked to the quality of the parent-adolescent relationship. It may be possible that as the levels of family conflict increases to serious levels, certain aspects of the PPD are weight heavier than others in the adolescents’ decision-making process. In fact it may be the case, in some families, the variables of finding out and expression of disappointment are not significant to their decision making processes due to an eroding of the parent-adolescent relationship. For these families, the role of the PPD in the decision making process may become ancillary to other variables related to the decisional process such as peer relationships and/or cognitive distortions. Conceivably constructs similar to detachment and psychological control could be antecedents to the low predictability of the PPD in these populations.
Also examined in the present study were the adolescents’ self-reported risky problem behaviors. The study assessed whether the behaviors were sufficiently related to one another to permit the establishment of a cohesive, albeit multidimensional scale. The study found evidence suggesting a unitary construct status for the risky behavior responses. The resulting scale, the Risky Behavior Scale: RBS, was examined for dimensionality, specifically, for two and three component solutions. The results of these exploratory analyses are discussed below.

**Single-Component Solution**

As noted, an exploratory analysis using the principal components technique provided evidence that the self-reported problem behavior responses could be construed as representing a basic unitary structure. A single-solution principal components analysis found that a single scale, referred to as the Risky Behavior Scale: RBS, was robust, i.e., that all of the items included in the scale loaded .51 or higher. Similarly, an examination of the interrelatedness of the items indicated adequate internal consistency (Cronbach’s $\alpha = .84$). An evaluation of a single-component solution by grade and gender indicated that the scale generally remained robust (high item loadings, high Cronbach’s alpha) across these variables. Two items varied across grade in their degree of contribution to internal consistency. These items, i.e., “having sex” and “skipping class”, were retained in the scale. Although they related only minimally to other problem behaviors at the ninth grade, their
contribution became comparable to that of other items at higher grade levels. Gender differences were not found for the one-component solution. This is consistent with findings from a meta-analysis (cf. Byrnes, Miller, & Schafer, 1999) which suggested that the “gender gap,” in relation to risk-taking, has been decreasing over time; yet, larger gender differences are found with reference to intellectual and physical risk-taking as compared to other risky behaviors, such as smoking.

Two-Component and Three-Component Solutions

Although the behavior responses were amenable to a robust single-component solution, the responses were also subjected to a principal components analysis for two- and three-component solutions. Generally, the single-component solution provided the highest degree of shared variance. Nonetheless, the additional exploratory analyses suggested that the RBS may entail distinguishable dimensions.

The high-risk behaviors included in the RBS encompass a broad range of precarious activities, index-status, problem behaviors, and externalizing-internalizing (Jessor, Donovan, & Costa, 1991; Achenbach, 1993; Kazdin, 1995, ). Two-and three-solution analyses of the RBS items suggested that the scale may entail more than one dimension. The two-solution analysis yielded separate high loadings (.64, .77, and .80 respectively) on a second component for three of the RBS items, namely, Shoplifting, Vandalism, and Stealing, while the remaining items continued to load highly (.54 to .74) on the first component. The second-dimension represents relatively serious offenses (i.e., are index rather status offenses) and tend to be covert,
externalizing, and may be considered “classic” antisocial behaviors. Although constituting adjudicable offenses whether committed by juveniles or adults, shoplifting or minor theft and vandalism are offenses considered characteristic of juvenile delinquents. Hence, this dimension might be labeled as a delinquent component (Risky-Delinquent Behavior) of the scale. It should be emphasized, however, that many of the items that continue to load exclusively on the first dimension, e.g., smoking cigarettes or going to party without parental permission, are nonetheless consistently with “problem” behavior even if not adjudicable. Thus, one may be able to attribute that all of the behaviors found in the Risky Behavior Scale are problem behaviors; yet, it is not the case to ascribe the label of delinquent behavior to all of the items. Within the literature, the operationalization of a delinquency measure with items from both the risky (skipping school and smoking cigarettes) and delinquency (vandalism and shoplifting) could lead to errors in measurement. While such scales as a whole may be reliable its validity for measuring delinquency may be in question. For example, adolescents who engage in delinquent behaviors may not do illegal drugs or skip school; generalizing finding from individuals who participate in delinquent behaviors such as vandalism may not attributable to individuals who engage in risky activities such as smoking cigarettes.

The Risky-Delinquent Behavior component or dimension of the RBS may also be related to having a direct effect on a victim or another person (or their property), while the remaining items still loaded on the Risky-Problem Behavior component
tend to depict more “self”-referenced behaviors. For example, engaging in drug use, getting drunk, and smoking (Risky-Problem Behavior component items) are all self-referent, while the Risky-Delinquent Behavior component items are focused on others. In terms of frequency of self-reported problem behaviors, a gender difference favoring males was evident with reference to the delinquent component of the RBS, consistent with other findings of higher rates of risk-taking in these activities for boys (Byrnes, Miller, & Schafer, 1999; Kontos, 2004; Zuckerman & Kuhlman, 2000).

A three-solution principal components analysis suggested a possible third but weaker dimension of the RBS. Items that distinctly loaded (.72 and .75, respectively) on this weaker third component were “lying to parents” and “hanging out with people you are not supposed to.” Two other items, “sneaking out of the house” and “going to a party without permission”, although loading marginally (.47 and .49, respectively) on this third dimension, continued to load adequately (.51 and .55, respectively) on the Risky-Problem Behavior component. This possible third dimension seems to address opposition to parents. The four behaviors involve disobedience to parent rules and regulations, as well as deceptions for such activities. Hitherto, the items loading on this component have a strong connection to the struggle between parents and their adolescents obtaining more freedom in their own personal live. In lieu of this connection, a more descriptive marker for this dimension maybe, defiance to parental authority (Risky-Parental Behavior).

In addition to the tentative support for the robustness of the RBS as a unitary instrument, the multidimensionality of the scale may prove to allow for greater
differentiation of the high-risk behavior construct. The specificity that is afforded by the three reported components may allow for the targets measurement of specific types of high-risk behavior, as a substitute for measuring the domain as a whole. In lieu of such findings, i.e., having discrete related subscales, the instruments may be viewed as an inventory; which will allow for the aggregation of scores from the three components into an overall score of high-risk.

**Limitations**

The study entailed several limitations. One limitation was that the study relied on a single measure of self-report responses from the adolescents concerning perceptions of parental behaviors, and not correlated with more objective measures of the construct. Convergence across multiple measures of the constructs would have bolstered the validity of the study’s findings. A second limitation pertained to sample characteristics and cell sizes. Utilizing a high school as a survey site underrepresents high-risk groups of students who are not enrolled or may be chronically absent. In fact, the school utilized for the study had separate classes and teachers for the more at risk students. Although the total sample size was substantial ($N = 360$), subsample size and gender was disproportionately represented. Some of the design cells (e.g., 12$^{th}$ and 11$^{th}$ grade) entailed disproportionately low subsamples as opposed to the ninth and tenth graders. The lack of larger samples sizes in the later grade levels, albeit gender proportionality was similar, may have lack sufficient power to examine the predictability of the PPD components. While for the ninth and tenth grades
females (80 and 71, respectively) was proportionately greater than males (57 and 21, respectively). These imbalances could lead to an overestimation or a misinterpretation of findings. For example, disappointment was the best and significant predictor of high-risk behavior; this may largely be due to the imbalance of females to males for this grade. The lower sample sizes found for the eleventh and twelfth grade may not allowed for the detection of the true significance of the PPD variables within these age groups.

*Future Research*

The present study explored the role of perceived parental deterrents in adolescents’ risky decision-making. The findings suggested that risky problem behavior is moderately prevalent in the sample of adolescents, and the considerations of parental consequence do play a deterrent role in adolescent’s high-risk decision-making processes. Taking an ecological systems approach, many problem behaviors may stem from a constellation of influences (i.e., family, peer and personal); developing studies that include measures related to these influences may help elucidate factors related to adolescent high-risk decision making. For instance, a study that included measures of peer and parental attachment may help clarify the role that the expression of parental disappointment may play in an adolescent’s decision-making—higher levels of parental attachment being correlated with higher variance accounted for by the disappointment variable. The inclusion of a measure of
sensation-seeking or levels of enjoyment for participation in a risky behavior may help capture variance in the decision-making process of a teen.

Additionally, future studies should include the utilization of both adolescent and parent reports of the perceived parenting deterrents. It may be case that teens are overestimating the likelihood of certain deterrents; this may give some insight into the efficacy of specific deterrents. More specifically, some studies have found that participants who had not engaged in a specific high-risk behavior had a higher estimation of parental punishment relative to those who reported engagement in such behavior (Paternoster, Saltzman, Waldo & Chiricos, 1983). Finally, the use of the principal components analytic technique in the present study was appropriate given its exploratory nature. Future research stemming from this study may benefit from the use of advanced multivariate techniques such as a factor analysis to examine the scale’s latent and underlying factors. Such research could allow for the development of psychometrically robust instruments related to the different dimensions of high-risk behavior.
References


Appendix A: Preliminary Study Questionnaire
<table>
<thead>
<tr>
<th>Behavior</th>
<th>Not at all Common</th>
<th>Slightly Common</th>
<th>Moderately Common</th>
<th>Highly Common</th>
<th>Extremely Common</th>
<th>Not at all Risky</th>
<th>Slightly Risky</th>
<th>Moderately Risky</th>
<th>Highly Risky</th>
<th>Extremely Risky</th>
</tr>
</thead>
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<tr>
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<td>0</td>
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<td>0</td>
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<td>0</td>
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</tr>
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</table>
Appendix B: Risky-Problem Behavior Scale

and

Perceived Parental Deterrents Questionnaire (PPD)
Now we would like to know which of the same 12 activities
you have actually done.

If you have never done an activity we want you to imagine what you think
your parent or guardian would do if they found out that you engaged in these
activities.

Take your time with each of the questions.
If you have any questions for us please let us know.

Let's do the first one together.

Hypo-Actual
**In the past year, have you shoplifted?**

If Yes:

**Answer the questions below (A-C6)**

A) In the past year, how many times have you shoplifted?

B) How likely is it that you would do this again?

C) In the future, if you were to shoplift:

C1) How likely is it that your parent(s) would find out?

C2) If your parent(s) were to find out, how likely is it that they would punish you?

C3) How likely is it that the punishment would be harsh?

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?

C5) How likely is it that your friends would approve?

C6) How likely is it that this would be enjoyable?

If No:

**Answer the questions below (A-C6)**

A) In the past year, do you know anybody who has shoplifted?

B) How likely is it that you would shoplift?

C) In the future, if you were to shoplift:

C1) How likely is it that your parent(s) would find out?

C2) If your parent(s) were to find out, how likely is it that they would punish you?

C3) How likely is it that the punishment would be harsh?

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?

C5) How likely is it that your friends would approve?

C6) How likely is it that this would be enjoyable?
In the past year, did you sneak out of the house?

**If Yes:**

<table>
<thead>
<tr>
<th>A</th>
<th>In the past year, how many times have you sneaked out of the house?</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Almost Never</td>
</tr>
<tr>
<td>2</td>
<td>Rarely</td>
</tr>
<tr>
<td>3</td>
<td>Occasionally</td>
</tr>
<tr>
<td>4</td>
<td>Frequently</td>
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<table>
<thead>
<tr>
<th>B</th>
<th>How likely is it that you would do this again?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not At All</td>
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<tr>
<td>2</td>
<td>A Little</td>
</tr>
<tr>
<td>3</td>
<td>Somewhat</td>
</tr>
<tr>
<td>4</td>
<td>Very</td>
</tr>
<tr>
<td>5</td>
<td>Extremely</td>
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**If No:**

<table>
<thead>
<tr>
<th>A</th>
<th>In the past year, do you know anybody who has sneaked out of the house?</th>
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<tbody>
<tr>
<td>1</td>
<td>None</td>
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<tr>
<td>2</td>
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<td>Very Many</td>
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<table>
<thead>
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<tbody>
<tr>
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<td>2</td>
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<tr>
<td>5</td>
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**In the future, if you were to sneak out of the house:**

<table>
<thead>
<tr>
<th>C1</th>
<th>How likely is it that your parent(s) would find out?</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Not At All</td>
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<tr>
<td>3</td>
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<td>5</td>
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<table>
<thead>
<tr>
<th>C2</th>
<th>If your parent(s) were to find out, how likely is it that they would punish you?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not At All</td>
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<tr>
<td>2</td>
<td>A Little</td>
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<td>Extremely</td>
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<table>
<thead>
<tr>
<th>C3</th>
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<td>2</td>
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<table>
<thead>
<tr>
<th>C4</th>
<th>If your parent(s) were to find out, how likely is it that they would be disappointed?</th>
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<td>1</td>
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<td>2</td>
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<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>C5</th>
<th>How likely is it that your friends would approve?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not At All</td>
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<td>2</td>
<td>A Little</td>
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<table>
<thead>
<tr>
<th>C6</th>
<th>How likely is it that this would be enjoyable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not At All</td>
</tr>
<tr>
<td>2</td>
<td>A Little</td>
</tr>
<tr>
<td>3</td>
<td>Somewhat</td>
</tr>
<tr>
<td>4</td>
<td>Very</td>
</tr>
<tr>
<td>5</td>
<td>Extremely</td>
</tr>
</tbody>
</table>
In the past year, have you used an illegal drug?

If Yes:
Answer the questions below (A-C6)

A) In the past year, how many times have you used an illegal drug?
   ① Almost Never  ② Rarely  ③ Occasionally  ④ Frequently

B) How likely is it that you would do this again?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to use an illegal drug:

C1) How likely is it that your parent(s) would find out?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C5) How likely is it that your friends would approve?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

If No:
Answer the questions below (A-C6)

A) In the past year, do you know anybody who has used an illegal drug?
   ① None  ② A Few  ③ Some  ④ Many  ⑤ Very Many

B) How likely is it that you would use an illegal drug?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to use an illegal drug:

C1) How likely is it that your parent(s) would find out?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C5) How likely is it that your friends would approve?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
In the past year, have you "skipped" or "ditched" a class?

If Yes:

Answer the questions below (A-C6)

A) In the past year, how many times have you "skipped" or "ditched" a class?
   ① Almost Never  ② Rarely  ③ Occasionally  ④ Frequently

B) How likely is it that you would do this again?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to "skip" or "ditch" a class:

C1) How likely is it that your parent(s) would find out?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C5) How likely is it that your friends would approve?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

If No:

Answer the questions below (A-C6)

A) In the past year, do you know anybody who has "skipped" or "ditched" a class?
   ① None  ② A Few  ③ Some  ④ Many  ⑤ Very Many

B) How likely is it that you would "skip" or "ditch" a class?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to "skip" or "ditch" a class:

C1) How likely is it that your parent(s) would find out?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C5) How likely is it that your friends would approve?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
### In the past year, have you been drunk?

#### If Yes:

**Answer the questions below (A-C6)**

A) In the past year, how many times have you been drunk?
   - ① Almost Never
   - ② Rarely
   - ③ Occasionally
   - ④ Frequently

B) How likely is it that you would do this again?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

#### C) In the future, if you were to get drunk:

C1) How likely is it that your parent(s) would find out?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C5) How likely is it that your friends would approve?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

#### If No:

**Answer the questions below (A-C6)**

A) In the past year, do you know anybody who has gotten drunk?
   - ① None
   - ② A Few
   - ③ Some
   - ④ Many
   - ⑤ Very Many

B) How likely is it that you would get drunk?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

#### C) In the future, if you were to get drunk:

C1) How likely is it that your parent(s) would find out?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C3) How likely is it that the punishment would be harsh?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C5) How likely is it that your friends would approve?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely

C6) How likely is it that this would be enjoyable?
   - ① Not At All
   - ② A Little
   - ③ Somewhat
   - ④ Very
   - ⑤ Extremely
In the past year, have you visited internet sites that you were not supposed to?

If Yes:

Answer the questions below (A-C6)

A) In the past year, how many times have you visited internet sites that you were not supposed to?
   - 1 Almost Never
   - 2 Rarely
   - 3 Occasionally
   - 4 Frequently

B) How likely is it that you would do this again?
   - 1 Not At All
   - 2 A Little
   - 3 Somewhat
   - 4 Very
   - 5 Extremely

C) In the future, if you were to visit internet sites that you were not supposed to:

   C1) How likely is it that your parent(s) would find out?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C2) If your parent(s) were to find out, how likely is it that they would punish you?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C3) How likely is it that the punishment would be harsh?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C5) How likely is it that your friends would approve?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C6) How likely is it that this would be enjoyable?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

If No:

Answer the questions below (A-C6)

A) In the past year, do you know anybody who has visited internet sites that they were not supposed to?
   - 1 None
   - 2 A Few
   - 3 Some
   - 4 Many
   - 5 Very Many

B) How likely is it that you would visit internet sites that you were not supposed to?
   - 1 Not At All
   - 2 A Little
   - 3 Somewhat
   - 4 Very
   - 5 Extremely

C) In the future, if you were to visit internet sites that you were not supposed to:

   C1) How likely is it that your parent(s) would find out?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C2) If your parent(s) were to find out, how likely is it that they would punish you?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C3) How likely is it that the punishment would be harsh?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C5) How likely is it that your friends would approve?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely

   C6) How likely is it that this would be enjoyable?
       - 1 Not At All
       - 2 A Little
       - 3 Somewhat
       - 4 Very
       - 5 Extremely
In the past year, have you smoked cigarettes?

<table>
<thead>
<tr>
<th>If Yes:</th>
<th>If No:</th>
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</thead>
<tbody>
<tr>
<td><strong>Answer the questions below (A-C6)</strong></td>
<td><strong>Answer the questions below (A-C6)</strong></td>
</tr>
</tbody>
</table>
| **A)** In the past year, how many times have you smoked cigarettes?  
   - 1. Almost Never  
   - 2. Rarely  
   - 3. Occasionally  
   - 4. Frequently | **A)** In the past year, do you know anybody who has smoked cigarettes?  
   - 1. None  
   - 2. A Few  
   - 3. Some  
   - 4. Many  
   - 5. Very Many |
| **B)** How likely is it that you would do this again?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **B)** How likely is it that you would smoke cigarettes?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **D) In the future, if you were to smoke cigarettes:** | **C) In the future, if you were to smoke cigarettes:** |
| **C1)** How likely is it that your parent(s) would find out?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C1)** How likely is it that your parent(s) would find out?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **C2)** If your parent(s) were to find out, how likely is it that they would punish you?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C2)** If your parent(s) were to find out, how likely is it that they would punish you?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **C3)** How likely is it that the punishment would be harsh?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C3)** How likely is it that the punishment would be harsh?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **C4)** If your parent(s) were to find out, how likely is it that they would be disappointed?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C4)** If your parent(s) were to find out, how likely is it that they would be disappointed?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **C5)** How likely is it that your friends would approve?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C5)** How likely is it that your friends would approve?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
| **C6)** How likely is it that this would be enjoyable?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely | **C6)** How likely is it that this would be enjoyable?  
   - 1. Not At All  
   - 2. A Little  
   - 3. Somewhat  
   - 4. Very  
   - 5. Extremely |
**In the past year, have you gone to a party/event without parent permission?**

If Yes:

**Answer the questions below (A-C6)**

**A)** In the past year, how many times have you gone to a party/event without parent permission?
- Almost Never
- Rarely
- Occasionally
- Frequently

**B)** How likely is it that you would do this again?
- Not At All
- A Little
- Somewhat
- Very
- Extremely

**C)** In the future, if you were to go to a party/event without parent permission:
- C1: How likely is it that your parent(s) would find out?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C2: If your parent(s) were to find out, how likely is it that they would punish you?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C3: How likely is it that the punishment would be harsh?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C4: If your parent(s) were to find out, how likely is it that they would be disappointed?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C5: How likely is it that your friends would approve?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C6: How likely is it that this would be enjoyable?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely

If No:

**Answer the questions below (A-C6)**

**A)** In the past year, do you know anybody who has gone to a party/event without parent permission?
- None
- A Few
- Some
- Many
- Very Many

**B)** How likely is it that you would go to a party/event without parent permission?
- Not At All
- A Little
- Somewhat
- Very
- Extremely

**C)** In the future, if you were to go to a party/event without parent permission:
- C1: How likely is it that your parent(s) would find out?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C2: If your parent(s) were to find out, how likely is it that they would punish you?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C3: How likely is it that the punishment would be harsh?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C4: If your parent(s) were to find out, how likely is it that they would be disappointed?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C5: How likely is it that your friends would approve?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
- C6: How likely is it that this would be enjoyable?
  - Not At All
  - A Little
  - Somewhat
  - Very
  - Extremely
In the past year, have you engaged in vandalism?

### If Yes:

**Answer the questions below (A-C6)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Scale Options</th>
</tr>
</thead>
</table>
| A) In the past year, how many times have you engaged in vandalism?        | Almost Never  
Rarely  
Occasionally  
Frequently |
| B) How likely is it that you would do this again?                         | Not At All    
A Little  
Somewhat  
Very    
Extremely |

### If No:

**Answer the questions below (A-C6)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Scale Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>C) In the future, if you were to engage in vandalism:</td>
<td></td>
</tr>
</tbody>
</table>
| C1) How likely is it that your parent(s) would find out?                  | Not At All    
A Little  
Somewhat  
Very    
Extremely |
| C2) If your parent(s) were to find out, how likely is it that they would punish you? | Not At All    
A Little  
Somewhat  
Very    
Extremely |
| C3) How likely is it that the punishment would be harsh?                   | Not At All    
A Little  
Somewhat  
Very    
Extremely |
| C4) If your parent(s) were to find out, how likely is it that they would be disappointed? | Not At All    
A Little  
Somewhat  
Very    
Extremely |
| C5) How likely is it that your friends would approve?                      | Not At All    
A Little  
Somewhat  
Very    
Extremely |
| C6) How likely is it that this would be enjoyable?                         | Not At All    
A Little  
Somewhat  
Very    
Extremely |
In the past year, have you had sexual intercourse?

If Yes:
Answer the questions below (A-C6)

A) In the past year, how many times have you had sexual intercourse?
   ① Almost Never  ② Rarely  ③ Occasionally  ④ Frequently

B) How likely is it that you would do this again?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to have sexual intercourse:
   C1) How likely is it that your parent(s) would find out?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C2) If your parent(s) were to find out, how likely is it that they would punish you?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C3) How likely is it that the punishment would be harsh?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C5) How likely is it that your friends would approve?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C6) How likely is it that this would be enjoyable?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

If No:
Answer the questions below (A-C6)

A) In the past year, do you know anybody who has had sexual intercourse?
   ① None  ② A Few  ③ Some  ④ Many  ⑤ Very Many

B) How likely is it that you would have sexual intercourse?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to have sexual intercourse:
   C1) How likely is it that your parent(s) would find out?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C2) If your parent(s) were to find out, how likely is it that they would punish you?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C3) How likely is it that the punishment would be harsh?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C5) How likely is it that your friends would approve?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C6) How likely is it that this would be enjoyable?
      ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
In the past year, have you hung out with people you were not supposed to?

<table>
<thead>
<tr>
<th>If No:</th>
<th>Answer the questions below (A-C6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(C) In the future, if you were to hang out with people you were not supposed to:</td>
</tr>
<tr>
<td></td>
<td>C1. How likely is it that your parents would find out?</td>
</tr>
<tr>
<td></td>
<td>C2. How likely is it that the punishment would be harsh?</td>
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<td>C3. How likely is it that your friends would approve?</td>
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<td></td>
<td>C4. How likely is it that you would be disappointed?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If Yes:</th>
<th>Answer the questions below (A-C5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(C) In the future, if you were to hang out with people you were not supposed to:</td>
</tr>
<tr>
<td></td>
<td>C1. How likely is it that your parents would find out?</td>
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<td></td>
<td>C2. How likely is it that the punishment would be harsh?</td>
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<tr>
<td></td>
<td>C4. How likely is it that you would be disappointed?</td>
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</tbody>
</table>
In the past year, have you stolen something?

If Yes:
Answer the questions below (A-C6)

A) In the past year, how many times have you stolen something?
   ① Almost Never  ② Rarely  ③ Occasionally  ④ Frequently

B) How likely is it that you would do this again?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to steal something:
   C1) How likely is it that your parent(s) would find out?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C2) If your parent(s) were to find out, how likely is it that they would punish you?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C3) How likely is it that the punishment would be harsh?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C5) How likely is it that your friends would approve?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C6) How likely is it that this would be enjoyable?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

If No:
Answer the questions below (A-C6)

A) In the past year, do you know anybody who has stolen something?
   ① None  ② A Few  ③ Some  ④ Many  ⑤ Very Many

B) How likely is it that you would steal something?
   ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely

C) In the future, if you were to steal something:
   C1) How likely is it that your parent(s) would find out?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C2) If your parent(s) were to find out, how likely is it that they would punish you?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C3) How likely is it that the punishment would be harsh?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C5) How likely is it that your friends would approve?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
   C6) How likely is it that this would be enjoyable?
       ① Not At All  ② A Little  ③ Somewhat  ④ Very  ⑤ Extremely
## In the past year, have you lied to your parent(s)?

### If Yes:

#### Answer the questions below (A-C6)

A) In the past year, how many times have you lied to your parent(s)?
- 1: Almost Never
- 2: Rarely
- 3: Occasionally
- 4: Frequently

B) How likely is it that you would lie to your parent(s) again?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

### If No:

#### Answer the questions below (A-C6)

A) In the past year, do you know anybody who has lied to their parent(s)?
- 1: None
- 2: A Few
- 3: Some
- 4: Many
- 5: Very Many

B) How likely is it that you would lie to your parent(s)?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

### C) In the future, if you were to lie to your parent(s):

#### If Yes:

C1) How likely is it that your parent(s) would find out?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C3) How likely is it that the punishment would be harsh?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C5) How likely is it that your friends would approve?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C6) How likely is it that this would be enjoyable?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

#### If No:

C1) How likely is it that your parent(s) would find out?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C2) If your parent(s) were to find out, how likely is it that they would punish you?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C3) How likely is it that the punishment would be harsh?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C4) If your parent(s) were to find out, how likely is it that they would be disappointed?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C5) How likely is it that your friends would approve?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely

C6) How likely is it that this would be enjoyable?
- 1: Not At All
- 2: A Little
- 3: Somewhat
- 4: Very
- 5: Extremely
Appendix C: Demographic Questionnaire
Finally, we would like to know a little more about you.

Answer the following questions about yourself and your parent(s) to the best of your ability. Keep in mind that your answers are confidential and will not be shared with anyone.

Take your time with each of the questions. If you have any questions, feel free to ask.
9) Do you have siblings that have at one time lived with you?
   If Yes, please answer question 9a.
   If No, please go to question 10.

9a) Please list the ages of your siblings from oldest to youngest.

<table>
<thead>
<tr>
<th>Age</th>
<th>0 Female</th>
<th>0 Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sibling One:</td>
<td></td>
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<td>Sibling Two:</td>
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<td>Sibling Three:</td>
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<td>Sibling Four:</td>
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<td>Sibling Five:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibling Six:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10) What is your gender?
   0 Female
   0 Male

11) What is your current age?
    ________ years old

12) How many people, including yourself, currently live in your household?
    ________ people

13) Who do you live with?
   0 Biological Family (both parents)
   0 Single Biological Parent, no partner → 0 Mother 0 Father
   0 Biological Parent with partner/step parent → 0 Mother 0 Father
   0 Non-parent relative (Grandparent, Aunts or Uncle, Brother or Sister etc.)
   0 Living on your own
   0 Other (Specify ______________________)
1) What grade are you in school?
   ① 9th  ② 10th  ③ 11th  ④ 12th

2) What is your current GPA? _______________________

3) What is your race?
   ① White/Caucasian  ② Black/African-American  ③ Hispanic-American
   ④ Asian-American  ⑤ Other, Please Describe: _______________________

4) What is your religious affiliation?
   ① Protestant  ② Catholic  ③ Jewish  ④ Christian
   ⑤ Muslim  ⑥ None  ⑦ Other, Please Describe: _______________________

5) What is your total family income?
   ① Less than $25,000  ② $25,000 - $50,000  ③ $50,000 - $75,000
   ④ $75,000 - $100,000  ⑤ $100,000 - $125,000  ⑥ More than $125,000
   ⑦ I don't know

6) Which of the following best describes your current employment status?
   ① Not Employed  ② Employed Part-Time  ③ Employed Full-Time

7) How many hours per week do you work?
   _______ hours

8) What is the highest education level reached by one of your parents?
   ① Less than High School  ② High School  ③ Some College
   ④ Bachelors Degree  ⑤ Masters Degree or Higher  ⑥ I don't know
Appendix D: Introduction Form
April 28, 2009

Dear Participant,

The way your parent[s] responds to your actions could influence many of your decisions. Moreover, your parent(s) may or may not even know about many of the decisions you have made in the past. The Adolescent Research Center (ARC) at The Ohio State University wants to know more about how you make decisions and whether or not you tell your parents about these decisions. Remember, your participation is purely voluntary and you may withdraw your participation at any time without penalty or loss of benefit to which you are otherwise entitled. We would like to thank you for your time and participation.

Today, during this class period, you will fill out 4 questionnaires. It will take you about 30 minutes to complete all of the packets. For your time, you will be compensated by being entered into the ARC raffle for a chance at winning one of several prizes, including one Nintendo Wii, one $100 gift card to Easton Town Centre and six other $25 gift cards to local stores (Best Bay, Target, Wal-Mart, Steak-n-Shake, GameStop, and AMC Theaters).

Please note that there is a number at the top of every questionnaire. This number is used so that we cannot identify which questionnaire is yours. Once you turn in the packet with your completed questionnaires, we will have no way of knowing which packet is yours. This protects your privacy, and allows you to be as honest and truthful with your answers as possible. I encourage you to be completely honest.

No one will ever know your answers:
not your parents,
not your teachers,
not your friends.

Again, thank you for participating. If you have any concerns or questions please feel free to ask at any time, or you may contact me by phone at (614-292-3059) or by e-mail at montemayor.1@osu.edu

Sincerely,
Raymond Montemayor, Ph.D.
Associate Professor
Appendix E: Debriefing Form
Debriefing Form

Modeling Adolescent Decision Making
Dr. Raymond Montemayor & Carroll Campbell M.A.

Thank you for volunteering to take part in this study of high-risk behaviors. Your participation will help us understand how adolescents, high school students like you, make decisions concerning engagement in high risk behaviors as well as understanding the roles that parents and peers play in this process.

The questionnaires that you filled out focused on understanding how you make decisions, your parents reaction to engagement in high-risk behaviors, your actual participation in certain behaviors, the level of trust and attachment you have with your parent and peers, and finally looked at how you feel about the how much authority your parents have over certain areas of your life.

If, in the course of this study, you develop any concerns or feel distressed and you would like to speak to someone about your thoughts or feelings, you may contact The Ohio State University Counseling and Consultation Services in the Younkin Success Center at (614)-292-5766. You may also contact The Ohio State University’s Psychological Service Center at (614)-292-2059. If you have any concerns or questions about this research, please feel free to contact Dr. Raymond Montemayor, Phone: (614) 292-3059, email: montemayor.1@osu.edu. Again, thank you for your participation in our study.

Sincerely,
Raymond Montemayor, Ph.D.
Associate Professor