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An investigation of prosocial and health risk behaviors as predictors of academic motivation

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AN INVESTIGATION OF PROSOCIAL AND HEALTH RISK BEHAVIORS
AS PREDICTORS OF ACADEMIC MOTIVATION

An Abstract of a Thesis
Submitted
in Partial Fulfillment
of the Requirements for the Degree
Specialist in Education

Tess Garceau
University of Northern Iowa
May 2016

ABSTRACT

Motivation is described as being one of the most valuable foundational constructs essential for student success (Steinmayr & Spinath, 2009). However, not all students are motivated by school-wide practices and/or the general curriculum. In order to promote and nurture students' motivation effectively, we must understand what motivates students, and also begin to analyze other coexisting risk factors that may hinder students' success.

Participants for this study included 119 high school students between the ages of 14-18 from schools in Northeast Iowa. All students at participating schools were invited to take part in the study; however, data was collected from only those individuals who returned the appropriate informed consent forms. Each participant took a web-based version of the Vallerand Academic Motivation Scale, the Goodenow Psychology Sense of School Membership Scale, and the Prosocial and Health Risk Behavior Scale (PHARBS). Group testing sessions were completed in approximately 20-30 minute sessions. The data were analyzed using correlational analyses and hierarchical linear regression. Results demonstrate that relationships exist between participation in prosocial risk behavior and types of intrinsic and extrinsic motivation, and participation in health risk behavior was associated with amotivation, or lack of motivation. Additionally, results support that adding prosocial risk behavior model to a model containing only health risk behavior increases our ability to predict motivation and might allow educators to develop more effective interventions for students.

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This Study by: Tess Garceau

Entitled: An Investigation of Prosocial and Health Risk Behaviors as Predictors of Academic Motivation

has been approved as meeting the thesis requirement for the Degree of Specialist of Education

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CHAPTER 1

ADOLESCENT RISK BEHAVIOR

Current research focused on adolescence contains much information regarding participation in risk behaviors. While it has been very clearly established that risk behaviors, such as underage drinking, gang involvement, and unprotected sex, often result in undesirable consequences (National Center for Health Statistics, 2012), other risk behaviors (i.e. trying a new sport, meeting new people, speaking out against bullies) are often overlooked. In addition, the potential for risk behaviors to result in beneficial outcomes and the psychological benefits of taking risks are other aspects of risk-taking behaviors that are often disregarded in research. This seems perplexing considering the messages our society sends about the importance of taking risks. For example, society promotes the idea of risking failure in order to “learn from our mistakes,” as well as risking rejection from peers by staying true to ourselves even if that means “daring to be different.” Thus, in order to fully understand risk, we must refrain from using traditional definitions of the term that focus only on the negative aspects and outcomes related to risk, and broaden our understanding of the definition to include all that risk truly encompasses. Further, in order to begin creating environments where adolescents can be successful, we must work to understand the beneficial outcomes of risk by uncovering the relationships between risk behavior and other desirable variables, such as academic motivation (Skaar, Christ, & Jacobucci, 2014).

It is not uncommon for individuals to conceptualize risk-taking in adolescents as behaviors that include involvement in dangerous behaviors that often result in negative

outcomes. This could potentially be because of the increased participation of pre-adolescents and adolescents in a variety of dangerous risk behaviors including risky driving behaviors that result in crashes and fatalities (Twisk & Stacey, 2007) and unprotected sex (Centers for Disease Control and Prevention [CDC], 2012).

The often increased autonomy given to adolescents by parents, and the importance placed on “fitting in” with peers during this time may also contribute to this age-group’s increased participation in risk behaviors. First, peers tend to accept and condone risky behavior more than adults. In addition, in the presence of peers, adolescents have the tendency to engage in more risk behaviors than when they are alone, and when peers are present, adolescents also are more likely to underestimate the potential costs and overestimate the potential benefits associated with a risk behavior (Gardner & Steinberg, 2005). Adolescents also tend to rate their preferences for engaging in risky behaviors higher when peers are present (Gardner & Steinberg, 2005). Chein, Albert, O’Brien, Uckert, and Steinberg (2011) suggested that this could be due to adolescents having an increased sensitivity to the immediate rewards center activation associated with risk behaviors in the presence of peers compared to adults. Perhaps it is for this reason that risk behaviors have also been termed sensation-seeking behaviors, thrill-seeking behaviors, and reward-seeking behaviors. Further, risk behavior results in a sensitive stimulation of the adolescent brain, which reinforces the risk behavior, and therefore explains why risk taking is so desirable for adolescents. Interestingly though, participation in prosocial risk behaviors has been determined to result in stimulation of the brain in a way similar to the stimulation that results from participation in health risk

behaviors (Telzera, Fulignib, Liebermanc, & Galván, 2013). This suggests that a possibly more realistic and effective way to decrease adolescent participation in health-risk behaviors is to replace the undesirable risk behaviors with more prosocial, positive risk-taking behaviors (Skaar et al., 2014).

Clearly, many risk behaviors can result in undesirable consequences. However, traditionally accepted definitions of “risk-taking” and “risk behaviors” have failed to note the potential for desirable outcomes associated with risk, and mention in their definitions only conceptualizations such as “a lack of certainty and the prospect of loss or failure” when choosing between alternatives (Kogan & Wallach, 1967, p. 113). Further, as previously mentioned, adolescent risk-taking relates to much more than participation in such health-risk behaviors as driving while under the influence, illegal substance abuse, and unprotected sexual activity. Thus, the term “risk” should not necessarily be equated with dangerous or hazardous outcomes, as the term risk could also be extended to include in its definition behaviors such as standing up to bullies/peers, asking a peer out on a date, and trying new activities, which are activities that are often associated with vastly different consequences than many health-risk behaviors. Put concisely, risk is a probabilistic concept, rather than an action that results undoubtedly in negative consequences (Skaar et al., 2014).

In order to fully understand all that risk encompasses, Skaar et al. (2014) support the movement to a broader definition of risk that recognizes the potential for either desirable or undesirable consequences and includes both prosocial and health risk behaviors as part of its definition. Specifically, they divide risk behavior into two areas:

prosocial risk behavior and health risk behavior. They define prosocial risk behaviors as those risk behaviors that have an increased likelihood for positive outcomes, whereas health risk behaviors are those risk behaviors that have an increased likelihood to result in negative outcomes (Skaar et al., 2014). Working within this model, authors suggest that “risk behavior is more completely defined when it is defined by social and emotional outcomes rather than the use of traditionally accepted descriptions” (Skaar et al., 2014, p. 138).

While it is clear that risk taking has benefits, it is important to also find balance between avoiding risks entirely and participating in too many risky behaviors, as adolescents who participate in some level of risk are psychologically healthier than either of the two extremes (Chassin, Pearson, & Sherman, 1989). Additionally, it might seem intuitive that certain prosocial risk behaviors may result in beneficial psychological outcomes, but research has also established that health risk behaviors may have the potential to produce beneficial outcomes, as well. For example, enhanced creativity, assertiveness, independence, and use of social skills have been observed among adolescents using and/or experimenting with substances (Chassin et al., 1989; Shedler & Block, 1990).

Risk Behavior and Motivational Theory

Motivation is described as being one of the most valuable foundational constructs essential for student success (Steinmayr & Spinath, 2009). However, it is unfair to assume that all students are motivated by school-wide practices and/or curriculum. Often times, it becomes the responsibility of school personnel to identify students’ lack of

motivation and prescribe additional techniques in instances where motivation is not present. In order to do this effectively, it is important to search for coexisting factors that when present, may affect students' academic motivation.

Two overarching theories of the topic of motivation are Bandura's (1977) social cognitive theory of self-regulated learning and Deci and Ryan's (1985) self-determination theory (Rowell & Eunsook, 2013). These theories explain a variety of motivational constructs that relate specifically to academic motivation, while also illustrating the importance of risk-taking in the overall enhancement of motivation.

Bandura's (1977) social cognitive theory of self-regulated learning explores beliefs, values, and goals and relates them to an individual's level of motivation. Bandura's social cognitive theory emphasizes the importance of self-efficacy, an individual's belief in his/her own ability to achieve a goal, as a determining factor in how motivated a student is in the classroom (Bandura, 1993). According to this theory, one would hypothesize that a student with high self-efficacy would be more motivated to reach his/her goals and would persist longer when encountering obstacles that are in the way of this goal (Bandura, 1993). Interestingly, self-efficacy is also said to be strengthened when individuals conquer challenging tasks, demonstrating a reciprocal relationship between self-determination and the completion of challenging tasks (Bandura, 1977). Bandura states that "to succeed at easy tasks provides no new information for altering one's sense of self-efficacy, whereas mastery of challenging tasks conveys salient evidence of enhanced competence (Bandura, 1977, p. 201). In other words, by risking failure on a more challenging task, rather than completing a task that

will surely result in successful completion, individuals are able to better develop and enhance their self-efficacy. Further, Caprara (2002) posited that interpersonal self-efficacy beliefs are important determinants of psychosocial functioning, including engagement in prosocial behaviors. Individuals who feel that they are able to successfully recognize others' needs and decide on the proper actions to meet these needs, will be more likely to engage in the costs and risk associated with prosocial behavior.

Self-determination theory (Deci & Ryan, 1985) has also proven useful for understanding students' motivation towards academics by studying the construct through a multidimensional lens. Deci and Ryan's (1985) self-determination theory operates on the premise that all individuals have the tendency to be curious about their surroundings and have an innate desire to learn (Deci & Ryan, 1985). In addition, the self-determination theory also digs deeper than many other theories by recognizing and comprehensively explaining that some motivated behaviors are self-determined, or acted on by choice, and other motivated behaviors are controlled, or acted on in compliance with or defiance against an outside force (Deci & Ryan, 1985). In addition, self-determination theory posits that self-determined behaviors are multidimensional and fall on a continuum. This means that we can divide self-determined behaviors into three categories: (a) autonomous regulation (i.e. acting out of choice or pleasure), (b) controlled regulation (i.e. acting for reward, or to avoid punishment or feelings of guilt), and (c) amotivation (i.e. lack of either category of motivation). In terms of the continuum present amongst these categories, self-determination theory posits that the highest quality of self-regulated behavior is autonomous regulation, followed by controlled regulation,

and finally amotivation. This makes sense because one of the central elements of self-determination theory is its emphasis on the value of choosing optimal, yet appropriate, challenges for oneself. This belief is consistent with Bandura's social cognitive theory because one can assume that the more self-motivated an individual is, the more likely he/she will be to successfully complete a challenging task, which in turn, would enhance his/her self-efficacy.

The distinction between these categories of motivation, although similar, is not to be confused with the distinction between intrinsic and extrinsic motivation. Intrinsic motivation refers to motivation that is a result of an interest, desire, or other internal influence, whereas extrinsic motivation results from being reinforced or rewarded by an outside force (Deci & Ryan, 1985). Further, rather than recognizing the two forms of motivation as opposite one another, Deci and Ryan (1985) argue that we should view them as underlying forces that work together. Although intrinsic motivation is viewed as an evolved propensity within the individual, certain conditions bring about and sustain, versus subdue and weaken, this innate propensity (Ryan & Deci, 2000).

Vallerand, Blais, Briere, and Pelletier (1989) have expanded upon Deci and Ryan's theory and postulate that intrinsic and extrinsic motivation can be further divided into subcategories. Specifically, they posit that intrinsic motivation has a tripartite classification: intrinsic motivation (IM) to know, toward accomplishments, and to experience stimulation. IM to know describes individuals who are motivated simply by the satisfaction of learning or experiencing something new. IM toward accomplishments is exemplified when individuals who experience satisfaction from surpassing themselves,

and/or individuals who experience pleasure during the process, rather than as a result of the outcome, of accomplishing/creating something new. Lastly, IM to experience stimulation occurs in individuals who participate in activities in order to experience stimulating sensations (i.e. fun/excitement, sensory stimulation, aesthetic experiences).

Extrinsic motivation can also be subdivided into three categories ordered along a self-determination continuum: external regulation, introjection, and identified (Deci & Ryan, 1991; Vallerand et al., 1989). External regulation is extrinsic motivation, as it is traditionally referred to in the literature, and describes motivation that results from external rewards and constraints. This type of extrinsic motivation is the least self-determined among the three subcategorizations. Introjection occurs when individuals start to internalize the reasons for their actions, yet the motivation is still not fully self-determined because it is merely an internalization of past events. For example, a student might be motivated to apply to college because he/she feels that is what good students should do. Finally, identified motivation occurs when the individual values a behavior or choice and perceives it as important. An example of this would be a student who applies to college because it is something important to him.

While many motives are said to explain the reasons adolescents engage in prosocial behaviors, generally findings suggest that individuals display prosocial behaviors for both intrinsically and extrinsically motivated reasons (Eisenberg & Fabes, 1998). In other words, teens engage in prosocial behaviors not only because they feel that it is the right thing to do, but also because of the social pressures and desirability associated with engaging in these behaviors. Similarly, the same intrinsic and extrinsic

motivations surround academics, as well. Students may be intrinsically motivated academically in that they are motivated toward achievement, toward stimulation, or by the desire to accumulate knowledge. Students may be extrinsically motivated academically by forces such as an external reward/goal or by the desire to demonstrate ability in order to receive praise and acceptance from peers.

An even more direct link between motivation and risk-taking behavior exists in the two-factor theory of risky choice (Lopes, 1987). This theory posits that individuals possess one of two motivational orientations: toward potential (motive to succeed) or toward security (motive to avoid failure). As one might predict, individuals who have been determined to be motivationally orientated toward security are less likely to engage in risky behaviors, whereas individuals who have been determined to be motivationally orientated toward potential are more likely to engage in risky behaviors (Lopes, 1987).

Similarities in Intervention Strategies

Another commonality between risk behavior and motivation are the ways in which deficiencies related to the two constructs can be addressed. School connectedness, or the extent to which students feel personally accepted, respected, included and supported by others in the school social environment” (Goodenow, 1993, p.80), has been shown to influence motivation and has been associated with decreasing participation in health risk behaviors. In fact, the Institute of Medicine (1997) suggests that “in some situations, a healthful psychosocial environment (in school) may be as important— or even more important — than classroom health education in keeping students away from

drugs, alcohol, violence, risky sexual behavior, and the rest of today's social morbidities" (Bernat & Resnick, 2009, p.383).

Research using longitudinal data has found strong connections between school connectedness and delayed initiation of a variety of health risk behaviors such as tobacco, alcohol, and marijuana use, delinquency, and violent behavior (Dornbusch, Erickson, Laird, & Wong, 2001). Moreover, when students feel more connected to school it is less likely that they will commit weapon violence or be exposed to weapon violence (Henrich, Brookmeyer, & Shahar, 2005). In fact, not only was school connectedness shown to be a preventative factor against committing weapon violence, but it was also a mitigating factor (Henrich et al., 2005). School connectedness is also negatively related to transportation-related risk behaviors, such as riding with a dangerous or drunk driver, underage driving, and injuries associated with risky transportation behaviors (Chapman, Buckley, Sheehan, Shochet, & Romaniuk, 2011). In addition, connectedness is a protective factor against gang involvement, violent behaviors, substance use, dropping out of school, and age of first sexual encounter (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; Resnick et al., 1997). Long-term effects of school bonding on health risk behaviors exist as well. At age 21, the rate of pregnancy among females was lower in individuals with higher levels of connectedness (Catalano et al., 2004). The same study also found that rates of condom use were higher and rates of sexually transmitted diseases were lower for individuals with higher levels of connectedness (Catalano et al., 2004).

In addition to decreasing a variety of health risk behaviors, school connectedness is significantly positively related to students' motivation to pursue social responsibility

and prosocial goals and to their academic effort (Wentzel, 1997). Lack of connectedness or the failure to form positive social bonds with teachers also leads students to feel more alienated and disengaged in the school environment (Murdock, 1999). Further, lack of motivation can cause students to become more disengaged with school, which eventually may lead to underachievement and/or dropping out (Rowell & Eunsook, 2013).

These findings are important in relation to school connectedness because both school connectedness and academic motivation have positive effects on student success on their own, but when coupled together, the benefits for students are even greater. Further research in this area may provide schools with another piece of information that may improve drop-out prevention efforts. For example, the use of popular systemic school-engagement interventions (i.e. Check and Connect programs) has been proven to decrease drop-out rates; however, these programs do not always result in the development of adequate skills and knowledge required for obtaining and maintaining jobs in the students that graduate (Sinclair, Christenson, Evelo, & Hurley, 1998). A caring school environment is not only associated with increases in school engagement and improvements in students' academic achievement (Osher, Spier, Kendziora, & Cai, 2009), but also to increases in related factors that may also lead to improvements in academic achievement (i.e. academic motivation). Therefore, by adding a school connectedness focus to school-engagement interventions, important skills (i.e. moral and ethical decision making skills) and tools (i.e. motivation, positive/consistent relationships) for lifelong learning and success will likely be maximized.

Specific teacher behaviors may also be directly related to students' academic motivation. Providing clear expectations, giving contingent responses, and offering strategic help for students are all strategies that are associated with greater academic motivation in students (Skinner & Belmont, 1993). These teacher behaviors are also commonly described as increasing students' reported school connectedness. From this, we can indirectly conclude that students have higher academic motivation if their teachers provide a caring environment. Skinner and Belmont (1993) also found a reciprocal relationship in which teachers tend to respond with more "caring" behaviors when students appear to be motivated. These results, as well as the results of the other aforementioned studies, should be interpreted with caution because although many studies have found that school connectedness and care are positively related to students' academic motivation, a cause-effect relationship has not yet been established. It is important that research continue to investigate this relationship in order to add to this growing body of research.

Statement of Purpose

Due to motivation being an innate propensity, and participation in risk behaviors being arguably more easily identifiable because it can be directly observed, it is important that we strive to understand the relationship between these two variables in order to begin developing effective prevention and intervention strategies. Research in this area will also help expand current definitions of risk behavior to include prosocial risk taking behavior by exploring the beneficial aspects of risk, including the relationship between prosocial and health risk behaviors and intrinsic/extrinsic motivation and amotivation. Moreover,

while a relationship appears to exist between academic motivation and risk taking behaviors, most of the evidence for this relationship is inferential, illustrating the need to empirically support these assumptions.

Further, in order to begin fostering students' motivation effectively, we must understand what motivates students, and also begin to analyze other coexisting risk factors that may hinder student success. While research has already established that a lack of motivation can lead students to become more disengaged with school, which eventually may lead to underachievement and/or dropping out (Rowell & Eunsook, 2013), it is also important to consider the influence that participation in prosocial and health risk behaviors may have on the various types of motivation (i.e. intrinsic, extrinsic, amotivation) because participation in these behaviors may ultimately enhance or inhibit academic motivation and overall student success. By understanding this relationship, we can hopefully begin to more accurately predict and identify students' motivation by examining their participation in prosocial and health risk behaviors and develop more individualized interventions based on students' participation in these risk behaviors. In addition, we can hopefully begin creating more effective environments for ensuring adolescent students' success.

The purpose of this study was to investigate the relationship between academic motivation and participation in prosocial and health risk behaviors. This study addressed the following questions:

1. Does a relationship exist between risk behavior and motivation?
2. How are the various types of motivation related to prosocial risk taking behavior?

3. How are the various types of motivation related to health risk taking behavior?
4. Does a measure containing both prosocial risk behavior and health risk behavior better predict students' academic motivation than a measure containing only health risk behavior?

It is predicted that both intrinsic and extrinsic motivation will be associated with greater participation in prosocial risk behaviors, while amotivation, or lack of motivation, will be associated with greater participation in health risk behaviors. It is also predicted that a measure containing both prosocial risk behavior and health risk behavior will better predict students' academic motivation than a measure containing only health risk behavior.

CHAPTER 2

METHODS

Participants

The sample for this study includes 119 students between the ages of 14-18 years old ($M = 15.9$, $SD = 1.2$) from three high schools in Northeast Iowa. All students at the three participating schools were invited to take part in the study; however, data was collected from only those individuals who returned the appropriate informed consent forms. Of the participants in the sample, 63% identified as female, and 37% identified as male. Additionally, a large portion of our student population (92%) identified as White/Caucasian.

Procedures

Informed assent was obtained from each participant. Parental consent was also obtained from participants younger than age 18. Students participated in the testing session in one sitting during an open period during the school day (i.e. study hall, lunch). The surveys administered, the Vallerand Academic Motivation scale (Vallerand et al., 1993) and the Prosocial and Health Adolescent Risk Behavior scale (PHARBS; Skaar et al., 2014), were combined into an electronic version that students were able to access by computer or iPad. Participating students were sent an email to their school email address account that provided them with a username, password, and link to the survey. The password was generated at random and contained no identifying characteristics. Students were asked by an examiner to follow the link to the site provided in the email, and then were asked to enter their email and password into the provided fields in order to access

the survey, which contained all Likert-scale items. Testing took approximately 20-30 minutes to complete, and also included the Goodenow Psychological Sense of School Membership Scale (Goodenow, 1993), which was administered as part of a larger study.

Measures

The Vallerand Academic Motivation Scale (AMS; Vallerand et al., 1993) was used to assess participants' academic motivation. This scale is an adaptation of the original Vallerand Academic Motivation scale, designed to measure academic motivation in college students, and is used for high school students. This measure provides information on the levels of amotivation, intrinsic motivation, and extrinsic motivation present in high-school students. This scale also provides information on the subcategories of these forms of motivation (i.e. introjected extrinsic motivation, intrinsic motivation with the desire to know), which allows us to generate hypotheses regarding the driving force behind students' motivation, or lack thereof. Students are asked to rate 28 items based on the extent to which each item describes their reason(s) for going to school on a scale of 1 (*does not correspond at all*) to 7 (*corresponds exactly*). This measure has adequate internal consistency, ranging from .83 to .86, with the exception of the identified subscale of the extrinsic motivation scale, which had an internal consistency of .62. In addition, the AMS has adequate factorial validity, concurrent validity, and construct validity (Vallerand et al., 1993; Cokley, Bernard, Cunningham, & Motoike, 2001).

The Prosocial and Health Adolescent Risk Behavior Scale (Skaar et al., 2014) was used to measure participation in prosocial and health risk behaviors. Students were asked

to rate how often they participate in each of 25 risk behaviors on a scale of 1 (*never*) to 4 (*five or more times a week*). Some items measured participation in prosocial risk behaviors, including how often students engage in behaviors such as entering competitions and dressing differently than peers. The remaining items measured participation in health risk behaviors, including how often students engage in behaviors such as stealing, having unprotected sex, and using tobacco. The health risk behavior subscale yielded an alpha of 0.86, and the prosocial risk behavior subscale yielded an alpha of 0.70. This measure has adequate internal consistency as well as adequate support for construct validity (Skaar et al., 2014).

Data Analysis

Correlational analyses were used to investigate the relationship between motivation and the two types of risk behaviors. Scores on each of the three motivation subscales (intrinsic motivation, extrinsic motivation, and amotivation) were compared to scores on the prosocial risk behavior subscale and the health risk behavior subscale.

Further, hierarchical regression analyses were used to investigate the degree to which adding the prosocial risk behavior measure affected our ability to predict motivation over and above a model containing only health risk behavior. First, regression analyses were used to understand the ability of the risk behavior model containing only health risk behaviors to predict scores on the motivation measure. The first step of the model included health risk behavior only. Then, the degree to which the overall risk behavior model, including both prosocial risk taking behaviors and health risk behaviors, is able to predict motivation was investigated. The second step of the model included

health risk behavior and prosocial risk behavior. This information was used to compare the ability of the total risk behavior model (containing both prosocial and health risk behavior) to predict the motivation subcategories over and above the model containing only health risk behavior.

CHAPTER 3

RESULTS

Of the 119 students sampled, the mean score for prosocial risk behavior was 12.24 (SD=5.2) and the mean score for health risk behavior was 2.62 (SD=3.91). As later referenced in Table 1, the descriptive statistics for the intrinsic motivation subcategories are as follows: IM-To Know (M= 18.81, SD= 5.56); IM-Toward Accomplishment (M= 17.11, SD= 6.25); IM- Toward Stimulation (M= 16.55, SD = 5.76). The descriptive statistics for the extrinsic motivation subcategories are as follows: EM- Identified (M = 21.71, SD =5.40); EM- Introjected (M= 18.6, SD= 6.24), EM-External Regulation (M= 22.26, SD= 5.08). The mean score for amotivation was 7.95 (SD= 4.92).

Table 1

Descriptive Statistics

Variable	N	Mean	SD
Prosocial Risk Behavior	119	12.24	5.28
Health Risk Behavior	119	2.62	3.91
Intrinsic Motivation- To Know	119	18.81	5.56
Intrinsic Motivation- Toward Accomplishment	119	17.11	6.25
Intrinsic Motivation- Toward Stimulation	119	16.55	5.76
Extrinsic Motivation- Identified	119	21.71	5.40
Extrinsic Motivation- Introjected	119	18.60	6.24
Extrinsic Motivation- External Regulation	119	22.26	5.08
Amotivation	119	7.95	4.96

Motivation and Health Risk Behavior

Pearson correlation coefficients were calculated for the relationship between participants' reported participation in health risk behavior scores and their scores for the seven types of academic motivation. Moderate negative correlation between health risk behavior and intrinsic motivation to know ($r(117) = -.361, p < .01$) and intrinsic motivation toward stimulation ($r(117) = -.325, p < .01$) were found, as well as a small negative correlation between health risk behavior and intrinsic motivation toward accomplishment ($r(117) = -.280, p < .01$). Additionally, small negative correlations between health risk behavior and extrinsic motivation identified ($r(117) = -.232, p < .05$) and extrinsic motivation introjected ($r(117) = -.190, p < .01$) were found. However, the correlation between health risk behavior and external motivation external regulation was not significant ($r(117) = -.051, p = .583$). Finally, a significant positive relationship between participation in health risk behaviors and amotivation exists ($r(117) = .181, p < .05$), indicating that students who participate in health risk behaviors are perhaps more likely to show a lack of academic motivation. It should be noted, however, that although many of these correlations were significant, the magnitude of the correlations were small to moderate in size, so results should be interpreted with caution.

Motivation and Prosocial Risk Behavior

Significant relationships exist between participation in prosocial risk behavior and intrinsic motivation to know ($r(117) = .229, p < .05$), intrinsic motivation toward accomplishment ($r(117) = .260, p < .01$), and extrinsic motivation introjected ($r(117) =$

.262, $p < .01$), respectively. However, the relationships between prosocial risk behavior and intrinsic motivation toward stimulation ($r(117) = .123$, $p < .183$), extrinsic motivation identified ($r(117) = .167$, $p = .069$), and extrinsic motivation external regulation ($r(117) = .032$, $p = .731$) were not significant. Finally, a small negative correlation between prosocial risk behavior participation and amotivation was found ($r(117) = -.278$, $p < .01$). See Table 2 for a summary of these correlations.

Table 2

Correlations Between Risk Behavior and Motivation Subcategories

	1	2	3	4	5	6	7	8	9
1. Prosocial Risk Behavior	-								
2. Health Risk Behavior	.185*	-							
3. Intrinsic Motivation- To Know	.229*	-.361**	-						
4. Intrinsic Motivation- Toward Accomplishment	.260**	-.280**	.787**	-					
5. Intrinsic Motivation- Toward Stimulation	.123	-.325**	.765**	.819**	-				
6. Extrinsic Motivation- Identified	.167	-.232*	.679**	.640**	.605**	-			
7. Extrinsic Motivation- Introspected	.262**	-.190*	.706**	.818**	.633**	.715**	-		
8. Extrinsic Motivation- External Regulation	.032	-.051	.441**	.371**	.283**	.679**	.548**	-	
9. Amotivation	-.278**	.181*	-.383**	-.316**	-.302**	-.389**	-.328**	-.219*	-

Note: * $p < .05$, ** $p < .01$

Hierarchical Regression Analyses

Hierarchical regression analyses revealed that the measure of prosocial risk behavior significantly increased the ability of the model to predict respectively all types

of intrinsic motivation over and above a model with only health risk behaviors as the predictor. Specifically, adding prosocial risk behavior to the model increased the ability of the model to predict intrinsic motivation to know (R^2 change = .09, $p < .01$), intrinsic motivation toward accomplishment (R^2 change = .101, $p < .01$), and intrinsic motivation toward stimulation (R^2 change = .035, $p < .05$), with the model accounting for a total of 22.1%, 17.9%, and 14% of variance in these types of intrinsic motivation, respectively. Additionally, adding prosocial risk behavior to the model also increased the ability of the model to predict amotivation (R^2 change = .10, $p < .01$), extrinsic motivation identified (R^2 change = .046, $p < .05$), and extrinsic motivation introjected (R^2 change = .091, $p < .05$), respectively. Results also demonstrate that the model accounted for 36.5% of the variance in amotivation, 10% of the variance in external motivation identified, and 12.7% of the variance in extrinsic motivation introjected. The ability of the model to predict extrinsic motivation external regulation did not significantly increase when prosocial risk behavior was added to the health risk behavior model (R^2 change = .002, $p = .777$).

CHAPTER 4

DISCUSSION

From these results, it appears that students who are less involved with health risk behaviors and more involved with prosocial risk behaviors may be more likely to be motivated in school. This means that the results of this study support the claims of Skaar et al. (2014) stating that eliciting self-reports of prosocial risk behavior in addition to health risk behavior may provide educators with information needed to develop more effective interventions. Specifically, this study supports that adding a measure of prosocial risk behavior to measures of risk behavior may improve our ability to create effective interventions aimed to improve motivation in students. Additionally, the present results suggest that prosocial and health risk behaviors are largely motivated by internalized goals and needs, rather than external factors, much like the findings reported by Hardy, Dollahite, Johnson, and Christenson (2015). Specifically, students appear to generally be motivated by an intrinsic desire to learn (IM to know), to achieve (IM toward accomplishment), and gain acceptance (EM introjected), and by an internal need to avoid/shame and guilt (EM introjected). On the other hand, students who participate in prosocial and health risk behaviors are not as likely to be academically motivated by entirely extrinsic means without an internalized component, as in external regulation. From these results, we can then begin to assume that emphasizing the importance of what is being learned and how what is being learned applies to students' lives might be more effective than other means for motivating students because these behaviors would seem to foster intrinsic forms of motivation. Results also demonstrate that students who

participate in prosocial risk behaviors are less likely to be amotivated, or to have a lack of motivation. This further supports the value in understanding prosocial risk behaviors, as participation in such behaviors might prove to be a protective factor against having a lack of academic motivation. It is important to note that although significant, the correlations ranged from small to moderate in strength, and therefore should be interpreted with caution.

Additionally, the results also demonstrate the value of adding items that measure prosocial risk behavior when investigating adolescent risk-taking behavior and motivation. Specifically, by adding prosocial risk behavior to the model in the regression analysis, it significantly increased the ability of the model to predict all types of motivation measured in this study with the exception of extrinsic motivation external regulation. This implies that our definition of risk behavior should no longer be restricted to health risk behavior, but rather that it should be expanded to include both prosocial and health risk behaviors in order to gain a more accurate depiction of all that risk encompasses. On an individual level, by having more accurate predictions of a student's motivation from his/her participation in both types of risk behaviors, educators will hopefully be able to develop more appropriate and effective interventions matched to that individual's needs. This might mean suggesting prosocial risk behaviors as a replacement behavior for participation in health risk behaviors, as these prosocial risks would likely stimulate reward centers in the adolescent brain similar to how risk behaviors stimulate the adolescent brain, but the prosocial risks would likely result in potentially less harmful or dangerous consequences. On a larger scale, if screening measures are able to more

accurately predict students' levels of academic motivation, educators may be able to more quickly and easily identify students in need of intervention that in turn, might reduce the likelihood of other problems associated with a lack of motivation (i.e. dropping out of school) in the future.

Limitations

Active consent was required for this project by the Human Subjects Review Board, which means that only participants who returned appropriate parental consent forms took part in the study. Anderman et al. (1995) established that a sample is more likely to be overrepresented by individuals who are White, have higher grade point averages, live in two-parent homes, report taking less risks, and are active in extracurricular activities when using active consent procedures compared to passive consent procedures. Because of this and the overrepresentation of White/Caucasian students in the present sample, it is possible that the sample obtained in the current study may be subject to selection bias, and in turn this may not provide a valid representation of the typical American student population. Further, students at one of the participating schools were required to take the survey outside of school time if they consented to participate in the study. This is believed to have significantly reduced the number of participants because a much larger number of students received parental consent than those who actually took the survey. There is also a limitation in the reliability of the identified subcategory of extrinsic motivation, which also limits our interpretation of the data.

Future Directions

A variety of personality traits appear to be underlying determinants of the likelihood of engaging in risky behaviors and/or being academically motivated. It is particularly important to understand these underlying processes because they may provide valuable clues to aid with prevention and intervention strategies. Intrinsic motivation, also termed “effectance motivation” and “mastery motivation,” has been linked to lower levels of academic anxiety (Gottfried, 1990) and to less fear of failure (Kagan & Moss, 1962). From this, we can assume that students who are intrinsically motivated are going to be more likely to take prosocial risks simply because they are not as fearful or nervous about doing so. This may also be true of participation in health risk behaviors. In addition, children with motivation to achieve or motivation towards mastery are less likely to have serious conduct problems and be more successful socially in late adolescence (Shiner, 2000). Thus, students who are more motivated might be less likely to participate in health risk behaviors.

Further, we may be able to make inferences about the likelihood of participating in risk behaviors and/or being academically motivated based upon the Big 5 Personality Traits (extraversion, neuroticism, openness to experience, conscientiousness, and agreeableness). Conscientiousness, while associated with a number of positive outcomes such as enhanced academic achievement and work competence, may actually inhibit an individual from taking risks (Shiner & Masten, 2012). Further, adults who possessed high levels of conscientiousness were more likely to describe themselves as being nonaggressive, behaviorally controlled, and as disliking risky situations (Shiner, Masten,

& Roberts, 2003). However, conscientiousness describes “strength of impulse control in task-focused endeavors” (Shiner & Masten, 2012, p. 509), which, therefore leads to the assumption that individuals possessing high levels of conscientiousness will also be persistent and motivated. The findings of the current study might provide insight into key information used in understanding these variables. If students described as conscientious typically dislike taking risks that are described in the present study as health risks, providing them with opportunities to participate in prosocial risks may even further maximize their already present academic motivation.

Other cognitive and emotional factors may underlie both risk-taking behaviors and academic motivation, as well. Empathy, for example, has been identified in motivation literature as being a necessary factor for engaging in altruistically motivated prosocial behavior (Hoffman, 1984). Sympathy has also been identified as an effective motive for engaging in prosocial behaviors and particularly those in which one tries to lessen another’s negative emotion (Batson, 1991). In terms of risk behavior, this might relate to such risks that involve standing up for individuals who are being bullied. This motivation to engage in prosocial behaviors, which include prosocial risk-taking behaviors, is often termed moral motivation, and relates to the degree to which individuals’ moral judgment leads to acting in accordance with the morals they possess. While clear links between moral motivation and engagement in prosocial behaviors exist, it is important that we continue to understand what other relationships between motivation and specific prosocial risk-taking behaviors exist.

Additionally, these results suggest that our definition of risk behavior should no longer be limited to including health risk behaviors (i.e. unprotected sexual intercourse, underage drinking of alcohol, illegal drug use). We should also include in the definition of risk behavior such prosocial risk behaviors as trying new classes/activities, standing up for students experiencing bullying, and telling the truth even when it may result in punishment. These behaviors, although likely to result in desirable outcomes, have the potential to result in negative outcomes, as well. For example, while an individual telling the truth in a situation where he/she might receive punishment might be a moral decision, he/she may still face consequences for telling the truth about certain actions. We need to begin researching and understanding such prosocial risk behaviors because schools could begin encouraging prosocial risk behaviors as replacement behaviors for health risk behaviors (Skaar et al., 2014), given what researchers already know about the adolescent brain and the increased likelihood that this population will participate in risk behaviors (Gardner & Steinberg, 2005). If researchers can re-conceptualize the definition of risk behavior and share this with schools, we can ensure that we are serving students in the greatest capacity possible.

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