A STUDY OF THE RELATIONSHIP BETWEEN SELF-REPORTED HEALTH, SOCIAL CAPITAL, FAMILY AFFLUENCE AND RISK-TAKING AMONG U.S. ADOLESCENTS

A Thesis

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in

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by
Jennifer Anne Rico

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A Thesis

by

Jennifer Anne Rico

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Date

Department of Sociology
Abstract

of

A STUDY OF THE RELATIONSHIP BETWEEN SELF-REPORTED HEALTH, SOCIAL CAPITAL, FAMILY AFFLUENCE AND RISK-TAKING AMONG U.S. ADOLESCENTS

by

Jennifer Anne Rico

Statement of Problem

Researchers, from a variety of disciplines, contend that social determinants play a substantial role in effecting the health of an individual. Particular interest has emerged in the past twenty years in response to the idea that social capital, especially at the neighborhood level, can influence behaviors and health outcomes. Little emphasis has been made to understand variables associated with adolescent health. This study will replicate the previous work of Boyce et al. (2008) to assess self-rated health among American adolescents and its relationship with neighborhood social capital and risk-taking behaviors.

Sources of Data

The United States data from the World Health Organization Health Behaviour in School-aged Children Survey (HBSC) 2001/2002 were used for the analysis. The HBSC is sponsored by the World Health Organization, and aims to gain insight into the health related attitudes and behaviors of young people in their social context.
Conclusions Reached

The current study adds to the existing literature, by substantiating the link between neighborhood social capital, risk-taking behavior, family affluence and their effects upon the self-rated health of American adolescents. There appears to be a positive association between neighborhood social capital and health reported health status of adolescents. Multiple risk-taking behaviors were shown to be detrimental to the health of U.S. adolescents; for each one-unit increase in the frequency of multiple risk-taking behaviors decreases the odds of reporting good health. Therefore, adolescents who report less frequent engagement in risk-taking behaviors are more likely to report having better health. Family affluence was not shown to influence risk-taking behavior among adolescence; however, the relationship between family affluence and the odds of reporting good health were positive and statistically significant.

_______________________, Committee Chair
Randall MacIntosh, Ph.D.

_______________________
Date
DEDICATION

This thesis is dedicated to my husband, David. From the moment I decided to return to college for my Master’s degree, he was always my biggest support and source of encouragement. For the countless social invitations he turned down so that I could have an entire weekend to be sequestered; his selfless devotion and unyielding love made my graduate school experience possible and immensely enjoyable. There is little doubt in my mind that without his commitment and understanding, there would be no thesis- and for that, I am forever grateful, David.

Although David accompanied me in this journey, King High School in Davis was the reason I even got to this point. As a teenage girl with a big chip on her shoulder and little direction in my life, the teachers and staff saw potential. For once in my life I was not merely a quiet girl in a classroom full of kids; but I was an individual who had strengths and weaknesses, all of which they embraced. Without the motivation and self-assurance that I gained in my junior and senior years, there is no doubt that the story I would have written for myself would be much different than it is today. So, I would like to dedicate this thesis, one of my greatest achievements, to Principal Dave Egolf and all of the faculty at King High School- you were just the people this young girl needed.

Lastly, to my family who never gave up on me. To my dad, my greatest inspiration and the best father anyone could ever ask for. My grandparents, Gladys and Peter Bakker, who spent many hours of their golden years teaching and guiding me- I am forever grateful.
I would like to thank Randy MacIntosh for allowing me to usurp just a small portion of his appreciable skill and experience in statistics, data analysis and overall academic research. His patience and expertise were invaluable throughout this process, and he was always willing and able to redirect and refocus my attention when I seemed to get a little off course. His willingness to take on the task of being my chairperson and great task of reading numerous drafts of chapters that go into this final product, have not gone unnoticed or unappreciated by me. Randy, thank you so much.

Thanks also to Cid Martinez, who was willing and kind enough to serve as my second reader. As a relatively new faculty member at CSUS, I am sure that taking on a task of this size may have been unexpected. Your expertise regarding neighborhood characteristics and urban sociology were incredibly insightful and added another layer to this thesis. Thank you for volunteering your limited time.

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Chapter 1

INTRODUCTION

Statement of the Problem

Researchers, from a variety of disciplines, contend that social determinants play a substantial role in effecting the health of an individual. Particular interest has emerged in the past twenty years in response to the idea that social capital, especially at the neighborhood level, can influence behaviors and health outcomes. However, up until about a decade ago, a good portion of the previous research has focused solely on adult health (Browning and Cagney, 2003; Kawachi et al. 1997; Dahl and Malmberg-Heimonen, 2010; Poortinga, 2006; Mohan et al. 2005; MuCulloch, 2001; Kim et al., 2006; Idler, Benyamini, 1997; Ross, 2002; Harpham, Grant and Rodriguez, 2004; Subramanian, Kawachi and Kennedy, 2001; Ziersch, 2001; Rose, 2000; Mansyur et al. 2008; Schultz et al. 2008; Steptoe and Feldman, 2001; Manderbacka, Lundberg and Martikainen, 1999). Little emphasis had been made to understand variables associated with adolescent health. This study will replicate the previous work of Boyce et al. (2008) to assess self-rated health among American adolescents and its relationship with neighborhood social capital and risk-taking behaviors.

The period of adolescence is marked with physiological, psychological and psychosocial changes. The interest in the life experience of adolescents has increased among researchers, for a variety of reasons. First, it is believed that the period of adolescence provides a glimpse of the interaction of individual and social-contextual factors that may affect their health later in life (Kaplan and Camacho, 1983).
Additionally, the engagement in risk-taking behaviors has been shown to negatively influence educational attainment (Blum et al., 2003). The period of adolescence is essential in socialization, especially for creating social networks and lifelong social skills.

Prior research has indicated a relationship between the effects of neighborhood disadvantage and low levels of social capital on verbal ability (Sampson et al., 2008), educational attainment and even self-rated health of residents. Intuitively, residential neighborhoods may be associated with the health of residents. One may hypothesize that neighborhoods with stronger collective efficacy may have healthier residents, whereas the opposite may be true of more disorganized neighborhoods. One mechanism in this phenomenon is social capital. In previous literature, the term social capital has been defined in a variety of ways. To keep with the theoretical framework of Boyce et al. (2008), this study will adopt the term social capital as defined by Putnam (1993), “the features of social organization such as civic participation, norms of reciprocity, and trust in others that facilitate cooperation for mutual benefit” (p. 1).

It has been hypothesized, that neighborhoods with high levels of trust, which is one component of social capital, have higher levels of collective efficacy. These neighborhoods have the capacity to attract high quality health services, and organize community members to advocate for safe infrastructure and open space. Secondly, close-knit neighborhoods would be less likely to allow risk-taking behaviors, such as illicit drug use, and reckless behavior, which would be held in check by vocal community members. Although this study will utilize a community level understanding of social capital, researchers remain ambivalent about an established definition of the term.
Despite the contention, all of the reviewed studies have adopted an ecological view of social capital, taking into consideration the social context rather than only at the individual level.

This study replicates the previous work of Boyce et al. (2008) examining the relationship between neighborhood social capital, and risk-taking behaviors on the self-reported health among US adolescents. Boyce et al. (2008) tested their hypotheses on Canadian adolescents; this study will utilize the World Health Organization Health Behaviour in School-aged Children Survey of American adolescents. This will help us better understand American adolescents and could potentially highlight geographical similarities and differences.
Chapter 2

LITERATURE REVIEW

It is believed that people living in areas of higher social capital are more likely to report better health because of the availability of health-related information, access to community amenities, and neighbors who are more likely to organize in order to protect their community from potential health-related dangers (Poortinga, 2006). People living in areas where neighbors are friendly, and stop and say “hello,” may foster greater feelings of trust. Trust is one of several attributes of social capital and is believed to encourage recognition of healthy behaviors.

The study of self-rated health has gained much interest among researchers within the past twenty years. Some studies have focused on the areas of social capital, self-rated health and risk-taking behaviors among adolescents. The issues, however, have been focused on independently of each other. Additionally, the previous works have had contradictory results and findings, leading to a murkier understanding of the potential factors associated with lower ratings of self-rated health among adolescents. Most would presume that neighborhoods with higher levels of social capital would also have healthier and less risk-taking populations.

Self-Rated Health

Many studies have broadly defined health in order to accommodate for the inherent subjectivity, comprehensiveness, and non-specificity of the term. Although there may be many variations of self-rated health scales, many are designed to encompass both the psychosocial and biological aspects of health. As very eloquently put by Jylha
(2009), “self-rated health, an individual and subjective conception that is related to the strongest biological indicator, death, constitutes a cross-road between the social world and the psychological experiences on the one hand, and the biological world, on the other” (2009:308). Jylha recognizes that the vagueness of self-rated health, as well as its poor theoretical legitimacy, thus calling for an examination of self-rated health in a conceptual framework. The purpose of the World Health Organization’s, Health Behaviour in School-aged Children (HBSC) survey, was to study the health of young people throughout the world; through the use of a self-rated likert scale to measure current health status. The HBSC defined health as, “not merely as absence of illness or disease, but as both psychological and physical well-being” (Currie et al. 2009:132). Previous research by Idler and Benyamini (1997) lends to the credibility of allowing individuals to rate their health status. Through the analysis of twenty-seven previous studies evaluating the association between self-rated health and mortality, Idler and Benyamini concluded that self-ratings of health accurately contribute to health status data.

Self-rated health has been the focus of much research, and is thought to encompass a wide variety of health conditions. One of the earlier studies, conducted by Kaplan and Camacho (1983) found an association between self-rated health and mortality after controlling for social networks, anomie, depression and level of happiness. Research by Kawachi et al. (1997) tested the hypothesis that income inequality would

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1 To remain consistent with the survey documentation, the British spelling of “behavior” has been retained.
result in reduced social cohesion and social capital, which would negatively affect mortality.

Through the use of a cross-sectional ecologic study of US adults, results supported their hypothesis; income inequality leads to mortality through, “the de-investment of social capital” (Kawachi et al., 1997). Other potential factors of self-rated health are self-esteem (Goodman 1999; Goodman et al. 2007), level of school achievement (Vingilis, 1998; Wade, Pevalin and Vingilis, 2000) and substance use (Snedker, Herting and Walton, 2009). These studies found that adolescents of lower socio-economic status reported lower levels of self-esteem, resulting in lower self-rated health. Among Swedish adults, Manderbacka, Lundberg and Marikaninen (1999) found that risk factors such as smoking, vitamin use, a diet high in vegetables, and leisure time exercise were all associated with self-rated health; the less healthy the habit, the worse the self-rating. They contend that, “the present study adds to the credibility of the self-rated health indicator as a global summary measure of the respondents’ health” (Manderbacka et al. 1999, 1719). After reviewing the previous work, multiple morbidities have been associated with affecting the level of self-rated health.

In the study of self-rated health, the HBSC has been recognized worldwide for its contribution not only to a reliable measure, but with a particular interest in understanding adolescent health. At the inception of the HBSC, the survey aimed to examine contextual and structural confounders that may contribute to the self-rating of health among adolescents. Almgren, Magarati and Mogford (2009) surveyed high school seniors regarding factors that influence their self-rated health. They found that females were
more likely to report lower ratings of health than their male counterparts, regardless of race/ethnicity. These results are not uncommon, which makes researchers wonder: why are adolescents rating their health so poorly? Are their potential factors that contribute, either directly or indirectly to an adolescent’s self-reported health? This very question has been asked in a variety of ways among a variety of researchers from multiple disciplines, trying to determine a possible association between an adolescent’s social capital and risk-taking behaviors. Since adolescence is such a defining time in a person’s life, researchers contend that these factors may influence or diminish the quality of one’s health status.

**Social Capital**

The term social capital has created much debate among social scientists regarding the lack of consensus about its definition and appropriate measure (Shortt, 2004). However, this has not deterred researchers who wish to study the topic. From the wealth of previous research is that social capital generally takes into consideration of two spheres; cognitive and structural. The cognitive indicators would be a person’s feelings regarding sharing, reciprocity and trust; while structural indicators include social cohesion, informal socialization, civic engagement and volunteering. The role that social capital plays in particular contexts, especially neighborhoods has enticed interest. Sampson, Sharkey and Raudenbush (2007) found that children living in extremely disadvantaged neighborhoods in Chicago showed diminished verbal ability. The association was so strong in fact, that they found neighborhood alone could reduce the verbal ability of a child by four points; equivalent to missing a year of schooling. This raises the question, if neighborhood dysfunction and disadvantage can be attributed to
cognitive deficiencies, what role does neighborhood context play in terms of adolescent health?

Researchers are interested in adolescents, primarily because of the unique physical and social transformations taking place in their lives. Previous research has found that adolescents report low levels of self-rated health. In order to better understand the relationship of self-rated health among teenagers, researchers have utilized health surveys. Research conducted by Morgan and Haglund (2009), examined the relationship between social capital and health-related behaviors on overall health among 11-15 year old British students. Morgan and Haglund (2009) found statistically significant relationships between a variety of social capital indicators (family, school setting, neighborhood setting, control in one’s neighborhood, and social networking) and health-related outcomes. Students’ who reported a loose sense of family belonging and low neighborhood involvement were nearly twice as likely to report poor health. These findings were replicated in a study among Brazilian adolescents. Borges et al. (2010) studied the effect of social capital on Brazilian adolescents, while distinguishing between the different forms of social capital. The researchers stratified social capital into four dimensions: cognitive, behavioral, and bonding/bridging social capital. According to the findings of Borges et al. (2010) individuals who lacked trust, having someone to borrow money from, and perception of reciprocity reported poor levels of self-rated health; even after adjusting for all of the other social capital dimensions. Drukker et al. (2003) used three different data sources to better understand the relationship between SES and community-reported measures of social capital on children’s health in the Netherlands.
Using secondary data from a longitudinal survey of children, these data included neighborhood SES measures. Their measure of social capital included informal social control, social cohesion and trust. Health and quality of life was assessed through self-administered surveys. Drukker et al. (2003) found that children living in neighborhoods with low-SES deprivation or high social capital had higher ratings of general health, mental health, and overall satisfaction. Khawaja et al. (2006) studied the association between social capital among adolescents in Beirut. Using a dataset where randomly selected adolescents (13-19 years old) were asked questions regarding their social capital and self-rated health; they found a statistically significant association between social capital and self-reported health. Confounding this finding was place of residence, which added to the likeliness of reporting poor health (Khawaja et al., 2006). Interestingly, despite cultural differences, the previous literature has demonstrated a link between adolescent health and social capital.

Although this study will focus on the adolescent population, the vast majority of previous research has concentrated on adults. Ross (2002) sampled Canadian adults and analyzed their feelings of self-rated health, in relation to the strength of community ties. Her research concluded that a sense of community belonging is associated with higher levels of self-rated health; even after controlling for SES, health behaviors, chronic diseases and stress. Using a nationwide, representative sample of Russian adults, Rose (2000) found that “significant social capital,” such as involvement or exclusion from social networks, close friendships, a sense of control over one’s life, and trust all impacted mental and physical health among this population. He claimed that social
capital, coupled with human capital, “could raise an individual’s self-reported health from just below average on a five-point scale to approaching good health” (p. 1432). McCulloch (2001) analyzed a cross-sectional survey of British households, which focused on questions about the respondent’s neighborhood and psychiatric morbidity. Using logistic regression analysis, McCulloch concluded that people in the lowest categories of social capital were at an increased risk of psychiatric morbidity and people in the lowest categories of social disorganization had lower rates of some health problems such as breathing problems and high blood pressure (McCulloch, 2001). Using the 2002 Health Survey for England, Poortinga (2006) found that people who experienced high levels of social support also reported higher levels of health. At the community level, social capital substantially decreased among those reporting poor health. Research conducted on adults has shown a substantial association between social capital and health.

The bulk of previous research has found a moderating relationship between social capital and self-reported health Boyce et al. (2008) tested the association of social capital, family affluence and risk-taking behaviors among adolescents. While they hypothesized that social capital and SES may moderate the effects of risk-taking, their results showed that these three measures effected health independently. Boyce et al. concluded that adolescents from affluent families are just as susceptible to the poor health effects of risk-taking behavior and social capital as youth from disadvantaged backgrounds. These findings are replicated in a study by Pickett et al. (2002) that found Canadian adolescents who reported multiple injuries may be accounted for with risk-taking behaviors, but are
not influenced by an SES gradient. Contradictory to previously mentioned research, data analyzed by Browning and Cagney (2003) found that neighborhood poverty in Chicago has no independent effect on the self-rated health of adults after controlling for individual level effects. It’s obvious that conflicting findings make this study all the more important in adding to the current research. Ziersch et al. (2005) used both qualitative and quantitative methods to understand the connection between neighborhood social capital and health, particularly, mental health among Australian adults. They found that neighborhood safety was associated with physical health, while neighborhood connections were related to one’s mental health. Findings by Dahl and Malmberg-Heimonen (2010) analyzed the relationship between the unequal distribution of social capital and SES affected the health of Norwegians. Through the use of a cross-sectional survey, they found that social capital and SES did not mediate health outcomes and the only variable that had an association was generalized trust.

Additionally, a study by Kim et al. (2006) used the nationwide, Behavioral Risk Factor Survey to examine the association between social capital and obesity/inactivity. Their study provided evidence that social capital offers modest protective factors on obesity and leisure time activities. Focusing on adolescents in the United States, Goodman (1999) used the National Longitudinal Study of Adolescent Health to determine if an SES gradient exists among adolescent health and for five diseases that contribute to adolescent and adult morbidity. Analysis found SES gradients for self-rated health, depression and obesity. Despite uncovering the SES gradient associated with
adolescent health, adolescents do not show as significant a health gradient when compared to their adult counterparts.

The previous research makes a strong claim that social capital and health may transcend nation and state residence. In an attempt to determine whether self-rated health varied between US states, Subramian et al. (2001) found that individual level-factors, such as smoking, being low income and black, are strongly associated with poorer reported health. They also found that differences between states affected the level of health among different income groups. As state per capita income increases, so does the likeliness of reporting better health. Similar findings emerged with research by Schultz et al. (2008) who used secondary survey data from Minnesota and Wisconsin. They found that higher levels of social trust, involvement and organized interaction are associated with higher levels of self-reported health.

A survey of a low-income youth in Cali, Columbia studied the effect of social capital on adolescent mental health. According to Harpham, Grant and Rodriguez (2004), SES factors (poor education and employment) were stronger predictors of ill mental health than social capital. In addition, they found a little recognized gender difference; women were more prone to ill mental health than their male counterparts (2004, 2272). Khawaja et al. (2006) found that the self-reported health of adolescents in Beirut was strongly associated with social capital, while controlling for age, gender, and income. In order to analyze the previous work of social capital on health internationally, Mansyur et al. (2008) tested cross-national data provided by the World Values Survey and the World Bank. By using a sample of 45 countries, they were able to determine that social capital
could not be measured the same way in every country. In fact, there were vast differences among few of the countries, especially Russia. Self-rated health in Russia was much lower than in other countries. However, they concluded that although self-rated health and social capital are associated in many countries, this is not always the case, and caution needs to be taken when comparing large, cross-national samples. Interestingly, a study of Russian by Rose (2000) found that social capital measures, such as informal networks and trust, affect the health of Russian adults significantly.

Poortinga (2006), predecessor to Mansyur et al. (2008), found that British adults who reported higher levels of self-rated health also reported higher levels of trust, social support and civic participation. Contradictory to the previously stated research conducted in other countries, Mohan et al. (2005) studied the effects of social capital on small areas of England. Using multilevel logistic modeling, Mohan et al. analyze the effects of individual and “ward” level characteristics on mortality. They conclude that their modeling showed no strong, consistent relationship between health and ecological levels of social capital. However, when economic deprivation was added to the model, there was a great deal of collinearity; however, they were unable to determine what the effects were. Mohan et al. recognize that the use of “wards” or administrative areas may not have been suitable for this analysis, since they do not capture true communities, which have a meaning for individuals. However, they continue to argue that a level of skepticism must be had when analyzing the effect of social capital on individual health behaviors and outcomes (Mohan et al. 2005).
**Socio-Economic Status-SES**

The term socio-economic can often be related to social capital, in that, the level of socioeconomic status may influence the type of social capital you have, or the “quality” of that social capital. Socio-economic status is not a measure of one indicator, but rather an index of education, income and occupation. A study by Drukker et al. (2003) found an association between social capital and SES, due to a lack of informal social control, social cohesion and ultimately trust. Since children are born into, and are associated with their parents SES, Goodman et al. (2007) examined how these perceptions of SES affected the self-rated health of mid-western teenagers. Through the use of a four-year, longitudinal study, Goodman et al. (2007) found that adolescents subjective ideas about their familial SES, predict their level of self-rated health, despite other socio-demographic indicators. Additionally, SES has been attributed to adolescent health and health behaviors. These studies lend significant credibility to the notion that SES and social capital may contribute to the self-ratings of health among all adolescents.

Low SES is associated with poor diet, reduced physical activity, and increased cigarette smoking. However, there has been no evidence of an association between SES and alcohol consumption or marijuana use (Hanson and Chen, 2007). Similar findings were presented in a study by Chen, Matthews and Boyce (2002), who reviewed numerous previous studies and ultimately determined that SES has serious health outcomes throughout life, but adolescents are at an increased risk of asthma, smoking, physical inactivity and increased risk of injury.
A reliable measure of SES can only be determined among adults, since children and adolescents are merely born into a particular SES group. However, the impact of SES has “immediate and profound effects,” on the lives of young people (Chen, Boyce, Matthews 2002: 320). The researchers conclude that when referring to SES, they do not simply mean poverty, but various life events and a lack of quality health care. More recently, Richter et al. (2009) analyzed the relationship between SES and health among adolescents, using the Health Behaviour in School-Aged Children (HSBC) study. These data supported prior findings; that lower SES resulted in lower self-rated health. It also supported the notion that smoking and physical inactivity are partially responsible for this association. According to Steptoe and Feldman (2001), neighborhood factors can contribute to high levels of stress. After controlling for neighborhood SES, and individual deprivation, neighborhood problems were associated with poorer self-rated health and psychological distress. While studying the effects of social support and SES disparities among adults with hypertension, Gorman and Sivaganesan (2007) found that the level of an individual’s SES was more important to their self-rating of health, than was hypertension. This shows that the potential stress of low SES contributes more significantly to a person’s well-being than a health condition such as hypertension. Though it is only one variable in the measure of SES, income or relative deprivation was found by Subramanyam et al. (2009) to be independently associated with poor health status. This reinforces the widely recognized idea that more than SES, a person’s income is a strong predictor of health status. From the review of the literature, SES and health have been inconsistently shown to have an independent relationship.
Adolescent Risk-Taking

Research on the etiology of adolescent risk-taking has shown some evidence regarding the importance of social context and neighborhood social capital. However, the prior literature regarding risk-taking behaviors has been conflicting. According to a study by Pickett et al. (2002), Canadian adolescents who partook in multiple risk-taking behaviors had an increased risk of injury; though there was little evidence indicating an SES gradient. An additional study by Pickett et al. (2006) further explored risk-taking behaviors and injury, while accounting for one’s social environment. The study determined that supportive social environments act as a protective factor for risk-taking behavior, and some forms of injury (Pickett et al., 2006). In addition to social capital, examination of risk-taking behaviors among adolescents help us understand whether risk-taking behaviors influence the self-reported health of teenagers. As mentioned before, work by Vingilis, Wade and Adlaf (1998) analyzed the effects of three risk-taking behaviors (smoking, cannabis use and alcohol consumption) in relation to an adolescent’s self-rated health. As determined by these data, “only tobacco use was found to be a predictor of health status” (Vingilis et al., p.94). Caribbean youth were studied by Blum et al. (2003) to evaluate their participation in risk-taking behaviors (violence, substance use and sexual intercourse). They found that strong familial ties and school acted as protective factors against risk-taking behaviors.

A few studies have focused on neighborhood structure and context in relation to risk-taking behaviors among adolescents. According to Winstanley et al. (2008) high levels of neighborhood disorganization and low levels of social capital were associated
with adolescent alcohol and drug use, and dependence. Wen, Van Duker and Olson (2009) studied the effect of social context, both the at the neighborhood and state levels, to examine adolescent smoking. They found that none of the state or neighborhood factors were significant, and that more proximate factors affect adolescent smoking behaviors. Contradictory to the previous research noted regarding risk-taking behavior, Chuang et al. (2009) found an association between SES and smoking and alcohol consumption in different neighborhood contexts. Adolescents living in a suburban, middle-class SES were three times more likely to smoke than their lower SES peers. Urban, low SES neighborhoods seemed to provide a more conducive context for adolescent alcohol consumption. These findings clearly demonstrate a neighborhood effect on risk-taking behaviors (Chuang, 2009). Findings by Musick, Seltzer and Schwartz (2008) further corroborate the results of Chuang et al. Musick et al. concluded that adolescents in Los Angeles were less likely to smoke in neighborhoods with higher levels of social capital. However, there was no evidence that this was true of drinking or drug use.

Akin to risk-taking, risk factors are behaviors that are associated with an increased risk of an adverse health effects. While risk-taking is attributed to health behaviors, risk factors include lifestyle decisions that are likely to increase the chances of developing a disease. Examining the effect of risk factors on adolescents has been studied to determine what type of effects they may have on self-rated health. Manderbacka, Lundberg and Martikainen (1999) studied the relationship between five risk factors, such as dietary habits, exercise, and BMI) and health behaviors (smoking, alcohol
consumption) on self-ratings of health. These data came from face-to-face interviews of Swedish adults, and found that risk factors and health behaviors do directly influence self-ratings of health. As the Poortinga et al. (2009) hypothesized, social capital, such as social support, trust and civic participation seem to discourage risk-taking behaviors (smoking and alcohol consumption). In addition, community level social capital was associated with lower levels of smoking and moderate levels of alcohol intake, as well as fruit and vegetable consumption (Poortinga, 2006). In addition to mortality and psychological factors, research by Vingilis, Wade and Adlaf (1998) showed that among the three drugs tested (alcohol, cannabis and tobacco) only tobacco use was found to be a risk-taking behavior in reported health status among adolescents. A replication of the study conducted by Vingilis et al.; Wade et al. (2000) used a national sample of adolescents from the United States. Wade et al. (2000) found that there was very little variance between the two datasets, and the results were extremely similar.

Summary

Despite the inconsistent results among previous research, it appears that much of the dissimilarity of findings can be attributed to the use of different measures of self-rated health. Earlier studies lend credibility to the idea that adolescent self-rated health can be influenced by risk-taking behaviors and the social capital of their neighborhoods, and the relationships are interactive ones, rather than mediated. However, the only other study examining the relationship between adolescent health, risk-taking and neighborhood social capital were tested among Canadian adolescents (Boyce et al., 2008). The current
study will seek to determine how these factors influence self-reported health among US adolescents.
Chapter 3

METHODOLOGY

Hypotheses

**Hypothesis 1:** Higher neighborhood social capital will be positively correlated with better self-reported health, after controlling for race/ethnicity, gender, and family affluence.

**Hypothesis 2:** Adolescents who never or occasionally engage in risk-taking will report better self-rated health than those who frequently engage in these behaviors.

**Hypothesis 3a:** Family affluence will influence risk-taking behaviors.

**Hypothesis 3b:** Family affluence will influence self-reported health status.

Sample

The United States data from the World Health Organization Health Behaviour in School-aged Children Survey (HBSC) 2001/2002 were used for the analysis. The HBSC is sponsored by the World Health Organization, and aims to gain insight into the health related attitudes and behaviors of young people in their social context. The HBSC is conducted every four years among 6-10th grade students in public and private schools throughout the United States and internationally. The survey has been conducted cross-nationally in over 30 countries since its inception during the 1985/1986 school year.

The study uses a three-stage cluster design in which a school district or a group of school districts was the primary sampling unit (PSU). From the PSU, a school was randomly selected as the second stage, and the classroom was then selected as the third
stage of sampling. A total of 548 schools were selected; 204 schools did not respond. Due to the high rate of non-response, additional schools were re-sampled to yield a total sample of 465 schools, with a participation rate of 73.2 percent. Within the participating schools, 18,620 students were deemed eligible, and 15,245 students participated, yielding an 81.9 percent response rate. There were two types of survey questionnaires, one for high school students which included 92 multiple-answer questions, and the other tailored for middle-schoolers that asked 77 multiple-answer questions. Each survey questionnaire is administered to students in grades 6-10 through standardized protocol. The individual level identifiers have been removed from the data, to ensure the confidentiality of participants. Questions regarding risk-taking behaviors such as smoking, and drug use were only asked of high school students (grades 9 and 10 only).

The data file is weighted by the inverse probability of having selected the respondent’s school and classroom, and adjusted for school non-response and student non-response within classrooms. Race and ethnicity were weighted by first classifying students into five categories: white, African-American, Hispanic, Asian and Native American. Enrollment totals for each race and grade level were obtained from the National Center for Educational Statistics’ website. Weights were then adjusted accordingly, so that each race/grade category was similar to the national totals.

Dependent Measure

Self-rated health: The dependent variable was a single question asking the respondent to rate his/her health status in the following question “would you say your
health is…?” 1=excellent, 2=good, 3=fair, 4=poor. The responses were dichotomized into 2=good (excellent/good) (72.4%), 1=poor (fair/poor) (27.6%).

Independent Measure

Neighborhood social capital: A 21-point summative scale was created using five HBSC data items to measure neighborhood social capital: “people say ‘hello’ and often stop to talk to each other in the street,” “it is safe for younger children to play outside during the day,” “you can trust people around here,” “there are good places to spend your free time,” and “I could ask for help or a favor from neighbors” (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree). All of the questions were tested during the development of the HSBC, with the exception of “you can trust people around here,” which was adapted from the work of Kawachi et al. (1997) and Boyce et al. (2008). Three categories equally divide up the range of values (range 5-25): 3=high social capital (scores 19-25), 2=moderate social capital (12-18), 1=low social capital (5-11). Therefore, there are 28 individuals in the sample who are classified as having “low” social capital, 961 individuals who have “moderate” social capital, and 3,856 individuals who have “high” social capital.

Multiple Risk Behaviors

Pickett et al. (2006) tested and validated a summative risk-taking scale, which was adapted by Boyce et al (2008). The scale used in the Canadian analyses of Boyce et al. (2008) has been modified to align as closely with the HSBC United States data as possible. Therefore, the risk-taking behavior variable used for this analysis is comprised of four HSBC data items. (1)Smoking (four categories: do not smoke to smoke
(2) lifetime drunkenness (five categories: have never been really drunk to drunk more than 10 times), (3) marijuana use (seven categories: never to more than 40 times), (4) other illicit drug use (seven categories: never to more than 40 times). Each item was scored into categories of 1=never, 2=occasional, 3=frequent risk behaviors. The mean was derived from the score, and was then categorized into three frequency of behavior: 1=never engage in risky behaviors, 2= occasionally engage in risky behaviors, 3= frequently engage in risky behaviors. There were adolescents who scored a one on the scale (11.5%) never engage in risk-taking behaviors, those that scored between one and two on the scale (70.7%) are considered occasional risk takers, and youth who score more than two, frequently engage in risk-taking behaviors (17.8%).

**Family Affluence Scale (FAS)**

The FAS was developed as a proxy of socio-economic status, which takes into account family expenditures and consumption. Boyce et al (2008) comprised four of the HBSC’s, easy to answer, non-sensitive questions: (1) vehicle ownership (0=no, 1=yes, one; 2=yes, two or more), (2) having a bedroom to yourself (0=no, 1=yes), (3) vacations with the family in the past year (0=none, 1=one, 2=two, 3=more than two), (4) number of computers in the home (0=none, 1=one, 2= two, 3=more than two). Responses were summed into a scale (range 0-9) with three cut points as recommended in previous studies (Boyce et al., 2008; Currie et al., 2008). Scores within the range of 0-2 were grouped into the low family affluence category (13.0%), scores of three and five were placed in the moderate affluence category (40.1%), and scores that fell within the range of six to nine were considered to be in the high affluence category (46.9%).
Demographic Variables

Gender: To understand gender differences, we will control for respondents gender. A dummy variable was created, setting females=1 and males as the omitted group. The sample consists of 2,594 males and 2,811 females (48% and 52%, respectively).

School grade: Respondent’s in grades 9 (50.9%) and 10 (49.1%) will be used for this analysis.

Race: We will control for the respondents race, by using the variable ‘combined race’. 1=American Indian (n=151), 2=Asian (n=225), 3=Black or African American (n=1,140), 4= Native Hawaiian or Pacific Islander (n=56), 5=White (n=2,944), 6=Two or more races (n=210). White will be the omitted group.

Regression Model

In order to assess the effects of social capital and SES on the relationship between adolescent risk-taking and self-rated health in the United States, the following analysis (adapted from the work of Boyce et al., 2008) was used with 5,221 adolescents who provided valid answers to the dependent variable. First, a descriptive analysis of the variables was performed to determine gender differences in self-rated health and risk-taking behaviors using the chi-square statistic. Secondly, bivariate associations between risk-taking behaviors and neighborhood social capital, as well as between risk-taking behaviors and family affluence were examined. Next, by using multiple regression analysis, and regressing self-rated health on social capital, family affluence, and risk-taking behaviors (controlling for gender and school grade) before including these three
variables in the same model to assess if variables that were significant in the reduced model, remained significant in the full model. Finally, a formal test of moderation was conducted. Because multiple regression cannot detect the magnitude of moderating effects among variables, these terms were created between all two variable combinations of risk-taking behaviors, social capital, and family affluence. Binary logistic regression analysis was conducted; adjusted odds ratios and 95% confidence intervals are reported.
Chapter 4

FINDINGS AND INTERPRETATION

Table 1 displays the distribution of respondents by gender. As we can quickly ascertain from the table, there are more females (52.01%) than males (47.99%) in our sample, and there is nearly an equal distribution between grade levels. Respondents in our sample were on average more likely to come from families of moderate or high levels of affluence, neighborhoods of moderate or high social capital, occasionally engage in risk-taking behaviors, and consider their current health status to be ‘good’. When we look at family affluence, a greater proportion of girls report coming from high affluent homes (24.67%) compared to boys (22.22%). When we look at the gender differences of risk-taking behaviors, girls are less likely to engage in risk-taking behaviors on a frequent basis (8.33%), however, girls are more likely to report engaging in occasional risk-taking behaviors than their male counterparts (38.83% girls and 31.86% of boys). Previous literature has shown (Almgren, Magarati and Mogford 2009) female adolescents are more likely to report poorer health status, when compared to boys. This finding is substantiated in our results, indicating that on average, girls are more likely to report poor health (17.81%) than their male counterparts (9.77%). Finally, when we stratify the sampled students by urbanicity, the results are slightly mixed yet statistically significant. Females in our sample were more likely to live in urban cities (20.41%) whereas; males were most likely to come from rural locations (17.14%).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Male</th>
<th>Female</th>
<th>Chi-sq&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (n=5405)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2594</td>
<td>47.99</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2811</td>
<td>52.01</td>
<td></td>
</tr>
<tr>
<td>School Grade (n=5405)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1348</td>
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<td>.55</td>
</tr>
<tr>
<td>10</td>
<td>1246</td>
<td>23.05</td>
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</tr>
<tr>
<td>Family Affluence Scale (n=5404)</td>
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<td></td>
<td></td>
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<tr>
<td>Low</td>
<td>366</td>
<td>6.77</td>
<td>5.34</td>
</tr>
<tr>
<td>Moderate</td>
<td>1027</td>
<td>19.00</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>1201</td>
<td>22.22</td>
<td></td>
</tr>
<tr>
<td>Neighborhood Social Capital</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>14</td>
<td>.29</td>
<td>6.42</td>
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<tr>
<td>Moderate</td>
<td>409</td>
<td>8.44</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>1815</td>
<td>37.46</td>
<td></td>
</tr>
<tr>
<td>Multiple Risk Behavior (n=5405)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>360</td>
<td>6.66</td>
<td>29.87***</td>
</tr>
<tr>
<td>Occasionally</td>
<td>1722</td>
<td>31.86</td>
<td></td>
</tr>
<tr>
<td>Frequently</td>
<td>512</td>
<td>9.47</td>
<td>8.33</td>
</tr>
<tr>
<td>Self-Reported Health Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>510</td>
<td>9.77</td>
<td>75.24***</td>
</tr>
<tr>
<td>Good</td>
<td>1980</td>
<td>37.92</td>
<td></td>
</tr>
<tr>
<td>Urbanicity (n=5306)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>1069</td>
<td>16.83</td>
<td>12.92*</td>
</tr>
<tr>
<td>Suburban</td>
<td>777</td>
<td>15.33</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>705</td>
<td>17.14</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Rao-Scott Chi-square reported.

*<0.05
**<0.001
***<.0001
Table 2 displays the association between multiple risk-taking behaviors and neighborhood social capital. The highest proportion of respondents came from neighborhoods of high social capital, and reported occasionally engaging in risk-taking behavior (78.19%). The group who most commonly reported “never engaging in risk-taking behaviors” was among adolescents who came from low social capital neighborhoods. However, it was also adolescents from neighborhoods of low social capital that were more likely to frequently engage in multiple risk-taking behaviors (21.43%) compared their peers from moderate (19.98%) and high (19.14%) social capital neighborhoods.

Table 2.
Association of Neighborhood Social Capital and Multiple Risk-Taking Behaviors

<table>
<thead>
<tr>
<th>Multiple Risk-Taking Behaviors</th>
<th>Neighborhood Social Capital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>%</td>
</tr>
<tr>
<td>Never</td>
<td>10</td>
<td>35.71</td>
</tr>
<tr>
<td>Occasionally</td>
<td>12</td>
<td>42.86</td>
</tr>
<tr>
<td>Frequently</td>
<td>6</td>
<td>21.43</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100</td>
</tr>
</tbody>
</table>

Rao-Scott Chi-square=50.47  p<.0001

Table 3 shows a statistically significant association between family affluence and risk-taking behaviors among respondents in our sample. According to the data, adolescents from families of moderate affluence are more likely to engage in frequent risk-taking behaviors (19.19%) when compared to their peers from low (9.40%) or high (19.94%) affluence. As we saw in Table 2, respondents from families of low affluence were much more likely to report never engaging in risk-taking behavior (53.14%) in
comparison to their moderate and high affluent counterparts. This is in direct
disagreement with the findings of Boyce et al., whose data indicated an inverse
relationship. Boyce et al. (2008), found in a sample of Canadian adolescents that students
from low affluent families were much more likely to engage in risk-taking behaviors,
compared to their moderate and high affluent schoolmates.

Table 3.
Association of Family Affluence and Multiple Risk-Taking Behaviors

<table>
<thead>
<tr>
<th>Multiple Risk-Taking Behaviors</th>
<th>Family Affluence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low n</td>
</tr>
<tr>
<td>Never</td>
<td>373</td>
</tr>
<tr>
<td>Occasionally</td>
<td>263</td>
</tr>
<tr>
<td>Frequently</td>
<td>66</td>
</tr>
<tr>
<td>Total</td>
<td>702</td>
</tr>
</tbody>
</table>

Rao-Scott Chi-square = 981.41  p < .0001

The logistic regression was computed using SAS 9.2 SURVEYLOGISTIC
procedure. Table 4 displays the statistically significant impact that gender, neighborhood
social capital, family affluence and risk-taking behaviors have on health status among
U.S. adolescents.

Model 1 indicates that female’s odds of reporting good health are nearly 47%
lower than that of their male counterparts. Additionally, family affluence is positively
associated with good health; each one-unit increase in family affluence increases the odds
of an adolescent reporting good health by 29%.
<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept Value</td>
<td>B</td>
<td>SE B</td>
<td>e</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.64</td>
<td>.09</td>
<td>.53***</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>-.32</td>
<td>.20</td>
<td>.73</td>
</tr>
<tr>
<td>American Indian</td>
<td>.13</td>
<td>.18</td>
<td>1.14</td>
</tr>
<tr>
<td>African-American</td>
<td>.004</td>
<td>.11</td>
<td>1.00</td>
</tr>
<tr>
<td>Multi-racial</td>
<td>-.22</td>
<td>.20</td>
<td>.81</td>
</tr>
<tr>
<td>Neighborhood Social</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>.27</td>
<td>.11</td>
<td>1.311*</td>
</tr>
<tr>
<td>Multiple Risk</td>
<td>-.63</td>
<td>.09</td>
<td>.53***</td>
</tr>
<tr>
<td>Family Affluence</td>
<td>.26</td>
<td>.07</td>
<td>1.29**</td>
</tr>
<tr>
<td>Urbanity</td>
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<tr>
<td>Urban</td>
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<td>.11</td>
<td>.83</td>
</tr>
<tr>
<td>Rural</td>
<td>-.16</td>
<td>.10</td>
<td>.85</td>
</tr>
<tr>
<td>N</td>
<td>5405</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-Square</td>
<td>104.85***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Df</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $e = \text{exponentiated } B$.

White, suburban males were used as the reference category.

* $p < .05$, **$p < .01$, ***$p < .0001$

Table 4.
Effects of Neighborhood Social Capital, Race, Family Affluence, Risk-Taking, and Urbanicity on the Self-Reported ‘Good’ Health of U.S. 9th and 10th Grade Adolescents

Table 5 displays the regression analysis when interaction effects are entered into the models. Model 2, tests the moderation effect between family affluence and multiple risk-taking behaviors. The interaction between family affluence and risk-taking is not significant.

There are two significant main effects in Model 1. The odds of reporting health status as ‘good’ increases 31 percent for each one-unit increase of neighborhood social
capital. The other significant effect is for gender, demonstrating that females are 47 percent less likely to report good health than their male classmates.

The only statistically significant association in Model 3 was for gender. Females were less likely to report their health as good when compared to their male classmates. The interaction effect of neighborhood social capital and family affluence was not found to be significant.

Model 4 displays some very interesting results. The neighborhood social capital main effect was significant (p<.0001), demonstrating that higher neighborhood capital scores are positively correlated with better self-reported health status. When the interaction between neighborhood social capital and multiple risk-taking are entered into Model 4 the association becomes significant (p<.0003). This interaction demonstrates that the positive influence of neighborhood social capital is reduced by a single unit increase in risk-taking behavior. In addition, family affluence becomes statistically significant (p<.0006).

Model 5 shows once again that neighborhood social capital and multiple risk-taking behaviors remain statistically significant (p<.0025) when all interaction effects are entered into the model together. All of the models displayed that females are more likely to report poor health when compared to their male classmates.
Table 5. Association between Self-Reported Health Status as ‘Good’ and Interaction Effects

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
<th></th>
<th>Model 4</th>
<th></th>
<th></th>
<th>Model 5</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>(e^B)</td>
<td>B</td>
<td>SE B</td>
<td>(e^B)</td>
<td>B</td>
<td>SE B</td>
<td>(e^B)</td>
<td>B</td>
<td>SE B</td>
<td>(e^B)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.64</td>
<td>.09</td>
<td>.53***</td>
<td>-.64</td>
<td>.09</td>
<td>.53***</td>
<td>-.67</td>
<td>.10</td>
<td>.51***</td>
<td>-.67</td>
<td>.09</td>
<td>.51***</td>
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</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>-.32</td>
<td>.20</td>
<td>.73</td>
<td>-.32</td>
<td>.20</td>
<td>.73</td>
<td>-.34</td>
<td>.20</td>
<td>.71</td>
<td>.49</td>
<td>.28</td>
<td>.71</td>
</tr>
<tr>
<td>American Indian</td>
<td>.14</td>
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<td>.12</td>
<td>.18</td>
<td>1.13</td>
<td>.15</td>
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<td>1.17</td>
<td>.15</td>
<td>.18</td>
<td>1.17</td>
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<td>.002</td>
<td>.11</td>
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<td>-.02</td>
<td>.11</td>
<td>.98</td>
<td>-.02</td>
<td>.11</td>
<td>.98</td>
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<td>.20</td>
<td>.80</td>
<td>-.22</td>
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<td>.81</td>
<td>-.21</td>
<td>.20</td>
<td>.81</td>
<td>-.21</td>
<td>.20</td>
<td>.81</td>
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<tr>
<td>Neighborhood Social Capital</td>
<td>.27</td>
<td>.11</td>
<td>1.31**</td>
<td>-.03</td>
<td>.23</td>
<td>.76</td>
<td>.19</td>
<td>1.15</td>
<td>.48</td>
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*** p<.0001    **p< .001    *p<.05
Chapter 5

DISCUSSION AND CONCLUSION

The purpose of this study is to supplement the existing research and add legitimacy to the previous findings that indicate neighborhood social capital, multiple risk-taking, family affluence and gender can influence the self-reported health of adolescents. This study utilized U.S. data from the 2002 World Health Organization’s Health Behavior in School-aged Children Survey and replicated Boyce et al. (2008) study using the Canadian version of the same dataset. Based on extensive review of the previous research the following hypotheses were generated.

_Hypothesis 1:_ Higher neighborhood social capital will be positively correlated with better self-reported health, after controlling for race/ethnicity, gender, and family affluence.

According to the coefficients in Table 4, the data support hypothesis one. There appears to be a positive association between neighborhood social capital and health reported health status of adolescents. Thus, we can conclude that with each one-unit increase on the neighborhood social capital index, the odds of an adolescent reporting good health increases by 31%.

_Hypothesis 2:_ Adolescents who never or occasionally engage in risk-taking will report better self-rated health than those who frequently engage in these behaviors.
Multiple risk-taking behaviors are shown to be detrimental to the health of U.S. adolescents; for each one-unit increase in the frequency of multiple risk-taking behaviors decreases the odds of reporting good health (O.R.=.53). We can extrapolate from Model 1, that adolescents who report less frequent engagement in risk-taking behaviors are more likely to report having better health; therefore, hypothesis two is supported by these data. 

*Hypothesis 3a:* Family affluence will influence risk-taking behaviors (not supported by model 2).

According to the non-significant coefficients in Model 2, family affluence does not influence risk-taking behaviors; therefore, hypothesis 3a remains unsupported.

*Hypothesis 3b:* Family affluence will influence self-reported health status (supported by model 4).

Model 4 shows a positive relationship between family affluence and self-reported health status, supporting hypothesis 3b. With each one-unit increase of family affluence, the odds of an adolescent reporting their health status as ‘good’ increases by .29.

**Table 6. Summary of Findings**

<table>
<thead>
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<th>Hypothesis</th>
<th>Findings</th>
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<td>Supported</td>
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<tr>
<td>Hypothesis 3b</td>
<td>Supported</td>
</tr>
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</table>
The original study, conducted by Boyce et al. (2008) determined after modeling interaction effects that “SES, neighborhood social capital, and risk behaviors were found to influence health independently” (p. 250). However, our current study appears to lend support for the moderating effects of neighborhood social capital and risk-taking behaviors on the health of adolescents (Model 4). Thus, as neighborhood social capital increases, the negative effects of risk-taking behaviors will decrease.

The results of this study seem to coincide with conclusions derived in the previous literature. From a sociological perspective, the association between neighborhood social capital, family affluence and health status is fascinating. In the results section, Model 4 showed a significant and positive relationship between family affluence and better self-reported health. Unlike the substantiated link between neighborhood social capital and risk-taking, made by Pickett et al. (2006), when we look at the results of their study regarding SES (family affluence) they concluded that health was not influenced by an SES gradient. However, a study conducted by Ritcher et al. (2009) found that low SES had a significant and negative effect upon the health of adolescents in both America and Europe. Steptoe and Feldman (2001) determined low levels of neighborhood SES and individual level deprivation increased the chances of poor health and increased psychological distress.

The current study shows a positive relationship between family affluence and self-reported health. When we refer to the previous literature, the reason for this relationship becomes more plausible. Poor health related behaviors that occur on a daily basis are more common among adolescents from families of lower affluence, which
appear to have cumulative effects resulting in poorer overall health-reported status. As we noted in the review of the literature, there exists a well-established association between SES and health status; primarily, the association between low SES and poorer reported health status.

Reduced levels of neighborhood social capital have also identified substantial health impacts on local residents. Previously cited literature has shown that socially deprived neighborhoods are more likely to have higher rates of obesity, depression (Kim et al. 2006), lack of physical activity, poor nutritional habits and higher rates of tobacco usage (Hanson and Chen, 2007). Drukker et al. (2003) found that children living in neighborhoods with low-SES deprivation or high social capital had higher ratings of general health, mental health, and overall satisfaction. Previous literature alluded to the lack of resources available in socio-economically deprived neighborhoods, which could be responsible for reduced levels of self-reported health and overall quality of life (Kawachi et al., 1999).

When examining the effect of social capital in impoverished neighborhoods, the results have been mixed. Some research argues that concentrated poverty and neighborhood structural characteristics still matter. Sampson et al. (2002), assert that “neighborhood mechanisms are not produced in a vacuum; some social processes, particularly those related to the idea of collective efficacy, appear to emerge mainly in environments with a sufficient endowment of socioeconomic resources and residential stability” (p. 465). However, the opposite has also been found to be true; high levels of
Social capital exist within economically deprived neighborhoods due to social ties that exist outside of the neighborhood (Small, 2009).

Small (2009) documents research conducted to assess the relationship between neighborhood deprivation and social capital. He references the Moving to Opportunity (MTO), study which sought to determine whether policy intervention regarding residential location could alter inner-city poverty and racial segregation. In order to test this hypothesis, research participants who resided in high poverty neighborhoods within large metropolitan cities throughout the U.S. were recruited, and post-study enrollment, were divided into three groups. The experimental group was given housing assistance vouchers, which allowed them to relocate to “nonpoor neighborhoods,” (Small 2009:195). The control group did not receive housing vouchers but continued to receive government assistance. Through tracking and follow-up, it was determined that participants, “despite expectations, results have been mixed. For some outcomes in some cities the experimental group experienced greater well-being; for others there was no effect” (Small 2009, 195).

While the presumed claim that macro level neighborhood poverty may not have an effect on the micro level social capital of its residents, Small (2009) provides additional insight from the findings of his own study regarding childcare centers in poor neighborhoods. He found that many of the childcare centers in the impoverished neighborhoods that he studied maintained social ties with external organizations and resources, which benefited both the mothers and children; however, this may have been due to the intervention of the institutional resources provided by New York City and the
state. In conclusion, Small (2009) argues that if urban organizations maintained high levels of outside ties, then people in poor neighborhoods associated with those centers would have greater access to goods and services than people in more affluent neighborhoods. “In such a scenario, people in poor neighborhoods would not always seem to do worse than those in nonpoor neighborhoods, because the negative effects of crime, poor schools, and other facts would be tempered by the positive effects of participating in better connected organizations” (Small 2009, 196). He also asserts that residents who are not affiliated with the child care centers, are potentially worse off because they do not have access to the resources the centers provide; “in a society increasingly structured around formal organizations, the organizational isolate is the person increasingly guaranteed to be left out” (p. 197). Thus, a paradoxical relationship between neighborhood poverty and resident outcomes appears to hinge on the social ties, which exist, and the beneficial resources those social ties can provide.

The findings generated by Small’s (2009) study may help explain why the interaction relationship between neighborhood social capital and family affluence in the current study were not statistically significant (Table 5). As Small (2009) asserts, areas of low affluence do not intrinsically have less social capital, and perhaps the reverse is true in most neighborhoods. As previously documented, Small’s research found that high-poverty neighborhoods in New York City had ties to outside resources which provided higher levels of social capital than elsewhere in the city. Small (2009) recognized that these resources were not created organically within the neighborhood, but as the result of targeted intervention in poor communities, on behalf of non-profit organizations and
city/state social programs. Provided with this insight the insignificant interaction of the combined effects of neighborhood social capital and family affluence becomes easier to understand.

The results of this study showed a relationship between increased risk-taking behavior and poor health status. A well-established association between increased risk-taking behaviors and reduced health status has been demonstrated (Pickett et al. 2006). Canadian adolescents were more likely to report poor health status when they were frequent users of tobacco. However, it could not be determined whether tobacco use altered the psychological state of the individual, or if the ill-perceived effects were enough make them believe their tobacco use negatively impacted their health (Vingilis et al. 1998). Health behaviors, including consumption of dietary fat, vitamin use, exercise, and smoking, were studied in relation to the health status of Swedish adults (Manderbacka et al. 1999). They clearly determined that the less healthy the behavior, the poorer the self-rating of health status; “former smokers showed a strong association with less than good self-rated health” (Manderbacka et al. 1999:1718). Along with existing research, our study concludes that risk-taking behaviors, which included tobacco smoking, alcohol consumption; marijuana use and illicit drug use negatively impact the self-reported health of U.S. adolescents.

It appears that our current study adds to the existing literature, by substantiating the link between neighborhood social capital, risk-taking behavior, family affluence and their effects upon the self-rated health of American adolescents. Overall, recognition in the importance of neighborhood social capital on the risk-taking behaviors among
adolescents, and the possible health implications ought to be addressed, for the betterment of future generations.

*Strengths and Limitations*

The main strength of this study is the use of the WHO’s Health Behaviours among School-aged Children, a well-recognized and long running international survey. However, as this is a cross-sectional study the inability to draw causal relationships is a severe limitation. Secondly, the responses obtained to create the data were provided one time, whereas many of us know, something such as health status can be a dynamic process or feeling; thus, the reliability of such responses may have been influenced by external factors. Additionally, statistical analysis required us to dichotomize the self-reported health status into “good” or “bad”, which eliminates the subtle differences that may exist. Lastly, the largest limitation that we ran across when doing the literature review were the contradictory definitions of social capital. Because this study replicates that of Boyce et al. (2008), we adopted the previously used definition of neighborhood social capital. However, a more nuanced definition would only strengthen all future research and reduce the inconsistencies.
APPENDIX A

Core Variables

*Dependent Variable*

Dependent variable:

Q42= Health

*Independent variables*

Neighborhood social capital:

Q81a= People say hello
Q81b= Feel safe to play outside
Q81c= Can trust people
Q81d= Good places to go
Q81e= Can ask for help

Multiple risk behaviors:

Q83= Smoking frequency
Q86= Been drunk
Q88a= Marijuana use-lifetime
Q88c= Other drug use- lifetime

Family Affluence Scale:

Q77= Own bedroom
Q78= Family car
Q79= Vacation
Q11= Number of computers at home
Control variables:

Q6_Comp= Computed-combined race
Q4= Grade
Q1= Gender
Q7= Urbanicity
APPENDIX B

Human Subjects Review Protocol

August 24, 2011

Jennifer Rico
Department of Sociology


The Human Subjects Committee of the Department of Sociology at CSU Sacramento has determined that your protocol qualifies as “exempt” and therefore does not need to be reviewed by the university level human subjects committee.

Please refer to the protocol number above in any future correspondence with the Department of Sociology Human Subjects Committee.

If you need any further information about this process, please contact me at 278-6675.

Best wishes,

Charles Varano
Chair, Sociology Department Human Subjects Committee
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