

PARENTAL MONITORING AND ADOLESCENT SEXUAL HEALTH OUTCOMES

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Adolescents engage in risky health behaviors more than young children and adults. This risk taking is thought to be a result of biological and environmental factors influencing adolescent behavior. Teenagers' engagement in risky sexual behavior puts them at a higher risk for morbidity and social stress resulting from unintended pregnancy and sexually-transmitted infections. This increased risk of morbidity emphasizes the public health significance of adolescent risk behavior. Parental monitoring has been identified as an important protective factor for adolescents' negative sexual health outcomes. However, the distinction between rule-setting and coercive discipline is critical in understanding the influence that parents have over their adolescent's risk taking behavior. Without recognition of the importance of a supportive and trusting parent/adolescent relationship, parental monitoring studies and interventions will be less effective in bringing about behavior change in adolescents and their parents. Perceptions of parental monitoring can vary greatly between adolescents and parents, and thus there is a need for a scale to measure actual parental knowledge of adolescent risk behavior. It is also important to consider the quality of parent and adolescent relationships when attempting to understand the effects of parental monitoring. As a result, the examination of barriers to parental monitoring and the nature of the parent/adolescent relationship are crucial for making a lasting positive impact on adolescent sexual health outcomes.

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PREFACE

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1.0 INTRODUCTION

As children move into adolescence, they experience greater amounts of unsupervised time with peers. In the years prior to adolescence, children seek approval of parental figures as they are the main influences in their lives, and the people with whom they often spend most of their time (Fulgini & Eccles, 1993). In adolescence, peers become increasingly important in decision-making, with adolescents seeking approval and advice from peers and distancing themselves from their parents (Fulgini & Eccles, 1993).

Adolescents take more risks than children or adults, as illustrated by statistics on substance abuse, crime, automobile crashes, gang violence, and contraceptive use (Steinberg, 2007). As a result it is important to understand why such risk-taking occurs and what factors influence risky behavior. Many studies have shown that parents are particularly influential on adolescent risk-taking beliefs, attitudes, and behaviors (Dishion & McMahon, 1998; Jaccard, Dittus, & Gordon, 1996; Stanton, et al., 2000; Webb, Bray, Getz & Adams, 2002). Parental monitoring is a critical protective factor in adolescent risk-taking behavior. When parents demonstrate concern for their adolescents, set distinct rules, and express interest in their adolescents' whereabouts, risky behavior in adolescents decline (Li, Feigelman, & Stanton, 2000). This is because greater amounts of parental monitoring allow for less unsupervised time with peers, thereby decreasing the opportunity for adolescents to engage in risk behaviors (Li, Feigelman, & Stanton, 2000).

Adolescent risk behavior has a significant influence on adolescent sexual health outcomes. Substantial morbidity among adolescents occurs from unintended pregnancy and sexually transmitted infections, including HIV (Youth Risk Behavior Surveillance-United States, 2008). Adolescents' engagement in certain risky behaviors, e.g. binge drinking and drug use, is often correlated with increased risky sexual behavior (Small & Luster, 1994). Results from the Centers for Disease Control and Prevention's (CDC) 2007 Youth Risk Behavior Surveillance Survey indicated that 44.7% of adolescents (grades 9-12) had at least one drink of alcohol and 26.0% had five or more drinks of alcohol on one occasion during the thirty days before the survey. In addition, 35.0% of students had sexual intercourse with at least one person during the three months prior to the survey and of those students 61.5% used a condom during their last sexual intercourse (CDC, 2008). Greater amounts of parental monitoring have been associated with a higher age at adolescent sexual debut, less frequent sexual intercourse, and increased self-efficacy with partner negotiation and condom use (Hutchinson & Wood, 2007).

Adolescent risk behavior can be understood best through a combination of physical, social, and environmental factors (Cohn, Macfarlane, Yanez, & Imai, 1995). Often times teen risk behavior begins around the same time as puberty, when hormonal surges result in physical maturation and increased ability to perform complex reasoning (Compas, Hinden, & Gerhardt, 1995). These biological factors along with social changes and environmental structure are key points for understanding adolescent risk taking (Compas, Hinden, & Gerhardt, 1995).

In this paper I describe the impact of parental monitoring on adolescent sexual health outcomes. A literature review was conducted in order to identify parent and adolescent perceptions of parental monitoring, barriers to parental monitoring, and tools that could

potentially increase successful parental monitoring in the future. In addition, I conducted background research in order to understand the biological influences that contribute to adolescent risk taking. Each aspect of the literature review was conducted under the framework of the Theory of Planned Behavior in order to understand adolescent behavioral intentions and potential points of intervention. Lastly, I recommend areas for future research and recommendations for possible program implementation.

2.0 BACKGROUND

Adolescence is a significant transitional period linking childhood and adulthood, during which teens often experiment with risky behavior (Benthin, Slovic, & Severson, 1993). Adolescent risky behavior has been a significant public health issue over time, and rates of emotional and behavioral problems in adolescents have steadily increased over the past twenty years (Prevention, 2008). This has resulted in an increase in morbidity and mortality due to risky behavior in adolescents, while there has been a decrease in negative health outcomes due to risk in young children and adults (Compas, Hinden, & Gerhardt, 1995).

The CDC's 2007 Youth Risk Behavior Surveillance Survey for the United States indicated that 47.8% of adolescents (grades 9-12) have had sexual intercourse. In addition, 35.0% of adolescents are currently sexually active, and 38.5% of sexually active students did not use a condom during their last sexual intercourse. Based on trend analysis using a logistic regression model, these percentages decreased overall from 1991-2007 (CDC, 2008). However, the percentage of adolescents who drank alcohol or used drugs before last sexual intercourse increased from 18.7% to 24.5% in those years (CDC, 2008).

Each year approximately three million adolescents contract a sexually transmitted infection and one million become pregnant (Whitaker & Miller, 2000). Adolescents make up 25% of newly diagnosed sexually transmitted infections each year (Whitaker & Miller, 2000). Despite the fact that adolescents are at increased risk for acquiring sexually transmitted infections, studies (Benthin, Slovic, & Severson, 1993; Cohn, Macfarlane, Yanez, & Imai, 1995;

Hutchinson & Wood, 2007) have shown that teens do not believe they are likely to become infected. These infections often times go undiagnosed for long periods of time, and can thereby result in infertility, cancer (in the case of HPV), and even death (CDC, 2008). In addition, acquiring one sexually transmitted infection increases the likelihood of contracting another, including the human immunodeficiency virus (HIV) (Whitaker & Miller, 2000). Of the one million adolescent pregnancies each year, approximately 25 percent result in miscarriage. Of the adolescent pregnancies that do not result in miscarriages, about 40 percent are terminated and 60 percent are carried to term (Miller & Benson, 2001). This presents both physical and emotional risks to adolescents, and can result in significant morbidity and mortality including complications during childbirth or abortion, increased risk for infection, and higher rates of poverty (Miller & Benson, 2001). These sexual health outcomes are a result of biological and environmental factors that contribute to adolescent development and risk behavior (Compas, Hinden, & Gerhardt, 1995).

Physical and biological development and maturation are significant throughout youth and the teen years. Language skills, social cognition, problem-solving, and thinking processes also develop further during adolescence. As stated by Compas, Hinden, and Gerhardt (1995),

The hormonal changes that define puberty influence growth and functioning of the brain, the central nervous system, and neurotransmitter processes within the central nervous system, and contribute to observable changes in body shape and morphology, including breast development, gonadal development, and growth of facial and pubic hair (p. 268).

Evidence suggests that changes in hormones are linked to mood and behavior, and that these complex relationships contribute to risk behavior in adolescence (Compas, Hinden, & Gerhardt, 1995). For example, biological factors, e.g. early age at menarche and hormone levels, have a distinct effect on adolescent pregnancy risk. It has been shown that the earlier adolescent females mature physically, the earlier they engage in sexual contact (Miller & Benson, 2001).

This is an example of a factor in sexual initiation and risk taking that is biological, and not in the control of the individual.

In addition, risk factors are shaped by the adolescent's environment. Risk factors are characteristics of a person or environment that results in increased negative developmental outcomes. Environmental risk factors are not biological in nature, but rather occur as a result of family structures, neighborhood characteristics, and other social circumstances. In addition to risk factors, protective factors reduce the probability of maladaptive development as a result of high risk factors. Parental monitoring is considered to be one of the most effective protective factors in reducing adolescent risky behavior (Compas, Hinden, & Gerhardt, 1995).

The first developed measure of perceived risk is the Fischhoff Psychometric Survey of Risk Perception (Bentlin, Slovic, & Severson, 1993). This scale asked people to rate various activities based on their riskiness. In addition, the participants were asked to assign various characteristics to the activities in order to measure perceived risk. These characteristics were (1) if the risk is voluntary or involuntary; (2) whether the risk of death from the activity is immediate or delayed; (3) if the risk is apparent to the exposed; (4) if the risks are acknowledged by science; (5) whether the risks from the activity are in the individual's control; (6) if the risk is familiar or unfamiliar; (7) whether the activity could kill one person at a time or a large number of people; (8) if the thought of the activity gives a feeling of dread; and (9) if an accident as a result of the activity is likely to cause deaths (Fischhoff, Bostrom, & Jacobs-Quadrel, 1993). These categories have been used to predict whether or not people find certain risky activities to be acceptable, but do not examine *why* they are accepted or not (Bentlin, Slovic, & Severson, 1993).

Ultimately it is not known if adolescent experimentation with risk is a result of adolescent perceptions of invulnerability, or if teenagers generally do not perceive their actions as unsafe

(Cohn, Macfarlane, Yanez, & Imai, 1995). Some studies (Cohn, Macfarlane, Yanez, & Imai, 1995; Beyth-Marom, Austin, Fischhoff, Palmgreen, & Jacobs-Quadrel, 1993) have found that many adolescents do not view their behavior as risky, and that teenagers tend to minimize the damage associated with health risky behavior. Cohn et al. (1995) hypothesized that adolescent minimization of harm from risky behavior may be due to a belief that occasional risk taking does not usually result in negative outcomes (Cohn, Macfarlane, Yanez, & Imai, 1995). They state that “this may lead teenagers to mistakenly interpret the risk of harm as cumulative across situations when it may actually be independent across situations” (p. 222).

Applying the Fischhoff Psychometric Survey of Risk Perception to adolescents, those who engage in risky activities generally report less fear of risks, a perception of low risk to self and others, and less seriousness of risk effects (Benthin, Slovic, & Severson, 1993). One study (Jessor, 1984) found that adolescents sometimes use risk behavior as a way to gain autonomy from parental control. By engaging in risky activities, teens can demonstrate that their parents do not have control over their actions. Part of this autonomy is expressed through increased peer association. Since adolescents who engage in risky behavior tend to associate with other risk taking teens, this results in adolescents perceiving greater support for risk taking from friends and a tendency to spend time with peers who also engage in risky behavior (Benthin, Slovic, & Severson, 1993).

Adolescents who engage in one form of risky behavior are more likely to engage in another (Benthin, Slovic, & Severson, 1993). Previous research suggests that this is because risk taking during adolescence is interrelated, as opposed to being a collection of random and/or independent behaviors (Jacobs-Quadrel, Fischhoff, & Davis, 1993; Jessor, 1984). However, there are some factors that are associated with adolescent risky and antisocial behaviors. These include

demographic variables such as male gender and low socio-economic status, parenting behaviors including poor supervision and coercive control, and environmental characteristics such as poor housing and neighborhood crime (Compas, Hinden, & Gerhardt, 1995). These factors do not directly predict adolescent risky behavior, but rather are correlated with various risky activities (Compas, Hinden, & Gerhardt, 1995).

In one study (Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000), higher levels of income were correlated with a delay of sexual intercourse and lower frequency of sexual activity. In addition, the authors found that adolescents from low-income families, youths raised by single parents, and Black youths are statistically more likely to have had sexual intercourse by the end of adolescence. From an environmental standpoint, positive family relationships and parental support and supervision throughout adolescence are critical in preventing adolescent risky behavior (Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000). This can be better understood through theoretical constructs that place an emphasis on environmental characteristics and relationships as having an influence on behavior (Fishbein & Ajzen, 1975).

The constructs of the Theory of Reasoned Action and the related Theory of Planned Behavior focus on individual motivational factors and how they determine the likelihood of engaging in a specific behavior. The Theory of Reasoned Action asserts that behavioral intention is the most important determinant of behavior, and that individuals' attitudes about performing the behavior and their subjective norm regarding the behavior influence the intention. The Theory of Planned Behavior uses these same constructs and adds "perceived control," which takes into account situations where individuals may not have complete control over a behavior, as well as the individual's belief that he/she can engage in a specific behavior even in a challenging

situation. Perceived control varies based on demographic variables, attitudes towards targets, personality traits, and other individual difference variables (Montano & Kasprzyk, 2008).

Both the Theory of Reasoned Action and the Theory of Planned Behavior have been used effectively to understand risky sexual behavior (Hutchinson & Wood, 2007). The Theory of Planned Behavior is especially pertinent because it incorporates perceived behavioral control into the assumption that an individual's behavior is a direct result of his/her behavioral intentions (Fishbein & Ajzen, 1975). This allows for increased understanding of the discrepancies that can occur between an individual's knowledge about a risky behavior and performance of that behavior.

“Subjective norm” is an important construct of the Theory of Planned Behavior because it reflects an individual's views about important people in his/her life's thoughts on a specific behavior, and that individual's desire to seek approval of the significant people in his/her life (Ajzen & Fishbein, 1975). Studies (Jaccard, Dittus, & Gordon, 1996; Cohn, Macfarlane, Yanez, & Imai, 1995; Hutchinson & Wood, 2007) have shown that adolescents' risky sexual behavior is directly related to approval or disapproval of such behavior by people whom they trust, look up to, and whose opinions they value. For adolescents, this often times includes peers, parents, and other family members.

In addition, the Theory of Planned Behavior assumes that adolescent behavioral intention is significantly predictive of whether or not the adolescent will engage in a specific behavior (Fishbein & Ajzen, 1975). For example, most adolescents know that unprotected sex can result in unintended pregnancy or acquiring sexually transmitted infections. However, many adolescents still engage in unprotected intercourse (Hutchinson & Wood, 2007). According to the Theory of Planned Behavior, perceived behavioral control contributes to the adolescent's

behavioral intentions as well (Fishbein & Ajzen, 1975). While adolescents may have knowledge about the consequences of unprotected intercourse, factors like confidence, self-esteem, and peer influence can result in the intention to have unprotected sex (Hutchinson & Wood, 2007).

The Theory of Planned Behavior's "perceived behavioral control" construct provides an important tool for understanding points of possible intervention in adolescent risk behavior. For example, perceived behavioral control over condom use has been shown to be a direct determinant of adolescent condom use during sexual intercourse (Jemmott et al., 2001). Adolescents' beliefs about condom availability, confidence in using a condom even when sex is impulsive, and confidence in negotiating with a partner to use a condom are all predictors of adolescent condom use. As a result, the Theory of Planned Behavior serves as a framework for understanding adolescent risky sexual behavior. In addition, it allows for a comprehensive understanding of how parental monitoring contributes to adolescents' subjective norm about sexual activity.

3.0 METHODS

This thesis is based on a literature review of journal articles and reports about parental monitoring, adolescent risky behavior, and adolescent sexual health outcomes. Articles were used for this literature review if they included one or more of the above concepts and were written about adolescents in the United States.

A literature search was performed in order to compile information about adolescent biological development and changing trends in risky behavior. The literature resulting from this search was used for the “Background” section of this paper. Journal articles were obtained through the PubMed database, and key search terms included “biology,” “adolescent risk behavior,” “development,” and “United States.” This resulted in 55 citations. The search was then narrowed by adding the term “sexual health,” resulting in 15 sources. Articles were discarded if they did not include biological and/or environmental factors that influence adolescent development or epidemiologic statistics about adolescent risk-taking in the United States. This resulted in 10 articles used for the “Background” section of this paper.

Journal articles for the remainder of the thesis were also identified using the PubMed database. An initial search of the terms “adolescent,” “parental monitoring” and “United States” produced 393 results in PubMed. This search produced a large number of studies about parental monitoring of adolescents with chronic diseases in addition to adolescent risky behavior. The search was narrowed with the terms “adolescent,” “parental monitoring,” “United States” and “risk behavior,” which produced 143 articles in PubMed. In order to obtain articles specifically

about parental monitoring and adolescent sexual health, the final search conducted in PubMed used the terms “parental monitoring,” “adolescent,” “United States” and “sexual health,” and produced 37 results. This literature was then examined for the criteria mentioned above, and 13 articles were discarded because they were not focused on adolescents in the United States. Therefore, the “Results” section of this paper was written based on 24 sources.

4.0 RESULTS

In this section I will review the current literature on parental monitoring and adolescent risky sexual behavior in the United States. This includes components of parental monitoring (e.g. parental monitoring measures and styles of parenting), determinants of risky adolescent behavior, and factors that influence adolescent risky sexual behavior. Interventions cited in this paper were put into a table (see appendix 1). For each intervention cited, the table describes the population studied, methodology and design, methods of data collection, sampling frame, and methods of analysis and results.

4.1 COMPONENTS OF PARENTAL MONITORING

4.1.1 Definition of parental monitoring

Dishion and McMahon (1998) define parental monitoring as “a set of correlated parenting behaviors involving attention to and tracking of the child’s whereabouts, activities, and adaptations” (p. 61). Parental permissiveness consists of parental actions that allow children to take part in various activities at the child’s discretion (Donenberg, Wilson, Emerson, & Bryant, 2002). Higher levels of monitoring and lower levels of permissiveness become more important

as children enter adolescence and spend less time under the direct supervision of adults and more time with peers (Kim, Hetherington, & Reiss, 1999).

4.1.2 Parental monitoring measures

Throughout the literature, researchers most frequently measure parental monitoring by a combination of adolescents' perceived parental knowledge of their social activities, along with the amount of unsupervised time that adolescents have (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Benthin, Slovic, & Severson, 1993; Whitaker & Miller, 2000). In addition, adolescents are asked about time they spend with peers, and how much of this time is permitted by their parents versus time that adolescents hide from their parents. When adolescents perceive lower levels of parental monitoring, they are more likely to engage in health risk behaviors, including earlier initiation of first intercourse (Sieverding, Adler, Witt, & Ellen, 2005).

4.1.3 Styles of parenting

Three styles of parenting have been described in the literature (Compas, Hinden, & Gerhardt, 1995; Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Rai, et al., 2003).

“Permissive” parenting generally lacks specific consequences for deviant actions and is centered on the belief that parents should be accepting of their adolescents' desires and actions.

“Authoritarian” parenting is much more punitive, with an emphasis on the importance of child obedience and parental molding of children's behavior and attitudes. Lastly, “authoritative” parents emphasize supervision and rule-making along with involvement, support and affection.

Important parts of authoritative parenting are parental monitoring and expressing concern and involvement through supervision (Rai, et al., 2003).

Parental monitoring is generally perceived by researchers as the most important aspect of “authoritative parenting.” Authoritative parenting is defined by Crosby et al. (2003) as “a combination of parenting behaviors (e.g., setting and enforcing clear standards, encouraging autonomy and communication with parents, and being involved and supportive in adolescents’ activities)” (p.172). How parents and adolescents perceive parental monitoring is a critical part in whether or not the component of monitoring as a part of authoritative parenting is successful in preventing health risky behaviors (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003).

4.2 DETERMINANTS OF RISKY ADOLESCENT BEHAVIOR

4.2.1 Peer association

Because early adolescence is a time of change for children marked by increased peer association and parental distancing, parents have fewer opportunities for direct monitoring (Fuligni & Eccles, 1993). This calls for parents to adopt new strategies to show concern and involvement in their children’s lives. In addition, younger adolescents are increasingly able to use complex reasoning and thereby are more likely to search for opportunities to demonstrate independent thinking and identity development. As a result, one of the most important and successful ways of continuing monitoring with adolescents is to allow them to participate more actively in decision - and rule-making in and outside of the home. This shows adolescents that they are trusted and

enables parents to demonstrate their concern for the well-being of the child while still giving them more autonomy (Fuligni & Eccles, 1993).

Adolescents tend to associate more and identify with their peers because these relationships are primarily equal (Fuligni & Eccles, 1993). Parent-child relationships are not symmetrical, and are not meant to be so. When adolescents begin to distance themselves from their parents, there may be a tendency for parents to either increase coercive and controlling behavior, or go in the opposite direction and attempt to treat the adolescent as an equal. In addition, the literature shows that adolescent boys' engagement in risky activities is most influenced by peer attitudes, beliefs and action, but not significantly by parents. In contrast, research has shown that female adolescents are influenced by parents and peers equally when it comes to risky health behaviors (Rai, et al., 2003).

Ultimately it is important for parents to maintain an asymmetrical relationship status with their adolescents, while at the same time allowing them to participate in rule-making activities within the home (Rai, et al., 2003). Parents who are very permissive often take on the role of a peer in the adolescent's life, and thereby do not have the respect from their adolescent that is necessary to provide guidance (Fuligni & Eccles, 1993). In order for parents to have the most positive impact on their child's behavior, they need to balance parental monitoring and adolescent autonomy (Fuligni & Eccles, 1993). This shows adolescents that their parents are acknowledging them as increasingly mature and autonomous, while still providing the adolescent with the comfort of parental care and concern as they grow more independent.

4.2.2 Quality of the parent-adolescent relationship

The quality of the parent-adolescent relationship is critical for preventing risky sexual behavior (Rai, et al., 2003). If adolescents do not feel that their parents are interested, trusting and supportive, they are more likely to engage in risky sexual behaviors (Fuligni & Eccles, 1993). This may be because adolescents tend to engage in activities in opposition to their parents if they feel that their relationship with their parents is primarily negative (Rai, et al., 2003). Such activities may be a result of attention-seeking on the part of the adolescent to promote parental concern and acknowledgment (Rai, et al., 2003). Despite the lack of research on specific causal factors, negative parent-adolescent relationships inhibit successful parental monitoring and positive adolescent sexual health outcomes, and vice versa (Fuligni & Eccles, 1993; Jaccard, Dittus, & Gordon, 1996; Rai, et al., 2003).

Research (Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996) shows that adolescents who are encouraged by their parents to rely on themselves but who ultimately have parental support are more likely to make responsible sexual decisions, including later initiation of intercourse and consistent use of contraceptives. In contrast, coercive and/or hostile parental behavior is consistent with lower levels of parental monitoring, and ultimately leads to adolescents' engaging in risky sexual health practices (Fuligni & Eccles, 1993).

It is important to distinguish between parent/adolescent communication and parental surveillance and control. When parents practice controlling, coercive behavior in order to keep track of their adolescents' social activities, adolescents are much more likely to engage in risky behavior (Rai, et al., 2003). This may be an act of rebellion that comes from adolescents feeling that their parents do not trust them or acknowledge their maturation (Stanton, et al., 2000). On the contrary, parent and adolescent communication represents a much more reciprocal style of

monitoring because it relies on mutual trust, support, respect and understanding. This creates a greater attachment to parents, which results in lower levels of delinquency (Stanton, et al., 2000).

Parental monitoring is widely recognized as a protective factor for adolescent risky health behaviors. Studies (Li, Feigelman, & Stanton, 2000; Sieverding, Adler, Witt, & Ellen, 2005; Crosby, DiClemente, Wingood, Lang, & Harrington, 2003) have shown that monitoring of adolescent social activities by parents directly impacts adolescent health by decreasing teen involvement in situations that involve drinking, drug use, and/or risky sexual behavior. This also indirectly minimizes interaction with peers who engage in deviant behavior, and thereby increases social skills and connection with positive peer influences (Li, Feigelman, & Stanton, 2000).

When adolescents perceive a low level of parental monitoring, they are more likely to engage in risky sexual behaviors (Compas, Hinden, & Gerhardt, 1995; Hutchinson & Wood, 2007; Li, Feigelman, & Stanton, 2000). Adolescents' perceptions of a lack of support can strain parent-adolescent relationships, resulting in low adolescent self-esteem and high amounts of risky sexual behavior (Longmore, Manning, & Giordano, 2001). Studies have shown that perceived parental monitoring is also inversely correlated with *all* forms of risky health behavior, including drug and alcohol use (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Li, Feigelman, & Stanton, 2000). This is particularly important because adolescents who engage in drugs and alcohol are more likely to have unprotected sex when they choose to initiate sexual activity (Li, Feigelman, & Stanton, 2000). In addition, studies (Li, Feigelman, & Stanton, 2000; Longmore, Manning, & Giordano, 2001) have shown that adolescents who perceive support from their parents and describe the relationship with their parents as affectionate and close are more likely to report higher self-esteem and better psychological health in adulthood.

In addition, maternal coercive and hostile behavior is a greater predictor of adolescent risky sexual activity than similar behaviors by fathers (Kim, Hetherington, & Reiss, 1999). Though this is the case, a strong parent-adolescent relationship reinforces maternal disapproval of sexual intercourse, thereby further delaying adolescent sexual debut (Jaccard, Dittus, & Gordon, 1996). This is generally only true until sex has been initiated, at which point the mother-adolescent relationship quality begins to have less effect on subsequent sexual activity (Jaccard, Dittus, & Gordon, 1996).

4.2.3 Adolescent alcohol and drug use

Adolescents who engage in one risky health behavior are frequently involved in other risky behaviors simultaneously (Li, Feigelman, & Stanton, 2000). Often these behaviors occur at the same time, such as drinking and drug use being coupled with unprotected sex (Longmore, Manning, & Giordano, 2001). This is an especially risky combination because alcohol and drugs impair judgment, and can therefore increase the likelihood of adolescent involvement in risky behavior. Studies have shown that parental monitoring can significantly decrease adolescent engagement in these activities, even in high-risk settings (Longmore, Manning, & Giordano, 2001). If parents place an emphasis on curfew-setting, rule-making, and trust, adolescents are more likely to avoid risky situations in order to maintain an amiable relationship with their parents (Fuligni & Eccles, 1993). Parental monitoring thereby serves as a protective factor, even when adolescents are surrounded by deviant peers who engage in health risk behaviors (Donenberg, Wilson, Emerson, & Bryant, 2002).

The extent to which adolescents perceive that their parents know who they are with and where they go is critical to the success of parental monitoring (Rai, et al., 2003). In addition,

adolescents' perceptions of parental awareness and observation of their activities, behaviors, and interests are significant in the reduction of deviant behavior, including risky sexual health practices (Fuligni & Eccles, 1993). Perceived parental monitoring by mothers greatly influences adolescent alcohol consumption and other risky behaviors by significantly decreasing the amount of drinking over time (Webb, Bray, Getz, & Adams, 2002). In addition, fathers do not appear to monitor female and male adolescents differently when it comes to alcohol use, whereas mothers monitor female teens more than male teens (Webb, Bray, Getz, & Adams, 2002).

Perceived parental monitoring is particularly important as it relates to female adolescent alcohol use. This is because adolescent females are more likely to become involved with older males who have greater access to alcohol (Webb, Bray, Getz, & Adams, 2002). Frequent access to alcohol presents a significant issue because alcohol use among adolescents is associated with higher levels of risky sexual behavior, and this level is even greater when female adolescents are engaging in relationships with older men (Donenberg, Wilson, Emerson, & Bryant, 2002). Webb et al. (2002) propose that the highest indicator of female alcohol use is the mother-daughter relationship, "because it is expected that mothers model and verbally communicate role expectations to their daughters, whereas fathers are limited to verbal communication regarding role expectations for females" (p. 393).

4.2.4 Parental perceptions of monitoring

How parents perceive their ability to monitor their adolescents' social activities is critical for their actual monitoring skills (Dishion & McMahon, 1998). If parents lack self-efficacy about monitoring their adolescents' activities, they will not be able to adequately perform the necessary components of monitoring (Dishion & McMahon, 1998). However, parents' positive beliefs

about the *value* of monitoring their children are a “necessary but not sufficient” condition for effective supervision to occur (Dishion & McMahon, 1998). This implies that parents need to possess other skills such as comprehensive communication strategies, in order to ensure that full supervision of their children is taking place (Dishion & McMahon, 1998).

When parents exhibit high levels of permissiveness and low levels of monitoring, it may be for a number of reasons. In some cases, parents may not believe that monitoring their children’s social and dating activities is necessary (Dishion & McMahon, 1998). This may be because they perceive their children as being “good kids” who have the ability to keep themselves out of risky situations without monitoring. Often times parental monitoring differs across families because of cultural values regarding adolescent autonomy (Dishion & McMahon, 1998). Parents may not be directly aware of some of these attitudes or beliefs, but rather act on them subconsciously as a result of ways that they themselves were raised and monitored.

4.2.5 Family interactions and neighborhood influences

Family members greatly influence the sexual socialization of adolescents, including values, behaviors, attitudes, and contraceptive use (Dishion & McMahon, 1998; Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996). Family interactions and parental actions model behavior for how adolescents might interact with their peers and partners. Since peers and partners are critical influences on adolescent sexual behavior, family and parental interaction plays a crucial role in adolescents’ sexual attitudes and actions (Donenberg, Wilson, Emerson, & Bryant, 2002).

In addition, neighborhood monitoring has been identified in the literature as an important protective factor for adolescent involvement in health risk behaviors (Small & Luster, 1994).

Both male and female adolescents experience lower amounts of substance use, sexual activity, and general deviant behavior when parents have strong relationships with other adults in the community (Jaccard, Dittus, & Gordon, 1996; Small & Luster, 1994). Such adults may include teachers, other adult family members, parents of peers, and close friends from the neighborhood within which the family lives (Small & Luster, 1994). These adults can play a critical role in supervising other people's adolescents by reporting back to parents on where their children were, who they were with, and what they were doing (Small & Luster, 1994)

Comprehensive parental monitoring and less permissiveness significantly reduce adolescents' sexual opportunities (Dishion & McMahon, 1998; Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996). Even when sexual encounters do occur during adolescence, monitoring is associated with later sexual initiation, less frequent sexual contact, fewer sexual partners, fewer sexual risk behaviors, and more frequent condom use among adolescents (Donenberg, Wilson, Emerson, & Bryant, 2002). In addition, increased levels of family stress and conflict are associated with higher rates of adolescent pregnancy, while greater family cohesion is inversely correlated with pregnancy risk. These results indicate that the quality of the parent-adolescent relationship and the environment at home have a significant effect on adolescent contraceptive use, and possibly on delay of sexual initiation (Jaccard, Dittus, & Gordon, 1996).

4.2.6 Barriers to successful parental monitoring

There are barriers that can inhibit monitoring regardless of parental intention and skill level, including multiple factors that can have a negative impact on parental monitoring, such as poverty (Dishion & McMahon, 1998), mental state (Kim, Hetherington, & Reiss, 1999), and

unemployment (Dishion & McMahon, 1998). In addition, changing economic trends that increase disparities between the rich and poor can have a significant effect on the prevalence of problem behaviors of adolescents (Dishion & McMahon, 1998).

Monitoring may be less effective overall in a single-parent, low-income household than in a two-parent, middle-income home (Dishion & McMahon, 1998). This is in part because single-parents in low-income households experience greater stress, economic hardship, and unemployment, and thereby may be less focused on monitoring their adolescents (Dishion & McMahon, 1998). However, one study (Dishion & McMahon, 1998) suggested that children who live in upper-class homes are monitored less due to parents' demanding work schedules. Ultimately the most predictive factors of adolescent risky behavior are related to parental monitoring, e.g. poor parental supervision, high levels of permissiveness, and family disorganization (Dishion & McMahon, 1998). In one study (Dishion & McMahon, 1998) these factors outweighed all others, including problem behavior in childhood.

Parents' own mental state greatly affects monitoring throughout their children's childhood and adolescence (Kim, Hetherington, & Reiss, 1999). Parental depression during a child's infancy disrupts parent-infant connection and can thereby have a negative impact on monitoring in childhood and adolescence (Kim, Hetherington, & Reiss, 1999). Parents who were not monitored as children are more likely to exhibit anti-social behavior, and therefore are less likely to monitor their own children. This can contribute to a lack of awareness around adolescent activities and a lower level of supervision among parents, which diminishes the likelihood of parental intervention on adolescent antisocial behavior and negative peer interaction (Kim, Hetherington, & Reiss, 1999).

In addition, many parents with low socio-economic status in urban areas experience low levels of self-efficacy as it relates to monitoring their adolescents' activities. This may be because urban environments provide more opportunity for adolescents to interact with peers, and greater association with peers can lead to higher amounts of risk-taking behaviors (Stanton, et al., 2000). Parents with lower incomes also tend to have lower levels of education, and as a result may not feel confident in educating their adolescents about health risk behaviors because they do not feel that their knowledge base is adequate (Dishion & McMahon, 1998). One study (Stanton, et al., 2000) showed that minority parents with low socio-economic status living in urban areas greatly underestimate how much their youth engage in risk behavior.

Adolescents who live in urban environments with high levels of poverty are at greater risk for adverse health outcomes than their suburban, wealthy counterparts (Romer, Stanton, Galbraith, Feigelman, Black, & Li, 1999). In particular, African American female adolescents are at an increased risk for such outcomes (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Li, Feigelman, & Stanton, 2000). This causes significant concern over this group's increased rates of unintended pregnancy and sexually transmitted infections, including the human immunodeficiency virus (HIV) (Romer, Stanton, Galbraith, Feigelman, Black, & Li, 1999).

Research (Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000; Crosby, DiClemente, Wingood, Lang, & Harrington, 2003) suggests that interventions at the family level are particularly effective in African American families with female adolescents, with parental monitoring playing a significant role. Such interventions have a large impact on the reduction of sexually transmitted infection incidence among African American female adolescents. Crosby et

al. (2003) have shown that African American female adolescents' "perceptions of infrequent parental monitoring predict subsequent biologically confirmed acquisition of STIs" (p. 171).

Research conducted on subgroups of various ethnicities and income levels have found little difference in parental monitoring across ethnic and socioeconomic groups (Donenberg, Wilson, Emerson, & Bryant, 2002). However, parental monitoring and parental permissiveness are consistently noted as being different for boys and girls, with girls reporting more perceived monitoring than boys and parents reporting the same (Donenberg, Wilson, Emerson, & Bryant, 2002). Data suggest that when girls feel that their parents monitor their activities and are involved in their lives with genuine concern, they are less likely to engage in risky sexual activities in order to keep positive family ties and avoid conflict and disapproval from parents (Donenberg, Wilson, Emerson, & Bryant, 2002).

4.2.7 Adolescent gender and parental monitoring

When girls do not perceive that their parents are monitoring their activities, they may be more likely to engage in risky sexual behavior because they are not concerned with maintaining a connection with their parents (Webb, Bray, Getz, & Adams, 2002). If avoiding family conflict is not of high importance to a female adolescent, then she is more likely to engage in risky behaviors that can result in negative sexual health outcomes (Donenberg, Wilson, Emerson, & Bryant, 2002). Donenberg, Wilson, Emerson and Bryant (2002) also suggested that female adolescents may engage in risky sexual behavior in order to gain attention from permissive or absent parents. There is also evidence to suggest that girls who perceive high levels of parental permissiveness are less likely to communicate with their parents about how to negotiate intimate partner relationships. As a result, they may succumb to stereotypical gender roles and become

submissive to their male partner's decision making (Donenberg, Wilson, Emerson, & Bryant, 2002).

Female adolescents perceive a higher level of parental monitoring than their male counterparts (Webb, Bray, Getz, & Adams, 2002). Donenberg, Wilson, Emerson and Bryant (2002) suggest that this may be because parents feel that it is more important to monitor girls to protect them from the direct consequences of sexual activity, e.g. pregnancy and sexually transmitted infections. Since girls are the ones who get pregnant, and if they choose to carry a pregnancy to term must ultimately be responsible for the child, parents may be more worried about this possibility than the risk of sexually transmitted infections or negative emotional outcomes for both boys and girls. As stated by Donenberg, Wilson, Emerson and Bryant (2002),

Development theory and research underscore the significance of interpersonal relationships in girls' identity development and sense of self. Social processes are especially important predictors of girls' sexual behavior. Girls, therefore, may be more influenced by parents than are boys because they place a high value on maintaining important relationships, and girls may be more responsive to parental monitoring or permissiveness in order to protect the parent-adolescent relationship (p. 3).

Research has shown that girls tend to place a higher value on parental approval and connection. If girls believe that their parents will be disappointed in a certain behavior, they are less likely to become involved in that activity for fear of disappointing their parents (Donenberg, Wilson, Emerson, & Bryant, 2002). When girls perceive that their parents are actively monitoring their activities and are concerned with what is going on in their lives, they are generally less likely to engage in risky sexual behavior in order to maintain a positive relationship with their parents (Donenberg, Wilson, Emerson, & Bryant, 2002).

Many of the differences in parental monitoring that occur based on gender are a direct result of parents' inherent views about gender differences (Webb, Bray, Getz, & Adams, 2002). Many people, including parents, believe that girls are more vulnerable to risky situations and

need more careful observation (Donenberg, Wilson, Emerson, & Bryant, 2002). In addition, many parents believe that boys need “tough love” in order to behave in a non-deviant manner, and as a result parents tend to monitor their male adolescents in a more coercive manner than they do their female adolescents (Longmore, Manning, & Giordano, 2001).

Despite increased levels of monitoring, girls report higher levels of risky sexual behavior, lower perceived risk of sexually transmitted infections, and less contraceptive use than their male counterparts (Donenberg, Wilson, Emerson, & Bryant, 2002). This may be due to increased monitoring that is authoritarian as opposed to authoritative, and that does not allow for female adolescents to participate in rule-making (Dishion & McMahon, 1998). However, as the amount of parental permissiveness increased so did the amount of sexual risk-taking for girls, but not for boys (Donenberg, Wilson, Emerson, & Bryant, 2002). Girls reported greater use of drugs and alcohol during sex, and less condom use with high parental permissiveness. Donenberg, Wilson, Emerson, and Bryant (2002) recommend that it would be beneficial to develop gender-specific interventions and monitoring tools in order to prevent risky sexual behavior.

Among females, various internalizing behaviors including depression and anxiety are strongly correlated to risky health behaviors (Webb, Bray, Getz, & Adams, 2002). When female adolescents are depressed or anxious, they may be more likely to seek comfort through sexual attention from male counterparts. On the contrary, male externalizing behaviors like delinquency and aggressiveness are more significantly related to risky health practices. These differences may be a result of societal gender role expectations that have been modeled by parents to adolescents (Webb, Bray, Getz, & Adams, 2002)

Higher self-esteem is associated with a greater delay in sexual initiation for female adolescents (Donenberg, Wilson, Emerson, & Bryant, 2002; Small & Luster, 1994; Webb, Bray,

Getz, & Adams, 2002). One study (Webb, Bray, Getz, & Adams, 2002) showed that females with low self-esteem associated sexual attention from men with better self-image. While self-esteem is less relevant for onset of male intercourse, parents can utilize this tool by making sure that their adolescents feel competent, confident, and supported. This can raise adolescent self-esteem, which may serve as a protective factor, especially for female adolescents (Small & Luster, 1994).

Research (Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996; Webb, Bray, Getz, & Adams, 2002) has demonstrated a significant association between parent communication about birth control and the consistency of contraceptive use among both adolescent boys and girls, although boys had results that were of greater statistical significance. Adolescent males tend to absorb more information about contraception from their parents than do adolescent females. This may be because female adolescents have a significantly higher number of birth control methods to learn about and choose from, and this may prove to be confusing and overwhelming (Jaccard, Dittus, & Gordon, 1996). On the contrary, adolescent males are generally taught exclusively about condom use by their parents, and thus may be able to better grasp the concept of birth control as it relates to their sexual health (Jaccard, Dittus, & Gordon, 1996).

4.2.8 Negotiated unsupervised time and parental views on adolescent sex

Negotiated unsupervised time consists of specific instances when adolescents are allowed be alone with peers or by themselves without an adult present (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003). Contrary to adolescent association with peers that is not given parental approval,

this time is negotiated between parent and child and is therefore permitted by the parent. It has been shown that negotiated unsupervised time does not prevent adolescents from engaging in sexual activity, but rather gives them an opportunity to do so. However, negotiated unsupervised time for adolescents has been correlated with a greater use of contraception in comparison with unsupervised time that teens hide from their parents (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003).

Adolescent sexual initiation and behavior are often spontaneous and impulsive (Donenberg, Wilson, Emerson, & Bryant, 2002). As a result most adolescents are not prepared to protect themselves in sexual situations, resulting in lower levels of partner communication, less comprehensive refusal skills, and a greater inability to be assertive about contraceptive use (Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996). Permissive parental behavior allows for more unsupervised situations to occur, thereby increasing the chances of early sexual initiation. The earlier that adolescents initiate sexual activity the more likely they are to have sex with multiple, high-risk partners, resulting in a greater likelihood of infection and unintended pregnancy (Donenberg, Wilson, Emerson, & Bryant, 2002).

There are studies (Beyth-Marom, Austin, Fischhoff, Palmgreen, & Jacobs-Quadrel, 1993; Miller & Benson, 2001) that assume that parents are opposed to adolescent premarital sex, and that adolescent sexual activity is always done in secret without parental knowledge. On the contrary, there are significant data (Jaccard, Dittus, & Gordon, 1996) suggesting that some parents believe that it is permissible for their adolescents to engage in sexual activity, as long as it is done responsibly and within a relationship. Ultimately it has been shown that adolescents' sexual activity and contraceptive behavior are influenced by their parents' attitudes about such topics, including premarital sex (Jaccard, Dittus, & Gordon, 1996).

Research (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Dishion & McMahon, 1998; Donenberg, Wilson, Emerson, & Bryant, 2002; Longmore, Manning, & Giordano, 2001; Webb, Bray, Getz, & Adams, 2002) has suggested that parents who communicate more extensively with their adolescents are exercising preventative measures against risky behaviors. Many critics of parent-adolescent communication about sex argue that parents who discuss sex with their adolescents are condoning premarital sexual activity, and that this results in early onset of sexual practices (Beyth-Marom, Austin, Fischhoff, Palmgreen, & Jacobs-Quadrel, 1993). Many proponents of parent-adolescent communication about sex argue that most adolescents will experiment with sex, and that discussion of sexual health practices and contraception better equips them to be responsible with their sexual decision-making (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Dishion & McMahon, 1998; Fuligni & Eccles, 1993; Jaccard, Dittus, & Gordon, 1996). Ultimately, the literature on the relationship between adolescent sexual activity and parent-adolescent communication about sex is complex. However, it is widely accepted that the quality of the parent-adolescent relationship can better predict the amount of influence parents have over adolescent premarital sexual activity (Jaccard, Dittus, & Gordon, 1996).

5.0 DISCUSSION

Many aspects of parental monitoring have not been extensively r thus far. First and foremost, research suggests that many parents will need education about sex and contraception in order to effectively communicate their values, attitudes and beliefs about such topics to their adolescents. It is important for adolescents to have accurate information about sexual health in order to prevent unintended pregnancy and sexually transmitted infections. In addition, it is important to understand parental attitudes about sex education. If parents feel that communicating with their children about sex is inappropriate, they are less likely to be receptive to a sexual health program. Prior to any intervention, needs assessments must be conducted within targeted communities to assess parental knowledge and acceptance of topics surrounding adolescents and sexual activity (Jaccard, Dittus, & Gordon, 1996).

Few parental monitoring interventions have specifically targeted minority families. Of the ones that have been conducted, most have not been evaluated. It is important to continue to target programs at minorities, specifically African American and Hispanic populations, because these groups experience high rates of sexually transmitted infections and unintended pregnancy and lower rates of parental monitoring than other racial and ethnic groups in the United States. Prior to any new intervention, extensive program evaluation needs to be conducted for existing interventions to make sure that such programs are effective and desired among minority community members (Stanton, et al., 2000). In addition, it is necessary to examine cultural differences in minority communities in order to understand how these norms impact parental

monitoring practices. Increased understanding of these differences will allow for greater knowledge about the history of monitoring practices, and will help to provide program planners and researchers with the background necessary to develop interventions accordingly.

A significant part of parental monitoring is knowledge of adolescent activities. In the future, researchers should attempt to correlate parents' perceptions of their adolescents' activities with their children's statements about current behaviors. This will create a more comprehensive understanding of the relationship between parental perceptions and actual adolescent risk behavior, thereby creating an opportunity for increased parent and adolescent communication. One study by Stanton et al. (2000) showed that a video intervention at home can increase communication about adolescent activities between parents and adolescents. By watching a video together about adolescent risk behavior, an opportunity would be created for discussion of such activities between parents and teens. This may be one effective way of enhancing parental knowledge about adolescent health risk behavior in the hopes of increasing communication between parents and teens (Stanton, et al., 2000).

Accurate parental knowledge of adolescent activities is not possible without adolescent disclosure. Adolescents tend to disclose more information about their lives to parents when they trust their parents to be supportive and understanding (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003). As a result future interventions should try to examine adolescent trust of parents, and how trust can be improved in order to increase adolescent disclosure and parental knowledge (Stanton, et al., 2000). Although successful parental monitoring has been associated with lower adolescent risk behavior, it is important for further research to examine where trust for parents comes from within adolescents, and *why* this trust is significant (Sieverding, Adler, Witt, & Ellen, 2005).

Unfortunately, the scales that exist to measure parental monitoring do not look at the actual knowledge possessed by parents about adolescent involvement in risk behaviors. Because previous scales measure parent and adolescent *perceptions* of parental monitoring (Stanton, et al., 2000), there is a need for a scale to connect these perceptions with a measure of parental monitoring and knowledge of adolescent risk behavior. This is particularly important because data collected by Stanton and colleagues indicate that a higher concordance between adolescent and parent reports of adolescent risk behavior results in a decrease in actual risk behavior (Stanton, et al., 2000).

As a result it is important for future research to develop a comprehensive scale to measure the discrepancy between parental knowledge of adolescent risk behavior and adolescent risk-taking. Studies (Huebner & Howell, 2003; Sieverding, Adler, Witt, & Ellen, 2005; Stanton, et al., 2000) have shown that there are significant discrepancies between parents' perceptions of their adolescents' risk behaviors and the actual activities that take place during adolescents' time with peers. Parents tend to underestimate their adolescents' risk behavior and adolescents tend not to disclose all risky activities to their parents. As a result, there is a need for a scale that would accurately measure parental knowledge of adolescent risk behaviors. An accurate parental knowledge scale would allow interventionists to tailor specific programs to various communities, thereby providing the most comprehensive and efficient form of parental monitoring initiatives. This is important because parental knowledge of adolescent involvement in risk behaviors is an important dimension in increasing communication to effectively establish discipline and reward strategies. Increased parental and adolescent communication is critical for parents in guiding their children to discontinue health risk behaviors (Stanton, et al., 2000).

Since factors such as perceived parental monitoring tend to have a greater influence on females than males, future programs should acknowledge these differences and develop interventions accordingly. Planners should take into account that current parental monitoring scales and initiatives may be most effective for female adolescents since these tools have demonstrated greater results with females than males (Webb, Bray, Getz, & Adams, 2002). On the other hand, males tend to identify more strongly with their peers and thus generate a significant amount of their attitudes and beliefs on health behaviors outside of the home. Therefore many of the current interventions aimed strictly at parent-adolescent relationships may not be sufficient to promote behavior change in male adolescent. As a result, it is important to conduct qualitative research to determine why this is the case in order to build a significant body of knowledge on the topic before conducting future interventions (Rai, et al., 2003).

Peers play a significant role in adolescent development and therefore greatly impact adolescent perceptions of risk-taking. As a result, it is important to understand the context within which adolescent risk behavior occurs in peer groups, and how these groups can be targeted for intervention. Most parental monitoring interventions to date have been targeted at individuals and their families despite the fact that adolescents are strongly influenced by their peers. It is important to conduct further research on the influence of peers and peers' parents on adolescent risk behavior in order to understand the larger impact of social networks on adolescent risk taking (Fuligni & Eccles, 1993).

The relationship between mothers and adolescents is critical to preventing adolescent sexual risk behavior. Jaccard, Dittus, and Gordon (1996) suggest that

If adolescents are generally satisfied with their relationship with their mother, they may be more likely to pay attention to, process and accept information from their mothers about sexual topics. Maternal values, such as those pertaining to responsible behavior,

may have a greater impact on adolescents when the quality of the parent-child relationship is positive (p.164).

This suggests that future interventions can benefit from targeting mothers and female guardians for parental monitoring programs. Both male and female adolescents perceive their relationship with their mother as having a significant impact on their risk behavior. When mother-adolescent relationships are positive, there is an even greater amount of positive influence transferred from mother to child through maternal modeling and guidance. An intervention aimed specifically at mothers may be the most effective and efficient way of improving parent and adolescent communication about sex. Such interventions could potentially provide tutorials on ways to monitor adolescent activities, from cell-phone usage to curfew enforcement. While it may be difficult to create a positive mother-adolescent relationship once the child is already in adolescence, mothers and female guardians who desire such improvements can be given the necessary tools to make changes in the relationship with their children (Jaccard, Dittus, & Gordon, 1996).

In addition, future research should examine why fathers do not have a significant impact on adolescent risky sexual behavior. This was stated in the literature (Fuligni & Eccles, 1993; Hutchinson & Wood, 2007), but was never explored or examined. This may be particularly important for adolescents who do not have a mother or female role model, and who rely on their father or male role model for guidance. Future programs could potentially target fathers and other males by increasing their education about communication skill-building, sexual health outcomes and responsible sexual behavior, and subsequently promoting father-adolescent communication and trust (Jaccard, Dittus, & Gordon, 1996).

Many factors increase adolescent pregnancy and sexually transmitted infections. These factors include alcohol and marijuana use, low educational aspirations, low socio-economic

status, and having a mother who had a child as an adolescent. In addition, biological factors that are transferred from parent to adolescent impacts adolescent sexual health risk. Earlier development of mature physical characteristics can lead to increased female association with older males. This can often result in increased risk behavior including sexual initiation at a young age. While these factors put some adolescents at a greater risk for negative sexual health outcomes, they are not causal in nature (Jaccard, Dittus, & Gordon, 1996).

Ultimately, it is not productive to examine any one characteristic as a causal factor for early onset of sexual behavior because it is understood that sexual debut is a complex issue involving biological, social and environmental influences. It is more appropriate to examine adolescent sexual activity as a result of multiple factors that do not guarantee that a negative outcome will occur, but rather raise the risk of such an outcome (Small & Luster, 1994). Recognition of this complex system points to the need for parental monitoring and communication to begin early in adolescence to prevent such pregnancies from occurring. As a result, a strong case can be made for the significance of parental communication and monitoring of adolescents *before* they engage in sexual activity in order to insure a greater likelihood of contraceptive use (Jaccard, Dittus, & Gordon, 1996).

Comprehensive parental monitoring and less permissiveness significantly reduce adolescents' sexual opportunities (Dishion & McMahon, 1998; Donenberg, Wilson, Emerson, & Bryant, 2002; Jaccard, Dittus, & Gordon, 1996). Even when sexual encounters do occur during adolescence, monitoring is associated with later sexual initiation, less frequent sexual contact, fewer sexual partners, fewer sexual risk behaviors, and more frequent condom use among adolescents (Donenberg, Wilson, Emerson, & Bryant, 2002). In addition, increased levels of family stress and conflict are associated with higher rates of adolescent pregnancy, while greater

family cohesion is inversely correlated with pregnancy risk. These results indicate that the quality of the parent-adolescent relationship has a significant effect on adolescent contraceptive use and delay of sexual initiation (Jaccard, Dittus, & Gordon, 1996), and that future programs and interventions could benefit from a more comprehensive understanding of the complex nature of this relationship.

6.0 CONCLUSION

This literature review has shown the importance of parental monitoring as a protective factor for negative adolescent sexual health outcomes. Adolescents face increased risk for unintended pregnancy and sexually transmitted infections due to high levels of risk taking behavior, and the goal of this paper was to illustrate the importance of parents in preventing such risk behaviors from occurring in adolescents. Parents face significant barriers to parental monitoring including long work hours, single-parent households, and increased adolescent time with peers. As a result, future interventions should provide parents with the tools necessary to monitor their adolescents' activities in order to strengthen the trust and communication between parents and adolescents.

There are limitations of this paper that need to be acknowledged. First and foremost, a literature review can only draw conclusions from studies that have already been conducted and published, and therefore this review does not add any new findings to the body of literature about parental monitoring and adolescent sexual health outcomes. The research could not access all of the literature on the topic, and therefore may not include some important studies. In addition some of the studies cited were based on the same larger study. Lastly, this literature review was limited to studies conducted with parents and adolescents in the United States, and cannot be generalized to other countries.

Despite some limitations, this literature review illustrates many of the important factors influencing parental monitoring and adolescent sexual health outcomes. One such factor is

accurate parental knowledge of adolescent whereabouts, friends, and activities. Lack of knowledge regarding adolescent behavior may allow parents to assume that risk taking is not occurring. Future research should examine parental knowledge of adolescent risk behavior as opposed to simply studying parental and adolescent perceptions of monitoring, since parent perceptions of adolescent risk taking can differ greatly from the actual amount of teen risk behavior.

In addition, there needs to be further examination of differences in parental monitoring across racial and ethnic groups within the United States in order to understand cultural differences in monitoring practices. Some variation in monitoring may be a result of cultural values, and to assume a lack of parental knowledge is counterproductive. Very few studies have been done about parental monitoring in low-income families with minority adolescents (DiClemente, et al., 2001). This has resulted in lack of a knowledge base about the cultural differences of minority families, and the different value placed on certain monitoring practices. As a result, these youths are an at-risk group that needs increased attention in order to prevent severely negative health outcomes (Romer, Stanton, Galbraith, Feigelman, Black, & Li, 1999).

Lastly, interventions targeted at increasing parental monitoring must also examine the level of trust and closeness between adolescents and their parents. Adolescents tend to exhibit greater risk behavior and distancing when they do not perceive a positive relationship with their parents. As a result, it is critical to understand the nature of parent and adolescent closeness and trust in order to develop effective interventions targeting adolescent sexual risk behavior. In addition, future studies could benefit from attempting to understand more about paternal figures and their influence (or lack thereof) over risky teen behavior. In order for future programs

targeted at reducing adolescent risky sexual behavior to be successful, there needs to be more research done to understand the context within which adolescents make sexual health decisions.

APPENDIX

INTERVENTIONS CITED

Table 1. Interventions cited

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Benthin, Slovic, & Severson, 1993)	Age range: 14-18; high school students from 2 schools in Eugene, Oregon	Quantitative; Cross-sectional study design	Participants rated 39 risky behaviors based on 14 risk characteristics	41 high school students (25 female, 15 male; participants volunteered)	Means, standard deviations, and factor analyses used to assess adolescent perceptions of risk
(Beyth-Marom, Austin, Fischhoff, Palmgreen, & Jacobs-Quadrel, 1993)	94.4% White; Teens aged 12-18, adult mean age of 42.5 years; 86% of the teens who participated lived with both parents at the time of the intervention	Qualitative and quantitative; Cross-sectional design	Participants took 4 surveys, each with 5 decision situations; listed consequences	398 subjects (199 parents & 199 teens); recruited through social orgs e.g. girl scouts and parent clubs	Each consequence coded by type, valence, and directness; ANOVA performed with group individuals

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000)	Nationally representative sample of 7 th -12 th graders and their parents	Quantitative and qualitative; Longitudinal study design	Participants completed in-school survey; 79.4% completed in-home interviews	10,803 teens, 85.6% of their parents; 134 schools randomly selected; weighted to represent 7 th -12 th graders in United States	Risk behaviors dichotomized; Chi-square analyses used; p-value indicated significant difference across race
(Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003)	Teens in 9 th and 10 th grade; urban, Midwest environment; 41% white, 36% African American, 21% Hispanic	Quantitative; cross-sectional study take from a previous longitudinal study's data about adolescent HIV risk	Data derived from follow-up survey conducted 4 months post intervention	692 teens in 9 th and 10 th grade from 6 urban schools in Midwest; taking health education classes; enrolled in previous HIV risk reduction study	Parental Monitoring Scale used; Chi-square, t-tests, and one-way ANOVA; high parental monitoring significant with less sex
(Buhi & Goodson, 2007)	Focused on adolescents between 11 and 18 years old; A decade of literature (1996-2005) related to adolescent sexual behaviors or intentions	Systematic Review	Literature review conducted through ERIC, MEDLINE, PsychINFO and Sociological Abstracts	69 published studies- both significant and not significant findings	Assessed studies' methodology; intention, perceived norms, and time home alone were predictors of sexual behavior outcomes
(Cohn, Macfarlane, Yanez, & Imai, 1995)	Equal # of boys and girls age 13-18, 50% white, 28% Hisp., 14% Black, 8% other	Quantitative; survey with 5-point scale; cross-sectional study	Participants evaluated the perceived harm assoc. with 14 risky health behaviors	376 teenagers (mean age 15.2 years) & 160 parents recruited from adolescent med clinic	Mean values < 0= presence of optimistic bias; p-values used

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Crosby, DiClemente, Wingood, Lang, & Harrington, 2003)	Female adolescents aged 14-18; African American; recruited in low-income areas with high rates of STIs	Quantitative; Prospective cohort study; Baseline data as well as 6-month, 12-month, and 18-month follow-up data collected	Collected @ U of Alabama Family Medicine clinic; survey questionnaire, instructions for vaginal self-swab specimen for STI testing	217 African American female adolescents enrolled in control section of an RCT of an HIV prevention intervention	Adjusted odds-ratios used to compare perceptions of parental monitoring and biological acquisition of STIs
(DiClemente, et al., 2001)	Black female adolescents 14-18 years old; sexually active in previous 6 months; residing in low-income neighborhoods	Quantitative; Cross-sectional study	Collected @ U of Alabama Family medicine clinic; self-administered survey, personal interview, vaginal swab specimen	1130 teens in adolescent medicine clinics, health department clinics and school health classes to participate in HIV/STD prevention trial	Logistic regression analysis; adolescents perceiving less parental monitoring were more likely to test + for an STI
(Donenberg, Wilson, Emerson, & Bryant, 2002)	Youth age 12-20 years; 45% female; 40% white, 40% African American, 8% Latino, 7% biracial, 3% other, 2% Asian	Quantitative; Cross-sectional study; Computerized Diagnostic Interview Schedule for Children 4.0 used to diagnose mental health disorders	The AIDS-Risk Behavior Assessment was used to assess adolescent self-reported sexual behavior within past 30 days and past 3 months	169 Youth and parents in mental health services at 3 Chicago hospitals; subset of a larger sample from an HIV prevention trial	Evaluated statistical significance through multiple regression analyses; female engaged in higher rates of risky sexual behavior than males

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Fuligni & Eccles, 1993)	6 th and 7 th grade children; predominantly White, lower-middle to middle income school districts in southeastern Michigan	Quantitative; Part of a large-scale, multi-wave longitudinal study of adolescent development (MSALT)	Adolescent subjects completed questionnaires based on the Family Decision-Making Scale	1,771 children in 6 th and 7 th grade; 54% girls, 46% boys; recruited through letters home to parents; students took survey during math class	Principal components factor-analysis and an orthogonal rotation; “parental strictness” and “decision-making opportunity” were significant
(Huebner & Howell, 2003)	Students in grades 7-12 on 6 rural high schools in a Southeastern state	Quantitative; Cross-sectional study design	A 174-item comprehensive anonymous questionnaire	2701 students from a larger study about adolescent behaviors; administered during classes	Frequencies and crosstabs used for demographic information; Logistic regression used to measure “sexual risk-taking”
(Jaccard, Dittus, & Gordon, 1996)	Participants qualified if they were Black youth aged 14-17 living in Philadelphia County with a mother or female caretaker in the household, and the youth’s biological mother was Black	Quantitative; cross-sectional study design	Self-administered questionnaires about adolescent sexual behavior and maternal attitudes towards premarital sex	751 Black youths ages 14-17 and their mothers; Identified through a systematic random sampling of houses in Philadelphia County from the 1990 Census Public Law tapes	Logistic regression or multiple regression strategies were used; p-values used to show significance of parent-adolescent relationship compared with adolescent sexual activity

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Jacobs-Quadrel, Fischhoff, & Davis, 1993)	Teens aged 11-18 and parents; Low-risk sample 96% White, High risk sample 33% White, 45% AA, 16% Asian, Hispanic or other	Quantitative; Cross-sectional study design	Subjects evaluated 8 possible adverse events on 4 dimensions for target individuals (acquaintance, friend, and parent or child)	86 pairs of low-risk teens and parents and 95 high-risk teens; Low-risk teens recruited from school orgs, high-risk teens from group homes for teens	Comparison between probabilities that participant assigned to themselves and to the target were compared with the invulnerability hypothesis; p-values used
(Li, Feigelman, & Stanton, 2000)	Male and female teens aged 9-17; low-income, urban, African American	Quantitative; Cross-sectional study design	Subjects completed a survey with the Parental Monitoring Scale: a 6-item scale assessing youth and parent perceptions	455 teens in 1992, 355 in 1994, and 349 in 1996; subjects recruited from community-based risk reduction studies	Multivariate analysis of variance and correlation analysis were performed; a strong inverse correlation between perceive parental monitoring and adolescent risk behavior was found
(Longmore, Manning, & Giordano, 2001)	Unmarried parents, single-parent families, and families with stepchildren were	Quantitative and qualitative; prospective cohort study	Surveys and interviews conducted from NSFH participants were conducted at the beginning of the study and 4 years later	848 children and one of their parents; Data drawn from 2 waves of the NSFH	Proportional hazard regression and p-values used, as well as coding based on gender, adolescent dating, and adolescent sex

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
Youth Risk Behavior Surveillance Survey (CDC, 2008)	Students in grades 9-12 during 2007 in public and private schools in the United States	Quantitative; Cross-sectional survey design	National school-based survey; representative US sample; Conducted by CDC and state and local education and health agencies	1,268 primary sampling units consisting of counties or subareas of larger counties in 50 states + DC	Prevalence estimates and confidence intervals conducted; t tests used; p-value <0.05 determined significance
(Kim, Hetherington, & Reiss, 1999)	Adolescents between 10-18 years of age, their parents, and siblings no more than 4 years apart in age; 94% White, 85% rural or suburban	Qualitative and quantitative; Data taken as a cross-section from a longitudinal study	Families interviewed in their homes in 2 sessions (1 weeks apart) for about 3 hours; adolescents and siblings completed surveys about family	341 male and 313 female adolescents and their parents and siblings; subset of data from NEAD project	Parent-Child Relationship Scale, Conflict Tactics Scale, and Child-Rearing Issues Scale used; ANCOVA & MANCOVA used along with qualitative coding
(Rai, et al., 2003)	African American youth aged 13-16 years; low-income, urban areas	Quantitative; Cross-sectional study design	Survey questions used to assess self-reported behaviors and perceptions of parental monitoring and peer risk	1279 participants in 6 cohorts involved in community based studies over a decade in an urban area	Data analyzed through frequency distributions, one-way ANOVA, and multiple logistic regression

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Romer, Stanton, Galbraith, Feigelman, Black, & Li, 1999)	African American youth aged 9-17 living in urban public housing	Quantitative; Stratified cross-sectional design	Surveys conducted using talking computers to increase confidentiality and comparability of interviews across age range	355 participants in 8 housing developments in a large US city; recruitment done with help from community leaders	Multiple regression analysis used to assess parental monitoring and youth sexual behavior; + monitoring= later sex
(Sieverding, Adler, Witt, & Ellen, 2005)	Sexually inexperienced youth aged 14-18 in San Francisco, CA	Quantitative; longitudinal study design-	Surveys conducted using a 4-scale measure to assess intent for sex; participants followed up at 6 and 12 months	307 participants recruited from an adolescent medicine clinic	Pearson product moment correlations, simple and multiple linear regression analyses; $p < 0.05$
(Small & Luster, 1994)	Adolescents in 7 th , 9 th , and 11 th grades in a midsize Southwestern city; 51% White, 39% Hispanic, 8% AA, 2% other	Quantitative; Cross-sectional survey design	Students administered a 160-item self-report survey in classrooms	2,168 adolescents in 7 th , 9 th , & 11 th grades from all 6 schools in a district	Mixed model discriminate function analysis conducted separately for males and females
(Stanton, et al., 2000)	Parents and adolescents aged 12-16 in public housing in a city in the mid-Atlantic region	Quantitative; Randomized, controlled longitudinal study design	Baseline data gathered with a survey from a talking computer; 2 and 6 month post-intervention data obtained	237 parents and one each of their children recruited from 8 public housing developments	Similarity of youth and parental reporting on the Parent-Adolescent Risk Behavior Concordance Scale measured with t-tests

Citation	Population Studied	Methodology & Design	Methods of Data Collection	Sampling	Methods of Analysis & Results
(Webb, Bray, Getz, & Adams, 2002)	Students in 7 th -10 th grades at high schools in 4 suburban school districts near Houston, TX; 31.8% White, 31.6% Black, 36.6% Hispanic	Quantitative; 2-wave longitudinal study design	Participants completed a questionnaire assessing drug and alcohol use and family/peer factors related to usage; completed in school approximately one year apart	1,672 students part of a larger longitudinal study of ethnicity, family factors and alcohol use	Logistic regression analysis conducted; structural equation modeling used to test hypothesized relationships; males reported high use than females
(Whitaker & Miller, 2000)	Adolescents and their mothers in 2 public high schools in Montgomery, AL and 1 public high school in the Bronx, NY and San Juan, PR	Quantitative; Cross-sectional study design	Participants completed surveys in their homes assessing parent-adolescent communication, adolescent sexual activity, and peer norms	907 adolescents who participated in the FARBCS; students recruited via flyers in their high schools and sent to their homes	Two-step hierarchical regression models conducted to examine the relationships between the factors and adolescent sexual behavior

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