UNIVERSITY OF CALIFORNIA, MERCED

Parental Motivations to Discuss Unhealthy Eating and Marijuana Use with their Children

A dissertation submitted in partial satisfaction of the requirements for
the degree of Doctor of Philosophy

in

Psychological Sciences

by

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The Dissertation of Tenie Khachikian is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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University of California, Merced

2018

DEDICATION

To my devoted husband,
for sharing this journey with me,
Arnold Baghomian.

And to my loving parents,
without whom none of my success would be possible,
Vrej and Leda Khachikian.

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ACKNOWLEDGEMENTS

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Guerrero, E. G., Marsh, J. C., **Khachikian, T.**, et al. (2013). Disparities in Latino substance use, service utilization and treatment outcomes: Implications for implementation of culturally-informed and evidence-based interventions under health care reform. *Drug and Alcohol Dependence, 133*(3), 805-813. doi:10.1016/j.drugalcdep.2013.07.027

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Abstract

Parental Motivations to Discuss Unhealthy Eating and Marijuana Use with their Children
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University of California, Merced, 2018
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Objective: Adolescent engagement in health risk behaviors, such as unhealthy eating and marijuana use, remains a significant issue in the United States. Parents are an important component in preventing their children from engaging in behaviors that could harm their health and well-being. Parent motivations to have discussions about these behaviors with their child may be influenced by their parenting dynamics (i.e., attachment styles, parenting styles, and parent-child communication), and other cognitive factors (i.e., perceived risks, prototypes, self-efficacy, coherence, worry, intentions and willingness). Little is known about how these factors might influence parent decisions to discuss unhealthy eating and marijuana use with their children.

Methods: In a series of three studies, parent motivations to discuss unhealthy eating and marijuana use with their child was explored. Guided by an adapted Prototype-Willingness Model (PWM), *Study 1* tested the associations of parenting dynamics; specific risks and prototypes of unhealthy eating and marijuana use by one's child; levels of self-efficacy, coherence in understanding behavioral risks, worry, discussion intentions and discussion willingness on parental discussions about unhealthy eating and marijuana use with their child ($N = 208$); *Study 2* tested the relationship of messages framed according to authoritative, authoritarian, and permissive parenting styles on youth's perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity in promoting discussion of unhealthy eating and marijuana use with a parent ($N = 393$); and *Study 3*, a longitudinal study with a national sample of parents, tested the effects of unhealthy eating and marijuana use discussion tools on parent discussions with their child about these behaviors one month later ($N = 318$).

Results: In *Study 1*, the findings supported most of the hypothesized relationships delineated by the adapted PWM, suggesting the potential utility of parenting styles and cognitive factors (e.g., self-efficacy, intentions) in motivating parent discussions with their child about unhealthy eating and marijuana use. In *Study 2*, the authoritative parenting-framed message on talking with one's parent about unhealthy eating and marijuana use was perceived by youth as the most effective in motivating discussions about these behaviors compared to the authoritarian and permissive parenting-framed messages. In *Study 3*, the findings partially supported the moderating effects of parenting styles on some of the relationships between discussion tools and other cognitive (e.g., self-efficacy, intentions) factors.

Conclusions: The results of these studies provide new evidence about the relationship of parenting styles and the adapted PWM framework in motivating parental discussions of

unhealthy eating and marijuana use with their children. However, there is a need for further investigation on how these newly developed discussion tools can motivate discussion of health risk behaviors with children. Subsequent research should be directed at a larger longitudinal study examining the effects of the authoritatively-framed discussion tools of unhealthy eating and marijuana use in promoting open discussion about these behaviors in families.

CHAPTER ONE

1. General Introduction

Adolescence, the transition from childhood to adulthood, is often characterized as a particularly difficult time for children (Spear, 2010; Steinberg, 2015). Adolescents undergo bodily and hormonal changes, which further influences their mental and physical health (Spear, 2010). Adolescents feel misunderstood and struggle to fit in with the pressures they may feel from their peers, family, and society (Steinberg, 2015). Often times, this may lead to the practice of risky and harmful behaviors such as poor diet, substance use, unprotected sex, and reckless driving (Kipping, Campbell, MacArthur, Gunnell, & Hickman, 2012; Solmeyer, McHale, & Crouter, 2014). These health risk behaviors can further shape adolescent health during this critical time and may even affect their decisions in adulthood, and thus it is critical to address these behaviors early on (Kipping et al., 2012; Steinberg, 2015).

The Centers for Disease Control and Prevention identified unhealthy eating and substance use as health risk behaviors that are particularly likely to negatively impact adolescent health (Eaton et al., 2006). The focus on unhealthy eating is important given the increase in obesity during adolescence throughout the last decade (Huh, Stice, Shaw, & Boutelle, 2012; Inge et al., 2013; Plotnikoff, Lubans, Costigan, & McCargar, 2013). With the rise in obesity rates among children and adolescents in the United States, it has become vital for parents to learn effective communication strategies that may influence their children to make healthier food choices in their daily lives.

Marijuana is the most commonly used illicit substance among adolescents, with the prevalence of marijuana use increasing every year in the United States (Substance Abuse and Mental Health Services Administration, 2014). Among these adolescents, there is a decrease in adolescents perceived harm and disapproval towards marijuana use (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2015). Changes in marijuana policies have tracked with greater acceptance of marijuana use in adults and adolescents across the United States (National Institute on Drug Abuse, 2016). These trends suggest that marijuana use will continue to rise with increases in legalization of marijuana for medicinal and recreational use across the United States.

Though adolescents begin to desire independence from their parents, parents still play an integral role in the prevention of health risk behaviors in their children (Bauman, Foshee, & Ennett, 2001; Clark et al., 2011; Dever et al., 2012; Griffin, Samuolis, & Williams, 2011; Spoth, Randall, Shin, & Redmond, 2002; Tharp & Noonan, 2012). It has been found that parent-child discussions centered on preventing risky behaviors serve as a protective influence (DeHaan & Thompson, 2003; Dielman, Butchart, & Shope, 1993; Hyatt & Collins, 2000; Mrug & McCay, 2013). Weekly parent-child discussions have also been identified as one of the strongest factors in influencing healthier food choices in adolescents (Barnes, Brown, McDermott, Bryant, & Kromrey, 2012).

Parent decisions to discuss health risk behaviors with their children are likely to be influenced by their general parenting dynamics such as their attachment styles, their parenting styles, and their communication tendencies (Becoña et al., 2015; Bronte-Tinkew, Moore, & Carrano, 2006; Rogers, Ha, Stormshak, & Dishion, 2015). These parental decisions are also likely to be shaped by more proximal and behavior-specific

psychological factors such as their risk perceptions of unhealthy eating and marijuana use, their social prototypes or stereotypes of children who engage in these behaviors, and their worry about the potential harms of these behaviors (Gibbons & Gerrard, 1995; Khachikian & Cameron, 2018).

In the present research project, we propose an extended adaptation of the PWM framework (Gibbons & Gerrard, 1995; Khachikian & Cameron, 2018) in which we integrate general parenting dynamics (e.g., attachment styles, parenting styles, and parent-child communication tendencies) with both established PWM factors (perceived risks, prototypes, worry, intentions and willingness) and new cognitive factors (self-efficacy and coherence in understanding the risks of unhealthy eating and marijuana use) as predictors of parental discussions of unhealthy eating and marijuana use with their children (i.e., tested in Study 1).

After testing this adapted PWM in Study 1, we used the model to guide the development and evaluation of discussion tools designed to provide parents with guidance on how to communicate about unhealthy eating and marijuana use with their children (i.e., tested in Studies 2 and 3). There is a need for evidence-based discussion tools that will provide parents with tips on how to talk with their child about these health risk behaviors, particularly given evidence that parenting practice interventions about substance use with a communication component have been effective in increasing discussions with their child about substance use, as well as alleviating or decreasing substance use in the child (Ellickson et al., 2008; Komro et al., 2001; O'Donnell, Myint-U, Duran, & Stueve, 2010; Toumbourou et al., 2013).

This dissertation is organized as follows. The general introduction provides an overview of the PWM including measures of perceived risks, prototypes, worry, intentions and willingness; evidence supporting the adapted PWM for predicting parental discussions of marijuana use with child; overview of attachment styles, parenting styles, parent-child communication, coherence, and self-efficacy; and lastly a summary and research overview. Then, Chapter Two will focus on Study 1, Chapter Three will focus on Study 2, Chapter Four will focus on Study 3, and Chapter Five will focus on the general discussion, limitations, and concluding remarks and recommendations.

2. The Prototype-Willingness Model

According to the PWM, two sets of psychological processes motivate risk-related behavior (Gibbons & Gerrard, 1995). The first process operates on a conceptual level by involving perceptions of risks (e.g., of the child eating unhealthy food) as primary determinants of intentions in risk-altering behavior (e.g., to discuss unhealthy eating with one's child). Perceived risk is a subjective judgment about the severity of harmful consequence of an action, whereas intentions refer to a deliberate plan to engage in the behavior (Kirch, 2008). The second process operates on a more impulsive level through the elicitation of prototypes of those who engage in the risky behavior (e.g., of adolescent marijuana users). Prototypes, or stereotypical images associated with behavior operate through social influence processes to affect willingness (Thornton, Gibbons, & Gerrard, 2002). Contrary to deliberated intentions, willingness suggests more impulsive motivations in emotionally-evocative situations (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008).

The PWM typically has been used to identify intrapersonal factors guiding an individual's engagement in risky health behaviors (e.g., cigarette smoking). We recently applied an adapted PWM in a study about parental discussions of marijuana use with children (Khachikian & Cameron, 2018; see Figure 1a). Specifically, we conceptually elaborated the model: (1) to predict a protective behavior (i.e., discussions designed to reduce risk of marijuana use); (2) to predict an interpersonal behavior (i.e., discussions with children about a risky behavior); and (3) to depict worry as an additional element in motivating discussions with children about unhealthy eating and marijuana use. We consider each factor in the adapted PWM model in turn.

2.1. Perceived Risks

According to the adapted PWM, perceptions of the potential harms of health risk behaviors are likely to play a key role in motivating decisions to discuss them with their children. Several theories of behaviors identify risk perceptions as a primary influence on health-related behaviors (Brewer, Weinstein, Cuite, & Herrington, 2004; Cameron, 2008; Gerrard, Gibbons, Benthin, & Hessling, 1996). Greater risk perceptions are associated with higher worry (Peters, Slovic, Hibbard, & Tusler, 2006) and greater intentions to engage in actions to protect against risky behaviors (Brewer, Chapman, Gibbons, Gerrard, McCaul, & Weinstein, 2007; Waters, McQueen, & Cameron, 2014; Weinstein, 2000). Accordingly, the model proposes a similar role of perceived risk in motivating discussions of unhealthy eating and marijuana use between parents and their children. Importantly, there is a need to understand which risks motivate parent-child discussions about unhealthy eating and marijuana use, and so information about the specific risks that parents associate with these behaviors is needed to inform discussion tools designed to motivate parent discussions of these risky behaviors.

2.2. Prototypes

As indicated by the PWM, prototypes of adolescents who eat unhealthy foods or use marijuana held by parents could influence worry and motivations to discuss risky behaviors with one's child. Prototypes have been shown to influence health risk behaviors (e.g., substance use; Gibbons & Gerrard, 1995; Thornton et al., 2002), with both positive and negative prototypes demonstrating importance as potential predictors of behavior. More favorable prototypes (e.g., of smokers as cool) have been associated with greater willingness and likelihood to engage in risky behaviors, such as cigarette smoking (Gerrard et al., 2008; Gibbons & Gerrard, 1995; Thornton et al., 2002). In addition, negative prototypes (e.g., of smokers as lazy) have been associated with greater worry in response to cigarette warnings (Magnan & Cameron, 2017) and marijuana use (Khachikian & Cameron, 2018). Positive and negative prototypes through the provision of messages or images can alter willingness (Gerrard, Gibbons, Brody, & Murry, 2006; Gerrard, Gibbons, Reis-Bergan, Trudeau, Vande Lune, & Buunk, 2002; Gibbons, Gerrard, & Lane, 2003).

2.3. Worry

Worry can fuel motivations to engage in health-related actions and, for protective behaviors in particular, it can be a stronger predictor relative to risk-related cognitions (Cameron, 2008; Cameron & Diefenbach, 2001; Hay, McCaul, & Magnan, 2006). Decisions centered on protective measures are likely to elicit worry and concern. Worry about the harmful consequences of heath-risk behaviors can motivate protective behavior

(Cameron, 2008; Loewenstein, Weber, Hsee, & Welch, 2001; McCaul, Schroeder, & Reid, 1996). For instance, worry about the harms of cigarette smoking elicited by cigarette warnings discourages smoking among both smokers and non-smokers (Cameron, Pepper, & Brewer, 2013; Magnan & Cameron, 2015). In supporting the addition of worry as a mediating factor to the adapted PWM, it has been found that worry mediates the relationship of risk perception with protective behavior motivation, which makes it important to study this further within the revised PWM framework for the present research project (Chapman & Coups, 2006; Kiviniemi & Ellis, 2014).

2.4. Intentions and Willingness

A significant feature of the PWM concerns the independent roles of intentions and willingness in predicting risky behaviors (Gerrard et al., 2008; Gibbons, Gerrard, Blanton, & Russell, 1998). Intentions consistently emerges as a strong predictor of health-protective behaviors (Brewer & Dewhurst, 2013; Orbell & Sheeran, 2000). Although research on the role of willingness in this context is more limited, several studies have identified willingness as a central motivator for engagement in risky behaviors, (Gibbons et al., 1998; Gibbons et al., 2003). For instance, adolescents demonstrate higher willingness to drink alcohol and smoke cigarettes, if given the opportunity to do so (Armenta, Whitbeck, & Gentzler, 2016; Gibbons et al., 2003). This evidence to date focuses primarily on willingness as a motivator of risky behaviors. Willingness could also be effective in evoking protective behaviors and particularly in contexts that generate concern. For a parent who worries about their child using marijuana (or eating unhealthy food), such as the child being invited to a party where marijuana (or unhealthy food) is likely to be present, the worry could motivate impulsive efforts to start a discussion about marijuana use (or unhealthy food) with their child.

3. Evidence Supporting the Adapted PWM for Predicting Parental Discussions of Marijuana Use with Children

Utilizing the adapted PWM, our previous study (Khachikian & Cameron, 2018) tested how perceived risks, prototypes, worry, intentions, and willingness predict parental discussions of marijuana use with their children. We administered a longitudinal survey to 499 American parents of children ages 10 to 17 assessing risk perceptions, prototypes, worry, discussion intentions, and discussion willingness. One month later, 409 participants completed another survey assessing whether they had discussed marijuana use with their child. At follow-up, 40% of participants reported having marijuana use discussions in the previous month. Structural-equation modeling revealed that perceived risks and negative prototypes positively predicted worry about their child using marijuana. Worry positively predicted intentions and willingness to discuss marijuana use with children. Worry mediated the relationship between perceived risks and intentions, but not the relationship between prototypes and willingness. Intentions positively predicted likelihood of marijuana use discussions, whereas willingness did not.

Importantly, the findings indicated that, parents generally reported high willingness to talk to their children about marijuana use, but the lack of association between willingness and discussion behavior suggests an important gap. Specifically, this willingness-behavior gap could reflect perceived difficulty or lack of skills to have these discussions with their children. These findings guided our current efforts to further understand the parenting beliefs and skills that promote discussion with children and

develop health communication strategies aimed at promoting parent and child discussion of the health risk behaviors. Parents who struggle to have conversations about marijuana and other risky substances might benefit from tools on how to have these discussions with their children.

Our present research project applied these prior findings to develop and implement discussion tools that can motivate parent-child discussions about unhealthy eating and marijuana use. We expanded our theoretical model to also include the variables of attachment styles, parenting styles, parent-child communication, self-efficacy, and coherence in the understanding of risks (see Figure 1b). In the next sections, we review the theory and research on these constructs that supported their inclusion in the extended PWM proposed for this research project.

4. Attachment Styles

Attachment theory refers to a deep connection and social relationship developed between individuals, often established and shaped through the attachment between caregiver (e.g., mother) and infant (Ainsworth, 1964; 1973; Ainsworth & Bell, 1970; Bowlby, 1982). Ainsworth and Bowlby categorize attachment theory into three types: secure, avoidant, and anxious/ambivalent. The style of attachment a child develops influences their development into adult life (Bowlby, 1969).

When a caregiver is highly receptive and tender in the early months, as communicated through facial expressions and vocalizations, the infants tend to develop a secure attachment that promotes behaviors indicative of well being; for example, they tend to require a smaller amount of contact and cry less during the later months (Ainsworth, Blehar, Waters, & Wall, 1978; Bell & Ainsworth, 1972). Caregivers who respond to infant stress with affection and sensitivity (e.g., picking up the infant when distressed) prompt the infant to feel secure that they will be comforted by their caregiver when they are feeling distressed again. Secure attachments formed in infancy have been shown to predict positive emotion-regulation styles such as adaptive coping and resiliency in stressful situations, in adulthood (Billet, Barker & Hernon-Tinning, 2002; Klohnen & Bera, 1998; Mikulincer & Shaver, 2001).

Attachment experiences can also shape the family environment, by influencing the interaction and relationship between parent and child (Doinita & Maria, 2015). For example, secure attachment styles tend to lead to more affectionate and intimate parent-child dynamics (Maximo et al., 2011), often leading to more constructive discussions about problems and a trusting relationship between parent and child (Feeney, Noller, & Patty, 1993). The extended PWM posits that attachment styles are foundational personality dynamics that shape a new branch of constructs influencing discussion behaviors. Specifically, attachment styles guide parenting styles and have downstream influences on parent-child communication tendencies, discussion self-efficacy, discussion intentions and willingness, and discussion behaviors.

5. Parenting Styles

Parenting styles have potent influences on the relationships between parents and children (Baumrind,1966, 1967) and shape a child's development, relationships, and behaviors into adult life. Baumrind categorizes parenting styles into three types: authoritative, authoritarian, and permissive. Parents who exhibit authoritative parenting styles are generally warm and rational, and they support their children with affection and

develop close relationships with them (Onder & Gulay, 2009). Authoritative parents tend to be loving, and they avoid using punishment to discipline. On the other hand, authoritarian parents tend to be demanding and controlling, and they are often unresponsive to their child's needs. Authoritarian parents tend to restrict autonomy and practice strict punishment (Kochanska, Kuczyniski, & Radke, 1989). Lastly, permissive parents tend to be patient and receptive, yet they exhibit inconsistencies in their responses towards their children's behaviors (Connor, 1980). For example, permissive parents tend to use punishment infrequently, but they alternate between praise and punishment leading to unpredictability in their parenting practices towards their children (Baumrind, 1967).

Authoritative parenting styles are associated with lower rates of health risk behaviors in adolescents, including lower use of alcohol, tobacco, and illicit drugs (Becoña et al., 2015; Kremers, Brug, de Vries, & Engels, 2003; Chassin, Presson, Rose, Sherman, Davis, & Gonzalez, 2005; Shakya, Christakis, & Fowler, 2012). It has been found that adolescents that grow up with authoritative parents are more likely to participate in healthier behaviors compared to adolescents of authoritarian or permissive parents (Kremers et al., 2003). In contrast, authoritarian and permissive parenting styles are associated with increased risks for health risk behaviors such as alcohol, tobacco, or marijuana use by children (Bronte-Tinkew et al., 2006; Patock-Peckham & Morgan-Lopez, 2006). These influences might operate at least in part via parent communications about health risk behaviors with their children; that is, parenting styles could shape the specific messages relayed to children, and these messages could vary in their persuasiveness. Messages framed in an authoritative style could be more effective than authoritarian or permissive messages in discouraging unhealthy eating and marijuana use in children.

The present research project focuses on parenting styles in three ways. First, it tests the extended PWM's predictions that attachment styles will be associated with parenting styles which, in turn, will be associated with parent-child communication tendencies and have downstream links with self-efficacy and coherence in discussing unhealthy eating and marijuana use with children, discussion intentions and willingness, and discussion behaviors (Study 1). Second, it examines the efficacy of authoritative, authoritarian, and permissive messages about discussing unhealthy eating and marijuana use with adolescents in motivating effective discussions (Study 2). Third, it examines the efficacy of discussion tools with features of authoritative parenting style on parental discussions of unhealthy eating and marijuana use with their children (Study 3).

6. Associations of Attachment Styles and Parenting Styles

The proposed associations between attachment styles and parenting styles are supported by previous research (Doinita & Maria, 2015; Karavasilis, Doyle, & Markiewicz, 2003). Each of the attachment styles are shown to parallel one of the parenting styles. Specifically, a secure attachment in a child is associated with having an authoritative parent (Baumrind, 1966; Doinita & Maria, 2015; Karavasilis et al., 2003; Millings, Walsh, Hepper, & O'Brien, 2013). Research also points to negative relationships between secure attachments, and both authoritarian and permissive parenting styles (Doinita & Maria, 2015; Millings et al., 2013). Parallel relationships have been found between avoidant attachment and authoritarian parenting, and anxious attachment and permissive parenting styles as well (Baumrind, 1971; Connor, 1980;

Elicker, Englund, & Sroufe, 1992). These studies highlight the associations of these parenting factors, although the independent relationships of attachment styles and parenting styles with parent-child dynamics regarding discussions of unhealthy eating and marijuana use remain unexplored.

7. Parent-Child Communication

Parent-child communication refers to the parent (i.e., or primary caregiver) perceptions of their openness to communication with their children (Loeber, Farrington, Stouthamer-Loeber & Van Kammen, 1998; Thornberry, Huizinga, & Loeber, 1995). Parent-child communication tendencies can have a significant impact on the decisions the child makes. In fact, lower levels of parent-child communication have been associated with an increased risk of adolescent substance use, unprotected sex, and other delinquent behaviors (Atienzo, Walker, Campero, Lamadrid-Figueroa, & Guiterrez, 2009; Goldberg-Looney, Sanchez-San, Ferrer-Cascales, Smith, Albaladejo-Blazquez, & Perrin, 2015; Loeber et al., 1998; Rogers et al., 2015). Of importance is the quality of the communication between parent and child, as this can influence the child's well-being and health (Broberg, 2012).

For instance, it has been found that when parents communicate openly with their children, it leads to a decrease in alcohol and tobacco use in their children as compared with those parents that do not practice open communication with their children (Goldberg-Looney et al., 2015; Ryan, Jorm, & Lubman, 2010). In fact, authoritative parents encourage open discussions with their children about problems they face as well as supporting their child's autonomy and decisions (Maccoby & Martin, 1983; Baumrind, 1991). These studies enhance the importance of the parent's role in prompting their child's health-related behaviors, and to further explore the association with attachment styles and parenting styles. Even more so adding to the significance of investigating this area within the context of unhealthy eating and marijuana use.

8. Self-Efficacy

Self-efficacy, or the perceived ability to engage in a particular behavior, is a consistently strong predictor of intentions and behavior (Bandura, 1997). Parental self-efficacy has been found to motivate parenting behavior, thereby influencing a child's development and decisions during adolescence (Hosokawa, Katsura, & Shizawa, 2017; Watkins, Howard-Barr, Moore, & Werch, 2006). For instance, higher parental self-efficacy has been associated with increased quality of parent-child interactions, parent involvement, and parent-child communication (Ennett et al., 2001; Watkins et al., 2006). Self-efficacy is associated with an increase in parent confidence to engage in discussions with their child about health risk behaviors (i.e., substance use), and increase parental monitoring of their behaviors (Ennett et al., 2001; Watkins et al., 2006). This theory and empirical evidence supports the importance of increasing discussion self-efficacy in parents to provide them with confidence in their communication skills and motivate them to engage in a discussion with their child about risky behaviors (e.g., substance use; Koning et al. 2010; O'Donnell et al., 2010).

9. Coherence

Coherence in understanding how a health behavior can lead to consequences is a cognitive factor that has been associated with reactions to health threats, including protective behaviors (Cameron, Marteau, Brown, Klein, & Sherman, 2012; Gold et al.,

2013; Lee, Cameron, Wünsche, & Stevens, 2011). Illness and illness-risk coherence is identified by the Common Sense Model (Leventhal, Brissette, & Leventhal, 2003) as motivating recommended health actions, and evidence to date supports this premise (Cameron et al., 2012; Lee et al., 2011; Waters et al., 2014). We propose that parents who have a coherent understanding of how a child's use of a behavior (unhealthy eating and marijuana use) puts them at risk for negative consequences will independently motivate discussion intentions and discussion willingness, and how likely parents are to discuss the behaviors of unhealthy eating and marijuana use with their child.

10. Summary and Research Overview

The present dissertation developed and tested an extended PWM for parental discussions about health risk behaviors with children, and then applied the model to develop and evaluate discussion tools of unhealthy eating and marijuana use for parents. The project involved three studies. In Study 1, a national sample of parents participated in a survey testing the proposed model. The study also gathered descriptive information about parenting dynamics of attachment styles, parenting styles, and parent-child communication; specific risks and prototypes associated with unhealthy eating and marijuana use by one's child; levels of discussion self-efficacy, coherence in understanding behavioral risks, worry, discussion intentions, and discussion willingness; and how often parents talk about the behaviors with their child. Study 2, conducted with youth, examined their views of messages framed according to authoritative, authoritarian, and permissive parenting styles about discussion of unhealthy eating and marijuana use with a parent. Study 3, a longitudinal study with a national sample of parents, tested the effects of authoritatively-framed discussion tools of unhealthy eating and marijuana on whether the parent later had a conversation with their child about the behaviors.

CHAPTER TWO

STUDY I

1. Introduction

This chapter begins with a description of Study 1 including aims and hypotheses; methods (i.e., participants, design, and procedure); detailed list of measures; overview of statistical analyses; results, discussion, and conclusion of study.

Study 1 explores the factors delineated by the adapted PWM framework for parental discussions of unhealthy eating and marijuana use, and tests the relationships among factors proposed by the model using a survey of parents living in the United States who have children ages 10 to 17 years old. This study specifically investigates the extent to which parents discuss unhealthy eating and marijuana use with their children, the relationship between parenting dynamics (i.e., attachment styles, parenting styles, parent-child communication), the risks, prototypes, and worries associated with these behaviors by children, how confident the parent is to discuss unhealthy eating and marijuana use (i.e., self-efficacy), the levels of coherence in understanding these risks, and parent motivations to have these discussions (i.e., intentions and willingness).

There was also a focus on the relationship of child's age with parent discussions of unhealthy eating and marijuana use. Parents might be more inclined to discuss unhealthy eating than marijuana use with younger children, given their long-standing roles as providing food and nutrition to their child while potentially viewing the opportunities for their child to use marijuana as low. In contrast, parents might be more inclined to discuss marijuana use than unhealthy eating with their older children as they expect them to desire independence in food choices (Boutelle, Lytle, Murray, Birnbaum, & Story, 2001; Koivisto & Sjoden, 1996) while having a growing appreciation of opportunities for their child to use marijuana. Although age-related differences in parent-child discussions centered on unhealthy eating and marijuana use have not been studied previously, understanding these differences can guide efforts to improve future discussions for younger and older youth. Parents completed a survey with measures of the adapted PWM factors, parenting factors (e.g., attachment styles, parenting styles), and personal characteristics (e.g., self-efficacy, competence).

The study aims were to: (Aim 1) evaluate the descriptive characteristics of parent past discussions of unhealthy eating and marijuana use with their child; (Aim 2) test the associations of attachment styles, parenting styles, parent-child communication, perceived risks of unhealthy eating and marijuana use, prototypes of unhealthy eating and marijuana use, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, worry of unhealthy eating and marijuana use, intentions of unhealthy eating and marijuana use, willingness of unhealthy eating and marijuana use, and past discussion behavior of unhealthy eating and marijuana use; and (Aim 3) to test for child age-group differences in parent discussions of unhealthy eating and marijuana use. Given the exploratory nature of the model-testing aims, this cross-sectional survey assessed PWM predictors of past discussion behavior which, in light of high consistency in health behaviors over time (Ajzen, 2005; Albarracín & Wyer, 2000; Singh, Fazel, Gueorguieva, & Buchanan, 2014), is expected to be a reasonably valid proxy for future discussion behavior for the purposes of model development.

For Aim 1, we tested the hypothesis that parents were less likely to report past discussions of unhealthy eating and marijuana use with their child. For Aim 2, we tested hypotheses that: (a) lower attachment anxiety and lower attachment avoidance will be associated with higher authoritative parenting style, whereas higher attachment anxiety and higher attachment avoidance will be associated with higher authoritarian parenting style and higher permissive parenting style; (b) higher authoritative parenting style will be associated with higher parent-child communication compared to lower attachment anxiety, lower attachment avoidance, lower authoritarian parenting style, and lower permissive parenting style; (c) higher authoritative parenting style and higher parent-child communication will be associated with higher self-efficacy of unhealthy eating and marijuana use compared to lower authoritarian parenting style and lower permissive parenting style; (d) higher parental perceived risks of harms of unhealthy eating and marijuana use, and negative prototypes of unhealthy eating and marijuana use will be associated with higher coherence and higher worry about their child eating unhealthy and using marijuana; (e) higher self-efficacy, higher coherence, and higher worry will be associated with higher intentions and higher willingness of unhealthy eating and marijuana use discussions with one's child; and (f) higher intentions and higher willingness will be associated with higher levels of past discussions about unhealthy eating and marijuana use with child. Lastly for Aim 3, we tested the hypothesis that parents would be more likely to discuss unhealthy eating with younger children as compared with discussing marijuana use with older children.

2. Methods

2.1. Participants

The university's institutional review board approved the study protocol. Participants were recruited from a national website service (Amazon Mechanical Turk or MTurk) under the restrictions that they were United States residents (based on ownership of a United States bank account) and a parent of a child 10 to 17 years old. Participants (N = 1,225) completed an online Qualtrics screener survey to determine their study eligibility. After providing consent, they responded to questions about whether they had child and, if so, ages of their children. Those meeting the inclusion criteria (N = 268) received online invitations to participate in the full study in Qualtrics. As a result, 208 participants provided informed consent and were able to complete the study. Overall, parents were approximately 39 years of age on average and predominantly Non-Hispanic White with over 72% identifying as women, college educated, employed full-time, and married; their children were approximately 13 years of age with just over 52% identified as male (see Table 1a).

2.2. Design

The survey included measures assesing discussion-related factors for both unhealthy eating and marijuana use. The measures were identical for the two behaviors, thereby enabling within-subjects tests for differences between the two behaviors.

2.3. Procedure

Participants responded to questions about measures of demographic and personal characteristics, child's unhealthy eating and marijuana use, parenting dynamics (attachment styles, parenting styles, and parent-child communication), factors identified in the prior PWM framework (perceived risks, prototypes, worry, intentions, and

willingness of unhealthy eating and marijuana use discussions with child), and cognitive factors new to the PWM (discussion self-efficacy and coherence in understanding risks). Following the survey completion, participants read a brief explanation of the study and received links to websites of national health organizations with information about unhealthy eating and marijuana use. They then received payment for their participation through MTurk ($.01 for participation in the screener survey, $2.00 for completing the full study). Data was collected in November 2017.

3. Measures

Participants were instructed to respond to measures in terms of their first child who was between the ages of 10 and 17 years old. Unless otherwise noted, item ratings were averaged to generate scores. Table 1d, 1e, and 1f presents the score means, standard deviations, and internal consistency statistics (Cronbach's α) for the main measures. Appendix A includes more details on questionnaire items listed below.

3.1. Demographic and Personal Characteristics

The survey questionnaire includes items measuring child's age and gender, parent age and gender, marital status, child living arrangements, education level, ethnicity, and zip code. For analyses involving child's age group as an independent variable (i.e., Aim 3), younger age group was defined as 10 to 13 years old and older age group was defined as 14 to 17 years old.

3.2. Child's Unhealthy Eating

The measure of diet behavior (Paxton, Strycker, Toobert, Ammerman, & Glasgow, 2011) was adapted to assess unhealthy eating by one's child during a typical week. The measure includes 10 items. Some examples of items include: "How many times does your child eat fast food meals or snacks?", "How many servings of fruit does your child eat a day?", "How many times a week does your child eat regular snack chips or crackers (not low-fat)?", and "How many times a week does your child eat yogurt or other fermented foods (like sauerkraut, kimchi, pickles, or kombucha)?" Item ratings ranged from 1 (*very little*) to 3 (*a lot*).

3.3. Child's Marijuana Use

This measure derived from a previous study on parental discussions of marijuana use and children (Khachikian & Cameron, 2018). The measure includes 4 items: "Do you think your child has used marijuana?", "Do you think your child has used marijuana on 100 or more occasions in his or her life?", "Do you think your child will use marijuana in the next year?", and "If one of your child's friends were to offer your child marijuana, would your child use it?" The first two item ratings were 0 (*no*) or 1 (*yes*), and the last two item ratings ranged from 1 (*definitely not*) to 5 (*definitely yes*).

3.4. Experiences in Close Relationships-Relationships Structures (ECR-RS)

This measure is used to assess attachment styles in close relationships, and can be modified to fit a number of relationships, i.e., parent and child (Fraley, Heffernan, Vicary, & Brumbaugh, 2011). The measure includes 9 items. Some examples of items include: "It helps to turn to my child in times of need", "I talk things over with my child", "I find it easy to depend on my child", and "I often worry that my child doesn't really care for me." Item ratings ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

3.5. Parenting Styles and Dimensions Questionnaire (PSDQ)

This measure was used to assess the parenting styles of authoritative, authoritarian, and permissive parenting styles (Robinson, Mandleco, Olsen, & Hart, 1995). The measure includes 30 items. Some examples of items include: "I encourage my child to talk about his/her troubles", "I find it difficult to discipline my child", "I give praise when my child is good", and "I scold or criticize when my child's behavior doesn't meet my expectations." Item ratings ranged from 1 (*never*) to 5 (*almost always*).

3.6. Parent-Child Communication Scale

This measure was used to assess parent-child relationship quality through measures of openness to communication (Loeber et al., 1998; Thornberry et al., 1995). The measure includes 20 items. Some examples of items include: "Can you discuss your beliefs with your child without feeling restrained or embarrassed?", "Are you very satisfied with how you and your child talk together?", "Are there things you avoid discussing with your child?", and "Do you and your child come to a solution when you talk about a problem?" Item ratings ranged from 1 (*almost never*) to 5 (*almost always*).

3.7. Perceived Risks

The measure of perceived risks for unhealthy eating and marijuana use by one's child was adapted from measures used to assess similar risk perceptions such as those associated with cigarette smoking (Cameron, 2008; Cameron et al., 2013). The measure includes 20 items (i.e., 10 unhealthy eating, 10 marijuana use). An example of an unhealthy eating stem is: "What do you think are your child's changes of getting each of the following conditions at some time in their life?" The five items were: cancer, heart disease, diabetes, obesity, and influenza. An example of a marijuana use stem is: "If your child were to regularly use marijuana, what do you think would be your child's chances of getting each of the following conditions at some time in their life?" The five items were: addiction, lung cancer, memory problems, sleep disturbances, and poor academic performance. The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 0 (*almost zero*) to 7 (*almost certain*).

3.8. Prototypes

The measure of prototypes, which assesses characteristics associated with both positive and negative prototypes, was adapted from a measure used in prior research on prototypes of cigarette smokers (Magnan & Cameron, 2015; McCool, Cameron, & Petrie, 2004; Khachikian & Cameron, 2018). The measure includes 36 items (i.e., 18 unhealthy eating, 18 marijuana use). The measure began with the stem: "Please imagine the type of person around your child's age who eats an unhealthy diet (or uses marijuana). In general, do you think that other children your child's age who eat an unhealthy diet (or use marijuana) tend to be…" The items included 9 positive descriptors (adventurous, calm, cool, curious, open-minded, intelligent, popular, independent, fun-loving) and 9 negative descriptors (lazy, immature, irresponsible, inconsiderate, rebellious, slacker, troublemaker, stressed, impulsive). Item ratings ranged from 1 (*not at all*) to 5 (*very much*). Positive items were reverse-coded before averaging the 18 item ratings so that higher scores reflect more negative prototypes.

3.9. Self-Efficacy

This measure focused on parent self-efficacy with regards to talking to their child about unhealthy eating and marijuana use. The measure includes 24 items (i.e., 12 unhealthy eating, 12 marijuana use). Examples of unhealthy eating items include: "It is easy for me to explain to my child how it is unhealthy to eat a diet that is low in fruits and vegetables", "It is easy for me to explain to my child how it is unhealthy to eat a diet that is low in probiotics", "I am personally able to talk to my child about unhealthy eating that is high in processed foods", and "I am personally able to talk to my child about unhealthy eating that is high in sugar." Examples of marijuana use items include: "It is easy for me to explain to my child the health risks of marijuana use", "It is easy for me to explain to my child the effects of marijuana use on academic performance", "I am personally able to talk to my child about the health risks of marijuana use", and "I am personally able to talk to my child about the peer pressure of using marijuana." The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.10. Coherence

This measure focused on parent ratings about their perceived understanding of risks of unhealthy eating and marijuana use. The measure includes 14 items (i.e., 7 unhealthy eating, 7 marijuana use). Some examples of items include: "The risks of my child eating an unhealthy diet (or using marijuana) are puzzling to me", "I really don't understand how junk food (or marijuana use) could affect my child's health", "I have a clear picture or understanding of how my child's dietary habits (or marijuana use) could affect his/her health", and "I have good knowledge of how my child eating unhealthy foods (or using marijuana) could increase the chances of chronic illness." The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

3.11. Worry

Parents' worry of unhealthy eating and marijuana use by their child was assessed with a measure adapted from prior research (Cameron, 2008; Cameron et al., 2013; Khachikian & Cameron, 2018). The measure includes 18 items (i.e., 9 unhealthy eating, 9 marijuana use). Some examples of items include "To what extent are you concerned about your child eating unhealthy foods (or using marijuana)?", "How important is it to you that your child eat healthy foods (or not use marijuana)?", "To what extent are you worried about the harms of your child eating unhealthy foods (or using marijuana)?", and "How concerned are you about your child getting each of the following conditions at some time in their life?" The items for unhealthy eating were cancer, heart disease, diabetes, obesity, and influenza, while the items for marijuana use were addiction, lung cancer, memory problems, sleep disturbances, and poor academic performance. The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 0 (*not at all*) to 6 (*extremely*).

3.12. Intentions

The measure of parental intentions to discuss unhealthy eating and marijuana use with their child was adapted from established measures of behavioral intentions (Ajzen, 2002; Gibbons & Gerrard, 1995; Khachikian & Cameron, 2018). The measure includes 6 items (i.e., 3 unhealthy eating, 3 marijuana use). The items were: "In the next four weeks,

to what extent do you plan to discuss unhealthy eating (or marijuana use) with your child?", "In the next four weeks, to what extent will you try to discuss unhealthy eating (or marijuana use) with your child?", and "In the next four weeks, how likely is it that you will discuss unhealthy eating (or marijuana use) with your child?" The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 1 (*not at all*) to 5 (*definitely*).

3.13. Willingness

Parents' willingness to discuss unhealthy eating and marijuana use was adapted from measures used to assess similar constructs such as cigarette smoking (Gibbons & Gerrard, 1995) as well as marijuana use (Khachikian & Cameron, 2018). The measure includes 6 items (i.e., 3 unhealthy eating, 3 marijuana use). The measure began with the following stem: "Your child wants to attend a party in four weeks where there would be unhealthy foods (such as, soda, fried foods, chips, candy, ice cream, etc.; or marijuana). The items were: "How willing would you be to ask your child to not attend the party within the next four weeks?", "How willing would you be to discuss unhealthy eating (or marijuana use) with your child over the next four weeks?", and "How willing would you be to discuss potential concerns about unhealthy eating (or marijuana use) with your child over the next four weeks?" The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from 1 (*very unwilling*) to 5 (*very willing*).

3.14. Past Discussion of Unhealthy Eating and Marijuana Use with Child

Parent's past discussion behavior was adapted from measures used to assess similar constructs, e.g., alcohol and tobacco use (Ennett, Bauman, Foshee, Pemberton, & Hicks, 2001). The measure includes 16 items (i.e., 8 unhealthy eating, 8 marijuana use). Some examples of items include: "In the past 6 months, how many times did you talk to your child about the negative consequences of unhealthy eating (or marijuana use)?", "In the past 6 months, how many times did you talk to your child about peer pressure to eat unhealthy foods (or to use marijuana)?", "In the past 6 months, how many times did you try to encourage your child to eat healthy (or not to use marijuana)?", and "In the past 6 months, how many times did you tell your child to eat healthy (or not to use marijuana)?" The unhealthy eating items were combined together, whereas the marijuana use items were combined together. Item ratings ranged from from 1 (*0 times*) to 4 (*3 or more times*).

4. Statistical Analyses

Preliminary, descriptive analyses were conducted on demographic and personal characteristics of study participants and on parent reports of their child's unhealthy and marijuana use behaviors. To address Aim 1, we conducted descriptive analyses on parent reports of their past discussions of unhealthy eating and marijuana use with their child. To address Aim 2, we initially conducted descriptive and correlational analyses of attachment styles and parenting styles, then correlational analyses of parent-child communication, perceived risks of unhealthy eating and marijuana use, prototypes of unhealthy eating and marijuana use, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, worry of unhealthy eating and marijuana use, intentions of unhealthy eating and marijuana use, willingness of unhealthy eating and marijuana use, and past discussion of unhealthy eating and marijuana use.

After, we conducted regression analyses to test the relationships of attachment styles, parenting styles, parent-child communication, perceived risks, prototypes, self-efficacy, coherence, worry, intentions, willingness, and past discussions of behaviors with child as delineated by the expanded model in Figure 1b. Structural equation modeling was not conducted as the sample size was not large enough. To address Aim 3, we conducted a repeated measures ANOVA with Bonferroni post-hoc tests to examine the relationship between child age group-related differences in how much parents discuss unhealthy eating versus marijuana use. All analyses were conducted with SPSS 24.0 statistical software.

5. Results

5.1. Parent Reports on Child's Unhealthy Eating and Marijuana Use

Table 1b presents the means of parent reports on their child's unhealthy eating and marijuana use behaviors in the past week. The highest ratings overall for unhealthy eating included parents reporting that their child ate vegetables; fruits; red or processed meat; and desserts and other sweets. Parents overall were not likely to think that their child ate seasoned vegetables or potatoes with butter or drank soda, sweet tea, or coffee. For marijuana use, the highest ratings overall included parents reporting that their child will use marijuana if their friend offers it and that their child will use marijuana in the next year. Parents overall were not likely to think that their child had used marijuana in the past or that their child had used marijuana on 100 or more occasions.

5.2. Parent Reports on Past Discussions about Unhealthy Eating and Marijuana Use

Table 1c presents the means of parent past discussions about unhealthy eating and marijuana use with their children. The three phrases with the highest ratings overall for both unhealthy eating and marijuana use included encouraging your child to eat healthy (93%) and not to use marijuana (58%); telling your child to eat healthy (88%) and not to use marijuana (56%); and negative consequences of unhealthy eating (85%) and marijuana use (63%). Less than half of parents discussed media portrayals of unhealthy eating or marijuana use; punishments of unhealthy eating and marijuana use; and choosing friends who eat healthy or who do not use marijuana. Overall, 51% of parents did not talk about unhealthy eating (i.e., combined score of unhealthy eating items) and 56% did not talk about marijuana use in the past 6 months (i.e., combined score of marijuana use items).

5.3. Attachment and Parenting Styles Descriptive and Correlational Analyses

Descriptive analyses revealed that parents gave higher ratings for attachment avoidance (M = 3.74, SD = 1.25) as compared with attachment anxiety (M = 1.90, SD = 1.35). Parents were most likely to rate their parenting style as authoritative (M = 4.00, SD = .62), followed by permissive (M = 1.91, SD = .65), and lastly authoritarian (M = 1.71, SD = .60).

Table 1d presents the zero-order correlations for the measures of attachment anxiety, attachment avoidance, authoritative parenting, authoritarian parenting, and permissive parenting. For attachment anxiety, there was a position correlation with authoritarian parenting and permissive parenting, and a negative correlation with authoritative parenting. Attachment avoidance was also negatively correlated with authoritative parenting. Authoritative parenting was negatively correlated with

authoritarian parenting and permissive parenting. While, authoritarian parenting was positively correlated with permissive parenting.

5.4. Unhealthy Eating and Marijuana Use Correlational Analyses

Table 1e presents the zero-order correlations for the measures of parent-child communication, perceived risks of unhealthy eating, negative prototypes of unhealthy eating, self-efficacy of unhealthy eating, coherence of unhealthy eating, worry of unhealthy eating, intentions of unhealthy eating, willingness of unhealthy eating, and past discussion of unhealthy eating with child. For unhealthy eating, parent-child communication exhibited positive correlations with negative prototypes, worry, intentions, willingness, and past discussion behavior. Perceived risks of unhealthy eating was positively correlated with self-efficacy, coherence, worry, intentions, willingness, and past discussion. Negative prototypes of unhealthy eating were positively correlated with worry, willingness, and past discussion. Self-efficacy of unhealthy eating was positively correlated with coherence, worry, intentions, and past discussion. Coherence of unhealthy eating was positively correlated with worry and intentions. Worry of unhealthy eating correlated positively with intentions, willingness, and past discussion. Intentions and willingness of unhealthy eating were positively associated with one another and both were positively correlated with past discussion behavior.

Table 1f presents the zero-order correlations for the measures of parent-child communication, perceived risks of marijuana use, negative prototypes of marijuana use, self-efficacy of marijuana use, coherence of marijuana use, worry of marijuana use, intentions of marijuana use, willingness of marijuana use, and past discussion of marijuana use with child. For marijuana use, parent-child communication exhibited positive correlations with negative prototypes, self-efficacy, worry, intentions, and past discussion behavior. Perceived risks of marijuana use was positively correlated with negative prototypes, self-efficacy, coherence, worry, intentions, willingness, and past discussion. Negative prototypes of marijuana use were positively correlated with self-efficacy, coherence, worry, intentions, willingness, and past discussion. Self-efficacy of marijuana use was positively correlated with coherence, worry, intentions, willingness, and past discussion. Coherence of marijuana use was positively correlated with worry and willingness. Worry of marijuana use correlated positively with intentions, willingness, and past discussion. Lastly, intentions and willingness of marijuana use were positively associated with one another and both were positively correlated with past discussion behavior.

5.5. Exploratory Regression Analyses

Regression analyses assessed the model-testing aims of Figure 1b. Initially, analyses of attachment styles (i.e., attachment anxiety and attachment avoidance) and parenting styles (i.e., authoritative, authoritarian, and permissive parenting styles) revealed that lower attachment anxiety ($R^2 = .24$, $F\ (2, 205) = 31.59$, $p < .01$) and lower attachment avoidance ($p < .001$) were associated with higher authoritative parenting. Whereas, higher attachment anxiety ($R^2 = .20$, $F\ (2, 205) = 26.25$, $p < .001$) was associated with higher authoritarian parenting style. In addition, higher attachment anxiety ($R^2 = .17$, $F\ (2, 205) = 20.80$, $p < .001$) was also associated with higher permissive parenting style.

Preliminary analyses focused on identifying the attachment styles (i.e., attachment anxiety and attachment avoidance) and parenting styles (i.e., authoritative, authoritarian, and permissive) that were most predictive of parent-child communication. Analyses revealed that higher authoritative parenting style ($R^2 = .32$, F (5, 202) = 19.40, $p < .001$) and higher authoritarian parenting style ($p < .01$) were significant predictors of parent-child communication. Whereas, attachment anxiety, attachment avoidance, and permissive parenting styles were not (p's > .05).

5.5.1. Unhealthy Eating Regression Analyses

Next, regression analyses were conducted on the model paths for the variables of parent-child communication, self-efficacy of unhealthy eating, coherence of unhealthy eating, worry of unhealthy eating, intentions of unhealthy eating, willingness of unhealthy eating, and past discussion behavior of unhealthy eating with child. Each analysis included all proximal and distal variables in the model that were predicted to have direct or indirect paths with the dependent measure. The analysis was repeated, taking out the non-significant variable with the lowest beta coefficient, until the model included only significant predictor variables.

Table 1g presents the results of the regression analyses for unhealthy eating measures. Higher authoritative parenting style and lower authoritarian parenting style were associated with higher self-efficacy of unhealthy eating. Higher perceived risks of harms of unhealthy eating was associated with higher coherence of unhealthy eating and higher worry of unhealthy eating. While, more negative prototypes of unhealthy eating were associated with higher worry of unhealthy eating. Higher authoritative parenting style and higher worry about unhealthy eating were associated with higher intentions to discuss unhealthy eating with child. Higher parent-communication, higher perceived risks of harms of unhealthy eating, more negative prototypes of unhealthy eating, and higher worry of unhealthy eating were associated with higher willingness to discuss unhealthy eating with child. Lastly, higher authoritative parenting style, higher authoritarian parenting style, higher parent-child communication, more negative prototypes of unhealthy eating, higher self-efficacy of unhealthy eating, and higher intentions of unhealthy eating were associated with higher levels of past discussion of unhealthy eating with child.

5.5.2. Marijuana Use Regression Analyses

Similarly, regression analyses were conducted on the model paths for the variables of parent-child communication, self-efficacy of marijuana use, coherence of marijuana use, worry of marijuana use, intentions of marijuana use, willingness of marijuana use, and past discussion behavior of marijuana use with child. Each analysis included all proximal and distal variables in the model that were predicted to have direct or indirect paths with the dependent measure. The analysis was repeated, taking out the non-significant variable with the lowest beta coefficient, until the model included only significant predictor variables.

Table 1h presents the results of the regression analyses for the marijuana use measures. Higher authoritative parenting style was associated with higher self-efficacy of marijuana use. Higher perceived risks of harms of marijuana use and more negative prototypes of marijuana users were associated with higher coherence of marijuana use. Higher perceived risks of harms of marijuana use was associated with higher worry of

marijuana use. Higher parent-child communication, higher perceived risks of harms of marijuana use, higher coherence of marijuana use, and higher worry about marijuana use were associated with higher intentions to discuss marijuana use with child. Higher self-efficacy of marijuana use was associated with higher willingness to discuss marijuana use with child. In addition, higher parent-child communication, higher perceived risks of harms of marijuana use, higher self-efficacy of marijuana use, higher coherence of marijuana use, and higher intentions of marijuana use were associated with higher levels of past discussion of marijuana use with child.

5.5.3. Summary of Regression Analyses Testing the Adapted PWM

The two sets of analyses testing the adapted PWM for parental discussions of unhealthy eating and marijuana use with one's child yielded somewhat consistent patterns across the two behaviors and that provides support for the proposed model. Figures 1c and 1d illustrate the patterns of significant relationships yielded by these analyses for unhealthy eating and marijuana use. The figures include significant paths, non-significant paths, and unpredicted significant paths.

Lastly, Figures 1e and 1f illustrate the final model for all significant paths for unhealthy eating and marijuana use. The common significant paths for both unhealthy eating and marijuana use included: (1) higher authoritative parenting style was associated with higher self-efficacy; (2) higher perceived risks of harms was associated with higher coherence and higher worry; (3) higher worry was associated with higher intentions; and (4) higher parent-child communication, higher self-efficacy, and higher intentions were associated with higher levels of past discussion of behavior.

The significant paths for unhealthy eating included (i.e., not in common with marijuana use): (1) lower authoritarian parenting style was associated with higher self-efficacy of unhealthy eating; (2) more negative prototypes of unhealthy eating were associated with higher worry of unhealthy eating; (3) higher authoritative parenting style was associated with higher intentions to discuss unhealthy eating with child; (4) higher parent-communication, higher perceived risks of harms of unhealthy eating, more negative prototypes of unhealthy eating, and higher worry of unhealthy eating were associated with higher willingness to discuss unhealthy eating with child; and (5) higher authoritative parenting style, higher authoritarian parenting style, and more negative prototypes of unhealthy eating were associated with greater past discussion of unhealthy eating with child.

The significant paths for marijuana use included (i.e., not in common with unhealthy eating): (1) more negative prototypes of marijuana users was associated with higher coherence of marijuana use; (2) higher parent-child communication, higher perceived risks of marijuana use, and higher coherence of marijuana use were associated with higher intentions to discuss marijuana use with child; (3) higher self-efficacy of marijuana use was associated with higher willingness to discuss marijuana use with child; and (4) higher perceived risks of harms of marijuana use and higher coherence of marijuana use were associated with greater past discussion of marijuana use with child.

5.6. Repeated Measures ANOVA

Finally, repeated measures ANOVA was conducted testing the main and interactive effects of Child's Age Group and Behavior (i.e., unhealthy eating and marijuana use). Child's age was measured in two groups, the first group included those

between 10 to 13 years old (unhealthy eating M = 11.7, SD = .59, marijuana use M = 11.3, SD = .83) and the second group included 14 to 17 years old (unhealthy eating M = 15.7, SD = .75, marijuana use M = 16.4, SD = .87).

The analysis revealed a Behavior effect (F (1, 206) = 8.49, $p < .01$) and an overall interaction effect for Behavior X Child Age Group (F (1, 206) = 25.07, $p < .001$). This indicated that the difference between discussion of unhealthy eating and marijuana use varied as a function of the child's age. Bonferroni corrected post-hoc tests showed that unhealthy eating discussions were significantly higher for parents of younger children than for parents of older children and marijuana use discussions were significantly higher for parents of older children than for parents of younger children.

6. Discussion

This study initially gathers information on the extent of parental discussions of unhealthy eating and marijuana use with their children (i.e., Aim 1). Descriptive analyses revealed that, of the past discussions about unhealthy eating and marijuana use, parents' reported greater ratings of encouraging child to eat healthy or not use marijuana; telling child to eat healthy or not use marijuana; and discussing the negative consequences of unhealthy eating and marijuana use. Of importance is that more than half of parents did not discuss the behaviors of unhealthy eating (i.e., 56%) or marijuana use (i.e., 51%) in the past 6 months. By supporting our hypothesis that parents were less likely to report past discussions of unhealthy eating and marijuana use with their child, this extends the possible benefits of developing discussion tools that would provide parents with guidance on how to have these discussions with their children.

Next, this study provides new evidence about the proposed relationships of the extended PWM framework on parental discussions of unhealthy eating and marijuana use (i.e., Aim 2). The study focused on the associations of attachment styles, parenting styles, parent-child communication, perceived risks, prototypes, self-efficacy, coherence, worry, intentions, willingness, and past discussions of unhealthy eating and marijuana use with one's child. The findings, which yielded patterns of relationships that were mostly in line with the adapted PWM predictions, further replicate and extend prior research in several ways.

First, the association of attachment styles and parenting styles adds an interesting adaptation to the model. For instance, lower levels of attachment anxiety and attachment avoidance were associated with higher authoritative parenting, while higher levels of attachment anxiety were associated with more authoritarian and permissive parenting. This parallels previous literature on the relationship of higher levels of secure attachment and authoritative parenting style (Doinita & Maria, 2015; Karavasilis et al., 2003; Millings et al., 2013), and between higher levels of attachment anxiety and authoritarian and permissive parenting styles (Connor, 1980; Elicker et al., 1992). There was not a significant relationship between greater attachment avoidance and authoritarian and permissive parenting styles. Authoritative parenting was a significant predictor of parent-child communication, whereas attachment anxiety, attachment avoidance, and permissive parenting were not. Several studies have found a positive association between authoritative parenting and increased open parent-child communication about problems (Maccoby & Martin, 1983; Baumrind, 1991).

On the contrary, higher levels of authoritarian parenting were also associated with more parent-child communication. It could be that authoritarian parents are also inclined to talk to their kids about risky behaviors, but perhaps they are doing so in potentially harmful or ineffective ways, and may benefit from tools on how to effectively engage in these discussions. Consistent with hypotheses, higher authoritative parenting was associated with higher self-efficacy of unhealthy eating and marijuana use. Other studies have also found a parallel association with authoritative parents often times displaying more confidence in dealing with challenges their child faces (e.g., poor academic performance) as compared with authoritarian and permissive parents (Llorca, Cristina Richaud, & Malonda, 2017). A significant association for only unhealthy eating was for lower authoritarian parenting style and higher self-efficacy of unhealthy eating, which is consistent with previous literature testing these relationships in similar contexts (Llorca et al., 2017).

Greater perceived risks of harms of unhealthy eating and marijuana use were associated with higher coherence and higher worry of unhealthy eating and marijuana use. These findings are consistent with, and extend, prior research on the influence of higher perceived risks of the harms of marijuana use in predicting higher worry of marijuana use (Cameron, 2008; Khachikian & Cameron, 2018; Loewenstein et al., 2001), and now can extend to unhealthy eating. For unhealthy eating, another significant association included more negative prototypes of unhealthy eating and higher worry of unhealthy eating. Relatedly, negative prototypes have been shown to predict higher worry about one's child using marijuana (Khachikian & Cameron, 2018). Interestingly, there was not an association between negative prototypes of marijuana users and worry of marijuana use in this study, however, there was a positive association with higher coherence of marijuana use.

Parental worry of unhealthy eating and marijuana use were positively associated with stronger intention motivations to discuss these behaviors with their child. This adds to prior research of worry in motivating a protective response (Cameron, 2008; Cameron & Diefenbach, 2001), e.g., discouraging marijuana use (Khachikian & Cameron, 2018). For unhealthy eating, there was also an unpredicted (significant) association between authoritative parenting style with intentions to discuss unhealthy eating with child. While for marijuana use, higher coherence was associated with discussion intentions of marijuana use, as well as an unpredicted (significant) association with more parent-child communication, and greater levels of perceived risks and coherence of marijuana use. These findings provide further support for the positive relationship of intention motivations in predicting discussions of unhealthy eating and marijuana use.

There was also a significant association between higher worry of unhealthy eating with higher willingness to discuss unhealthy eating with one's child. Additionally, unpredicted (significant) associations of higher levels of parent-child communication and perceived risks of harms of unhealthy eating, and more negative prototypes of unhealthy eating were positively associated with discussion willingness of unhealthy eating. For marijuana use, there was also an unpredicted (significant) association for higher self-efficacy of marijuana use with higher willingness to discuss marijuana use with child. This contributes to growing evidence that worry directly drives motivations to engage in

health-protective actions (Cameron, 2008; Cameron et al., 2001; Khachikian & Cameron, 2018).

For intentions of unhealthy eating and marijuana use, there was a positive association with past discussion of unhealthy eating and marijuana use. These findings are in line with the substantial body of evidence that intentions are associated with health-related behaviors (Khachikian & Cameron, 2018; Webb & Sheeran, 2006). The predicted path of willingness did not associate with past discussion of unhealthy eating or marijuana use. Previously, willingness has been found to predict risky health behaviors (Gerrard et al., 2008), however, this might not extend to the behavior of discussing unhealthy eating and marijuana use with one's child. Other studies have also found this to be true for willingness and discussion behavior path for marijuana use (Khachikian & Cameron, 2018). One possibility is that parents may be more likely to participate in premeditated discussions (i.e., intentions) with their child about health-related behaviors as compared with impulsive discussions (i.e., willingness). There were also unpredicted (significant) associations of higher levels of authoritative and authoritarian parenting styles, and more negative prototypes of unhealthy eating with past discussion of unhealthy eating with child. While, greater perceived risks of harms and coherence of marijuana use were associated with past discussion of marijuana use with child.

These present study findings can possibly serve as useful standards for developing discussion tools that include measures of parenting styles and PWM framework factors, in an effort to assist discussions of unhealthy eating and marijuana use with one's child. Since, attachment styles did not predict any of the behaviors, it will not be included in the parenting-framed messages developed in Study 2 or the tools developed in Study 3. Although, they did have associations with parenting styles (e.g., low attachment avoidance, and low attachment anxiety with authoritative parenting), and this association will be tested with correlational analyses in Study 2. These results support the potential utility of framing discussion tools with authoritative parenting style, but given that authoritarian style was also associated with motivations for discussion behaviors, it could be that an authoritarian-framed message might be helpful as well. Therefore, all three of the parenting styles will be further tested in Study 2 with youth.

Lastly, this study evaluates child-age group differences in discussions of unhealthy eating and marijuana use (i.e., Aim 3). Discussion levels varied by child's age, with parents of younger children discussing unhealthy eating, and parents of older children discussing marijuana use. With support of our hypothesis, it could be that parents may not discuss unhealthy eating with older kids, as they may feel that they are independent and can make their own decisions (Boutelle et al., 2001; Koivisto & Sjoden, 1996). However, adolescents across all age groups are likely to eat unhealthy (Boutelle et al., 2001; National Center for Health Statistics, 2015), and respond well to recommendations on diet (Borraccino et al., 2016). In contrast, parents may be less likely to think that their children use marijuana at younger ages. In recent years, marijuana initiation is more likely to begin at younger ages (i.e., 10-13 years old) with a decrease in perceived likelihood of harm of marijuana use (Substance Abuse and Mental Health Services Administration, 2014). Given the changing landscape of marijuana legalization, it is imperative to continue to consider all age groups. Therefore, implementing a discussion tool that could provide parents with the necessary guidance to engage in

communication about risky behaviors, regardless of their child's age group, is an important first step.

Strengths of the present study include its focus on parent motivations to discuss unhealthy eating and marijuana use and its contributions to further inclusion of the parenting styles and revised PWM factors in motivating discussions about these behaviors, in a sample of parents in the United States. The association of parenting styles in motivating protective responses is essential to consider for development of discussion tools, and will be further tested in Study 2 and 3. Another strength is the use of MTurk, which has become a popular method used for recruiting large heterogeneous samples such as parents of adolescents from across the nation as has been demonstrated in several published psychological studies (Gosling & Mason, 2015; Mason & Suri, 2012; Weinberg, Freese, & McElhattan, 2014).

Limitations of this study require consideration when interpreting the results and point to directions for future research. First, the results may not be representative of all parents across the nation or in other countries, as it consisted predominantly of Non-Hispanic White and well-educated participants. Second, the findings may not be generalizable to all parents, particularly as we focused primarily on parents of children ages 10 to 17 years old. Further research utilizing random samples of parents in the United States is needed especially with the changing landscape of marijuana legalization laws. A last limitation is that discussion behavior is measured as a past behavior rather than future behavior. However, the observed relationships of predictor variables with past behavior are likely to hold for future behavior as an individual's behavior is fairly consistent, and typical behaviors, are more predictive than uncommon behaviors (Ajzen, 2005; Albarracín & Wyer, 2000; Ouellette & Wood, 1998; Singh et al., 2014). Nevertheless, additional research is needed to test the predictive associations of the PWM factors on discussion behavior in the future.

7. Conclusion

To conclude, the findings mostly supported the hypothesized relationships delineated by adapted PWM, suggesting its potential utility in understanding parent motivations to engage in discussions with their child about unhealthy eating and marijuana use. The present study contributes new data indicating that, in a sample of Americans with adolescents, some parents are likely to engage in past discussion of unhealthy eating and marijuana use with their child through mechanisms such as communication of protective actions for unhealthy eating and marijuana use, and negative consequences of engaging in those behaviors. However, a good proportion of parents have trouble engaging in these types of discussions, and thus, there is a need for a discussion tool. Parents who struggle to have these conversations might benefit from tools on how to openly engage in these discussions with their child. Such tools can focus on applying interpersonal factors, e.g., perceived risks of harms of and worry of the social harms associated with unhealthy eating and marijuana use, to provide specific guidelines on what these conversations should focus on.

There is a need for more effective discussion tools of unhealthy eating and marijuana use that targets ways in which parents (i.e., based on parenting styles) could have more effective discussions with their children centered on unhealthy eating and marijuana use. And thus, the present findings were utilized to develop communication

strategies aimed at promoting discussions of unhealthy eating and marijuana use in Study 2. There was further support of the potential utility of framing discussion tools in authoritative style, but given that authoritarian style was also associated with motivations for discussion behaviors, it could be that an authoritarian-framed message might be helpful as well. It therefore remains an empirical question as to whether an authoritatively framed tool would be more persuasive and efficacious than an authoritarian-framed message or permissive-framed message. These approaches were applied to Study 2 discussed further in Chapter 3.

CHAPTER THREE

STUDY II

1. Introduction

This chapter begins with a description of Study 2 including aims and hypotheses; methods (i.e., participants, design, and procedure); discussion of manipulations (i.e., parenting-framed messages); detailed list of measures; overview of statistical analyses; results, discussion, and conclusion of study.

Results from Study 1 suggested that parent motivations to discuss unhealthy eating and marijuana use with their child may be influenced by their parenting dynamics (e.g., parenting styles), and other cognitive factors (e.g., self-efficacy, coherence, worry, intentions). There is a need to develop a discussion tool that could be used by parents to engage in discussions with their children centered on these behaviors. One of the unique aspects of this tool is the inclusion of parenting-framed messages that was developed using characteristics of the parenting styles of authoritative, authoritarian, and permissive (i.e., Study 2). These messages were assessed in order to figure out which parenting-framed message (i.e., authoritative, authoritarian, or permissive) was rated most effective to be used in the discussion tool for Study 3 with parents. The parenting-framed messages were developed by an attribute list of the three parenting styles (i.e., authoritative, authoritarian, and permissive) so that each characteristic was addressed with each respective message (see Figure 2a). Prior to testing these parenting-framed messages with parents, it is important to test the acceptability of these messages with youth. The focus is on youth ages 18 to 20 years old, as this age group is close to minors. More so, they will better articulate responses to parenting-framed messages with a more enhanced perspective as compared to a younger age group.

Importantly, Study 2 tests the receptivity by a child to the parenting-framed message based on the perceived parenting styles of one's parent, whereas Study 3 tests the receptivity of the parent to use the discussion tools of unhealthy eating and marijuana use based on the parent's perceived parenting style. This study also tests the associations of the attachment styles (i.e., attachment anxiety and attachment avoidance) and parenting styles (i.e., authoritative, authoritarian, and permissive parenting styles) as perceived about one's parent. Therefore, in Study 2 we assessed the parenting styles of one's parent, while in Study 1 and Study 3 we assessed parenting styles with one's child. Since, there may be variation across parent and child populations with regards to reports on parents' parenting styles, it was important to test them both.

The study aims were to: (Aim 1) test the associations of the perceived attachment styles with a parent and the perceived parenting styles of the parent; (Aim 2) test the associations of attachment styles and parenting styles on perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity; and (Aim 3) test the relationship of parenting-framed messages of unhealthy eating and marijuana use on perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity.

For Aim 1, we tested hypotheses that: (a) lower attachment anxiety and lower attachment avoidance will be associated with higher authoritative parenting style; and (b) higher attachment anxiety and higher attachment avoidance will be associated with

higher authoritarian parenting style and permissive parenting style. For Aim 2, we tested hypotheses that: (a) lower attachment anxiety, lower attachment avoidance, and higher authoritative parenting style will be associated with higher perceived effectiveness, higher perceived interpretability, higher motivations to discuss behavior, and higher discussion similarity for authoritative messages of unhealthy eating and marijuana use compared to lower authoritarian parenting style and lower permissive parenting style; and (b) higher attachment anxiety, higher attachment avoidance, higher authoritarian parenting style, and higher permissive parenting style will be associated with higher perceived effectiveness, higher perceived interpretability, higher motivations to discuss behavior, and higher discussion similarity for authoritarian and permissive messages of unhealthy eating and marijuana compared to lower authoritative parenting style. For Aim 3, we tested hypotheses that: (a) higher perceived effectiveness, higher perceived interpretability, higher motivations to discuss behavior, and higher discussion similarity will be associated with higher authoritative parenting-framed messages for unhealthy eating and marijuana use compared to lower authoritarian parenting-framed messages and lower permissive parenting-framed messages; and (b) these message differences will be stronger for authoritative parenting style than for authoritarian parenting style or permissive parenting style.

2. Methods

2.1. Participants

The university's institutional review board approved the study protocol. Participants were recruited through the university online research participation site (i.e., SONA System) to undergraduate students who are between the ages of 18 to 20 years old at the University of California, Merced. In total, 393 participants provided informed consent and were able to complete the study. Overall, participants were approximately 19 years of age on average and predominantly Hispanic with over 72% identifying as women and lowerclassmen (e.g., freshmen, sophomore; see Table 2a).

2.2. Design

The study utilized a 3 X 2 within-subjects design, with parenting-framed messages (i.e., authoritative, authoritarian, and permissive) and the conditions of unhealthy eating and marijuana use. After completing measures of demographic and personal characteristics, and unhealthy eating and marijuana use, participants viewed a series of parenting-framed messages through counterbalancing.

2.3. Procedure

Participants responded to questions about measures of demographic and personal characteristics, unhealthy eating and marijuana use, attachment and parenting styles, and parenting-framed messages. Participants viewed a total of six messages, and then rated the messages on perceived effectiveness, perceived interpretability, and motivations to discuss the behavior, and discussion similarity. The six messages were counterbalanced, with every participant viewing all three parenting-style message within in each of the two behavior conditions. Participants were randomly assigned to one of two behavior conditions (i.e., unhealthy eating first vs. marijuana use first), which were presented in random order to each group. For instance, one group was tested with unhealthy eating followed by marijuana use, and the second group was tested with marijuana use followed by unhealthy eating, and vice versa. Following the survey completion, participants read a

brief explanation of the study and received links to websites of national health organizations with information about unhealthy eating and marijuana use. They then received SONA credit (i.e., credit for classes) for their participation in the survey. Data were collected in November 2017.

3. Parenting-Framed Messages (i.e., Manipulations)

These parenting-framed messages were developed with guidelines from previous research focusing on parenting styles (Baumrind, 1966, 1967; Cherry, 2016) and attitudes and perceptions of adolescent risky behaviors (Cameron et al., 2013; Cameron & Williams, 2015; Khachikian & Cameron, 2018; see Figure 2a). The messages were framed with respect to either of the parent's (i.e., mother or father) or caregiver whom the participant identified with. Before viewing the messages, each participant was asked to identify which parent or caregiver they will be thinking of when answering the questions. Each message differed with respect to the parenting style measured (i.e., authoritative, authoritarian, and permissive).

The messages began with the following guidelines: "We are interested in understanding the observations that instantly enter your mind if your parent or caregiver was to have this conversation with you about certain behaviors. When answering these questions, please consider one of your parents or caregiver. Remember that it is your immediate impressions that we are interested in when you read the message." Below we include the three parenting-framed messages of unhealthy eating and marijuana use.

3.1. Unhealthy Eating Messages

Authoritative Parenting Style: "I wanted to have a conversation with you about unhealthy eating because I care about you. I want to make sure that we both have an equal opportunity to express our feelings to each other about unhealthy eating in a respectful matter. So, I am curious to know if you think eating unhealthy is harmful to you. Is there anything you have heard or seen in school, movies, or music about unhealthy eating? I want you to feel safe to communicate any feelings you may have towards unhealthy eating with me, I am here for you. Please know that you are in a safe place to communicate your feelings."

Authoritarian Parenting Style: "We are having a conversation about unhealthy eating because it is harmful to you and your health. You will listen to me and do as I say, because I am your parent and my opinion about this is what matters most. So, I want you to know that eating unhealthy is very harmful to you and I do not want you to ever try it. Is there anything you have heard or seen in school, movies, or music about unhealthy eating? You need to tell me this because if you don't you could get in a lot of trouble in school and at home."

Permissive Parenting Style: "I was wondering if it would be possible to have a conversation with you about unhealthy eating? I am not sure if you want to talk about this, do you think it would be okay? But, then again, we should have this conversation. So, I am curious to know what you think about eating unhealthy and if it is harmful to you. Is there anything you have heard or seen in school, movies, or music about unhealthy eating? If you don't want to talk to me about this, I guess it is okay. But if you do talk to me about this I will make sure to make your favorite dinner and take you to the movies."

3.2. Marijuana Use Messages

Authoritative Parenting Style: "I wanted to have a conversation with you about marijuana use because I care about you. I want to make sure that we both have an equal opportunity to express our feelings to each other about marijuana use in a respectful matter. So, I am curious to know if you think marijuana is harmful to you. Is there anything you have heard or seen in school, movies, or music? I want you to feel safe to communicate any feelings you may have towards marijuana use with me, I am here for you. Please know that you are in a safe place to communicate your feelings."

Authoritarian Parenting Style: "We are having a conversation about marijuana use because it is harmful to you and your health. You will listen to me and do as I say, because I am your parent and my opinion about this is what matters most. So, I want you to know that marijuana is very harmful to you and I do not want you to ever try it. Is there anything you have heard or seen in school, movies, or music? You need to tell me this because if you don't you could get in a lot of trouble in school and at home."

Permissive Parenting Style: "I was wondering if it would be possible to have a conversation with you about marijuana use? I am not sure if you want to talk about this, do you think it would be okay? But, then again, we should have this conversation. So, I am curious to know what you think about marijuana and if it is harmful to you. Is there anything you have heard or seen in school, movies, or music? If you don't want to talk to me about this, I guess it is okay. But if you do talk to me about this I will make sure to make your favorite dinner and take you to the movies."

4. Measures

The following measures from Study 1 were also included in Study 2: demographic and personal characterisitcs, child's unhealthy eating, child's marijuana use, and ECR-RS (i.e., this measure was revised to focus on relationship with parent; see Appendix A). Unless otherwise noted, the items were reverse-scored as needed and averaged to generate total scores. Additional measures in the survey are as follows.

4.1. Parenting Authority Questionnaire (PAQ)

This measure derived from Buri (1991) and is a reliable measurement for assessing perception of parenting styles of authoritative, authoritarian, and permissive. Previous research has focused on the importance of investigating both parent (i.e., PSDQ; Study 1) and child reports of the parents' parenting styles (Robinson et al., 1995) in order to accurately assess the typology of parenting styles across parent and child samples. The measure includes 60 items, 30 items referring to the mother, and 30 items referring to the father. We used an adapted version of the questionnaire that measured only 30 items by changing the wording of the items to refer to "parent." Prior to answering the questions for the PAQ, participants received an open-ended question that stated, "Please let us know which parent (i.e., mom, dad) or caregiver you are thinking of"

Then, the participant responded to the items included in the measure. Some examples of items include: "Whenever my parent told me to do something as I was growing up, he/she expected me to do it immediately without asking questions", "My parent has always felt that what I need is to be free to make up my own mind and to do what I want to do, even if this does not agree with what he/she might want", "As I was growing up, my parent did not allow me to question any decision he/she made", and "As the children in my family were growing up, my parent consistently gave us direction and

guidance in rational and objective ways." Items ratings ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

4.2. Perceived Effectiveness

The measure includes 5 items: "Overall, how effective is this message in motivating someone to talk to a parent about unhealthy eating (or marijuana use)?", "It would be appropriate for a parent to say this message to a son or daughter who is 10-17 years old", "It would be appropriate for a parent to say this message to a son or daughter who is 18-20 years old", "This message is relevant for youth ages 10-17 years old", and "This message is relevant for young adults 18-20 years old." Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

4.3. Perceived Interpretability

The measure includes 4 items: "This message is difficult to interpret", "This message is easy to understand", "This message is confusing", and "This message is clear." Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

4.4. Motivations to Discuss Behavior

The measure includes 4 items: "How much does this message persuade you to talk about unhealthy eating (or marijuana use) with your parent?", "How much does this message discourage you from wanting to talk about unhealthy eating (or marijuana use) with your parent?", "How much does this message make you want to talk about unhealthy eating (or marijuana use) with your parent?", and "How much does this message make you want to avoid talking with your parent about unhealthy eating (or marijuana use)?" Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

4.5. Discussion Similarity

The measure included 2 items: "If your parent were to ask you to have a discussion about unhealthy eating (or marijuana use), how much of it would be similar to this message?", and "If your parent were to ask you to have a discussion about unhealthy eating (or marijuana use), how likely is it that he or she would say something like this to you?" Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

5. Statistical Analyses

Preliminary, descriptive analyses were conducted on demographic and personal characteristics of study participants and on their unhealthy eating and marijuana use behaviors in the past week. To address Aim 1, we conducted descriptive and correlational analyses on participant responses to attachment styles with a parent, and the perceived parenting styles of the parent. To address Aim 2, we conducted correlational analyses of attachment styles, parenting styles, perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarly. To address Aim 3, we conducted a repeated measures ANOVA to test the acceptability of the parenting-framed messages for unhealthy eating and marijuana use on perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity. Following significant interactions, simple effects analyses were conducted. All analyses were conducted with SPSS 24.0 statistical software.

6. Results

6.1. Participant Reports on Unhealthy Eating and Marijuana Use

Table 2b presents the means of participant reports on unhealthy eating and marijuana use behaviors. For unhealthy eating, the highest ratings overall were those for

eating beans, chicken, or fish; eating fast food meals or snacks; eating red or processed meat; and eating regular snack chips or crackers. Participants overall were not likely to report consuming vegetables; or fruits. In this study, youth gave the lowest ratings for consuming vegetables and fruits, whereas in Study 1 parents gave the highest ratings for their children in consuming vegetables and fruits. For marijuana use, the highest ratings overall included participants reporting that they will use marijuana if a friend offers it and that they will use marijuana in the next year. Participants overall were not likely to report using marijuana in the past or using marijuana on 100 or more occasions.

6.2. Attachment and Parenting Styles Descriptive and Correlational Analyses

Descriptive analyses revealed that participants were most likely to rate their parent's higher in attachment avoidance (M = 3.19, SD = 1.57) as compared with attachment anxiety (M = 1.80, SD = 1.40). For parenting styles, participants gave higher ratings of authoritarian style (M = 3.37, SD = .76) and authoritative style (M = 3.26, SD = .71), followed by permissive style (M = 2.52, SD = .60).

Table 2c presents the zero-order correlations for the measures of attachment anxiety, attachment avoidance, authoritative parenting, authoritarian parenting, and permissive parenting. Attachment anxiety was positively correlated with attachment avoidance and authoritarian parenting, and negatively correlated with authoritative parenting. Attachment avoidance exhibited positive correlation with authoritarian parenting, and a negative correlation with authoritative parenting and permissive parenting. Authoritative parenting exhibited positive correlation with permissive parenting, and a negative correlation with authoritarian parenting. Authoritarian parenting was negatively correlated with permissive parenting.

6.3. Unhealthy Eating Correlational Analyses of Attachment Styles, Parenting Styles, Perceived Effectiveness, Perceived Interpretability, Motivations to Discuss Behavior, and Discussion Similarity

Table 2d presents the unhealthy eating zero-order correlations for the measures of attachment anxiety, attachment avoidance, authoritative parenting style, authoritarian parenting style, permissive parenting style, perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity. For attachment anxiety, there was a positive correlation with perceived effectiveness of authoritarian message, perceived interpretability of authoritarian message, and motivations to discuss unhealthy eating for authoritative, authoritarian, and permissive messages, and discussion similarity of authoritarian message. In contrast, it was negatively correlated with perceived effectiveness of authoritative message. For attachment avoidance, there was a positive correlation with discussion similarity of authoritarian message, and negative correlations with perceived effectiveness of authoritative message, motivations to discuss unhealthy eating for authoritative message, and discussion similarity of authoritative message.

For perceived authoritative style of the parent, there was a positive correlation with perceived effectiveness of authoritative message and discussion similarity of authoritative and permissive message; in contrast it was negatively correlated with perceived interpretability of authoritative message and discussion similarity of authoritarian message. For the perceived authoritarian style of the parent, there was a positive correlation with discussion similarity of authoritarian message. Perceived

permissive style of the parent was positively associated with perceived effectiveness of the authoritarian message, motivations to discuss authoritative message and permissive message, and discussion similarity of authoritative and permissive messages. In contrast, it was negatively correlated with perceived effectiveness of authoritative message and discussion similarity of authoritarian message.

6.4. Marijuana Use Correlational Analyses of Attachment Styles, Parenting Styles, Perceived Effectiveness, Perceived Interpretability, Motivations to Discuss Behavior, and Discussion Similarity

Table 2e presents the marijuana use zero-order correlations for the measures of attachment anxiety, attachment avoidance, authoritative parenting style, authoritarian parenting style, permissive parenting style, perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity. For attachment anxiety, there was a positive correlation with perceived effectiveness of authoritarian message, perceived interpretability of authoritative and authoritarian messages, and motivations to discuss marijuana use for permissive message, and discussion similarity of authoritarian message. In contrast, it was negatively correlated with discussion similarity of authoritative message. For attachment avoidance, there was a positive correlation with discussion similarity of authoritarian message and negative correlations with perceived effectiveness of authoritative message, and discussion similarity of authoritative message.

For perceived authoritative style of the parent, there was a positive correlation with perceived effectiveness of authoritative message and discussions similarity of authoritative and permissive messages; in contrast it was negatively correlated with perceived interpretability of permissive message and discussion similarity of authoritarian message. For the perceived authoritarian style of the parent, there was a positive correlation with discussion similarity of authoritarian message and negative correlations with discussion similarity of authoritative and permissive messages. Perceived permissive style of the parent was positively correlated with motivations to discuss marijuana use for authoritative message, and discussion similarity of authoritative and permissive messages. In contrast, it was negatively correlated with discussion similarity of authoritarian message.

6.5. Repeated Measures ANOVA

Repeated measures ANOVA's tested the main and interactive effects of Behavior (i.e., unhealthy eating and marijuana use) and Message (i.e., authoritative, authoritarian, and permissive) on perceived effectiveness, perceived interpretability, motivations to discuss behavior, and discussion similarity. Overall, 80% of participants answered the questions with regards to their mother.

6.5.1. Perceived Effectiveness

For perceived effectiveness, the analysis revealed a Message effect (F (2, 778) = 27.85, $p < .001$) and an overall interaction effect for Behavior X Message (F (2, 778) = 4.40, $p < .05$; see Figure 2b). Participants gave higher ratings of perceived effectiveness for the authoritative messages about marijuana use (M = 2.82, SD = .79) and unhealthy eating (M = 2.80, SD = .90) compared to the permissive messages for unhealthy eating (M = 2.22, SD = 1.13), and marijuana use (M = 2.19, SD = 1.17), and the authoritarian

messages for marijuana use (M = 1.47, SD = 1.08), and unhealthy eating (M = 1.33, SD = 1.10).

Simple main effects analyses revealed that the unhealthy eating and marijuana use messages scored higher for perceived effectiveness of authoritative messages compared to perceived effectiveness of authoritarian and permissive messages ($p < .001$). In addition, the unhealthy eating and marijuana use messages scored lower for perceived effectiveness of authoritarian messages compared to perceived effectiveness of permissive messages ($p < .001$).

6.5.2. Perceived Interpretability

For perceived interpretability, the analysis revealed a Message effect (F (2, 778) = 20.52, $p < .001$) and an overall interaction effect for Behavior X Message (F (2, 778) = 6.88, $p < .01$; see Figure 2c). Participants gave higher ratings of perceived interpretability for the authoritative message about marijuana use (M = 2.05, SD = .49) and perceived interpretability for the permissive message about unhealthy eating (M = 1.94, SD = .57) compared to perceived interpretability for the authoritative message about unhealthy eating (M = 1.92, SD = .54), perceived interpretability for the permissive message about marijuana use (M = 1.92, SD = .54), and perceived interpretability for the authoritarian messages about unhealthy eating (M = 1.86, SD = .57), and marijuana use (M = 1.83, SD = .79).

Simple main effects analyses revealed that the marijuana use message scored higher for perceived interpretability of authoritative message compared to perceived interpretability of authoritarian and permissive messages ($p < .001$). The unhealthy eating message scored higher for perceived interpretability of authoritative messages compared to perceived interpretability of authoritarian message ($p < .05$). Additionally, the unhealthy eating and marijuana use messages scored lower for perceived interpretability of authoritarian messages compared to perceived interpretability of permissive messages ($p < .001$).

6.5.3. Motivations to Discuss Behavior

For motivations to discuss behavior, the analysis revealed an overall interaction effect for Behavior X Message (F (2, 778) = 7.55, $p < .01$; see Figure 2d). Participants gave higher ratings of motivations to discuss for the authoritative messages about marijuana use (M = 1.92, SD = .70) and unhealthy eating (M = 1.83, SD = .66) compared to motivations to discuss for the authoritarian messages about unhealthy eating (M = 1.81, SD = .71) and marijuana use (M = 1.80, SD = .69), and motivations to discuss for the permissive messages about marijuana use (M = 1.79, SD = .68), and unhealthy eating (M = 1.78, SD = .64). Simple main effects analyses revealed that marijuana use message scored higher for motivations to discuss behavior for authoritative message compared to motivations to discuss behavior for authoritarian and permissive messages ($p < .05$). There were no significant main effects for unhealthy eating messages.

6.5.4. Discussion Similarity

For discussion similarity, the analysis revealed a Message effect (F (2, 778) = 28.76, $p < .001$) and an overall interaction effect for Behavior X Message (F (2, 778) = 20.70, $p < .001$; see Figure 2e). Participants gave higher ratings of discussion similarity for the authoritative messages about unhealthy eating (M = 1.91, SD = 1.19) and marijuana use (M = 1.84, SD = 1.29) compared to discussion similarity for the

authoritarian message about marijuana use (M = 1.56, SD = 1.30), discussion similarity for the permissive messages about unhealthy eating (M = 1.52, SD = 1.23) and marijuana use (M = 1.30, SD = 1.21), and discussion similarity for the authoritarian message about unhealthy eating (M = 1.24, SD = 1.23).

Simple main effects analyses revealed that the unhealthy eating and marijuana use messages scored higher for discussion similarity of authoritative messages compared to discussion similarity of authoritarian messages and permissive messages ($p < .001$). In addition, the unhealthy eating message scored lower for discussion similarity of authoritarian message compared to discussion similarity of permissive message ($p < .001$), and higher for marijuana use message of discussion similarity of authoritarian message compared to discussion similarity of permissive message ($p < .001$).

7. Discussion

Overall, participants were more likely to rate the authoritative parenting-framed messages of unhealthy eating and marijuana use as higher in effectiveness, interpretability, motivations to discuss the behavior, and discussion similarity compared to the authoritarian and permissive parenting-framed messages. Initially, this study explored the associations of attachment styles (i.e., attachment anxiety and attachment avoidance) and parenting styles (i.e., authoritative, authoritarian, and permissive parenting styles) as perceived about one's parent (i.e., Aim 1). It was found that lower attachment anxiety and lower attachment avoidance were associated with higher authoritative parenting styles. Several studies have found an association between secure attachment and authoritative parenting styles, where parents who display secure attachment are likely to practice an authoritative parenting style (Doinita & Maria, 2015; Millings et al., 2013). Whereas, lower secure attachment was associated with stronger preferences for the authoritarian-framed messages of unhealthy eating and marijuana use. These findings converge with previous evidence of a negative relationship between secure attachment and authoritarian parenting styles (Elicker et al., 1992; Millings et al., 2013). In contrast, lower secure attachment did not predict evaluations of permissive parenting-framed messages of unhealthy eating and marijuana use. These seem to be consistent with associations of attachment styles and parenting styles in Study 1.

The study mostly revealed a coherent pattern of significant associations of lower levels of attachment anxiety and attachment avoidance, and higher authoritative parents exhibiting greater acceptability (i.e., higher ratings of effectiveness, interpretability, motivations to discuss behavior, and discussion similarity) of authoritative parenting-framed messages of unhealthy eating and marijuana use compared to higher levels of attachment anxiety and attachment avoidance, and higher authoritarian and permissive parents exhibiting greater acceptability of the authoritarian and permissive parenting-framed messages (i.e., Aim 2). The parenting styles were as or more strongly associated with positive responses to the the parenting-framed messages compared to the attachment styles. These findings highlight the potential utility of framing the messages in accordance with parenting styles and how each of the styles had parallel comparisons to their own parenting-framed message (e.g.., authoritative parenting style and authoritative parenting-framed messages).

Subsequently, this study explored the relationship of parenting-framed messages of unhealthy eating and marijuana in terms of their perceived effectiveness, perceived

interpretability, motivations to discuss behavior, and discussion similarity (i.e., Aim 3). Importantly, participants were more likely to rate the authoritative parenting-framed messages of unhealthy eating and marijuana use as higher in effectiveness, interpretability, motivation to discuss the behavior, and discussion similarity. These effects were likely to hold for authoritative parenting-framed messages for both unhealthy eating and marijuana use, suggesting the significance of developing tools with inclusion of authoritative parenting characteristics to motivate parents to have discussions with their children about unhealthy eating and marijuana use. This directly supports the development of authoritatively-framed discussion tools implemented in Study 3, which directly incorporates the authoritative parenting-framed message used in Study 2. It further extends previous literature on the positive relationship of authoritative parenting style in motivating open communication about risky behaviors between parent and child (Maccoby & Martin, 1983; Baumrind, 1991).

Strengths of the present study include its focus on a largely unexplored area of youth acceptability of newly developed parenting-framed messages to motivate discussions of unhealthy eating and marijuana use with parents. A second strength is that previous literature has not focused on the development of theory-driven discussion tools and reactions to them by youth. Another potential strength is that the sample consisted of an ethnically diverse population. As a result, analyses were conducted to test for ethnic differences for message conditions, however there was no statistical significance.

Limitations of this study require consideration when interpreting the results. First, the results may not be representative of all the nation or other countries, as it consisted primarily of individuals ages 18 to 20 years old attending a university in Central California. Further research is needed to assess these discussion message effects with a broader age group range, geographic location, etc. Second, the utilization of self-report on personal questions of unhealthy eating behavior and marijuana use behaviors may lead to social desirability bias in participant responses. Finally, the study focused on participant responses to hypothetical scenarios; more research can further this line of inquiry by testing whether participants would have similar responses to actual communications with parents.

8. Conclusion

This study provides information on the relevance of authoritative parenting-framed messages in promoting parental discussions centered on unhealthy eating and marijuana use. Children and adolescents who struggle to have conversations with their parents about health risk behaviors might benefit from tools that are designed to teach parents how to engage in effective communication with their children about unhealthy eating or marijuana use. There is a need to develop a discussion tool that could be used by parents to engage in these discussions. The findings guide efforts that developed a discussion tool (i.e., including authoritative parenting framed-message) aimed at promoting parent and child discussion of unhealthy eating and marijuana use that took place in Study 3. These preliminary findings can be examined further in studies utilizing random samples of younger and older youth in the United States. It is important to continue to consider the elements that are important in motivating discussions about unhealthy eating or marijuana use, as this will postulate new approaches that can be applied to have more effective discussions between parents and their children.

CHAPTER FOUR

STUDY III

1. Introduction

This chapter begins with a description of Study 3 including aims and hypotheses; discussion of Pilot Study; methods (i.e., participants, design, and procedure); discussion of manipulations (i.e., tools); detailed list of measures; overview of statistical analyses; results, discussion, and conclusion of study.

Results from Study 2 provided evidence that the authoritative parenting-framed message on talking with one's parent about unhealthy eating and marijuana use was perceived by youth as the most effective in motivating discussions about these behaviors as compared with authoritarian and permissive parenting-framed messages. In particular, authoritative parenting style was associated with higher ratings of perceived effectiveness, perceived interpretability, motivations to discuss the behavior, and discussion similarity. These findings provided empirical justification to utilize the authoritative parenting-framed message within the context of the fuller tools that were developed in this study and administered to parents. The discussion similarity items were not tested in Study 3, as those questions were specific to youth in Study 2 with questions, such as, "If your parent were to ask you to have a discussion about unhealthy eating (or marijuana use), how much of it would be similar to this message?"

Attachment styles were not targeted by the tools for several reasons. First, Studies 1 and 2 demonstrated the stronger relevance of parenting styles as compared with attachment styles in dynamics influencing discussion motivations. In Study 1, attachment styles did not demonstrate significance with the model aims, while in Study 2, parenting styles were as or more strongly associated than attachment styles with the parenting-framed messages. Second, short-term and longer-term behaviors linked with parenting styles are theoretically more malleable than those linked with anxious and avoidant attachment styles. Messages framed according to a parenting style will be relatively easier to deliver, more accepted by a child, and more likely to have the intended effects of promoting the style-associated responses by the child.

Study 3 tested the efficacy of two discussion tools, one for promoting discussions of unhealthy eating and one for promoting discussions of marijuana use, each of which incorporated the respective authoritative message from Study 2. These tools were tested against a comparison communication that provided educational information about the harms of sedentary behavior. Images used in the three tools were paralleled to portray a range of parent-child relationships (i.e., mother-daughter, father-son), ethnicity (i.e., African-American, Asian), facial expressions (smiling), and activity (i.e., sitting, jogging) (see Figure 3a). The efficacy of the tools was tested by examining their immediate impact on the cognitive factors of perceived effectiveness; perceived interpretability; motivations to address the behavior; discussion self-efficacy; coherence in understanding; discussion intentions; and discussion willingness. Efficacy was also tested by examining the impact of the tools on behaviors of tool downloads for later use; reports on discussions of the behaviors four weeks later; and willingness to pay for the tool. Willingness to pay for a product is proven to be a strong predictor of whether or not a participant would be

motivated to use a product (i.e., tool) by purchasing it (Briedert, Hahsler, & Reutterer, 2006). This measure has been used to provide knowledge through customer responses about the potential purchase of a product, success of the design, and pricing decisions (Marn, Roegner, & Zawada, 2003). It provided us with information on whether our tools were effective enough that participants would be willing to pay money to utilize it.

This study furthered the examination of moderating influences of parenting style on tool conditions of unhealthy eating, marijuana use, and sedentary behavior, and cognitive (e.g., self-efficacy, intentions) and behavioral (e.g., discussion behavior) factors. The discussion tools of unhealthy eating and marijuana use included the authoritative parenting-framed message, making it essential to test if the parents that identified as being authoritarian or permissive would find these tools effective as well (see Appendix B). It further explored parental views about discussing unhealthy eating and marijuana use with their children and then tested the effects of discussion tools on parent's conversations with their children about these health risk behaviors. Participants included parents living in the United States who have children ages 10 to 17 years old. The study consisted of an initial survey, and then a follow-up survey four weeks later (see Participants and Procedure below).

The study aims were to: (Aim 1) test the effects of the unhealthy eating discussion tool, marijuana use discussion tool, and sedentary behavior tool (i.e., control) on perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, intentions of unhealthy eating, marijuana use, and sedentary behavior, willingness of unhealthy eating and marijuana use, tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, tool use, and willingness to pay for the tool; and (Aim 2) test the moderation effects of authoritative parenting style, authoritarian parenting style, and permissive parenting style on tool conditions of unhealthy eating, marijuana use, and sedentary behavior (i.e., control) and the dependent measures of perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, intentions of unhealthy eating, marijuana use, and sedentary behavior, willingness of unhealthy eating and marijuana use, tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, tool use, and willingness to pay for the tool.

For Aim 1, we tested hypotheses that: (a) the unhealthy eating discussion tool will lead to higher perceived effectiveness, higher perceived interpretability, higher motivations to address the behavior, higher self-efficacy of unhealthy eating, higher coherence of unhealthy eating, higher intentions of unhealthy eating, higher willingness of unhealthy eating, and higher willingness to pay for the tool compared to the sedentary behavior tool; (b) the marijuana use discussion tool will lead to higher perceived effectiveness, higher perceived interpretability, higher motivations to address the behavior, higher self-efficacy of marijuana use, higher coherence of marijuana use, higher intentions of marijuana use, higher willingness of marijuana use, and higher willingness to pay for the tool compared to the sedentary behavior tool; (c) the sedentary behavior tool will lead to higher intentions of sedentary behavior compared to the unhealthy eating discussion tool and marijuana use discussion tool; (d) the unhealthy

eating discussion tool and marijuana use discussion tool will not have message condition differences; (e) there will be a significant association for the unhealthy eating discussion tool and marijuana use discussion tool with tool download, discussion behavior of marijuana use and unhealthy eating, and tool use compared to the sedentary behavior tool; and (f) there will be a significant association for the sedentary behavior tool with discussion behavior of sedentary behavior compared to the unhealthy eating discussion tool and marijuana use discussion tool.

For Aim 2, we tested hypotheses that the positive effects of the unhealthy eating discussion tool and marijuana use discussion tool relative to the sedentary behavior tool on perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, intentions of unhealthy eating, marijuana use, and sedentary behavior, willingness of unhealthy eating and marijuana use, tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, tool use, and willingness to pay for the tool will be (a) greater for low authoritative parents than for high authoritative parents, (b) greater for high authoritarian parents than for low authoritarian parents, and (c) greater for high permissive parents than for low permissive parents.

2. Pilot Study

Prior to administering the full study, a pilot study of the initial survey of Study 3 was conducted in order to test for the feasibility of the methods, acceptability of the tools, and reliability (internal consistency) of the measures. Participants were recruited from MTurk under the restrictions that they were United States residents (based on MTurk's sampling criteria) and a parent of a child 10 to 17 years old. Potential participants ($N = 500$) completed an online Qualtrics screener survey to determine their study eligibility. After providing consent, they responded to questions about whether they had child and, if so, ages of their children. Those meeting the inclusion criteria ($N = 60$) received online invitations to participate in the full study in Qualtrics. As a result, 30 participants provided informed consent and were able to complete the study. Participants received payment for their participation through MTurk ($.01 for screener survey and $2.00 for initial study).

Overall, parents were approximately 38 years of age on average and predominantly Non-Hispanic White with over 77% identifying as women, college educated, employed full-time; their children were approximately 13 years of age with just over 77% identified as female (see Table 3a). Reliability analyses revealed high reliability for the unhealthy eating variables of perceived risk ($\alpha = .74$), worry ($\alpha = .86$), self-efficacy ($\alpha = .91$), coherence ($\alpha = .85$), and intentions ($\alpha = .94$), and for the marijuana use variables of perceived risk ($\alpha = .84$), worry ($\alpha = .87$), self-efficacy ($\alpha = .85$), coherence ($\alpha = .81$), and intentions ($\alpha = .88$). For tool conditions, the perceived effectiveness ($\alpha = .83$) and perceived interpretability ($\alpha = .89$) items demonstrated high internal consistency as well.

However, the items of willingness for unhealthy eating ($\alpha = .55$), willingness for marijuana use ($\alpha = .53$) and motivations to address behavior ($\alpha = .65$) were relatively lower. We conducted an item-analysis to increase internal consistency. As a result, we removed one of the items for willingness, which was "How willing would you be to ask

your child not to attend the party within the next four weeks?" This increased the score for reliability of willingness for unhealthy eating (α = .76) and for marijuana use (α = .87). The item analysis for motivations to address behavior revealed that the item, "This message left me feeling discouraged" was lowering the reliability score. Therefore, the item was changed to "This message left me feeling discouraged about the topic." The pilot study provided us with additional information on which items to include in the final study, and these changes were made prior to administering the full study.

3. Study 3 Methods

3.1 Participants

Participants were recruited from MTurk under the restrictions that they were United States residents (based on MTurk's sampling criteria) and a parent of a child 10 to 17 years old. Potential participants (N = 1,500) completed an online Qualtrics screener survey to determine their study eligibility. After providing consent, they responded to questions about whether they have a child and, if so, ages of their children. Those meeting the inclusion criteria received online invitations to participate in the full study in Qualtrics. In total, 318 participants provided informed consent and completed the initial study. One month later, 258 participants (81% retention) completed the follow-up survey assessing whether they had discussed unhealthy eating or marijuana use with their child. Overall, parents were approximately 40 years of age on average and predominantly Non-Hispanic White with over 65% identifying as women, college educated, employed full-time, and married; their children were approximately 13 years of age with just over 57% identifying as male (see Table 3b).

3.2. Design

The study was adminstered to parents with an initial survey at Time 1 and then a follow-up survey one month later at Time 2. The study utilized a 2 X 3 mixed design, with Time (i.e., Time 1 and Time 2), and Tool Type (unhealthy eating, marijuana use, and sedentary behavior) as the independent variables. The dependent variables were perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy, coherence, intentions, willingness, and tool downloading (at Time 1) and discussion behavior, tool use, and willingness to pay for the tool (at Time 2).

3.3. Procedure

For the initial survey, participants first responded to measures of the child's unhealthy eating and marijuana use, discussion of unhealthy eating and marijuana use in the past month, perceived risks, and worry. Participants were then randomly assigned to one of three tool conditions in which they received a communication about discussing marijuana use, discussing unhealthy eating, or sedentary behavior consequences. After viewing the tools, participants completed measures of perceived effectiveness, perceived interpretability, motivations to address the target behavior; as well as intentions, willingness, self-efficacy, and coherence for unhealthy eating and marijuana use. Since sedentary behavior is the control condition only a measure of intentions and discussion behavior was included. We included intentions, as this variable has been predictive of health-protective behaviors (Brewer & Dewhurst, 2013) such as sedentary behavior. They then completed the dispositional measures of attachment and parenting styles, and demographic characteristics. At the end of the survey, participants had the option of downloading the tool they viewed in the study.

One month later, participants were invited to complete the follow-up survey that included measures of past month discussion of unhealthy eating and marijuana use with child, use of the tool they received, willingness to pay for the tool they had received at the intial survey, self-efficacy, coherence, worry, intentions, and willingness. Following the survey completion, participants read a brief explanation of the study and received links to websites of national health organizations with information about unhealthy eating and marijuana use. They were also provided with the option to download all three of the tools and we were able to keep track of whether or not the participant downloaded any of the three tools. Participants received payment for their participation through MTurk ($.01 for screener survey, $2.00 for initial study, and $1.00 for follow up study).

4. Tools (i.e., Manipulations)

The tools were administered in the initial survey (see Appendix B). It consisted of 3 conditions (i.e., unhealthy eating, marijuana use, and sedentary behavior). As noted before, the sedentary behavior is the control condition.

4.1. Unhealthy Eating and Marijuana Use Discussion Tools

For these conditions the stem begins with the following guidelines: "When given the opportunity and time, children are likely to talk to their parents about risky health behaviors such as eating unhealthy foods (or marijuana use). It is important for parents to talk to their children about unhealthy eating habits (marijuana use) starting at a young age and continuing through older adolescence. Below are some tips to help you have these conversations." Then, the participants viewed a one-page information sheet that listed potential consequences of unhealthy eating (or marijuana use), questions to consider about child and unhealthy eating (or child and marijuana use), and script to use when starting a conversation with child about unhealthy eating (or marijuana use). The script is the authoritative parenting-framed message adapted from the Study 2.

4.2. Sedentary Behavior Tool

For this control condition, the stem begins with the following guidelines, "When given the opportunity and time, children are likely to look to their parents and adopt their risky health behaviors such as having a sedentary lifestyle. It is important to consider sedentary behavior regardless of your age. Below are some tips to help you be active." Then, the participant viewed a one-page information sheet that listed potential consequences of sedentary behavior, questions to consider about sedentary behavior, and information about sedentary behavior. A script was not included in this condition. This is because the control condition was designed to avoid encouraging the parent to have a discussion with their child about sedentary behavior (e.g., staying away from language that would entice conversations), and instead just focus on the behavior itself.

5. Measures

The following measures from Study 1 were also be included in Study 3: demographic and personal characterisitcs, child's unhealthy eating, child's marijuana use, ECR-RS, PSDQ, self-efficacy, coherence, perceived risks, worry, intentions, willingness, and past discussion of unhealthy eating and marijuana use with child (see Appendix A). For sedentary behavior the survey measures of intentions and discussion behavior were added. Unless otherwise noted, the items were reverse-scored as needed and averaged to generate total scores. Additional measures in the initial survey and follow-up survey are as follows.

5.1. Initial Survey

5.1.1. Perceived Effectiveness

The measure includes 3 items: "This message is informative", "This message is worth remembering", and "This message is appropriate for parents of children who are the same age as my child." Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

5.1.2. Perceived Interpretability

The measure includes 4 items: "This message is difficult to interpret", "This message is easy to understand", "This message is confusing", and "This message is clear." Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

5.1.3. Motivations to Address the Behavior

The measure includes 4 items: "This message is persuasive", "This message left me feeling discouraged about the topic", "This message encourages me to change my behavior", and "This message motivates me to change my behavior." Items ratings ranged from 0 (*not at all*) to 4 (*extremely*).

5.1.4. Tool Download

Participants had an option to download the tool that they viewed in the survey. This was measured with the item: "Would you be interested in downloading the tool you viewed in this survey?" with a response of a *no* (0) or *yes* (1). If the participant was interested in downloading the item, they were directed to a page where they would be able to download the tool in PDF form. We also verified whether the participant downloaded the file by measuring if they clicked the image that opened the file and automatically downloaded the tool into their computer downloads folder.

5.2. Follow-up Survey

5.2.1. Discussion Behavior

Participant discussion behavior was measured in the follow-up survey with 1 item: "Since the last session four weeks ago, did you talk about unhealthy eating (or marijuana use or sedentary behavior) with your child?" with a response of a *no* (0) or *yes* (1). If participant answered yes, they were asked to describe what they said to their child.

5.2.2. Tool Use

Tool usage was measured in the follow-up survey with 4 items: "Which behavior did the health tool focus on?", "Did you download the health tool?", "Did you use the tool to have a conversation with your child about the behavior?", and "Did you share the tool with anyone else?" For the last three items, participants responded with a *no* (0) or *yes* (1). These items were averaged to generate score for tool use.

5.2.3. Willingness to Pay for the Tool

Participant willingness to pay for the tool was measured in the follow-up survey with 1 item: "Imagine the health tool was available for purchase at a local store, how much would you pay for the tool?" Items ranged from *$0*, *$.50*, *$1.00*, *$1.50*, *$2.00*, *$2.50*, and *$3.00*.

6. Statistical Analyses

Preliminary, descriptive analyses were conducted on demographic and personal characteristics of study participants, and their parenting styles. To address Aim 1, we conducted between-subject ANOVAs to examine the effects of tool conditions (i.e., unhealthy eating, marijuana use, and sedentary behavior) on the dependent measures of perceived effectiveness, perceived interpretability, motivations to address the behavior,

self-efficacy, coherence, intentions, willingness, tool download, discussion behavior, tool use, and willingness to pay for the tool. These analyses included the between-subject's ANOVA with one independent variable for each of the dependent variables. Chi-square analyses were also used to test tool condition effects on the dichotomous dependent variables (i.e., tool download, discussion behavior, and tool use).

To address Aim 2, we conducted moderation analyses of each of the three parenting styles (i.e., authoritative, authoritarian, and permissive) for the tool condition effects (i.e., unhealthy eating, marijuana use, and sedentary behavior) on the continuous dependent measures using linear regression analyses as delineated by West, Aiken, & Krull (1996). For the categorical dependent measures of tool download, discussion behavior, and tool use we conducted logistic regression analyses. To test these effects, we created two dummy variables: one comparing the unhealthy eating tool (-1) with the sedentary behavior tool (+1), and the other comparing the marijuana use tool (+1) to the sedentary behavior tool (-1). Each attachment style was centered about the mean. Significant Parenting Styles X Tool Dummy Variable interactions were followed up with simple slopes analyses (Dawson, 2014). All analyses were conducted with SPSS 24.0 statistical software.

7. Results

7.1. Parenting Styles Descriptive Analyses

Descriptive analyses revealed that parents were most likely to rate their parenting style as authoritative (M = 4.14, SD = .55), followed by permissive (M = 2.28, SD = .71), and lastly authoritarian (M = 1.92, SD = .65).

7.2. Between-Subjects ANOVAs

Table 3c presents the condition means (standard deviations), main effects statistics, and results for all of the between subject's ANOVAs. Between-subject ANOVAs examined the effects of unhealthy eating discussion tool, marijuana use discussion tool, and sedentary behavior tool on perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy, coherence, intentions, willingness, and willingness to pay for the tool.

7.2.1. ANOVAs of Tool Evaluations

For perceived effectiveness, there was a significant effect of tool conditions (p < .001). Post-hoc comparisons using the Tukey HSD test indicated that, contrary to hypotheses, perceived effectiveness was higher for the sedentary behavior condition than for the unhealthy eating condition and marijuana use condition. Consistent with hypotheses, there was no significant difference between the unhealthy eating condition and the marijuana use condition.

For motivations to address the behavior, there was a significant effect of tool conditions (p < .001). Post-hoc comparisons using the Tukey HSD test indicated that, contrary to hypotheses, motivations to address the behavior was higher for the sedentary behavior condition than for the unhealthy eating condition and marijuana use condition. Consistent with hypotheses, there was no significant difference between the unhealthy eating condition and the marijuana use condition. Lastly, for perceived interpretability, there was no significant effect of tool conditions (p = .52).

7.2.2. ANOVAs of Unhealthy Eating Measures

For self-efficacy of unhealthy eating, there was a significant effect of tool conditions ($p < .05$). Post-hoc comparisons using the Tukey HSD test indicated that, contrary to hypotheses, the self-efficacy in discussing unhealthy eating was higher for the sedentary behavior condition than for the marijuana use condition. There was no significant difference between the unhealthy eating condition and either of the two other tool conditions.

For intentions to discuss unhealthy eating with one's child, there was a significant effect of tool conditions ($p < .01$). Post-hoc comparisons using the Tukey HSD test indicated that, contrary to hypotheses, the intentions in discussing unhealthy eating was higher for the sedentary behavior condition compared to the unhealthy eating condition and marijuana use condition. There was no significant difference between the unhealthy eating condition and the marijuana use condition.

For willingness to discuss unhealthy eating with one's child, there was a significant effect of tool conditions ($p < .001$). Post-hoc comparisons using the Tukey HSD test indicated that, contrary to hypotheses, the willingness in discussing unhealthy eating was higher for the sedentary behavior condition compared to the unhealthy eating condition and marijuana use condition. There was no significant difference between the unhealthy eating condition and the marijuana use condition. Additionally, there was no significant tool condition effects for coherence of unhealthy eating.

7.2.3. ANOVAs of Marijuana Use Measures

There was no significant effect of tool conditions for self-efficacy of marijuana use, coherence of marijuana use, intentions to discuss marijuana use, and willingness to discuss marijuana use.

7.2.4. ANOVA of Sedentary Behavior Measure

For intentions to discuss sedentary behavior with one's child, there was a marginal significant effect of tool conditions ($p = .06$). Post-hoc comparisons using the Tukey HSD test indicated, consistent with hypotheses, the intentions in discussing sedentary behavior was higher for the sedentary behavior condition compared to the unhealthy eating condition. There was no significant difference between the sedentary behavior condition and the marijuana use condition, and the unhealthy eating condition and marijuana use condition.

7.2.5. ANOVA of Willingness to Pay for the Tool

Parents reported that they would be willing to pay around \$1.18 ($SD = .95$) for the tool they viewed in the initial survey. For willingness to pay for the tool, there was a significant effect of tool conditions ($p < .01$). Post-hoc comparisons using the Tukey HSD test indicated that, consistent with hypotheses, willingness to pay for the tool was higher for the unhealthy eating condition than for the sedentary behavior condition. There was no significant difference between the unhealthy eating condition and marijuana use condition as well as for the marijuana use condition and sedentary behavior condition.

7.3. Chi-Square Analyses of Tool Download, Discussion Behavior, and Tool Use

Chi-square analyses examined the differences of the unhealthy eating discussion tool, marijuana use discussion tool, and sedentary behavior tool on tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, and tool

use. Since these variables are dichotomous, chi-square analyses were conducted instead of ANOVAs. A chi-square test revealed a marginal significant association between the tool conditions and discussion behavior of unhealthy eating ($\chi^2 = 4.70$, $p = .09$). Consistent with the hypothesis, there was a relationship between the unhealthy eating condition and discussion behavior of unhealthy eating. Some qualitative examples of discussions reported by parents in the unhealthy eating condition included, "I showed my daughter the tool and started explaining what can happen when you don't take care of yourself and your health," "We discussed the key points on the tool about unhealthy eating habits," "He seemed open to the discussion when presented with facts from the tool," and "It went good, he sat down with me and read it with me, and he seemed to be interested in the health tool". However, chi-square analyses revealed no differences across the three tool conditions (i.e., unhealthy eating, marijuana use, or sedentary behavior) in the proportions of parents who downloaded the tool ($p = .20$), discussion behavior of marijuana use ($p = .27$), discussion behavior of sedentary behavior ($p = .55$), and tool use ($p = .20$).

7.4. Moderation Analyses

Each parenting style was assessed as a moderator of the tool conditions (i.e., unhealthy eating discussion tool, marijuana use discussion tool, and sedentary behavior tool) effects on the measures of perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, intentions of unhealthy eating, marijuana use, and sedentary behavior, willingness of unhealthy eating and marijuana use, tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, tool use, and willingness to pay for the tool.

7.4.1. Authoritative Parenting Style

Table 3d presents all the moderation analyses for authoritative parenting style. Analyses revealed that authoritative parenting style had a significant interaction effect of the marijuana use discussion tool versus sedentary behavior tool on perceived interpretability ($t = -2.06$, $p < .05$; see Figure 3b). The unstandardized simple slope 1 *SD* below the mean was .13 ($t = 1.33$, $p = .19$) and the unstandardized simple slope 1 *SD* above the mean was -.23 ($t = -2.27$, $p < .05$). For parents with high authoritative parenting style, the marijuana use discussion tool led to lower perceived interpretability relative to the sedentary behavior tool. There is no significant difference as a function of low authoritative parenting style.

Authoritative parenting style had a significant interaction effect of the marijuana use discussion tool versus sedentary behavior tool on motivations to address the behavior ($t = -2.41$, $p < .05$; see Figure 3c). The unstandardized simple slope 1 *SD* below the mean was -.03 ($t = -.22$, $p = .82$) and the unstandardized simple slope 1 *SD* above the mean was -.59 ($t = -4.46$, $p < .001$). For parents with high authoritative parenting style, the marijuana use discussion tool led to lower motivations to address the behavior relative to the sedentary behavior tool. There is no significant difference as a function of low authoritative parenting style.

Authoritative parenting style had a marginal significant interaction effect of the marijuana use discussion tool versus sedentary behavior tool on marijuana use discussion intentions ($t = -1.79$, $p = .08$; see Figure 3d). The unstandardized simple slope 1 *SD*

below the mean was .45 (t = 1.90, p = .06) and the unstandardized simple slope 1 *SD* above the mean was -.29 (t = -1.24, p = .22). For parents with low authoritative parenting style, the marijuana use discussion tool induced higher intentions of marijuana use discussions relative to the sedentary behavior tool. There is no significant difference as a function of high authoritative parenting style.

Authoritative parenting style had a marginal significant interaction effect of the marijuana use discussion tool versus sedentary behavior tool on willingness to pay for the tool (t = -1.85, p = .07; see Figure 3e). The unstandardized simple slope 1 *SD* below the mean was .27 (t = 1.76, p = .08) and the unstandardized simple slope 1 *SD* above the mean was -.28 (t = -1.51, p = .13). For parents with low authoritative parenting style, the marijuana use discussion tool induced higher willingness to pay for tool relative to the sedentary behavior tool. There is no significant difference as a function of high authoritative parenting style.

On the other hand, authoritative parenting style did not moderate tool effects on perceived effectiveness, self-efficacy of unhealthy eating and marijuana use, coherence of unhealthy eating and marijuana use, intentions of unhealthy eating and sedentary behavior, and willingness of unhealthy eating and marijuana use. In addition, authoritative parenting style did not moderate tool effects on the categorical variables of tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, and tool use (p's > .05).

7.4.2. Authoritarian Parenting Style

Table 3e presents all the moderation analyses for authoritarian parenting style. Analyses revealed that authoritarian parenting style moderated the effects of marijuana use discussion tool versus sedentary behavior tool on motivations to address the behavior (t = 2.62, p < .01; see Figure 3f). The unstandardized simple slope 1 *SD* below the mean was -.57 (t = -4.96, p < .001) and the unstandardized simple slope 1 *SD* above the mean was -.07 (t = -.61, p = .54). For parents with low authoritarian parenting styles, the marijuana use discussion tool led to lower motivations to address the behavior relative to the sedentary behavior tool. There is no significant difference as a function of high authoritarian parenting style.

Authoritarian parenting style moderated the effects of marijuana use discussion tool versus sedentary behavior tool on self-efficacy of having unhealthy eating discussions (t = 2.10, p < .05; see Figure 3g). The unstandardized simple slope 1 *SD* below the mean was -.26 (t = -2.71, p < .05) and the unstandardized simple slope 1 *SD* above the mean was .06 (t = .62, p = .53). For parents with low authoritarian parenting styles, the marijuana use discussion tool led to lower self-efficacy of unhealthy eating discussions relative to the sedentary behavior tool. There is no significant difference as a function of high authoritarian parenting style.

Authoritarian parenting style moderated the effects of marijuana use discussion tool versus sedentary behavior tool on coherence of having unhealthy eating discussions (t = 2.99, p < .01; see Figure 3h). The unstandardized simple slope 1 *SD* below the mean was -.16 (t = -2.83, p < .01) and the unstandardized simple slope 1 *SD* above the mean was .14 (t = 2.53, p < .05). For parents with high authoritarian parenting styles, the marijuana use discussion tool led to greater coherence of unhealthy eating discussions relative to the sedentary behavior tool. For parents with low authoritarian parenting

styles, the marijuana use discussion tool led to lower coherence of unhealthy eating discussions relative to the sedentary behavior tool.

Authoritarian parenting style also moderated the effects of marijuana use discussion tool versus sedentary behavior tool on self-efficacy of having marijuana use discussions ($t = 2.64$, $p < .01$; see Figure 3i). The unstandardized simple slope 1 *SD* below the mean was -.26 ($t = -2.34$, $p < .05$) and the unstandardized simple slope 1 *SD* above the mean was .21 ($t = 1.88$, $p = .06$). For parents with high authoritarian parenting styles, the marijuana use discussion tool led to greater self-efficacy of marijuana use discussions relative to the sedentary behavior tool. For parents with low authoritarian parenting styles, the marijuana use discussion tool led to lower self-efficacy of marijuana use discussions relative to the sedentary behavior tool.

On the other hand, authoritarian parenting style did not moderate tool effects on perceived effectiveness, perceived interpretability, coherence of marijuana use, intentions of unhealthy eating, marijuana use, sedentary behavior, willingness of unhealthy eating and marijuana use, and willingness to pay for the tool. In addition, authoritarian parenting style did not moderate tool effects on the categorical variables of tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, and tool use (p*'s* > .05).

7.4.3. Permissive Parenting Style

Table 3f presents all the moderation analyses for permissive parenting style. Analyses revealed that permissive parenting style had a marginal significant interaction effect of the unhealthy eating discussion tool versus sedentary behavior tool on perceived effectiveness ($t = -1.83$, $p = .07$; see Figure 3j). The unstandardized simple slope 1 *SD* below the mean was .32 ($t = 2.65$, $p < .05$) and the unstandardized simple slope 1 *SD* above the mean was -.04 ($t = -.36$, $p = .72$). For parents with low permissive parenting styles, the unhealthy eating discussion tool led to higher perceived effectiveness relative to the sedentary behavior tool. There is no significant difference as a function of high permissive parenting style.

Permissive parenting style moderated the effects of the unhealthy eating discussion tool versus sedentary behavior tool on motivations to address the behavior ($t = -2.06$, $p < .01$; see Figure 3k). The unstandardized simple slope 1 *SD* below the mean was .36 ($t = 3.25$, $p < .01$) and the unstandardized simple slope 1 *SD* above the mean was -.02 ($t = -.22$, $p = .83$). For parents with low permissive parenting styles, the unhealthy eating discussion tool led to higher motivations to address the behavior relative to the sedentary behavior tool. There is no significant difference as a function of high permissive parenting style.

Permissive parenting style moderated the effects of marijuana use discussion tool versus sedentary behavior tool on self-efficacy for having unhealthy eating discussions ($t = 2.29$, $p < .05$; see Figure 3l). The unstandardized simple slope 1 *SD* below the mean was -.27 ($t = -2.99$, $p < .01$) and the unstandardized simple slope 1 *SD* above the mean was .07 ($t = .73$, $p = .47$). For parents with low permissive parenting styles, the marijuana use discussion tool led to lower self-efficacy of unhealthy eating discussions relative to the sedentary behavior tool. There is no significant difference as a function of high permissive parenting style.

Permissive parenting style had a marginal significant interaction effect of the unhealthy eating discussion tool versus sedentary behavior tool on coherence for having unhealthy eating discussions (t = 1.75, p = .08; see Figure 3m). The unstandardized simple slope 1 *SD* below the mean was -.06 (t = -1.01, p = .31) and the unstandardized simple slope 1 *SD* above the mean was .12 (t = 1.85, p = .07). For parents with high permissive parenting styles, the unhealthy eating discussion tool led to greater coherence of unhealthy eating discussions relative to the sedentary behavior tool. There is no significant difference as a function of low permissive parenting style.

Permissive parenting style moderated the effects of unhealthy eating discussion tool versus sedentary behavior tool on unhealthy eating discussion intentions (t = -2.37, p < .05; see Figure 3n). The unstandardized simple slope 1 *SD* below the mean was .44 (t = 2.89, p < .05) and the unstandardized simple slope 1 *SD* above the mean was -.14 (t = -.92, p = .36). For parents with low permissive parenting styles, the unhealthy eating discussion tool led to higher intentions of unhealthy eating discussions relative to the sedentary behavior tool. There is no significant difference as a function of high permissive parenting style.

Permissive parenting style had a marginal significant interaction effect of the unhealthy eating discussion tool versus sedentary behavior tool on coherence for having marijuana use discussions (t = 1.78, p = .08; see Figure 3o). The unstandardized simple slope 1 *SD* below the mean was -.03 (t = -.45, p = .66) and the unstandardized simple slope 1 *SD* above the mean was .17 (t = 2.35, p < .05). For parents with high permissive parenting styles, the unhealthy eating discussion tool led to greater coherence of marijuana use discussions relative to the sedentary behavior tool. There is no significant difference as a function of low permissive parenting style.

Permissive parenting style moderated the effects of unhealthy eating discussion tool versus sedentary behavior tool on sedentary behavior intentions (t = -2.06, p < .05; see Figure 3p). The unstandardized simple slope 1 *SD* below the mean was .45 (t = 2.56, p < .05) and the unstandardized simple slope 1 *SD* above the mean was -.16 (t = -.85, p = .40). For parents with low permissive parenting styles, the unhealthy eating discussion tool led to higher intentions of sedentary behavior discussions relative to the sedentary behavior tool. There is no significant difference as a function of high permissive parenting style.

On the other hand, permissive parenting style did not moderate tool effects on perceived interpretability, self-efficacy of marijuana use, intentions of marijuana use, willingness of unhealthy eating and marijuana use, and willingness to pay for the tool. In addition, permissive parenting style did not moderate tool effects on the categorical variables of tool download, discussion behavior of unhealthy eating, marijuana use, and sedentary behavior, and tool use (p's > .05). Table 3g presents the summary of the significant interaction effects for the moderation analyses of authoritative, authoritarian, and permissive parenting styles.

8. Discussion

This study provides new evidence regarding the efficacy of discussion tools in promoting parent discussions of unhealthy eating and marijuana use with their child. An important feature of the discussion tools of unhealthy eating and marijuana use is the utilization of the authoritative parenting-framed message within the context of the

discussion tools (see Appendix B). The effects of the tool conditions (i.e., unhealthy eating, marijuana use, and sedentary behavior) on perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy, coherence, intentions, willingness, tool download, discussion behavior, tool use, and willingness to pay for the tools (i.e., Aim 1) were tested. Initially, the sedentary behavior condition demonstrated higher ratings for perceived effectiveness and motivations to address the behavior compared to the unhealthy eating and marijuana use conditions. There were not significant differences across the unhealthy eating and marijuana use conditions for perceived effectiveness, perceived interpretability, and motivations to address the behavior. This is important because the lack of differences in these two conditions suggests that any message effects are not due to differences in their perceived quality. Perceived interpretability was not significant.

The sedentary behavior condition had higher ratings for intentions and willingness to discuss unhealthy eating compared to the unhealthy eating and marijuana use conditions. Consistent to hypotheses, intentions in discussing sedentary behavior was higher for the sedentary behavior condition compared to the unhealthy eating condition. Parents may have felt that sedentary behavior condition was also an important health-risk behavior to consider discussing with their children. Future studies should consider including a no-treatment control condition (i.e., not including a tool for the third condition). This option could warrant for further interpretations on whether these newly-developed discussion tools of unhealthy eating and marijuana are reliable in motivating parent discussion behavior of the behaviors by comparing with a no-tool condition.

Parents were likely to pay around $1.18 (out of $3.00) for the tool, and consistent with hypotheses, willingness to pay for the tool was higher for the unhealthy eating condition than for the sedentary behavior condition, implying that parents were likely to pay to access the unhealthy eating discussion compared to the other two conditions. There was also a significant association between the unhealthy eating discussion tool and discussion behavior of unhealthy eating. These findings support the adaptation of the unhealthy eating discussion tool in promoting discussions of unhealthy eating with child. In contrast, the marijuana use discussion tool did not promote more discussion behavior of marijuana use relative to the sedentary behavior discussion tool. These findings suggest that the discussion tool was more effective in promoting discussions of unhealthy eating compared to marijuana use.

Though unhealthy eating and marijuana use are health-risk behaviors, they are inherently different. Research has indicated that eating behaviors in children are shaped by observing the eating behaviors and food preferences of their parents (Birch, Savage, & Ventura, 2007), while marijuana use is modeled more by one's peers (Tucker, De La Haye, Kennedy, Green, & Pollard, 2013). Parents may exhibit greater motivation to discuss unhealthy eating as this behavior has an impact on their child's direct survival from infancy (i.e., breast-feeding) to adulthood. The discussion tool of marijuana use may be missing important elements that motivate a protective response in parents. A revised tool may be needed to promote discussions about more controversial topics such as marijuana use. Such a tool is needed particularly given that recent changes in legalization and availability of marijuana use in the United States may lead to parents viewing marijuana use by youth as less risky or troubling, leading to fewer discussions of the

behavior with their child. These trends are in line with recent declines in perceived risks of marijuana use among youth (Friese & Grube, 2013; Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2015).

The study further tested the moderating effects of parenting styles (i.e., authoritative, authoritarian, and permissive) on tool conditions and perceived effectiveness, perceived interpretability, motivations to address the behavior, self-efficacy, coherence, intentions, willingness, tool download, discussion behavior, tool use, and willingness to pay for the tool relative to the control condition (i.e., Aim 2). With the inclusion of the authoritative parenting-framed message in the unhealthy eating and marijuana use discussion tools, it was predicted that parenting styles would moderate the relationships between tool effects and the dependent measures. In particular, it was predicted that the improvement relative to the control condition would be greater for low authoritative parents than for high authoritative parents, greater for high authoritarian parents than for low authoritarian parents, and greater for high permissive parents than for low permissive parents. This is because it is believed that authoritarian and permissive parents will benefit more from authoritative tools compared to authoritative parents, as they are in the greatest need for assistance.

The effects of the discussion tools on perceived interpretability, motivations to address the behavior, marijuana use discussion intentions, and willingness to pay for the tool were moderated by authoritative parenting styles. In fact, for parents with high authoritative parenting styles, the marijuana use discussion tool led to lower perceived interpretability and lower motivations to address the behavior. Whereas, for parents with low authoritative parenting styles, the marijuana use discussion tool led to higher marijuana use discussion intentions and higher willingness to pay for the tool relative to the sedentary behavior tool. In line with hypotheses, the findings on dependent measures show that the marijuana use discussion tool had greater effects for low authoritative parents compared to high authoritative parents. This extends research on the positive effects of authoritative parenting in encouraging parent communication about health-related behaviors (Maccoby & Martin, 1983; Baumrind, 1991) leading to better health outcomes for children (Demo & Cox, 2000; Kremers et al., 2003) as the tools were authoritatively-framed.

The effects of the discussion tools on motivations to address the behavior, self-efficacy of unhealthy eating discussions, coherence of unhealthy eating discussions, and self-efficacy of marijuana use discussions were moderated by authoritarian parenting styles. In fact, for parents with high authoritarian styles, the marijuana use discussion tool led to higher coherence of unhealthy eating discussions and higher self-efficacy of marijuana use discussions relative to the sedentary behavior tool. Whereas, for parents with low authoritarian styles, the marijuana use discussion tool led to lower motivations to address the behavior, lower self efficacy of unhealthy eating discussions, lower coherence of unhealthy eating discussions, and lower self-efficacy of marijuana use discussions relative to the sedentary behavior tool. In line with hypotheses, the findings on dependent measures show that the marijuana use discussion tool had greater effects for high authoritarian parents compared to low authoritarian parents. These findings provide support for the efficacy of authoritative parenting-framed messages in motivating parental discussions of risky behaviors in parents with high authoritarian parenting styles.

The effects of the discussion tools on perceived effectiveness, motivations to address the behavior, self-efficacy of unhealthy eating discussions, coherence of unhealthy eating discussions, unhealthy eating discussion intentions, coherence of marijuana use discussions, and sedentary behavior discussion intentions were moderated by permissive parenting styles. In fact, for parents with high permissive styles, the unhealthy eating discussion tool led to higher coherence of unhealthy eating discussions, lower unhealthy eating discussion intentions, and higher coherence of marijuana use discussions relative to the sedentary behavior tool. Whereas, for parents with low permissive styles, the unhealthy eating discussion tool led to higher perceived effectiveness, higher motivations to address the behavior, lower self-efficacy of unhealthy eating discussions, higher unhealthy eating discussion intentions, and higher sedentary behavior discussion intentions relative to the sedentary behavior tool. In line with hypotheses, the findings on coherence of unhealthy eating and marijuana use show that the unhealthy eating discussion tool had greater effects for high permissive parents compared to low permissive parents. Contrary to hypotheses, the effects of the unhealthy eating discussion tool on unhealthy eating discussion intentions showed negative effects for high permissive parents, and negative effects for perceived effectiveness, motivations to address the behavior, intentions of unhealthy eating and sedentary behavior for low permissive parents.

Overall, the findings for the moderation analyses mostly supported hypotheses by suggesting that low authoritative parents, high authoritarian parents, and high permissive parents find the tools more useful. For authoritative parents and authoritarian parents, the marijuana use discussion tool was more effective in motivating discussions compared to the unhealthy eating discussion tool for permissive parents. Specifically, for low authoritative parents the marijuana use discussion tool led to increased levels of perceived interpretability and motivations to address the behavior, and for high authoritarian parents the marijuana use discussion tool led to an increase in coherence of unhealthy eating discussions and self-efficacy of marijuana use discussions. For permissive parents the unhealthy eating discussion tool led to higher coherence of unhealthy eating and marijuana use.

An interesting discovery is that authoritative and authoritarian parenting served as moderators for marijuana use conditions, whereas permissive parenting served as a moderator for the unhealthy eating conditions. It could be that authoritative and authoritarian parents are more likely to have marijuana use discussions because they feel more confident compared with permissive parents. Whereas, permissive parents identify better with unhealthy eating because it is an easier topic to discuss as compared with marijuana use. According to Baumrind Classification (1971) of parenting styles authoritative and authoritarian parents tend to be higher in discipline and structure, and expectation compared to permissive parents that have lower discipline and structure, and expectation. In fact, authoritarian parents are known for establishing strict rules (Baumrind, 1967; Cherry, 2016) which could be more common for marijuana use, while permissive parents allow for freedom of choice (i.e., Cherry, 2016) which could be more common for children when picking which foods to eat (Boutelle et al., 2001).

This knowledge should be applied to revise the discussion tools that were developed for parents to have discussions about unhealthy eating and marijuana use with

their children. A priority should be on the development of the discussion tools based on the behavior by taking into account aspects of the parenting styles and how they might affect the specific discussions. Being exploratory in nature, this study has several important study implications. First, the difference in unhealthy eating and marijuana use offers opportunity to refine and validate the discussion tools in future studies for these behaviors. These differences can be assessed by taking into account the behavior and framing the messages with not only parenting styles but behavior as well. For instance, implementing tools for unhealthy eating that utilizes friendlier language compared with more structure for marijuana use. Second, we generated two new discussion tools that were effective in motivating discussions. These discussion tools can be applied to other risky behaviors and possibly distributed to parents in different settings (i.e., schools) in order to test the adaptability and acceptability of each tool with larger parent populations.

Future studies could look to examine these dynamics more clearly in a larger sample of parents of children ages 10 to 17 years old. It is important to note that there were several moderating relationships of various dependent measures that were not significant. Since these discussions tools are newly developed, more research is needed to explore the moderating effects of parenting styles in motivating discussion behaviors of unhealthy eating and marijuana use. Additional studies could add more dimensions of authoritative parenting styles in the discussion tool (i.e., including authoritative parenting text throughout the tool even when prompting the parent to have a discussion with their child), instead of just including a script.

Strengths of the present study include its focus on a largely unexplored area of parent motivations to discuss unhealthy eating and marijuana use, its contributions to further development of discussion tools utilizing authoritative parenting-framed message, and the use of a longitudinal design, in a sample of parents in the United States. This study added partial evidence of the moderating effects of parenting styles in some of the relationships between unhealthy eating and marijuana use discussion tools and the PWM factors. A second strength of the study is that it could be replicated, and tested, with other conditions in order to test the moderating impact of authoritatively-framed discussion tools on more behaviors. Though, if replicated alterative strategies should be implemented for motivating parents to have these discussions by revising the tools or testing with a no-treatment control condition. A third strength is that the study provided valuable information on whether these newly developed discussion tools would be effective in promoting discussion behaviors in a sample of parents. These tools could possibly be disseminated to school settings in order to further test their effectiveness in motivating discussions of unhealthy eating and marijuana use. Lastly, these findings provided important data on the differences in discussion behaviors for unhealthy eating and marijuana use, in which the unhealthy eating discussion tool was more likely to motivate discussion behavior.

Limitations of this study require consideration when interpreting the results and point to directions for future research. Initially, the results may not be representative of all parents across the nation or in other countries, as it consisted predominantly of Non-Hispanic White and well-educated participants. Although, MTurk has become a popular method used for recruiting large heterogeneous samples such as parents of adolescents from across the nation and has been demonstrated in several published psychological

studies (Gosling & Mason, 2015; Mason & Suri, 2012; Weinberg et al., 2014). Second, the findings may not be generalizable to all parents, particularly as we focused on parents of children ages 10 to 17 years old. More research is needed to determine if results would vary for different ages (i.e., parents of younger children), ethnicities, number of children, gender of parent, and if the results would extend to other behaviors as well. There is a definite need to extend the study to test for differences in mothers and fathers and to assess if their possibly differing parenting styles could influence discussion motivations of unhealthy eating and marijuana use with their children. This could provide vital information on whether the discussion tools could be more generalizable to a more representative population of parents and children across the United States.

9. Conclusion

To conclude, this study tested the effects of newly developed discussion tools of unhealthy eating and marijuana on parental discussions of these behaviors with their children. These tools were tested against a comparison tool that provided information about the harms of sedentary behavior. There is a need for further investigation on how authoritative tools can motivate parental discussions of health risk behaviors with their children. The unhealthy eating discussion tool motivated discussions, and both unhealthy eating and marijuana use discussion tools provided a glimpse of how parenting styles could moderate parent perceptions and beliefs related to these behaviors. Subsequent research should be directed at a longitudinal, nationwide study on whether parental motivations to discuss unhealthy eating and marijuana with their children could extend to random samples of parents in the United States and elsewhere.

CHAPTER FIVE

1. General Discussion

The parent-child relationship has a major influence on child development and behavior. Parents can play a critical role in preventing their children from engaging in behaviors that could harm their health and well-being. Identifying whether or not discussion tools of unhealthy eating and marijuana use are effective for parent and child conversations centered on risky health behaviors is of particular importance. Another component to consider in promoting parent-child discussions about unhealthy eating and marijuana use is the associations of parenting styles. In particular, the present research project examined parenting styles in three ways. Initially, guided by an adapted PWM framework the study tested the associations of parenting styles, attachment styles, parent-child communication; specific risks and prototypes of unhealthy eating and marijuana use by one's child; levels of self-efficacy, coherence, worry; discussion intentions and willingness on parental past discussions of unhealthy eating and marijuana use (Study 1). Second, it revealed the authoritative parenting-framed message on talking with one's parent about unhealthy eating and marijuana use was perceived by young adults as most effective in motivating discussions about these behaviors (Study 2). Finally, it provided partial support of the moderating effects of parenting styles on discussion tools and cognitive factors (Study 3).

The present research project had several important implications. The findings supported most of the hypothesized relationships delineated by an adapted PWM framework (Gibbons & Gerrard, 1995), suggesting the potential utility of the parenting styles and cognitive factors in promoting discussions about unhealthy eating and marijuana use. Some of these factors (e.g., intentions) were also supported in previous research examining parental perceptions and beliefs of marijuana use and discussions with their children (Khachikian & Cameron, 2018), and now could extend to include unhealthy eating discussions as well. By addressing these constructs, we were able to propose an adapted theoretical model that could possibly decrease unhealthy eating and marijuana use in children and adolescents.

According to descriptive analyses, a good proportion of parents had trouble engaging in discussions with their children centered on unhealthy eating and marijuana use (Study 1). As a result, this project further proposed and developed three parenting-framed messages aimed at promoting parent and child discussion of the health risk behaviors (Study 2). The authoritative parenting-framed message was rated as most effective in motivating discussions about unhealthy eating and marijuana use compared to authoritarian parenting-framed message and permissive parenting-framed message. Relatedly, several studies have found that authoritative parenting styles are associated with decreased health risk behaviors in adolescents, including lower use of alcohol, tobacco, and illicit drugs (Becoña et al., 2015; Kremers et al., 2003; Chassin et al., 2005; Shakya et al., 2012). These conclusions were utilized to develop discussion tools that included the authoritatively-framed message, in order to further motivate effective discussions about unhealthy eating and marijuana use between parents and their children (Study 3). It is believed that parents who struggle to have these discussions might benefit from tools on how to have these conversations with their children.

The study findings partially supported the moderating effects of parenting styles on discussion tools and some of the cognitive factors. Future studies could target the implementation of additional discussion tools, aside from unhealthy eating and marijuana use discussion tools. This could gather information on ways to improve the utility of the authoritative parenting-framed message within the context of the discussion tool by closely examining the effects on several health-risk behaviors. It could be that some behaviors respond better to the authoritative parenting component compared to others. Although, these tools were still effective in motivating discussions, and so, the discussion tools could be modified and tested in a bigger sample.

2. Limitations

Limitations of the present research project requires consideration when interpreting the results and point to directions for future research. Initially, the results may not be representative of all parents across the nation or in other countries, as Study 1 and 3 consisted predominantly of Non-Hispanic White and well-educated participants, whereas Study 2 consisted of participants between the ages of 18 to 20 years old. More research is needed to measure the practicality of the discussion tools with more ethnically diverse groups. With regards to marijuana use, utilizing random samples of parents in the United States could prove to be beneficial in interpreting results, as the landscape is constantly changing with regards to marijuana legalization laws, and could impact discussion of marijuana use between parents and their children.

Another important limitation to consider is the lack of fathers within the samples. Fathers may have differing responses to the discussion tools compared to mothers. As noted by the participant characteristics (see Table 1a and Table 3b), the parents were primarily mothers of children ages 10 to 17 years old (i.e., Study 1 and 3) and 80% of responses by children were about their mothers (i.e., Study 2). It warrants the need to investigate the impact of perceived parenting styles of fathers on motivating discussion of unhealthy eating and marijuana use. The comparability of responses across mothers and fathers could lead to the incorporation of richer parenting practices to consider when designing future discussion tools. Moreover, all three studies relied on self-report on specific questions, which may lead to bias of participant responses. The partial support of the moderating effects of parenting styles indicates the need for further investigation of how these practices could influence discussion outcomes, and copiously recognize the implications in promoting future discussions about unhealthy eating and marijuana use. Additional studies of parents of children in younger age groups (i.e., younger than 10 years old), and children of younger age groups (i.e., younger than 18 years old) are needed. This could provide more information on what elements are most effective when designing discussion tools for varying child age groups, and if differences exist.

The present research project provided preliminary findings to consider on the moderating effects of authoritative, authoritarian, and permissive parenting styles, and could be expanded to include additional traits and temperaments (e.g., parent nutrition and parent marijuana use) specific to parents and children. It may be beneficial to measure more acceptability items after participants view the discussion tools, by including more items than perceived effectiveness, perceived interpretability, motivations to address the behavior after the discussion tools, in order to provide additional ways of testing the effectiveness of the tools. This could possibly elicit richer qualitative data on

the differing effects of the discussion tools on parents and their children. By identifying key words and phrases that were utilized in their discussions, it could lead to the consideration of other parent-child practices or characteristics that could influence the discussions of these behaviors.

3. Concluding Remarks and Recommendations

To conclude, the present research project explored the associations of a revised theoretical framework of parenting styles and PWM factors on parent motivations to discuss unhealthy eating and marijuana use with their child (Study 1), tested the acceptability of authoritative parenting-framed messages of unhealthy eating and marijuana use by youth (Study 2), and then, designed and developed discussion tools to encourage parent conversations about unhealthy eating and marijuana use with their child (Study 3). This study contributes new data, in a sample of American parents with children between the ages of 10 to 17 years old, on the moderating effects of the discussion tools about unhealthy eating and marijuana use in parent-child discussions about these behaviors.

The partial support of the moderating effects of parenting styles validates the need for further exploration of how these qualities could impact discussion outcomes of health risk behaviors. Subsequent research should be directed at a longitudinal, nationwide study on whether parental motivations to discuss unhealthy eating and marijuana with their children could extend to random samples of parents in the United States and elsewhere. Additional studies could also include other risky behaviors (e.g., sexual activity) in order to test whether authoritatively-framed discussion tools extend to other behaviors as well.

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Table 1a
Study 1 Participant Characteristics for (N= 208)

	Mean% (SD)
Parent	
Age	39.3 (6.9)
Gender	
Female	71.6%
Male	28.4%
Ethnicity	
White (Non-Hispanic)	87.5%
African-American	9.1%
Asian-American	4.3%
Hispanic	1.4%
Native Hawaiian	0.5%
American-Indian	0.1%
Marital Status	
Married	67.8%
Living with partner	12.5%
Divorced	11.1%
Single	7.7%
Widowed	1.0%
Education	
Some college or university	34.6%
College or university graduate	28.8%
1 or more years of graduate school	15.4%
High school graduate	14.4%
Technical or trade school	5.8%
Grades 9-11	1.0%
Employment	
Full-Time	65.9%
Part-Time	17.8%
No	16.3%
Child	
Age	13.2 (2.2)
Male	52.4%
Female	47.6%

Table 1b.

Parent Reports on Child's Unhealthy Eating and Marijuana Use

	Mean	*SD*
Child's Unhealthy Eating		
Servings of vegetables each day	2.67	.54
Servings of fruits each day	2.56	.57
Eat red or processed meat	2.19	.67
Eat desserts and other sweets	2.13	.66
Eat beans, chicken, or fish	2.11	.70
Eat regular snack chips or crackers	2.07	.71
Eat yogurt or other fermented foods	1.89	.79
Eat fast food meals or snacks	1.88	.67
Season vegetables or potatoes with margarine, butter, etc.	1.57	.61
Drink regular soda, sweet tea, or coffee	1.51	.68
Child's Marijuana Use		
Child will use marijuana if friend offers it	1.90	1.05
Child will use marijuana in the next year	1.68	.99
Child has used marijuana	.15	.36
Child has used marijuana on 100 or more occasions	.01	.10

Note. Unhealthy eating items 1=very little; 2=some; 3=a lot; Marijuana use first two items 1=definitely not; 2=probably not; 3=maybe; 4=probably yes; 5=definitely yes; last two items 0=no; 1=yes

Table 1c.

Parent Reports on Past Discussions about Unhealthy Eating and Marijuana Use

	Mean	*SD*	*Percentages*
Unhealthy Eating			
Encourage your child to eat healthy	3.58	.89	93%
Tell your child to eat healthy	3.34	1.06	88%
Negative consequences of unhealthy eating	3.01	1.10	85%
Family rules centered on unhealthy eating	2.19	1.25	55%
Media portrayals of unhealthy eating	1.79	1.04	44%
Peer pressure to eat unhealthy food	1.75	1.07	39%
Punishments as a result of unhealthy eating	1.41	.86	31%
Choosing friends who eat healthy	1.39	.88	20%
Marijuana Use			
Encourage your child not to use marijuana	2.21	1.24	58%
Tell your child not to use marijuana	2.16	1.22	56%
Negative consequences of marijuana use	2.19	1.16	63%
Family rules of not using marijuana	1.93	1.18	46%
Media portrayals of marijuana use	1.91	1.20	43%
Peer pressure to use marijuana	2.13	1.19	56%
Punishments as a result of using marijuana	1.85	1.17	41%
Choosing friends who do not use marijuana	1.95	1.19	47%

Note. 1=0 times; 2=1 time; 3=2 times; 4=3 or more times; Percentages includes value if parent discussed 1 time, 2 times, or 3 or more times

Table 1d.

Correlations for Attachment and Parenting Styles

Measures	1	2	3	4	5
1. Attachment Anxiety	---				
2. Attachment Avoidance	.13	---			
3. Authoritative Parenting	-.24**	-.45**	---		
4. Authoritarian Parenting	.45**	.07	-.29**	---	
5. Permissive Parenting	.41**	.10	-.28**	.55**	---
Mean	1.90	3.74	4.00	1.71	1.91
SD	1.35	1.25	.62	.60	.65

Note. **. Correlation is significant at the .01 level (2-tailed)

Table 1e.

Correlations (Unhealthy Eating)

Measures	1	2	3	4	5	6	7	8	9
1. Parent-Child Communication	---								
2. Perceived Risks	.05	---							
3. Negative Prototypes	.17*	.14	---						
4. Self-Efficacy	.08	.23**	.01	---					
5. Coherence	.10	25**	.01	.51**	---				
6. Worry	.32**	.43**	.17*	.19**	.18**	---			
7. Intentions	.37**	.19**	.10	.17*	.19**	.59**	---		
8. Willingness	.38**	.27**	.21**	.09	.10	.46**	.58**	---	
9. Past Discussion	.31**	.22**	.26**	.16*	.09	.41**	.54**	.42**	---
Mean	3.26	4.24	2.89	3.93	2.78	4.57	3.47	3.86	2.31
SD	.35	1.00	.55	.65	.32	1.39	1.32	1.28	.65
α	.59	.86	.78	.88	.90	.91	.98	.72	.79

Note. **. Correlation is significant at the .01 level (2-tailed)
*. Correlation is significant at the .05 level (2-tailed)

Table 1f.
Correlations (Marijuana Use)

Measures	1	2	3	4	5	6	7	8	9
1. Parent-Child Communication	---								
2. Perceived Risks	.09	---							
3. Negative Prototypes	.16*	.25**	---						
4. Self-Efficacy	.15*	.16*	.30**	---					
5. Coherence	.12	.21**	.27**	.63**	---				
6. Worry	.19**	.48**	.18*	.28**	.24**	---			
7. Intentions	.30**	.33**	.15*	.15*	.06	.49**	---		
8. Willingness	.06	.14*	.26**	.31**	.23**	.20**	.22**	---	
9. Past Discussion	.29**	.30**	.24**	.15*	.05	.31**	.58**	.15*	---
Mean	3.26	3.83	3.08	4.02	3.32	4.25	2.89	4.97	2.04
SD	.34	1.05	.58	.80	.41	1.60	1.48	1.29	1.01
α	.59	.86	.82	.93	.91	.91	.98	.78	.94

Note. **. Correlation is significant at the .01 level (2-tailed)
*. Correlation is significant at the .05 level (2-tailed)

Table 1g.

Regression Analyses of Parent-Child Communication, Self-Efficacy, Coherence, Worry, Intentions, Willingness, and Past Discussion of Unhealthy Eating

	B	*SE*	β	*(CI)Lower*	*(CI)Upper*	*t*	*df*	*F*	R^2
Parent-Child Communication							2, 205	45.67	.31
Authoritative Parenting Style	.32	.03	.58	.25	.38	9.43****			
Authoritarian Parenting Style	.14	.04	.25	.08	.22	4.19****			
Self-Efficacy							3, 204	9.82	.13
Authoritative Parenting Style	.24	.09	.23	.07	.41	2.77**			
Authoritarian Parenting Style	-.24	.08	-.22	-.39	-.09	-3.08***			
Coherence							2, 205	6.69	.07
Perceived Risks	.15	.04	.25	.07	.24	3.66****			
Worry							2, 205	25.74	.20
Perceived Risks	.58	.09	.42	.41	.76	6.62****			
Negative Prototypes	.29	.16	.12	-.02	.60	1.85*			
Intentions							8, 199	18.04	.43
Authoritative Parenting Style	.48	.16	.23	.17	.80	3.01***			
Worry	.48	.06	.51	.36	.60	7.68****			
Willingness							8, 199	10.59	.30
Parent-Child Communication	.93	.27	.25	.39	1.46	3.42***			
Perceived Risks	.16	.09	.12	-.02	.34	1.78*			
Negative Prototypes	.26	.14	.11	-.03	.54	1.78*			
Worry	.29	.07	.31	.16	.42	4.33****			
Past Discussion							10, 197	16.51	.46
Authoritative Parenting Style	.18	.08	.17	.02	.33	2.24**			
Authoritarian Parenting Style	.31	.07	.28	.02	.44	4.55****			
Parent-Child Communication	.22	.13	.12	-.02	.47	1.78*			
Negative Prototypes	.15	.07	.13	.02	.28	2.32**			
Self-Efficacy	.14	.06	.14	.02	.27	2.28**			
Intentions	.22	.04	.45	.15	.30	5.98****			

Note. ****$p <$ .001 ; ***$p <$ .01; ** $p <$ .05; * $p <$ .10

Table 1h.

Regression Analyses of Parent-Child Communication, Self-Efficacy, Coherence, Worry, Intentions, Willingness, and Past Discussion of Marijuana Use

	B	*SE*	β	*(CI)Lower*	*(CI)Upper*	*t*	*df*	*F*	R^2
Parent-Child Communication							2, 205	45.67	.31
Authoritative Parenting Style	.32	.03	.58	.25	.38	9.43****			
Authoritarian Parenting Style	.14	.04	.25	.08	.22	4.19****			
Self-Efficacy							2, 205	15.67	.13
Authoritative Parenting Style	.49	.10	.38	.30	.68	5.09****			
Coherence							2, 205	10.76	.10
Perceived Risks	.13	.06	.15	.24	.02	2.23**			
Negative Prototypes	.36	.11	.23	.56	.15	3.38***			
Worry							2, 205	31.51	.24
Perceived Risks	.71	.10	.47	.52	.90	7.40****			
Intentions							7, 200	12.61	.31
Parent-Child Communication	.80	.30	.19	.22	1.39	2.71**			
Perceived Risks	.21	.10	.15	.01	.40	2.12**			
Coherence	.23	.13	.14	-.02	.49	1.81*			
Worry	.36	.07	.39	.23	.49	5.59****			
Willingness							7, 200	3.75	.12
Self-Efficacy	.34	.15	.21	.05	.63	2.30**			
Past Discussion							9, 198	14.72	.40
Parent-Child Communication	.38	.19	.13	.01	.76	1.99*			
Perceived Risks	.15	.06	.16	.03	.28	2.47**			
Self-Efficacy	.22	.10	.17	.03	.41	2.23**			
Coherence	.27	.08	.24	.11	.43	3.27***			
Intentions	.32	.05	.47	.23	.41	7.08****			

Note. ****$p <$ .001 *;* ***$p <$ .01; ** $p <$ .05; * $p <$ .10

Table 2a.

Study 2 Participant Characteristics (N= 393)

	Mean% (SD)
Parent	
Age	19 (.85)
Gender	
Female	72.3%
Male	27.7%
Ethnicity	
Hispanic	71.7%
White (Non-Hispanic)	27.7%
Asian	17.8%
African-American	4.8%
American-Indian	4.8%
Native Hawaiian	2.3%
College Level	
Freshmen	39.9%
Sophomore	25.7%
Junior	31.0%
Senior	3.3%

Table 2b.
Youth Reports of Unhealthy Eating and Marijuana Use

	Mean	*SD*
Unhealthy Eating		
Eat beans, chicken, or fish	2.25	.76
Eat fast food meals or snacks	1.99	.61
Eat red or processed meat	1.95	.76
Eat regular snack chips or crackers	1.79	.67
Eat desserts and other sweets	1.71	.68
Drink regular soda, sweet tea, or coffee	1.58	.67
Season vegetables or potatoes with margarine, butter, etc.	1.54	.61
Eat yogurt or other fermented foods	1.51	.64
Servings of vegetables each day	1.26	.50
Servings of fruits each day	1.23	.48
Marijuana Use		
Will use marijuana if friend offers it	2.54	1.42
Will use marijuana in the next year	2.52	1.45
Has used marijuana	.58	.50
Has used marijuana on 100 or more occasions	.13	.34

Note. Unhealthy eating items 1=very little; 2=some; 3=a lot; Marijuana use first two items 1=definitely not; 2=probably not; 3=maybe; 4=probably yes; 5=definitely yes; last two items 0=no; 1=yes

Table 2c.
Correlations for Attachment and Parenting Styles

Measures	1	2	3	4	5
1. Attachment Anxiety	---				
2. Attachment Avoidance	.45**	---			
3. Authoritative Parenting	-.30**	-.54**	---		
4. Authoritarian Parenting	.24**	.30**	-.24**	---	
5. Permissive Parenting	.07	-.13**	.40**	-.32**	---
Mean	1.80	3.19	3.26	3.37	2.52
SD	1.40	1.57	.71	.76	.60

Note. **. Correlation is significant at the .01 level (2-tailed)

Table 2d.

Unhealthy Eating Correlations for Attachment Styles, Parenting Styles, Perceived Effectiveness, Perceived Interpretability, Motivations to Discuss Behavior, & Discussion Similarity

	Attachment Anxiety	Attachment Avoidance	Authoritative Parenting Style	Authoritarian Parenting Style	Permissive Parenting Style
Perceived Effectiveness of Authoritative Message	-.14**	-.18**	.20**	.08	-.13*
Perceived Effectiveness of Authoritarian Message	.13*	.06	.03	.04	.19**
Perceived Effectiveness of Permissive Message	.03	.04	.01	.00	.07
Perceived Interpretability of Authoritative Message	.09	.08	-.10*	.01	-.04
Perceived Interpretability of Authoritarian Message	.14**	.07	-.03	.05	.03
Perceived Interpretability of Permissive Message	.06	.05	.00	.01	.06
Motivations to Discuss Behavior Authoritative Message	.10*	-.11*	.09	-.03	.13**
Motivations to Discuss Behavior Authoritarian Message	.11*	.02	.09	-.02	.06
Motivations to Discuss Behavior Permissive Message	.17**	.06	.03	.00	.14**
Discussion Similarity of Authoritative Message	-.09	-.33**	.40**	-.09	.19**
Discussion Similarity of Authoritarian Message	.22**	.30**	-.25**	.30**	-.13*
Discussion Similarity of Permissive Message	.09	-.07	.19**	-.08	.32**

Note. **. Correlation is significant at the .01 level (2-tailed)

*. Correlation is significant at the .05 level (2-tailed)

Table 2e.

Marijuana Use Correlations for Attachment Styles, Parenting Styles, Perceived Effectiveness, Perceived Interpretability, Motivations to Discuss Behavior, & Discussion Similarity

	Attachment Anxiety	Attachment Avoidance	Authoritative Parenting Style	Authoritarian Parenting Style	Permissive Parenting Style
Perceived Effectiveness of Authoritative Message	-.09	-.11*	.11*	-.04	-.05
Perceived Effectiveness of Authoritarian Message	.11*	.07	-.02	.04	.09
Perceived Effectiveness of Permissive Message	.05	.07	.03	.01	.07
Perceived Interpretability of Authoritative Message	.10*	.05	-.03	.00	.00
Perceived Interpretability of Authoritarian Message	.15**	.08	-.03	.03	.03
Perceived Interpretability of Permissive Message	.09	.08	-.10*	.01	-.04
Motivations to Discuss Behavior Authoritative Message	.08	-.02	-.01	-.04	.10*
Motivations to Discuss Behavior Authoritarian Message	.08	-.06	.02	.00	-.03
Motivations to Discuss Behavior Permissive Message	.10*	.01	.07	-.03	.08
Discussion Similarity of Authoritative Message	-.18**	-.35**	.39**	-.30**	.24**
Discussion Similarity of Authoritarian Message	.22**	.30**	-.25**	.30**	-.13*
Discussion Similarity of Permissive Message	.09	-.02	.16**	-.14**	.32**

Note. **. Correlation is significant at the .01 level (2-tailed)

*. Correlation is significant at the .05 level (2-tailed)

Table 3a.
Pilot Study Participant Characteristics (N= 30)

	Mean% (SD)
Parent	
Age	37.6 (10.6)
Gender	
Female	53.3%
Male	46.7%
Ethnicity	
White (Non-Hispanic)	76.7%
African-American	13.3%
Asian-American	10%
Hispanic	6.7%
Other	3.3%
Education	
College or university graduate	36.7%
Some college or university	33.3%
1 or more years of graduate school	13.3%
High school graduate	13.3%
Technical or trade school	3.3%
Employment	
Full-Time	60%
Part-Time	20%
No	20%
Child	
Age	12.7 (2.4)
Female	76.7%
Male	23.3%

Table 3b.
Study 3 Participant Characteristics (N= 318)

	Mean% (SD)
Parent	
Age	39.8 (7.1)
Gender	
Female	64.8%
Male	35.2%
Ethnicity	
White (Non-Hispanic)	81.6%
African-American	11.3%
Asian-American	3.9%
Hispanic	8.9%
Other	.6%
Native Hawaiian or other Pacific Islander	.3%
Marital Status	
Married	67.9%
Living with partner	12.3%
Single	9.1%
Divorced	7.9%
Separated	2.5%
Widowed	.3%
Education	
College or university graduate	37.4%
Some college or university	29.9%
1 or more years of graduate school	11.6%
Grade 12 or GED	11.6%
Technical or trade school	8.2%
Grades 9-11	1.3%
Employment	
Full-Time	65.4%
Part-Time	17.3%
No	17.3%
Child	
Age	13.3 (2.3)
Male	56.9%
Female	43.1%

Table 3c.
Between-Subjects ANOVAs of Tool Conditions

	Unhealthy Eating Condition	Marijuana Use Condition	Sedentary Behavior Condition	*df*	*F*	η_p^2
Tool Evaluations						
Perceived Effectiveness	3.04 (.86)[a]	2.98 (1.14)[a]	3.53 (.57)[b]	2, 315	12.31***	.07
Perceived Interpretability	3.53 (.62)	3.48 (.70)	3.58 (.64)	2, 315	.65	.00
Motivations to Address the Behavior	2.57 (.80)[a]	2.43 (.95)[a]	3.23 (.69)[b]	2, 315	28.11***	.15
Unhealthy Eating						
Self-Efficacy	4.01 (.62)	3.94 (.72)[a]	4.17 (.63)[b]	2, 315	3.62*	.02
Coherence	2.80 (.39)	2.85 (.58)	2.84 (.42)	2, 315	.41	.00
Intentions	3.72 (1.11)[a]	3.75 (1.21)[a]	4.18 (.92)[b]	2, 315	5.73**	.04
Willingness	3.73 (1.20)[a]	3.68 (1.26)[a]	4.26 (1.00)[b]	2, 315	8.12***	.05
Marijuana Use						
Self-Efficacy	4.10 (.73)	4.08 (.87)	4.14 (.67)	2, 315	.18	.00
Coherence	2.71 (.53)	2.85 (.57)	2.79 (.44)	2, 315	2.07	.01
Intentions	2.71 (1.39)	2.90 (1.50)	2.84 (1.48)	2, 315	.45	.00
Willingness	4.28 (.99)	4.28 (1.13)	4.23 (1.08)	2, 315	.08	.00
Sedentary Behavior						
Intentions	3.56 (1.37)[a]	3.63 (1.37)	3.96 (1.21)[b]	2, 315	2.79+	.02
Willingness to Pay for the Tool	1.40 (.98)[a]	1.12 (.92)[b]	.80 (.82)[b]	2, 255	6.96**	.05

*Note. df = degrees of freedom; ***p < .001; **p < .01; *p < .05; +p < .10;* η_p^2 partial eta squared effect size

Table 3d.
Moderation Analyses for Authoritative Parenting Style

	B	*SE*	β	*t*	*F*	R^2
Tool Evaluations						
Perceived Effectiveness					6.62**	.10
Authoritative Parenting Style	.20	.09	.12	2.15*		
Unhealthy Eating VS. Sedentary Behavior	.15	.07	.13	2.05*		
Marijuana Use VS. Sedentary Behavior	-.20	.07	-.18	-2.92**		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.11	.13	.05	.87		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.15	.13	-.07	-1.17		
Perceived Interpretability					9.80***	.14
Authoritative Parenting Style	.42	.06	.35	6.65***		
Unhealthy Eating VS. Sedentary Behavior	.00	.05	.00	-.01		
Marijuana Use VS. Sedentary Behavior	-.05	.05	-.06	-1.00		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.01	.09	-.01	-0.11		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.18	.09	-.12	-2.06*		
Motivations to Address the Behavior					14.73***	.19
Authoritative Parenting Style	.21	.08	.13	2.49*		
Unhealthy Eating VS. Sedentary Behavior	.18	.06	.16	2.72**		
Marijuana Use VS. Sedentary Behavior	-.31	.06	-.28	-4.83***		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.08	.12	.04	.69		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.28	.12	-.14	-2.41*		
Unhealthy Eating Measures						
Self-Efficacy					14.16***	.19
Authoritative Parenting Style	.49	.06	.40	7.85***		
Unhealthy Eating VS. Sedentary Behavior	.03	.05	.04	.70		
Marijuana Use VS. Sedentary Behavior	-.10	.05	-.12	-2.05*		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.04	.09	.02	.41		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	.03	.09	.02	.33		
Coherence					1.02	.02
Authoritative Parenting Style	-.08	.05	-.09	-1.63		
Unhealthy Eating VS. Sedentary Behavior	.03	.04	.06	.90		
Marijuana Use VS. Sedentary Behavior	.02	.04	.03	.42		

Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.01	.07	-.01	-.11		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	.08	.07	.07	1.17		
Intentions					3.68*	.06
Authoritative Parenting Style	.28	.11	.14	2.50*		
Unhealthy Eating VS. Sedentary Behavior	.16	.09	.12	1.87+		
Marijuana Use VS. Sedentary Behavior	-.13	.09	-.10	-1.52		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.11	.16	.05	.72		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.01	.16	.00	-.07		
Willingness					5.87**	.09
Authoritative Parenting Style	.41	.12	.19	3.48**		
Unhealthy Eating VS. Sedentary Behavior	.16	.09	.11	1.80+		
Marijuana Use VS. Sedentary Behavior	-.21	.09	-.14	-2.28*		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.11	.17	-.04	-.65		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.13	.16	-.05	-.77		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.02	.06	-.02	-.27		
Marijuana Use Measures						
Self-Efficacy					11.13***	.15
Authoritative Parenting Style	.53	.07	.38	7.28***		
Unhealthy Eating VS. Sedentary Behavior	.01	.06	.01	.20		
Marijuana Use VS. Sedentary Behavior	-.02	.06	-.02	-.35		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.14	.10	.08	1.32		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	.09	.10	.05	.86		
Coherence					1.41+	.02
Authoritative Parenting Style	-.08	.05	-.09	-1.51		
Unhealthy Eating VS. Sedentary Behavior	.07	.04	.12	1.79+		
Marijuana Use VS. Sedentary Behavior	.07	.04	.11	1.68+		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.02	.08	.02	.31		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	.06	.07	.06	.87		
Intentions					1.54+	.02
Authoritative Parenting Style	.12	.15	.05	.80		
Unhealthy Eating VS. Sedentary Behavior	.10	.12	.06	.88		
Marijuana Use VS. Sedentary Behavior	.08	.11	.04	.69		

Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.16	.21	.05	.75		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.37	.21	-.11	-1.79+		
Willingness					2.30**	.04
Authoritative Parenting Style	.29	.11	.15	2.61**		
Unhealthy Eating VS. Sedentary Behavior	-.02	.09	-.01	-.22		
Marijuana Use VS. Sedentary Behavior	.02	.08	.01	.20		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.16	.16	.07	1.05		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.20	.15	-.08	-1.30		
Sedentary Behavior Measure					1.79	.03
Intentions						
Authoritative Parenting Style	.22	.14	.09	1.64		
Unhealthy Eating VS. Sedentary Behavior	.16	.11	.10	1.53		
Marijuana Use VS. Sedentary Behavior	-.08	.10	-.05	-.78		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.13	.19	.04	.69		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.03	.19	-.01	-.16		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	.00	.08	.00	.02		
Willingness to Pay for the Tool					3.60**	.07
Authoritative Parenting Style	.00	.12	.00	.02		
Unhealthy Eating VS. Sedentary Behavior	-.29	.09	-.22	-3.38**		
Marijuana Use VS. Sedentary Behavior	.00	.08	.00	.01		
Authoritative Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.15	.15	-.07	-1.03		
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.27	.15	-.13	-1.85+		

Note. ***$p < .001$; **$p < .01$; *$p < .05$; +$p < .10$

Table 3e.
Moderation Analyses for Authoritarian Parenting Style

	B	*SE*	β	*t*	*F*	R^2
Tool Evaluations						
Perceived Effectiveness					5.04**	.08
Authoritarian Parenting Style	.03	.08	.02	.37		
Unhealthy Eating VS. Sedentary Behavior	.14	.07	.12	1.97+		
Marijuana Use VS. Sedentary Behavior	-.21	.07	-.19	-2.94**		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.05	.12	-.03	-.45		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.03	.10	.02	.32		
Perceived Interpretability					7.13***	.10
Authoritarian Parenting Style	-.32	.06	-.32	-5.70***		
Unhealthy Eating VS. Sedentary Behavior	.00	.05	.00	.07		
Marijuana Use VS. Sedentary Behavior	-.03	.05	-.04	-.61		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.02	.08	.02	.26		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.00	.07	.00	.06		
Motivations to Address the Behavior					13.04***	.17
Authoritarian Parenting Style	.03	.07	.02	.38		
Unhealthy Eating VS. Sedentary Behavior	.17	.07	.15	2.57*		
Marijuana Use VS. Sedentary Behavior	-.32	.06	-.29	-4.94***		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.09	.11	.05	.84		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.25	.10	.16	2.62*		
Unhealthy Eating Measures						
Self-Efficacy					3.46*	.05
Authoritarian Parenting Style	-.16	.06	-.16	-2.75*		
Unhealthy Eating VS. Sedentary Behavior	.03	.05	.04	.57		
Marijuana Use VS. Sedentary Behavior	-.10	.05	-.12	-1.92+		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.13	.09	.09	1.48		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.16	.08	.13	2.10*		
Coherence					16.90***	.21
Authoritarian Parenting Style	.29	.04	.40	7.65***		
Unhealthy Eating VS. Sedentary Behavior	.03	.03	.04	.74		
Marijuana Use VS. Sedentary Behavior	-.01	.03	-.02	-.32		

Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.10	.06	.10	1.67		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.15	.05	.18	2.99**		
Intentions					2.59+	.04
Authoritarian Parenting Style	.08	.10	.05	.80		
Unhealthy Eating VS. Sedentary Behavior	.16	.09	.12	1.80+		
Marijuana Use VS. Sedentary Behavior	-.13	.09	-.10	-1.56		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.15	.15	-.07	-1.04		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	-.10	.13	-.05	-.77		
Willingness					3.89*	.06
Authoritarian Parenting Style	-.11	.10	-.06	-1.08		
Unhealthy Eating VS. Sedentary Behavior	.16	.09	.11	1.73+		
Marijuana Use VS. Sedentary Behavior	-.21	.09	-.15	-2.30*		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.21	.16	.09	1.37		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.20	.13	.09	1.46		
Marijuana Use Measures						
Self-Efficacy					2.00**	.03
Authoritarian Parenting Style	-.15	.07	-.12	-2.16*		
Unhealthy Eating VS. Sedentary Behavior	.00	.06	.00	.05		
Marijuana Use VS. Sedentary Behavior	-.03	.06	-.03	-.42		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.10	.10	.06	.97		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.23	.09	.17	2.64*		
Coherence					13.79***	.18
Authoritarian Parenting Style	.30	.04	.38	7.24***		
Unhealthy Eating VS. Sedentary Behavior	.06	.04	.10	1.70+		
Marijuana Use VS. Sedentary Behavior	.04	.04	.07	1.17		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.01	.06	.01	.08		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.09	.06	.10	1.60		
Intentions					1.22	.01
Authoritarian Parenting Style	.16	.13	.07	1.19		
Unhealthy Eating VS. Sedentary Behavior	.10	.12	.05	.83		
Marijuana Use VS. Sedentary Behavior	.07	.12	.04	.58		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.05	.20	-.02	-.24		

Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.06	.17	.02	.37		
Willingness					3.21***	.05
Authoritarian Parenting Style	-.35	.09	-.21	-3.67***		
Unhealthy Eating VS. Sedentary Behavior	-.01	.08	-.01	-.09		
Marijuana Use VS. Sedentary Behavior	.04	.08	.03	.51		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.02	.14	.01	.15		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	-.08	.12	-.04	-.63		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.02	.05	.03	.49		
Sedentary Behavior Measure						
Intentions					1.97+	.03
Authoritarian Parenting Style	.20	.12	.10	1.69+		
Unhealthy Eating VS. Sedentary Behavior	.15	.11	.09	1.44		
Marijuana Use VS. Sedentary Behavior	-.09	.10	-.06	-.90		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.25	.18	-.09	-1.41		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	-.10	.15	-.04	-.64		
Willingness to Pay for the Tool					3.22**	.06
Authoritarian Parenting Style	-.10	.10	-.07	-1.01		
Unhealthy Eating VS. Sedentary Behavior	-.29	.08	-.22	-3.49**		
Marijuana Use VS. Sedentary Behavior	.02	.08	.01	.21		
Authoritarian Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.13	.14	.06	.98		
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.06	.12	.03	.47		

Note. ***$p < .001$; **$p < .01$; *$p < .05$; +$p < .10$

Table 3f.
Moderation Analyses for Permissive Parenting Style

	B	*SE*	β	*t*	*F*	R^2
Tool Evaluations						
Perceived Effectiveness					5.62**	.08
Permissive Parenting Style	.02	.07	.01	.25		
Unhealthy Eating VS. Sedentary Behavior	.14	.07	.12	1.96+		
Marijuana Use VS. Sedentary Behavior	-.20	.07	-.18	-2.89**		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.18	.10	-.12	-1.83+		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.10	.10	-.06	-.97		
Perceived Interpretability					5.49***	.08
Permissive Parenting Style	-.25	.05	-.28	-5.05***		
Unhealthy Eating VS. Sedentary Behavior	.01	.05	.01	.14		
Marijuana Use VS. Sedentary Behavior	-.03	.05	-.04	-.65		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.05	.07	-.04	-.66		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.04	.07	-.04	-.61		
Motivations to Address the Behavior					12.50***	.17
Permissive Parenting Style	.06	.07	.04	.84		
Unhealthy Eating VS. Sedentary Behavior	.17	.07	.15	2.53*		
Marijuana Use VS. Sedentary Behavior	-.31	.07	-.29	-4.82***		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.19	.09	-.12	-2.06*		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.02	.09	-.01	-.24		
Unhealthy Eating Measures						
Self-Efficacy					3.94*	.06
Permissive Parenting Style	-.13	.05	-.14	-2.48*		
Unhealthy Eating VS. Sedentary Behavior	.03	.05	.04	.57		
Marijuana Use VS. Sedentary Behavior	-.10	.05	-.13	-1.98+		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.02	.07	.02	.33		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.17	.07	.15	2.29*		
Coherence					4.75***	.07
Permissive Parenting Style	.16	.04	.24	4.38***		
Unhealthy Eating VS. Sedentary Behavior	.03	.04	.05	.77		
Marijuana Use VS. Sedentary Behavior	.00	.04	.00	.05		

Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.09	.05	.11	1.75+		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.08	.05	.10	1.53		
Intentions					3.58*	.05
Permissive Parenting Style	.07	.09	.04	.80		
Unhealthy Eating VS. Sedentary Behavior	.15	.09	.11	1.71+		
Marijuana Use VS. Sedentary Behavior	-.14	.09	-.10	-1.59		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.29	.12	-.15	-2.37*		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.11	.12	-.06	-.91		
Willingness					3.33*	.05
Permissive Parenting Style	-.04	.09	-.02	-.40		
Unhealthy Eating VS. Sedentary Behavior	.16	.09	.11	1.71+		
Marijuana Use VS. Sedentary Behavior	-.21	.09	-.15	-2.29*		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.02	.13	.01	.14		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.08	.13	.04	.57		
Marijuana Use Measures						
Self-Efficacy					1.24*	.02
Permissive Parenting Style	-.13	.06	-.12	-2.11*		
Unhealthy Eating VS. Sedentary Behavior	.01	.06	.01	.13		
Marijuana Use VS. Sedentary Behavior	-.02	.06	-.02	-.33		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.07	.09	-.05	-.77		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.03	.09	.03	.38		
Coherence					5.41***	.08
Permissive Parenting Style	.18	.04	.24	4.41***		
Unhealthy Eating VS. Sedentary Behavior	.07	.04	.11	1.72+		
Marijuana Use VS. Sedentary Behavior	.05	.04	.09	1.37		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.10	.06	.11	1.78+		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.06	.06	.06	1.01		
Intentions					1.09+	.01
Permissive Parenting Style	.21	.12	.10	1.79+		
Unhealthy Eating VS. Sedentary Behavior	.10	.12	.06	.84		
Marijuana Use VS. Sedentary Behavior	.07	.12	.04	.61		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.04	.16	-.02	-.25		

Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.13	.16	-.05	-.81		
Willingness					.94	.01
Permissive Parenting Style	-.10	.09	-.06	-1.11		
Unhealthy Eating VS. Sedentary Behavior	-.02	.09	-.02	-.25		
Marijuana Use VS. Sedentary Behavior	.02	.09	.02	.25		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.16	.12	-.09	-1.31		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.00	.12	.00	.03		
Sedentary Behavior Measure						
Intentions					2.37*	.04
Permissive Parenting Style	.15	.11	.08	1.40		
Unhealthy Eating VS. Sedentary Behavior	.15	.11	.09	1.38		
Marijuana Use VS. Sedentary Behavior	-.09	.10	-.06	-.88		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.31	.15	-.13	-2.06*		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	-.13	.15	-.06	-.85		
Willingness to Pay for the Tool					3.33***	.06
Permissive Parenting Style	.03	.09	.02	.27		
Unhealthy Eating VS. Sedentary Behavior	-.30	.08	-.23	-3.55***		
Marijuana Use VS. Sedentary Behavior	.00	.08	.00	-.01		
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.06	.12	.03	.49		
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.18	.12	.10	1.49		

Note. ***$p < .001$; **$p < .01$; *$p < .05$; +$p < .10$

Table 3g.

Summary of Significant Interaction Effects for Moderation Analyses of Authoritative, Authoritarian, and Permissive Parenting Styles

	B	*SE*	β	*p*
Authoritative Parenting Style				
Perceived Interpretability				
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.18	.09	-.12	.04*
Motivations to Address the Behavior				
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.28	.12	-.14	.02*
Intentions				
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.37	.21	-.11	.08+
Willingness to Pay for the Tool				
Authoritative Parenting Style X Marijuana Use VS. Sedentary Behavior	-.27	.15	-.13	.07+
Authoritarian Parenting Style				
Motivations to Address the Behavior				
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.25	.10	.16	.01*
Self-Efficacy				
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.16	.08	.13	.04*
Coherence				
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.15	.05	.18	.00**
Self-Efficacy				
Authoritarian Parenting Style X Marijuana Use VS. Sedentary Behavior	.23	.09	.17	.01*
Permissive Parenting Style				
Perceived Effectiveness				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.18	.10	-.12	.07+
Motivations to Address the Behavior				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.19	.09	-.12	.04*
Self-Efficacy Unhealthy Eating				
Permissive Parenting Style X Marijuana Use VS. Sedentary Behavior	.17	.07	.15	.02*
Coherence Unhealthy Eating				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.09	.05	.11	.08+
Intentions Unhealthy Eating				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.29	.12	-.15	.02*
Coherence Marijuana Use				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	.10	.06	.11	.08+
Intentions Sedentary Behavior				
Permissive Parenting Style X Unhealthy Eating VS. Sedentary Behavior	-.31	.15	-.13	.04*

*Note. +p < .10; *p < .05; **p < .01*

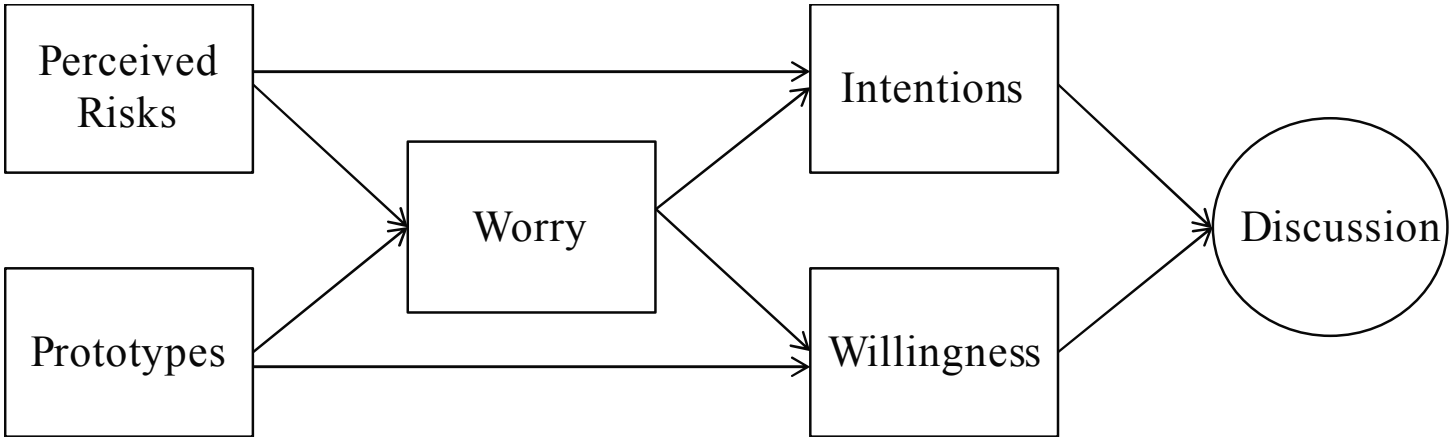


Figure 1a. *The Adapted Prototype-Willingness Model from Khachikian & Cameron (2018)*

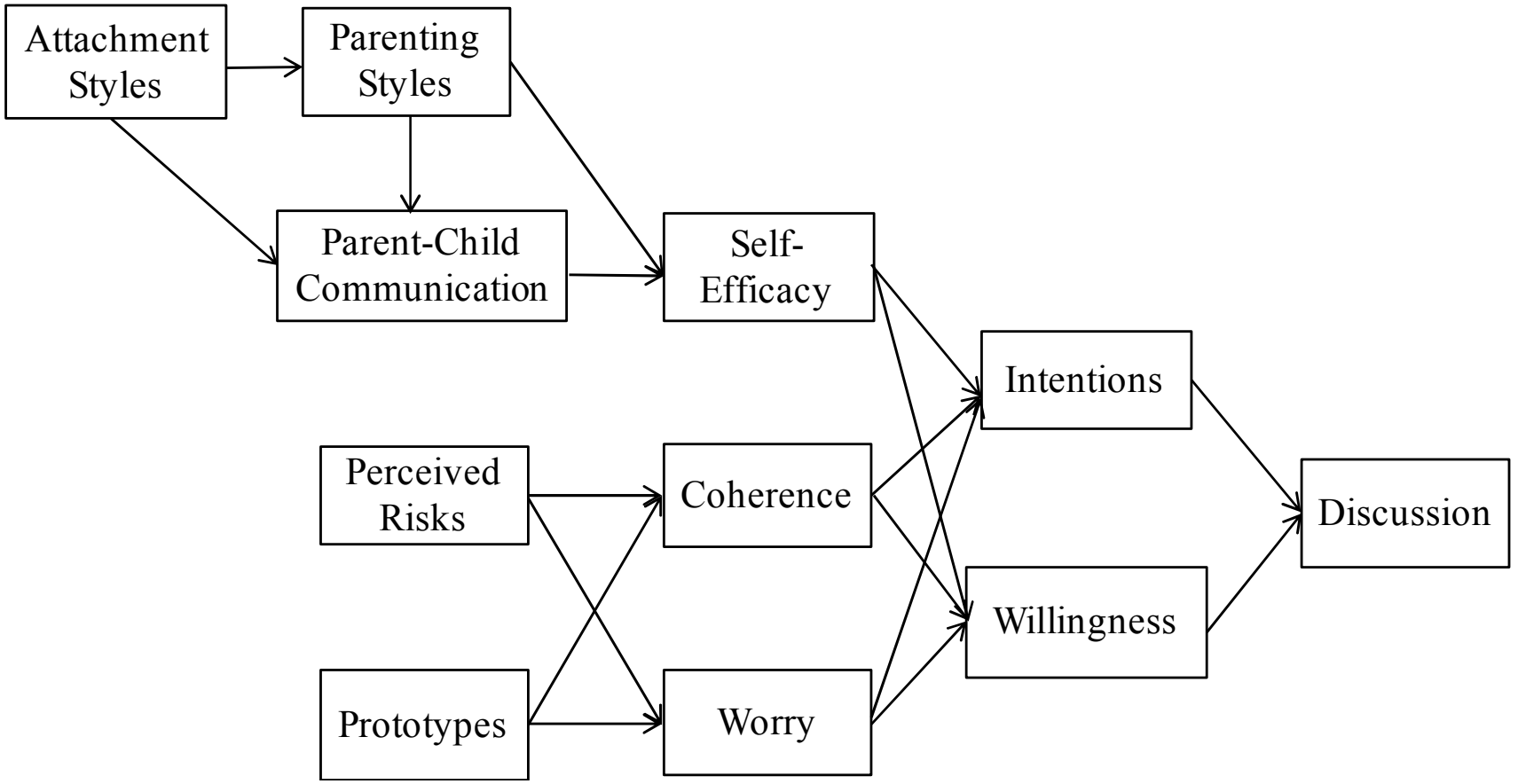


Figure 1b. *The Adapted Prototype-Willingness Model for Study 1*

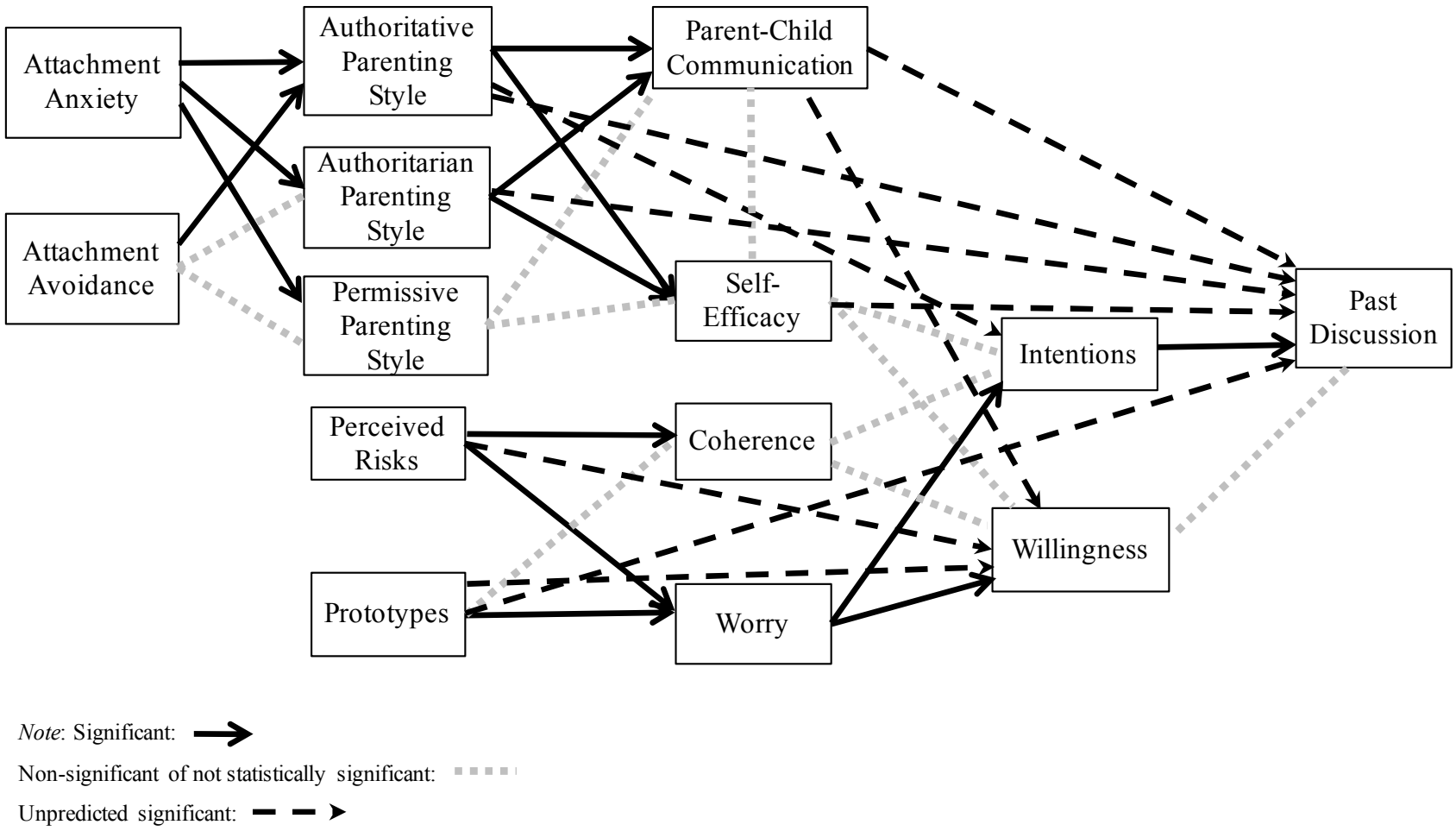


Figure 1c. *Unhealthy Eating Regression Paths*

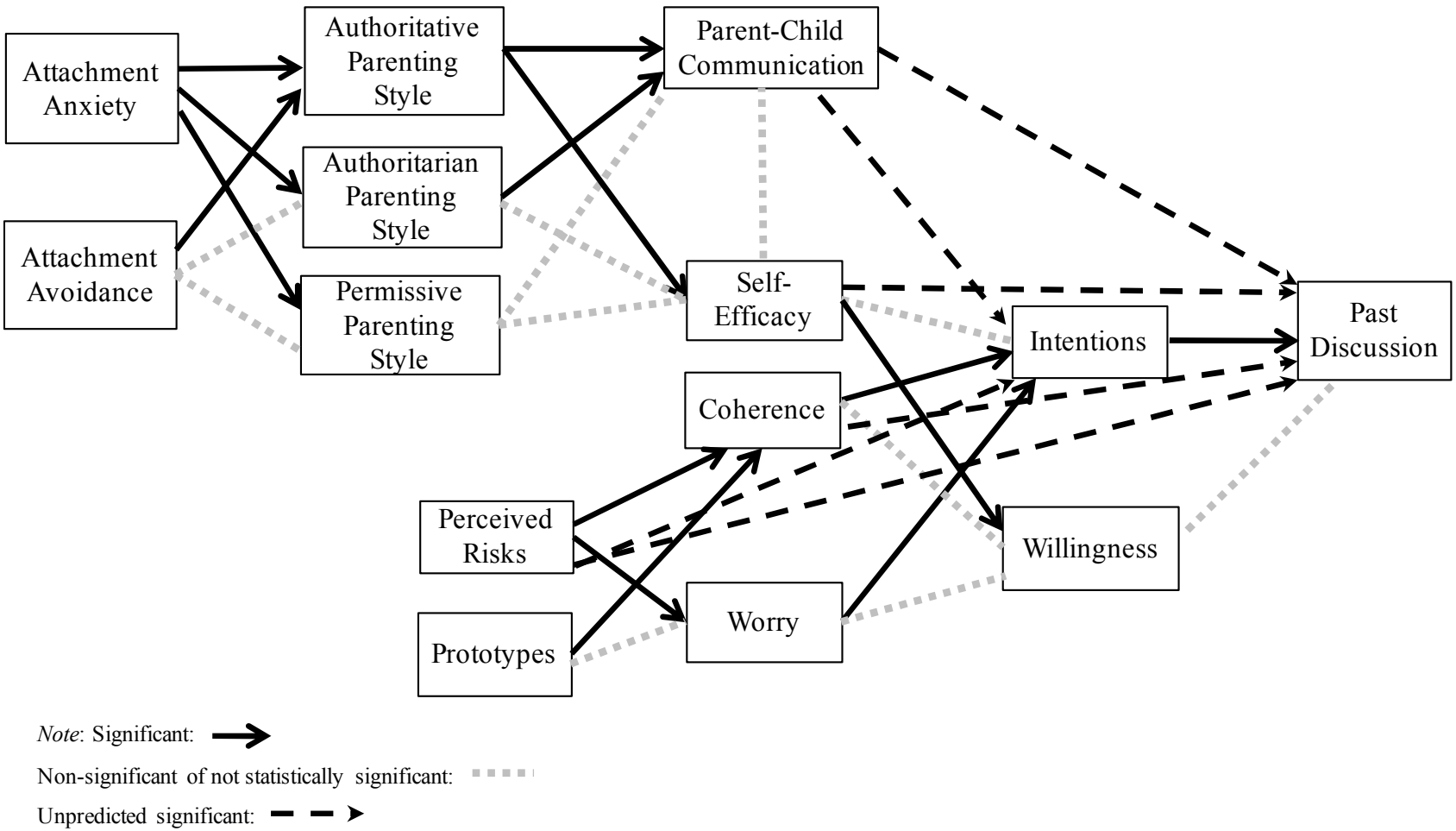


Figure 1d. *Marijuana Use Regression Paths*

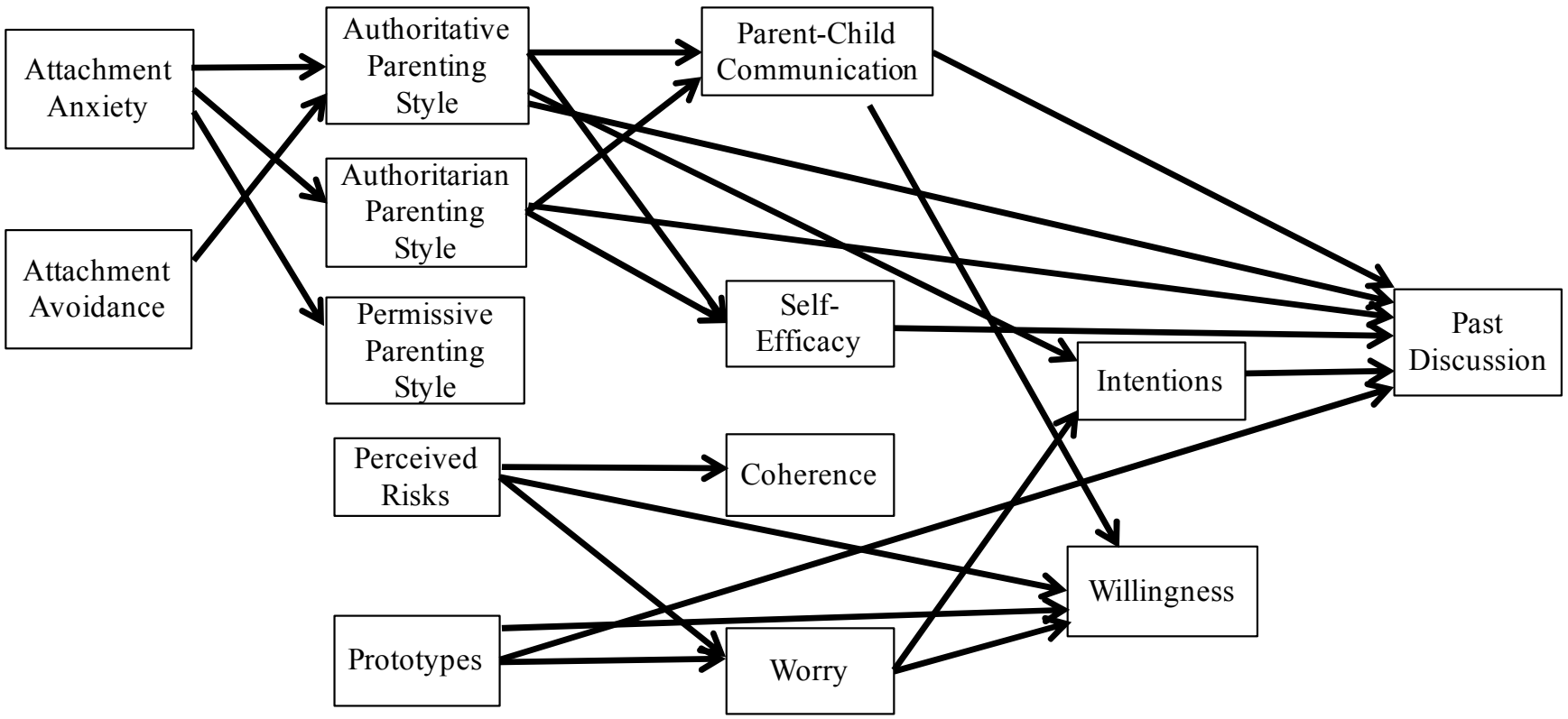


Figure 1e. *Unhealthy Eating Regression Final Model*

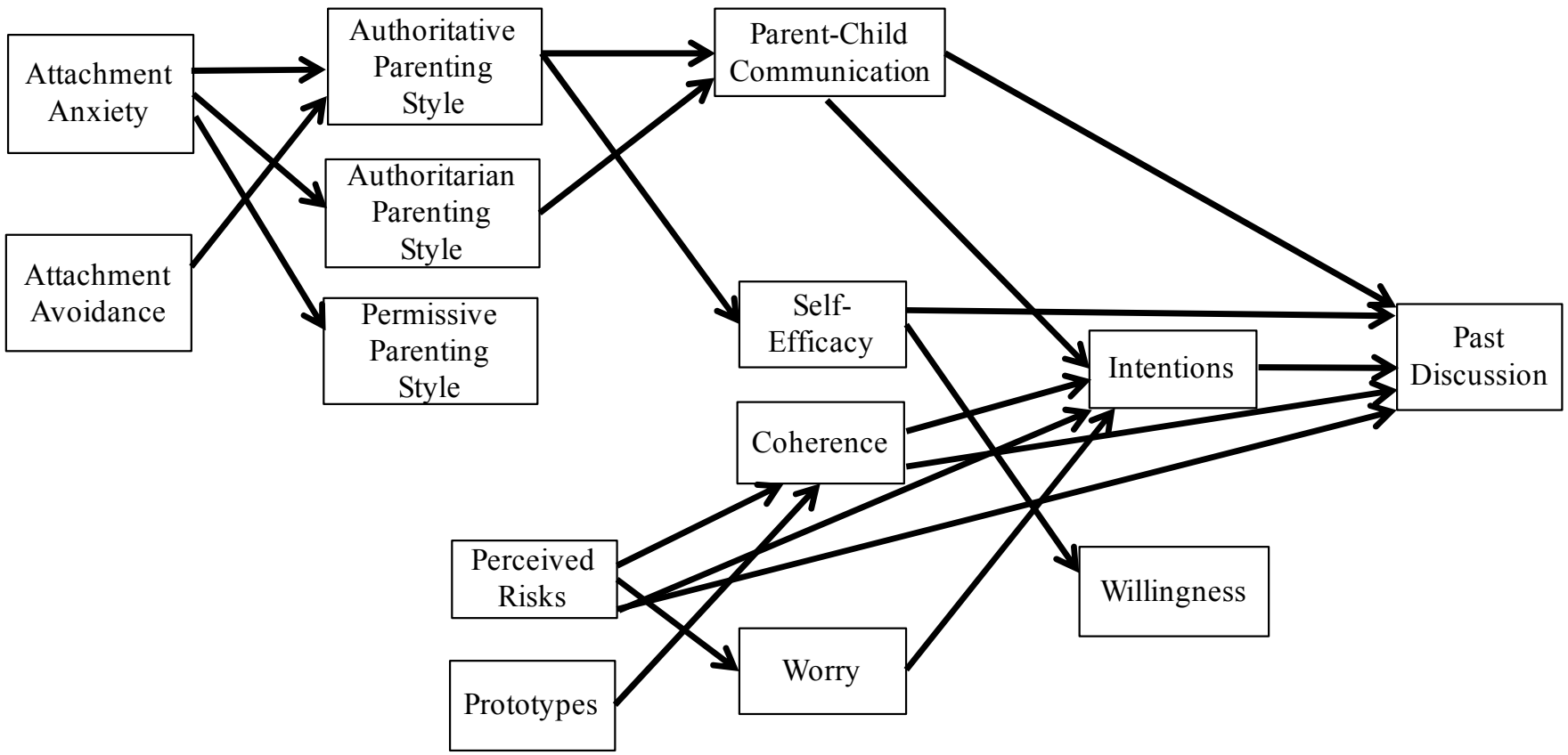


Figure 1f. *Marijuana Use Regression Final Model*

Authoritative Parenting

Listen to their children.
Express warmth and nurturance.
Set limits, consequences, and expectations on their children's behavior.
Encourage children to express their opinions.
Administer fair and consistent discipline.

Authoritarian Parenting

Very demanding towards their children, but not responsive.
Do not express much warmth or nurturance.
Set strict rules and expectations.
Do not provide their children with choices or options.
Administer punishment with little or no explanation.

Permissive Parenting

Usually very nurturing and loving towards their children.
Often act more like a friend, rather than a parent.
Set few rules. If there are rules, they are often inconsistent.
Rarely discipline their children and avoid confrontation.
Utilize bribery such as gifts and food to get their children to behave.

Figure 2a. *Attributes of Parenting Styles for Parenting-Framed Messages*

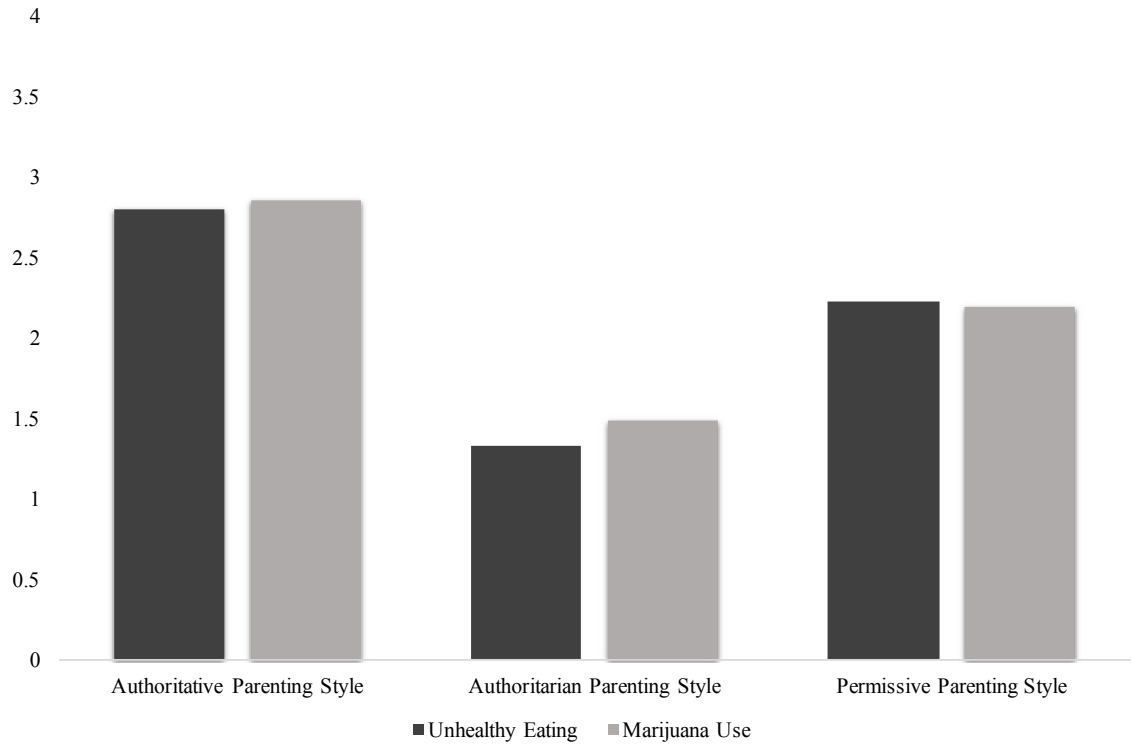


Figure 2b. *Repeated Measures ANOVA of Perceived Effectiveness of Unhealthy Eating and Marijuana Use*

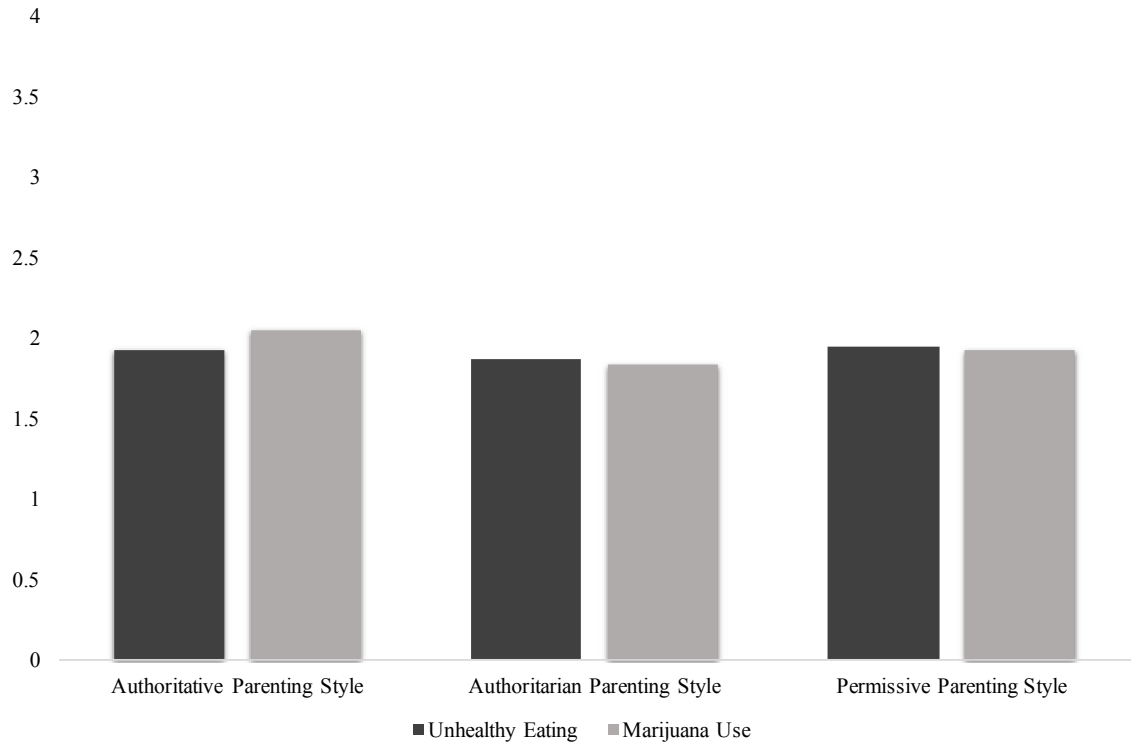


Figure 2c. *Repeated Measures ANOVA of Perceived Interpretability of Unhealthy Eating and Marijuana Use*

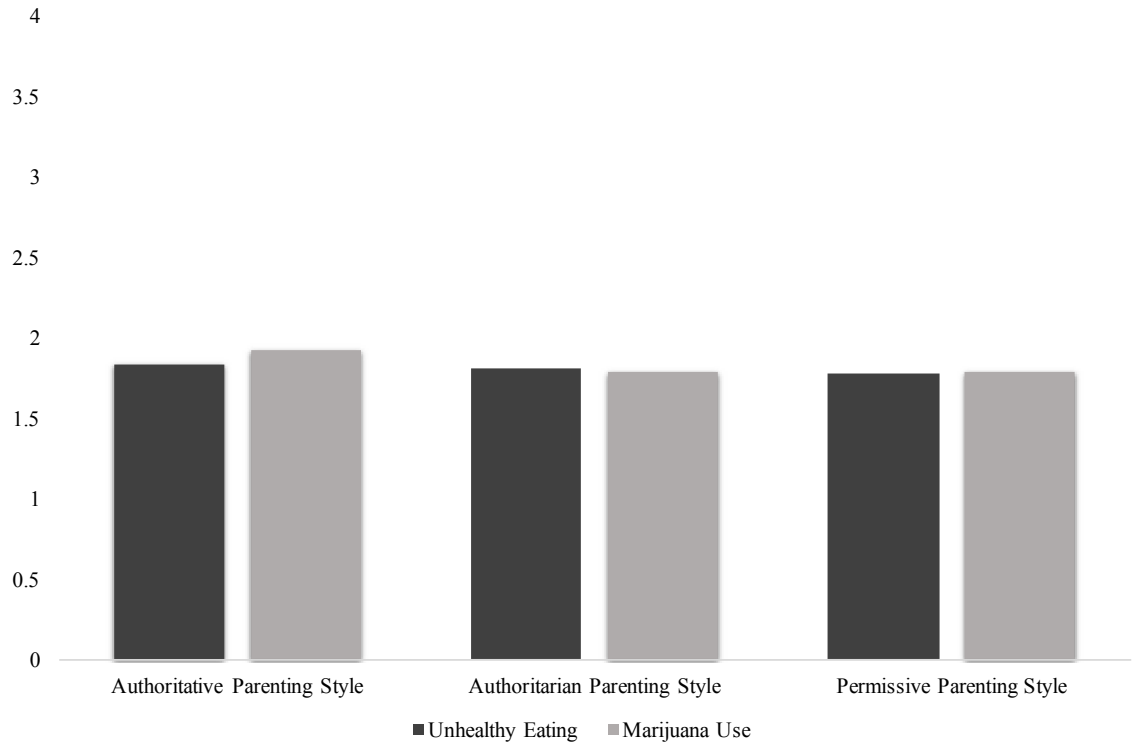


Figure 2d. *Repeated Measures ANOVA of Motivations to Discuss Unhealthy Eating and Marijuana Use*

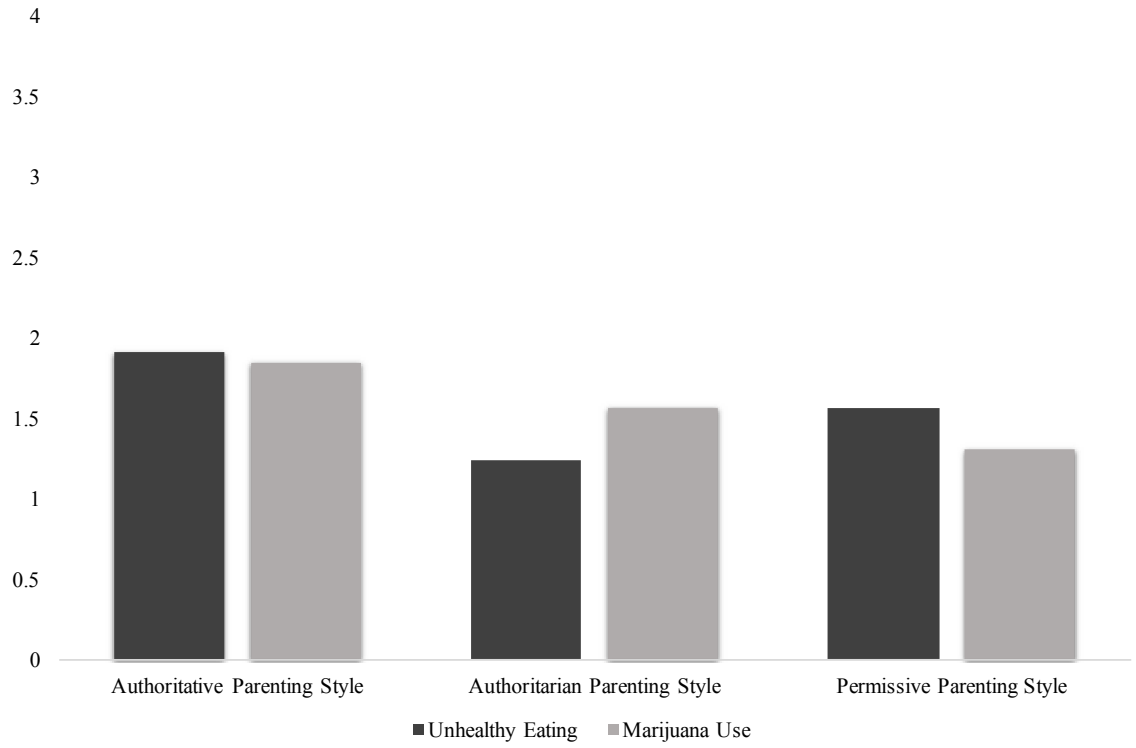


Figure 2e. *Repeated Measures ANOVA of Discussion Similarity of Unhealthy Eating and Marijuana Use*

Unhealthy Eating & Marijuana Use Images		Sedentary Behavior Image	
Relationship Type		Relationship Type	
Mother-Daughter	X	Two Women	X
Mother-Son	X	Two Men	X
Father-Daughter	X	Woman and Man	X
Father-son	X		
Ethnicity		Ethnicity	
African-American	X	African-American	X
Asian	X	Asian	X
Hispanic	X	Hispanic	X
White	X	White	X
Facial Expressions		Facial Expressions	
Parent Smiling	X	Smiling	X
Child Smiling	X		
Activity		Activity	
Sitting	X	Jogging	X
Facing each other	X	Facing each other	X

Figure 3a. *Comparability of Tool Images*

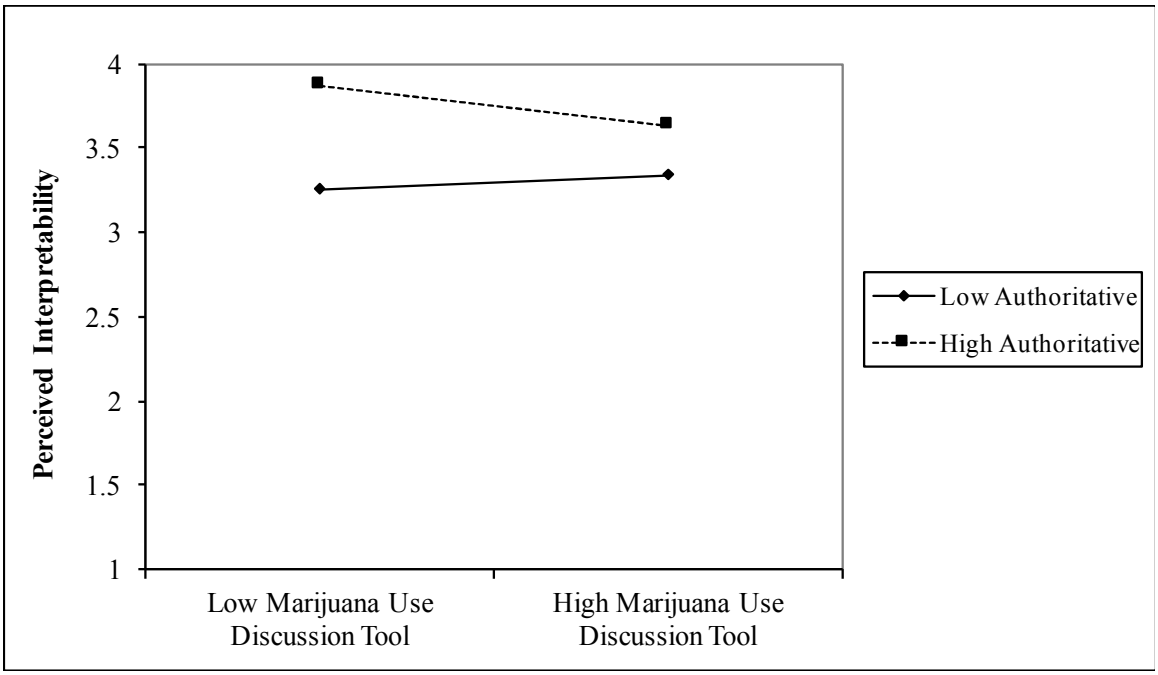


Figure 3b. *Authoritative Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Perceived Interpretability*

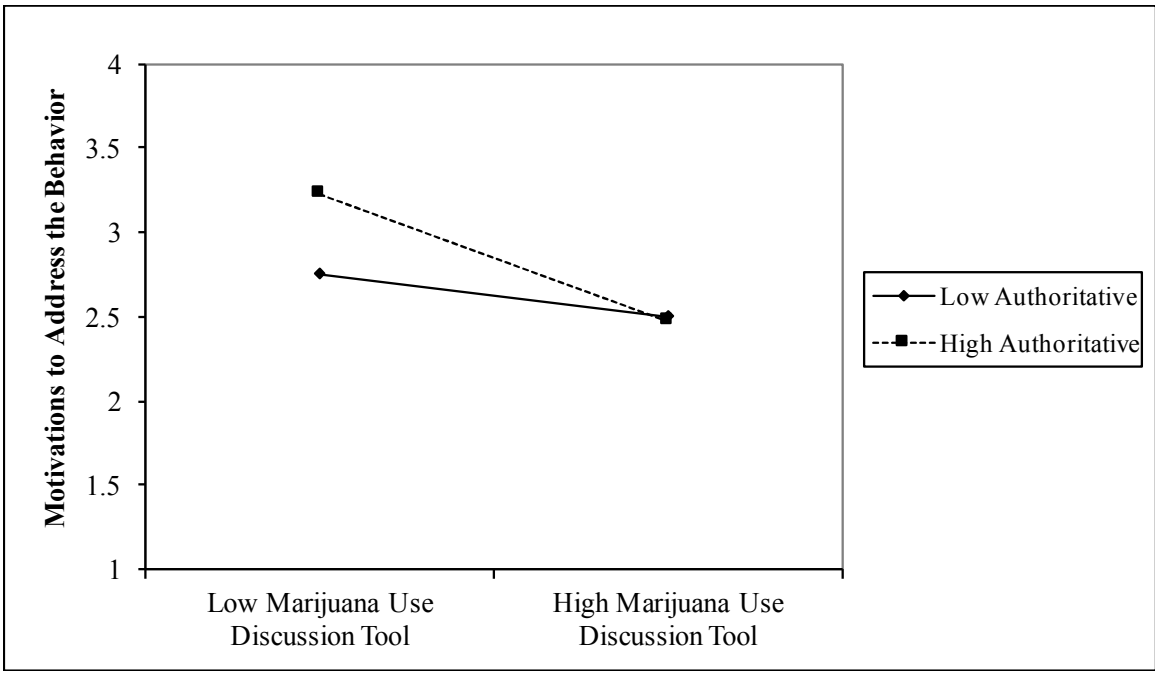


Figure 3c. *Authoritative Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Motivations to Address the Behavior*

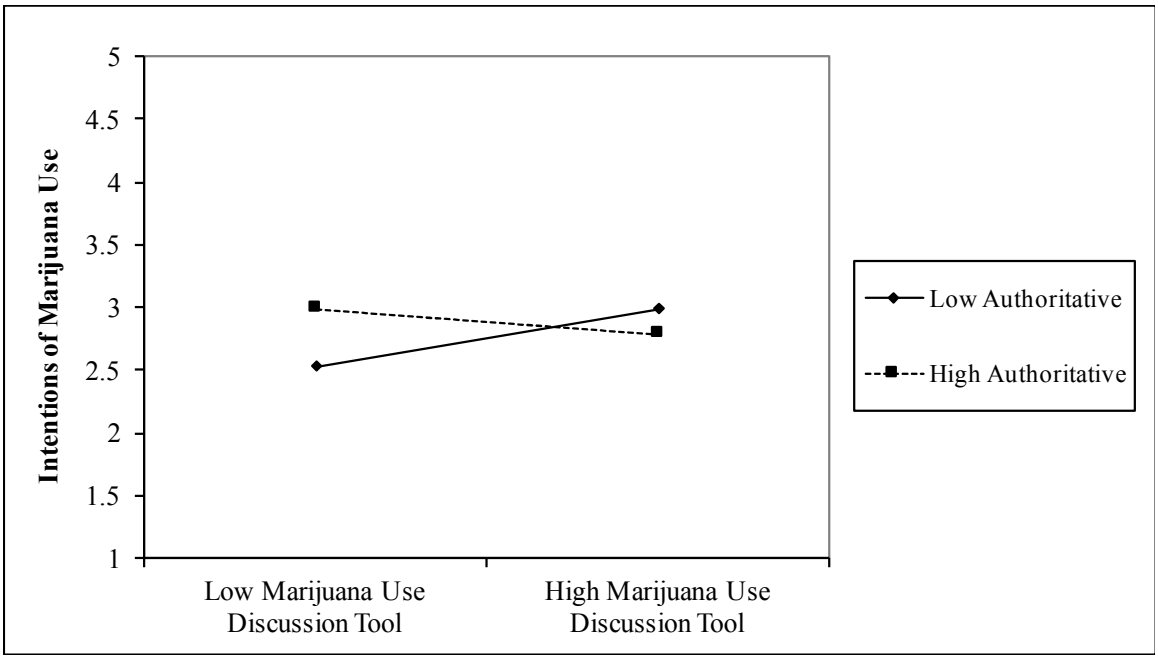


Figure 3d. *Authoritative Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Intentions for Having Marijuana Use Discussions with One's Child*

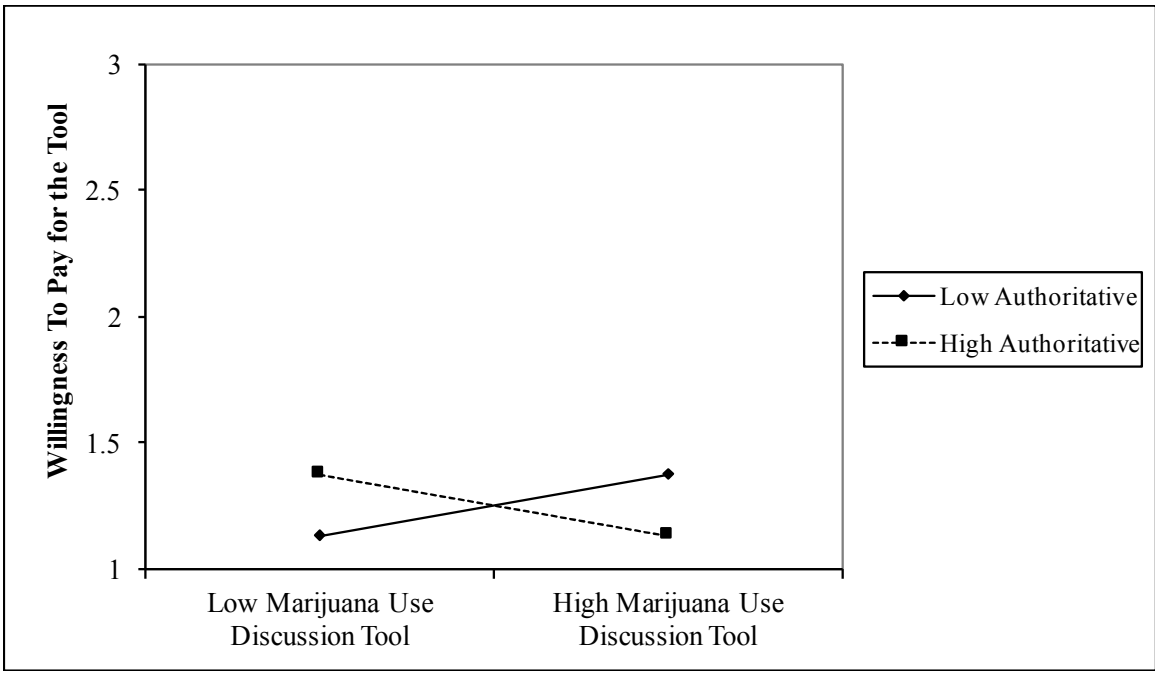


Figure 3e. *Authoritative Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Willingness to Pay for the Tool*

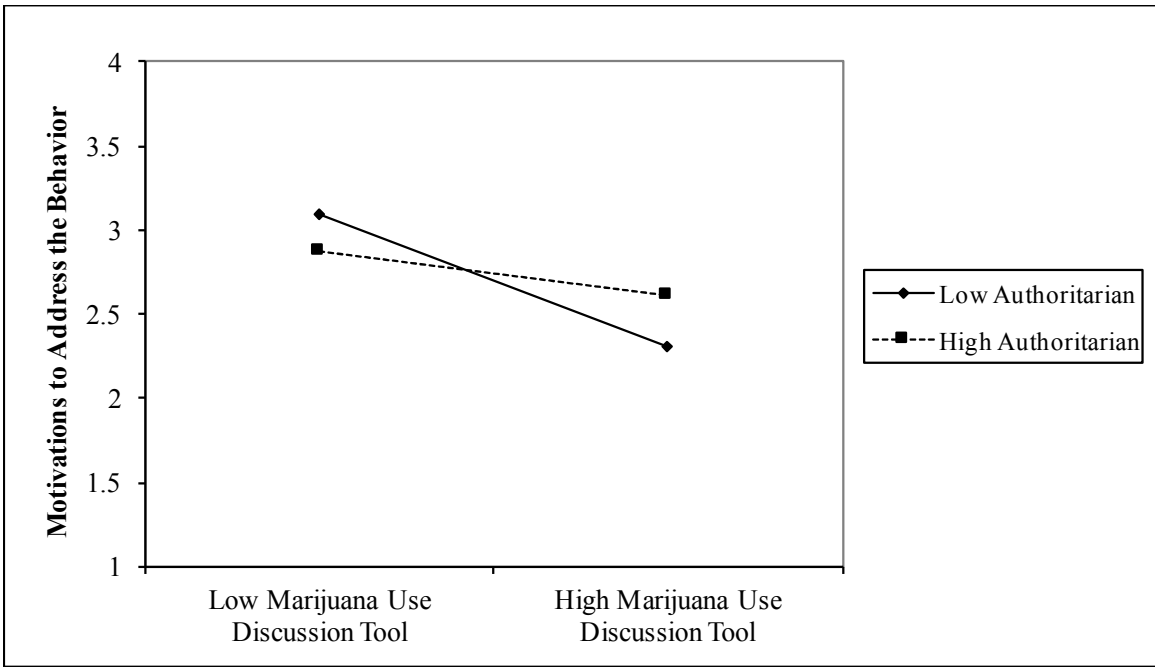


Figure 3f. *Authoritarian Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Motivations to Address the Behavior*

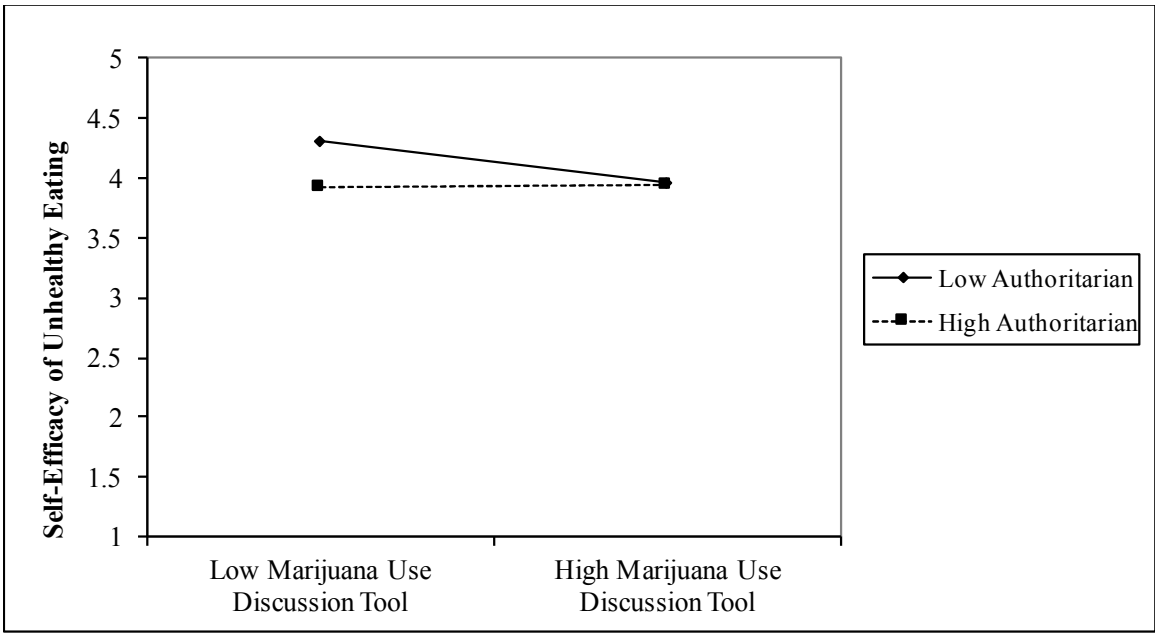


Figure 3g. *Authoritarian Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Self-Efficacy for Having Unhealthy Eating Discussions with One's Child*

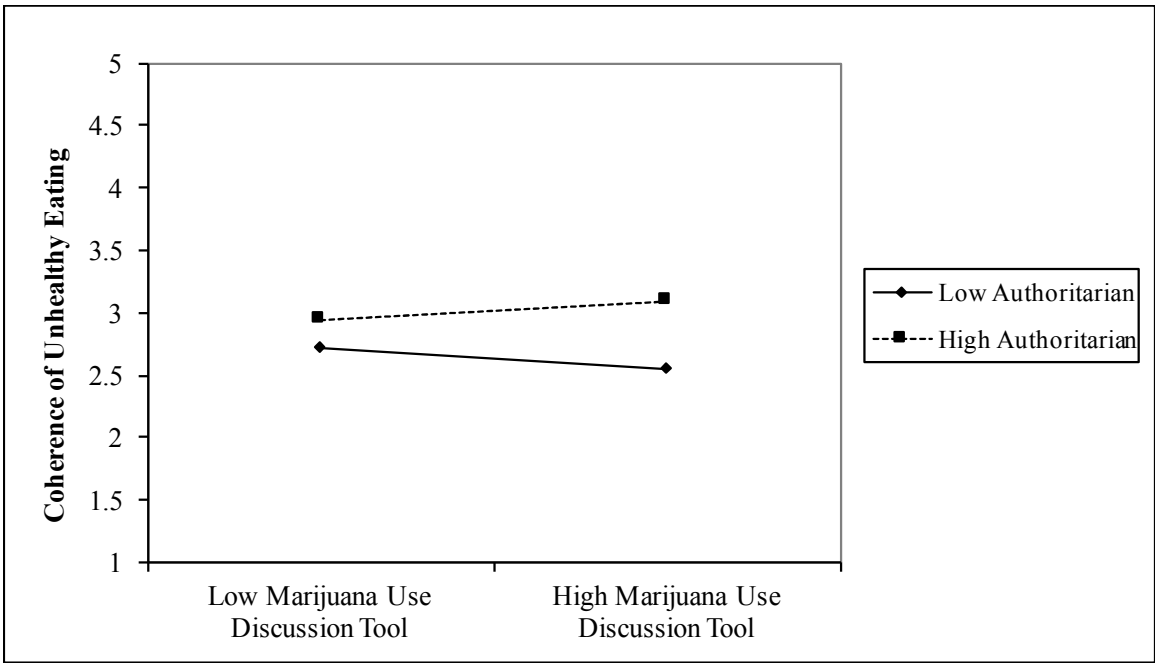


Figure 3h. *Authoritarian Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Coherence for Having Unhealthy Eating Discussions with One's Child*

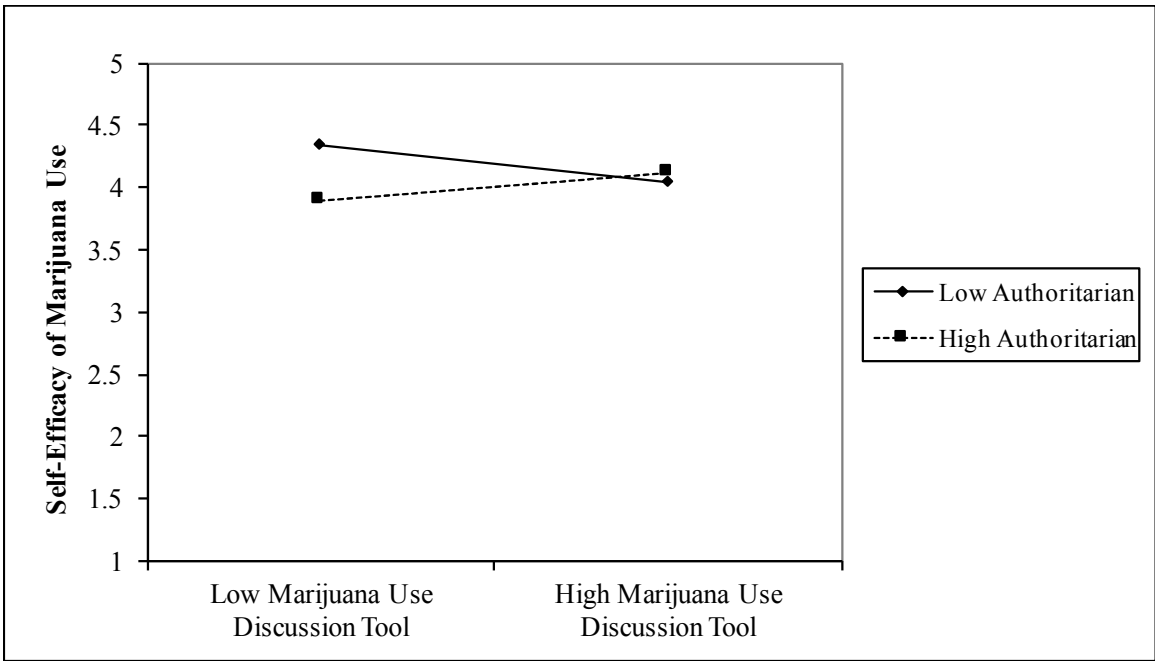


Figure 3i. *Authoritarian Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Self-Efficacy for Having Marijuana Use Discussions with One's Child*

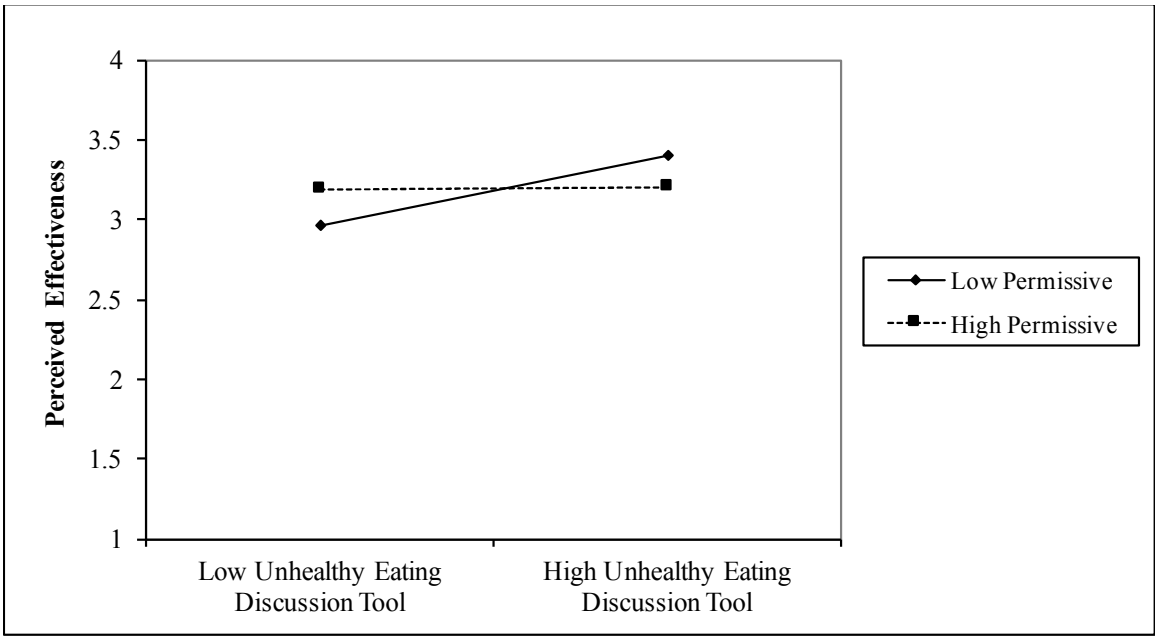


Figure 3j. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Perceived Effectiveness*

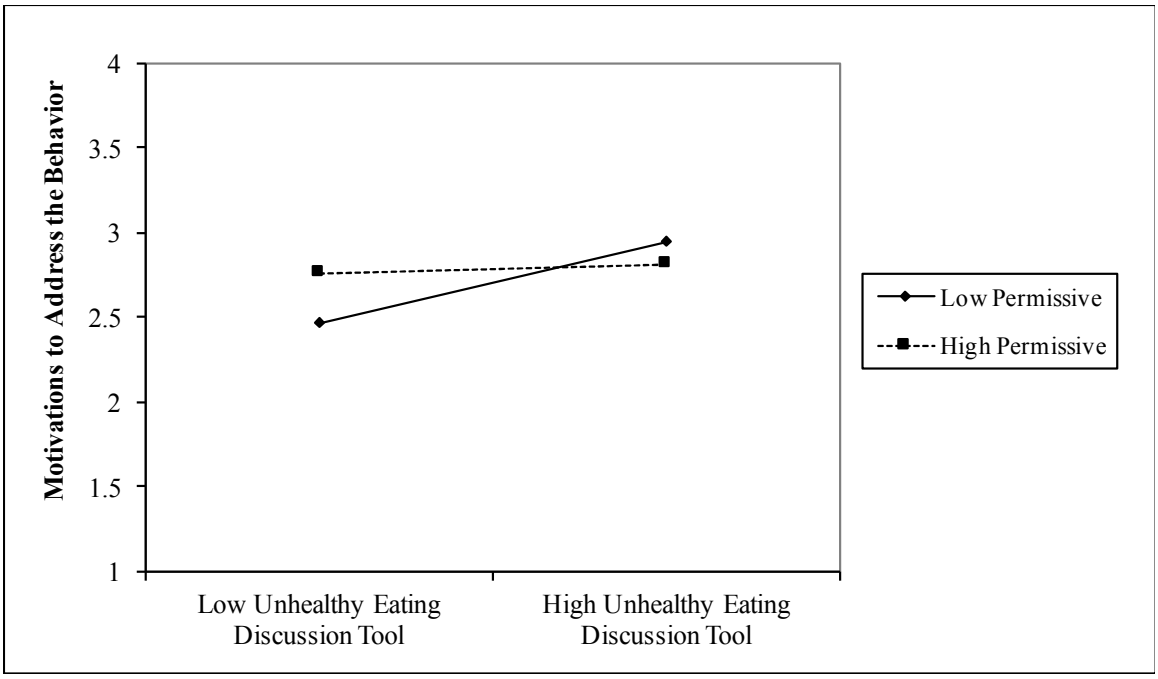


Figure 3k. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Motivations to Address the Behavior*

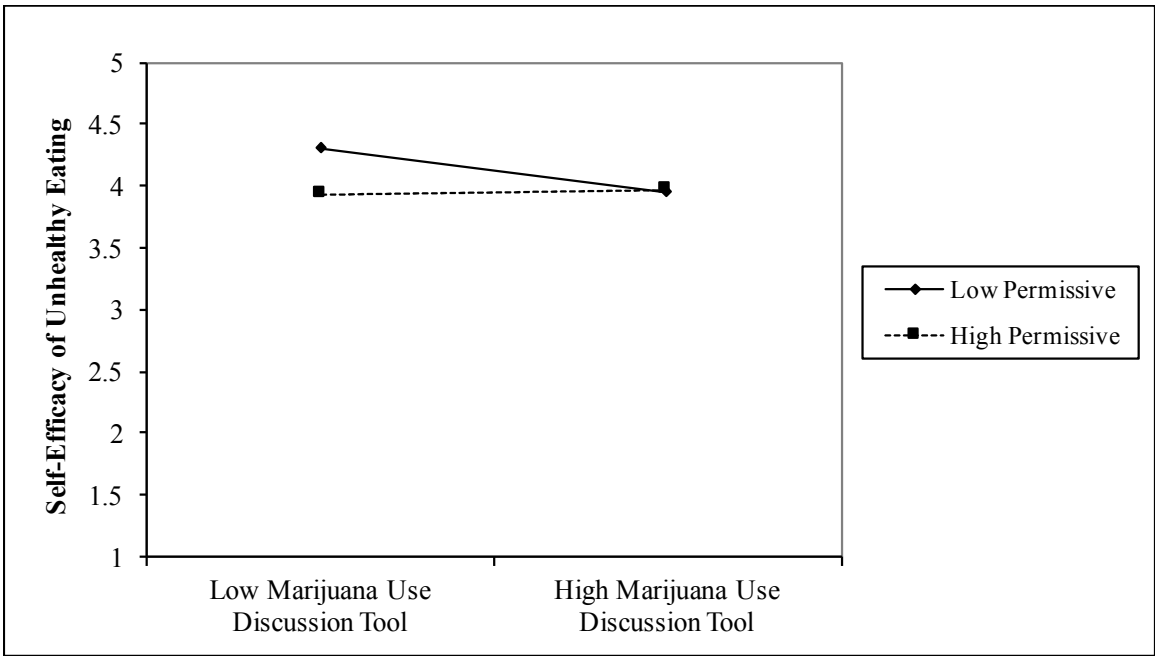


Figure 31. *Permissive Parenting Style as a Moderator of the Effects of the Marijuana Use and Sedentary Behavior Tools on Self-Efficacy for Having Unhealthy Eating Discussions with One's Child*

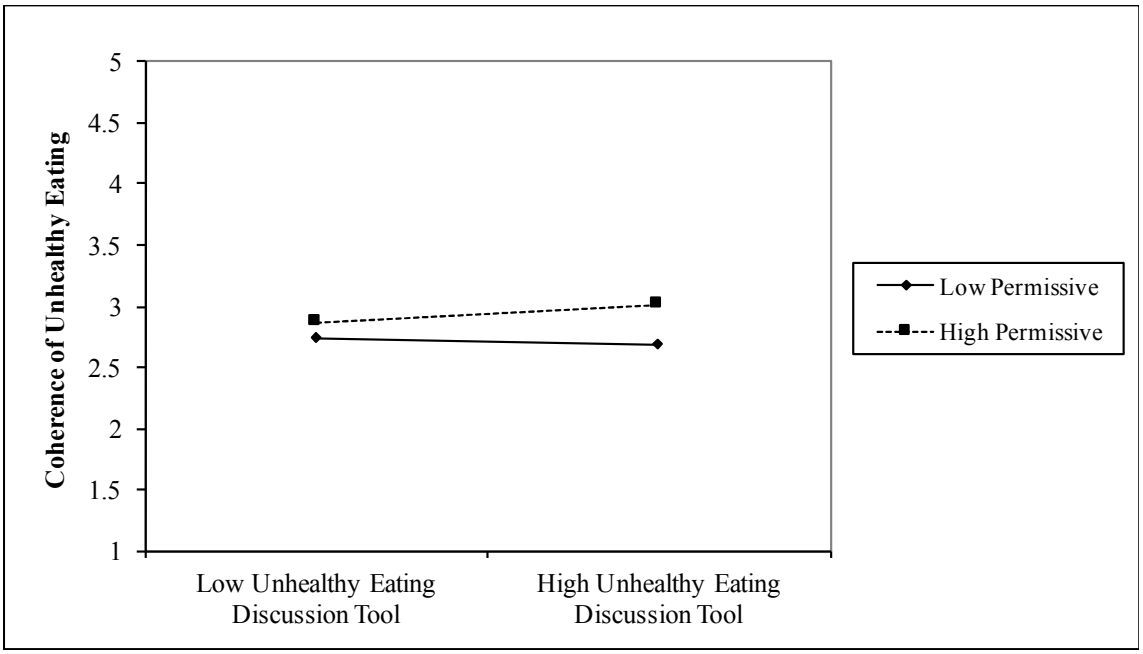


Figure 3m. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Coherence for Having Unhealthy Eating Discussions with One's Child*

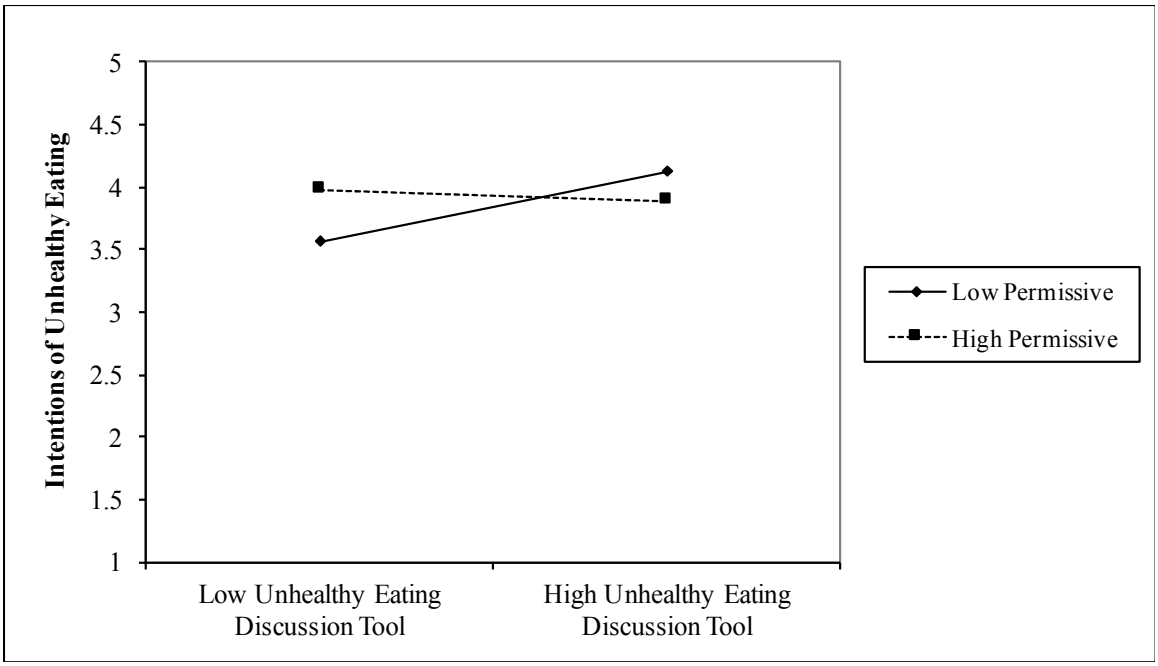


Figure 3n. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Intentions for Having Unhealthy Eating Discussions with One's Child*

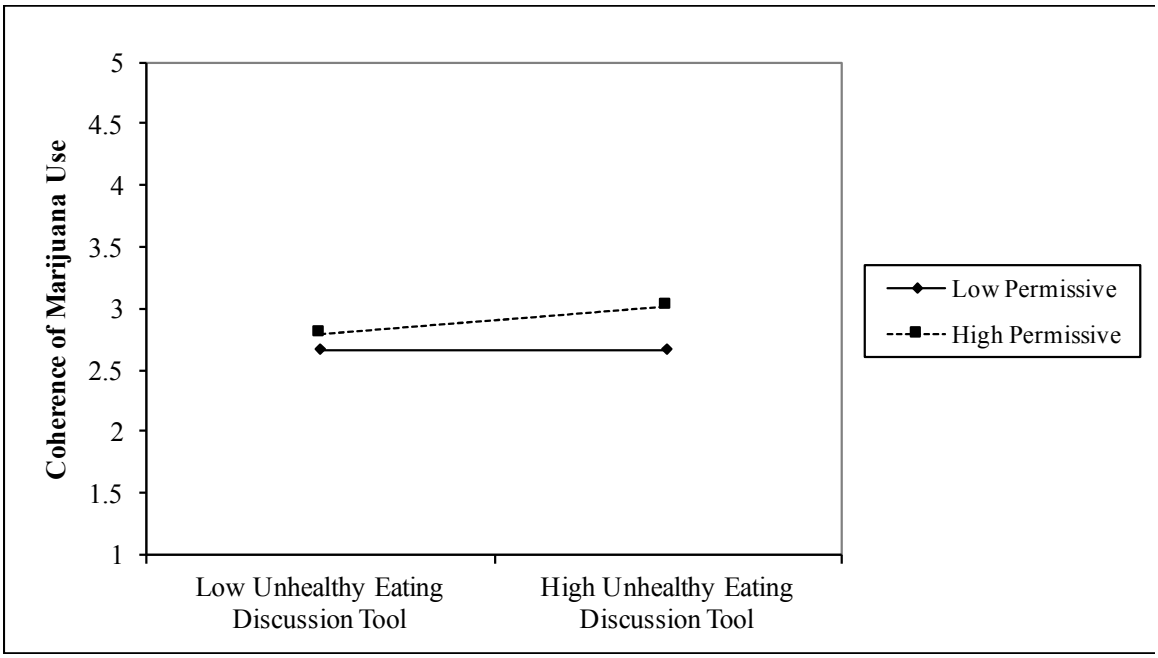


Figure 3o. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Coherence for Having Marijuana Use Discussions with One's Child*

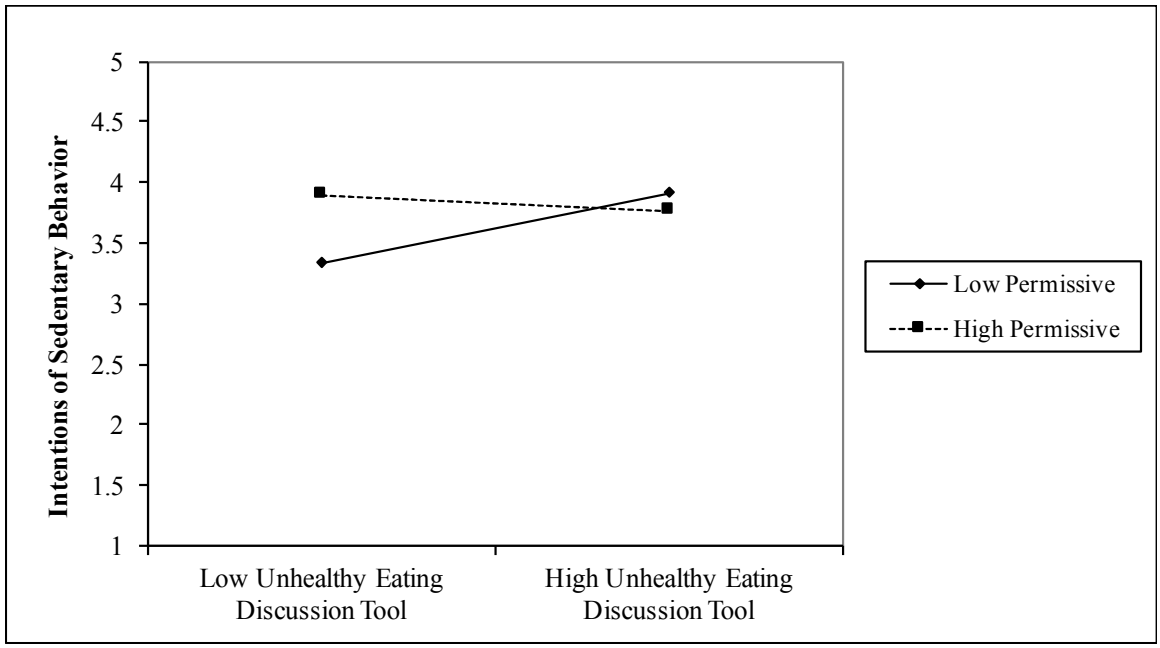


Figure 3p. *Permissive Parenting Style as a Moderator of the Effects of the Unhealthy Eating and Sedentary Behavior Tools on Intentions for Having Sedentary Behavior Discussions with One's Child*

APPENDIX A SURVEY ITEMS

Demographics (Study I, III)

What is your child's age?
- Included options of 10-17 for age

What is your child's gender?
- Male
- Female

What is your age?
- Included options of 18- 80 for age

What is your gender?
- Female
- Male
- Other

What is your marital status?
- Single
- Married
- Living with partner
- Widowed
- Divorced
- Separated

Does the child you considered in completing this survey live with you?
- Yes
- No

Please identify your ethnic group:
- Hispanic or Latino
- Not Hispanic or Latino

Please identify your race (check all that apply)
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or other Pacific Islander
- White
- Other (please specify)

Are you employed?
- No

- Yes, part-time
- Yes, full-time

What is the highest level of education that you finished?
- Never attended school or only attended kindergarten
- Grades 1-8 (Elementary)
- Grades 9-11 (Some high school)
- Grade 12 or GED (High school graduate)
- Technical or trade school
- Some college or university
- College or university graduate
- 1 or more years of graduate school

What is the ZIP code of your primary residence?

Demographics (Study II)

What is your gender?
- Female
- Male
- Other

What is your age?
- 18
- 19
- 20

Are you a:
- Freshman
- Sophomore
- Junior
- Senior

What is the ZIP code of your home residence (where you live when not attending UC Merced)?

Please identify your ethnic group:
- Hispanic or Latino
- Not Hispanic or Latino
-

Please identify your race (check all that apply)
- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or other Pacific Islander

- White
- Other (please specify)

Child's Unhealthy Eating (Study I, II, III)

**In Study II the word "child" was replaced with "do you"*

How many times does your child eat fast food meals or snacks?

- Less than 1 time
- 1-3 times
- 4 or more times

How many servings of fruit does your child eat a day?

- 5 or more
- 3-4 times
- 2 or less

How many servings of vegetables does your child eat each day?

- 5 or more
- 3-4 times
- 2 or less

How many regular sodas or glasses of sweet tea or coffee with sugar or other sweeteners does your child drink each day (one glass is an 8 oz serving)?

- Less than 1
- 1-2 times
- 3 or more

How many times a week does your child eat beans (like pinto or black beans), chicken, or fish?

- 3 or more times
- 1-2 times
- 4 or more times

How many times a week does your child eat regular snack chips or crackers (not low-fat)?

- 1 time or less
- 2-3 times
- 4 or more times

How many times a week does your child eat desserts and other sweets?

- 1 time or less
- 2-3 times
- 4 or more times

How much margarine, butter, or meat fat does your child use to season vegetables or to put on potatoes, bread, or corn?
- o Very little
- o Some
- o A lot

How many times a week does your child eat red meat or processed meat (e.g. bacon, sausages, hot dogs, bologna, salami, etc.)?
- o Less than 1 time
- o 1-2 times
- o 3 or more times

How many times a week does your child eat yogurt or other fermented foods (like sauerkraut, kimchi, pickles, or kombucha)?
- o Less than 1 time
- o 1-2 times
- o 3 or more times

Child's Marijuana Use (Study I, II, III)

**In Study II the word "child" was replaced with "have you"*

Do you think your child has used marijuana?
- o No
- o Yes

Do you think your child has used marijuana on 100 or more occasions in his or her life?
- o No
- o Yes

Do you think your child will use marijuana in the next year?
- o Definitely not
- o Probably not
- o Maybe
- o Probably yes
- o Definitely yes

If one of your child's friends were to offer your child marijuana, would your child use it?
- o Definitely not
- o Probably not
- o Maybe
- o Probably yes
- o Definitely yes

ECR-RS (Study I, II, III)

	1	2	3	4	5	6	7
It helps to turn to my child in times of need.	o	o	o	o	o	o	o
I usually discuss my problems and concerns with my child.	o	o	o	o	o	o	o
I talk things over with my child.	o	o	o	o	o	o	o
I find it easy to depend on my child.	o	o	o	o	o	o	o
I don't feel comfortable opening up to my child.	o	o	o	o	o	o	o
I prefer not to show my child how I feel deep down.	o	o	o	o	o	o	o
I often worry that my child doesn't really care for me.	o	o	o	o	o	o	o
I'm afraid that my child may abandon me.	o	o	o	o	o	o	o
I worry that my child won't care about me as much as I care about him/her.	o	o	o	o	o	o	o

PSDQ (Study I, III)

	Never	Once in a while	About half of the time	Very Often	Always
I encourage my child to talk about his/her troubles.	o	o	o	o	o
I find it difficult to discipline my child.	o	o	o	o	o
I give praise when my child is good.	o	o	o	o	o
I spank, slap, or strike my child when he or she is disobedient.	o	o	o	o	o
I punish by taking privileges away from my child with little if any explanations.	o	o	o	o	o
I spoil my child.	o	o	o	o	o
I give comfort and understanding when my child is upset.	o	o	o	o	o
I yell or shout when my child misbehaves.	o	o	o	o	o
I scold and criticize to make my child improve.	o	o	o	o	o
I grab my child when he/she is being disobedient.	o	o	o	o	o
I state punishments to my child and do not actually do them.	o	o	o	o	o
I am responsive to my child's feelings or needs.	o	o	o	o	o
I allow my child to give input into family rules.	o	o	o	o	o
I give my child reasons why rules should be obeyed.	o	o	o	o	o

I punish by putting my child off somewhere alone with little if any explanations.	o	o	o	o	o
I help my child to understand the impact of his/her behavior by encouraging my child to talk about the consequences of his/her own actions.	o	o	o	o	o
I take my child's desires into account before asking the child to do something.	o	o	o	o	o
I explode in anger towards my child.	o	o	o	o	o
I threaten my child with punishment more often than actually giving it.	o	o	o	o	o
I use physical punishment as a way of disciplining my child.	o	o	o	o	o
I give into my child when my child causes a commotion about something.	o	o	o	o	o
I slap my child when my child misbehaves.	o	o	o	o	o
I have warm and intimate times together with my child.	o	o	o	o	o
I encourage my child to freely express himself/herself even when disagreeing with me.	o	o	o	o	o
I scold or criticize when my child's behavior doesn't meet my expectations.	o	o	o	o	o
I show respect for my child's opinions by encouraging my child to express them.	o	o	o	o	o

I explain to my child how I feel about his/her good and bad behavior.	o	o	o	o	o
I use threats as punishment with little or no justification.	o	o	o	o	o
I take into account my child's preferences in making plans for the family.	o	o	o	o	o
When my child asks why he/she has to conform, I state: "because I said so," or "I am your parent and I want you to."	o	o	o	o	o
I explain the consequences of my child's behavior.	o	o	o	o	o
I emphasize the reasons for rules.	o	o	o	o	o

PAQ (Study II)

While I was growing up, my parent felt that in a well-run home I should have my way as often as my parent does.

- o 1 Strongly disagree
- o 2
- o 3
- o 4
- o 5 Strongly agree

Even if I didn't agree, my parent felt that it was for my own good if I was forced to conform to what he/she thought was right.

- o 1 Strongly disagree
- o 2
- o 3
- o 4
- o 5 Strongly agree

Whenever my parent told me to do something as I was growing up, he/she expected me to do it immediately without asking any questions.

- o 1 Strongly disagree
- o 2
- o 3
- o 4

- 5 Strongly agree

As I was growing up, once the family policy had been established, my parent discussed the reasoning behind the policy with me and the rest of the family.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent has always encouraged verbal give-and-take whenever I have felt that family rules and restrictions were unreasonable.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent has always felt that what I need is to be free to make up my own mind and to do what I want to do, even if this does not agree with what he/she might want.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent did not allow me to question any decision he/she made.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent directed the activities and decisions of the children in the family through reasoning and discipline.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent always felt that more force should be used on me in order to get me to behave the way I am supposed to.

- 1 Strongly disagree
- 2

- 3
- 4
- 5 Strongly agree

As I was growing up, my parent did not feel that I needed to obey rules and regulations of behavior simply because someone in authority had established them.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, I knew what my parent expected of me in my family, but I also felt free to discuss those expectations with him/her when I felt that they were unreasonable.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent felt that a wise parent should teach his/her children early just who is boss in the family.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent seldom gave me expectations and guidelines for my behavior.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

Most of the time as I was growing up my parent did what I wanted when making family decisions.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As the children in my family were growing up, my parent consistently gave us direction and guidance in rational and objective ways.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent would get very upset if I tried to disagree with him/her.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent felt that most problems in society would be solved if a parent would not restrict the children's activities, decisions, and desires as they were growing up.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent let me know what behavior was expected of me, and if I didn't meet those expectations, he/she would punish me.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent allowed me to decide most things for myself without a lot of direction.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent took my opinions into consideration when making family decisions, but would not decide for something simply because I wanted it.

- 1 Strongly disagree
- 2
- 3
- 4

- 5 Strongly agree

My parent did not view him/herself as responsible for directing and guiding my behavior as I was growing up.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent had a clear standard of behavior for the children in our home as I was growing up, but he/she was willing to adjust those standards to the needs of each of the individual children in the family.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent gave me direction for my behavior and activities as I was growing up and expected me to follow his/her direction, but was always willing to listen to my concerns and to discuss that direction with me.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent allowed me to form my own point of view on family matters and generally allowed me to decide for myself what I was going to do.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

My parent has always felt that most problems in society would be solved if we could get parents to strictly and forcibly deal with their children when the child does not do what they are supposed to as they are growing up.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent often told me exactly what he/she wanted me to do and how it was expected for me to do it.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent gave me clear direction for my behaviors and activities, but he/she was also understanding when I disagreed with them.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, my parent did not direct the behaviors, activities, and desires of the children in the family.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, I knew what my parent expected of me in the family and insisted that I conform to those expectations simply out of respect for his/her authority.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

As I was growing up, if my parent made a decision in the family that hurt me, he/she was willing to discuss that decision with me and to admit it if he/she had made a mistake.

- 1 Strongly disagree
- 2
- 3
- 4
- 5 Strongly agree

Parent-Child Communication Scale (Study I)

Can you discuss your beliefs with your child without feeling restrained or embarrassed?

- 1 Almost Never
- 2

- 3
- 4
- 5 Almost Always

Is your child a good listener?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Can your child tell how you are feeling without asking?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Are you very satisfied with how you and your child talk together?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child try to understand your point of view?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Are there things you avoid discussing with your child?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Do you discuss child-related problems with your child?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child insult you when he/she is angry with you?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Do you think you can tell your child how you really feel about some things?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child tell you about his/her personal problems?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child keep his/her feelings to him/herself rather than talk about them with you?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always
-

Does your child hide being angry?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Do you encourage your child to think about things and talk about them so that he/she can establish an opinion?
- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

If your child is upset, is it difficult for you to figure out what he/she is feeling?
- 1 Almost Never

- 2
- 3
- 4
- 5 Almost Always

Does your child let things pile up without talking or dealing with them until they are more than you and he/she can handle?

- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child let you know what is bothering him/her?

- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Are there certain topics which you do not allow your child to discuss with you?

- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Does your child admit mistakes without trying to hide anything?

- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Can your child have his/her say even if you disagree?

- 1 Almost Never
- 2
- 3
- 4
- 5 Almost Always

Do you and your child come to a solution when you talk about a problem?

- 1 Almost Never
- 2
- 3

o 4
o 5 Almost Always

Perceived Risks Unhealthy Eating (Study I, III)

(1) What do you think are your child's chances of getting each of the following conditions at some time in their life?
(2) If your child were to regularly eat an unhealthy diet, what do you think would be your child's chances of getting each of the following conditions at some time in their life?

	Almost zero	Very small	Small	Moderate	Large	Very large	Almost certain	My child has this condition
Cancer	o	o	o	o	o	o	o	o
Heart disease	o	o	o	o	o	o	o	o
Diabetes	o	o	o	o	o	o	o	o
Obesity	o	o	o	o	o	o	o	o
Influenza	o	o	o	o	o	o	o	o

Perceived Risks Marijuana Use (Study I, III)

(1) What do you think are your child's chances of getting each of the following conditions at some time in their life?
(2) If your child were to regularly use marijuana, what do you think would be your child's chances of getting each of the following conditions at some time in their life?

	Almost zero	Very small	Small	Moderate	Large	Very large	Almost certain	My child has this condition
Addiction	o	o	o	o	o	o	o	o
Lung Cancer	o	o	o	o	o	o	o	o
Memory Problems	o	o	o	o	o	o	o	o
Sleep Disturbances	o	o	o	o	o	o	o	o
Poor Academic Performance	o	o	o	o	o	o	o	o

Prototypes Unhealthy Eating (Study I)

Please imagine the type of person around your child's age who eats an unhealthy diet. In general, do you think that other youth your child's age who eat an unhealthy diet tend to be…

	Not At All	Slightly	Somewhat	Quite A Bit	Very Much
Adventurous	o	o	o	o	o
Lazy	o	o	o	o	o
Open-Minded	o	o	o	o	o
Cool	o	o	o	o	o
Slacker	o	o	o	o	o
Curious	o	o	o	o	o
Immature	o	o	o	o	o
Inconsiderate	o	o	o	o	o
Intelligent	o	o	o	o	o
Irresponsible	o	o	o	o	o
Calm	o	o	o	o	o
Popular	o	o	o	o	o
Rebellious	o	o	o	o	o
Troublemaker	o	o	o	o	o
Stressed	o	o	o	o	o
Impulsive	o	o	o	o	o
Independent	o	o	o	o	o
Fun-Loving	o	o	o	o	o

Prototypes Marijuana Use (Study I)

Please imagine the type of person around your child's age who uses marijuana. In general, do you think that other youth your child's age who use marijuana tend to be…

	Not At All	Slightly	Somewhat	Quite A Bit	Very Much
Adventurous	o	o	o	o	o
Lazy	o	o	o	o	o

Open-Minded	o	o	o	o	o
Cool	o	o	o	o	o
Slacker	o	o	o	o	o
Curious	o	o	o	o	o
Immature	o	o	o	o	o
Inconsiderate	o	o	o	o	o
Intelligent	o	o	o	o	o
Irresponsible	o	o	o	o	o
Calm	o	o	o	o	o
Popular	o	o	o	o	o
Rebellious	o	o	o	o	o
Troublemaker	o	o	o	o	o
Stressed	o	o	o	o	o
Impulsive	o	o	o	o	o
Independent	o	o	o	o	o
Fun-Loving	o	o	o	o	o

Self-Efficacy Unhealthy Eating (Study I, III)

(1) It is easy for me to explain to my child how it is unhealthy to eat a diet that is...
(2) I am personally able to talk to my child about unhealthy eating that is...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
low in fruits and vegetables	o	o	o	o	o
low in probiotics	o	o	o	o	o
low in prebiotics	o	o	o	o	o
high in processed foods	o	o	o	o	o
high in sugar	o	o	o	o	o
high in fast foods	o	o	o	o	o

Self-Efficacy Marijuana Use (Study I, III)

(1) It is easy for me to explain to my child...
(2) I am personally able to talk to my child about ...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
the health risks of marijuana use	o	o	o	o	o
the laws about marijuana use by under-age youth	o	o	o	o	o
the potential for addiction with marijuana use	o	o	o	o	o
the links between marijuana use and memory problems	o	o	o	o	o
the effects of marijuana use on academic performance	o	o	o	o	o
the peer pressure of using marijuana	o	o	o	o	o

Coherence Unhealthy Eating (Study I, III)

Now, we are interested in your rating of the following statements in terms of how much you would agree or disagree with them if your child were to eat unhealthy foods:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The risks of my child eating an unhealthy diet are puzzling to me.	o	o	o	o	o
The link between an unhealthy diet and disease risk for my child is a mystery to me.	o	o	o	o	o
I really don’t understand how junk food would affect my child's health.	o	o	o	o	o

It doesn't make any sense to me how my child's diet might affect his/her health.	o	o	o	o	o
I have a clear picture or understanding of how my child's dietary habits could affect his/her health.	o	o	o	o	o
I have good knowledge of how my child eating unhealthy foods could increase the chances of chronic illness.	o	o	o	o	o
I have a good sense of how my child's dietary habits could cause problems to his/her health.	o	o	o	o	o

Coherence Marijuana Use (Study I, III)

Please rate the following statements in terms of how much you would agree or disagree with them if your child were to use marijuana:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The risks of my child using marijuana are puzzling to me.	o	o	o	o	o
The link between marijuana use and disease risk for my child is a mystery to me.	o	o	o	o	o
I really don't understand how marijuana use could affect my child's health.	o	o	o	o	o
It doesn't make any sense to me how my child's use of marijuana might affect his/her health.	o	o	o	o	o

I have a clear picture or understanding of how my child's marijuana use could affect his/her health.	o	o	o	o	o
I have good knowledge of how my child using marijuana could increase the chances of chronic illness.	o	o	o	o	o
I have a good sense of how my child's marijuana use could cause problems to his/her health.	o	o	o	o	o

Worry Unhealthy Eating (Study I, III)

Please rate your agreement with each of the following statements about unhealthy eating and your child:

	0	1	2	3	4	5	6
To what extent are you concerned about your child eating unhealthy foods?	o	o	o	o	o	o	o
To what extent does thinking about your child eating unhealthy foods bother you?	o	o	o	o	o	o	o
How important is it to you that your child eat healthy foods?	o	o	o	o	o	o	o
To what extent are you worried about the harms of your child eating unhealthy foods?	o	o	o	o	o	o	o

How concerned are you about your child getting each of the following conditions at some time in their life?

	0	1	2	3	4	5	6

Cancer	o	o	o	o	o	o	o
Heart disease	o	o	o	o	o	o	o
Diabetes	o	o	o	o	o	o	o
Obesity	o	o	o	o	o	o	o
Influenza	o	o	o	o	o	o	o

Worry Marijuana Use (Study I, III)

Please rate your agreement with each of the following statements about marijuana use and your child:

	0	1	2	3	4	5	6
To what extent are you concerned about your child using marijuana?	o	o	o	o	o	o	o
To what extent does thinking about your child using marijuana bother you?	o	o	o	o	o	o	o
How important is it to you that your child does not use marijuana?	o	o	o	o	o	o	o
To what extent are you worried about the harms of your child using marijuana?	o	o	o	o	o	o	o

How concerned are you about your child getting each of the following conditions at some time in their life?

	0	1	2	3	4	5	6
Addiction	o	o	o	o	o	o	o
Lung Cancer	o	o	o	o	o	o	o
Memory Problems	o	o	o	o	o	o	o
Sleep Disturbances	o	o	o	o	o	o	o
Poor Academic Performance	o	o	o	o	o	o	o

Intentions Unhealthy Eating (Study I, III)

In the next four weeks, to what extent do you plan to discuss unhealthy eating with your child?

- 1 Not at all
- 2
- 3
- 4
- 5 Definitely

In the next four weeks, to what extent will you try to discuss unhealthy eating with your child?

- 1 Not at all
- 2
- 3
- 4
- 5 Definitely

In the next four weeks, how likely is it that you will discuss unhealthy eating with your child?

- 1 Not at all
- 2
- 3
- 4
- 5 Definitely

Intentions Marijuana Use (Study I, III)

In the next four weeks, to what extent do you plan to discuss marijuana use with your child?

- 1 Not at all
- 2
- 3
- 4
- 5 Definitely

In the next four weeks, to what extent will you try to discuss marijuana use with your child?

- 1 Not at all
- 2
- 3
- 4
- 5 Very much

In the next four weeks, how likely is that you will discuss marijuana use with your child?

- 1 Extremely Unlikely
- 2
- 3
- 4
- 5 Extremely Likely

Willingness Unhealthy Eating (Study I, III)

Imagine you are in the following situation: Your child wants to attend a party in four weeks where there would be unhealthy foods (such as, soda, fried foods, chips, candy, ice cream, etc.).

How willing would you be to ask your child to not attend the party within the next four weeks?

- 1 Very Unwilling
- 2
- 3
- 4
- 5 Very Willing

How willing would you be to discuss unhealthy eating with your child over the next four weeks?

- 1 Very Unwilling
- 2
- 3
- 4
- 5 Very Willing

How willing would you be to discuss potential concerns about unhealthy eating with your child over the next four weeks?

- 1 Very Unwilling
- 2
- 3
- 4
- 5 Very Willing

Willingness Marijuana Use (Study I, III)

Imagine you are in the following situation: Your child wants to attend a party in four weeks where there would be marijuana.

How willing would you be to ask your child to not attend the party within the next four weeks?

- 1 Very Unwilling

- 2
- 3
- 4
- 5 Very Willing

How willing would you be to discuss marijuana use with your child over the next four weeks?

- 1 Very Unwilling
- 2
- 3
- 4
- 5 Very Willing

How willing would you be to discuss potential concerns about marijuana use with your child over the next four weeks?

- 1 Very Unwilling
- 2
- 3
- 4
- 5 Very Willing

Past Discussion Behavior Unhealthy Eating (Study I, III)

In the past 6 months, how many times did you talk to your child about the negative consequences of unhealthy eating?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about peer pressure to eat unhealthy foods?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about choosing friends who eat healthy?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about the media portrayals of unhealthy eating?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

In the past 6 months, how many times did you try to encourage your child to eat healthy?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

In the past 6 months, how many times did you tell your child to eat healthy?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

In the past 6 months, how many times did you talk to your child about your family rules centered on unhealthy eating?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

In the past 6 months, how many times did you talk to your child about punishments or other disciplinary actions that would result from unhealthy eating?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

Past Discussion Behavior Marijuana Use (Study I, III)

In the past 6 months, how many times did you talk to your child about the negative consequences of marijuana use?
- o 0 times
- o 1 time
- o 2 times
- o 3 or more times

In the past 6 months, how many times did you talk to your child about peer pressure to use marijuana?
- o 0 times

- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about choosing friends who do not use marijuana?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about the media portrayals of marijuana use?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you try to encourage your child not to use marijuana?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you tell your child not to use marijuana?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about your family rules of not using marijuana?

- 0 times
- 1 time
- 2 times
- 3 or more times

In the past 6 months, how many times did you talk to your child about punishments or other disciplinary actions that would result from using marijuana?

- 0 times
- 1 time
- 2 times
- 3 or more times

APPENDIX B STUDY III TOOLS

Unhealthy Eating Discussion Tool

START THE CONVERSATION ABOUT UNHEALTHY EATING
Care. Talk. Listen.

When given the opportunity and time, children are likely to talk to their parents about risky health behaviors such as eating unhealthy foods. It is important for parents to talk to their children about unhealthy eating habits starting at a young age and continuing through older adolescence. Below are some tips to help you have these conversations.


The potential consequences of unhealthy eating include:

- Obesity
- High blood pressure and heart rate
- High cholesterol
- Heart disease
- Type 2 diabetes
- Tooth decay
- Depression
- Eating disorders

Some questions that you might consider asking your child include:

- What do you know about unhealthy eating?
- What are some questions you might have about unhealthy eating?
- Do you think about the risks of unhealthy eating?
- Do you feel peer pressure at school to eat unhealthy foods?
- How many of your friends at school eat unhealthy foods?

Here is a script you might consider using to start a conversation about this topic with your child:
"I want to have a conversation with you about unhealthy eating because I care about you. I want to make sure that we both have an equal opportunity to express our feelings to each other about unhealthy eating in a respectful matter. So, I am curious to know if you think eating unhealthy is harmful to you. Is there anything about foods that you may have seen in school, movies, or social media that you have questions about? I want you to feel safe to communicate any feelings you may have towards unhealthy eating with me, I am here for you. Please know that you are in a safe place to share your feelings."


Having positive parent-child discussions is key to maintaining healthy relationships.
Take time to *care*, *talk* to your kids, and *listen*!

Marijuana Use Discussion Tool

START THE CONVERSATION ABOUT MARIJUANA USE
Care. Talk. Listen.

When given the opportunity and time, children are likely to talk to their parents about risky health behaviors such as marijuana use. It is important for parents to talk to their children about marijuana use starting at a young age and continuing through older adolescence. Below are some tips to help you have these conversations.


The potential consequences of marijuana use include:

- Addiction
- Memory problems
- High blood pressure and heart rate
- Heart disease
- Lung problems
- Depression
- Schizophrenia
- Psychosis

Some questions that you might consider asking your child include:

- What do you know about marijuana use?
- What are some questions you might have about marijuana use?
- Do you think about the risks of marijuana use?
- Do you feel peer pressure at school to use marijuana?
- How many of your friends at school use marijuana?

Here is a script you might consider using to start a conversation about this topic with your child:
"I want to have a conversation with you about marijuana use because I care about you. I want to make sure that we both have an equal opportunity to express our feelings to each other about marijuana use in a respectful matter. So, I am curious to know if you think marijuana is harmful to you. Is there anything about marijuana that you may have seen in school, movies, or social media that you have questions about I want you to feel safe to communicate any feelings you may have towards marijuana use with me, I am here for you. Please know that you are in a safe place to share your feelings."


Having positive parent-child discussions is key to maintaining healthy relationships.
Take time to *care*, *talk* to your kids, and *listen*!

Sedentary Behavior Tool

GET THE FACTS ABOUT SEDENTARY BEHAVIOR

Learn. Plan. Move.

When given the opportunity and time, children are likely to look to their parents and adopt their risky health behaviors such as having a sedentary lifestyle. It is important to consider sedentary behavior regardless of your age. Below are some tips to help you be active.

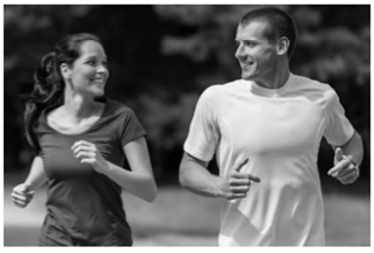
The potential consequences of sedentary behavior include:

- Mood swings
- Obesity
- Cancer risk
- High blood pressure
- Lower back pain
- Increase in calorie intake
- Memory problems
- Insomnia

Some questions that you might consider about sedentary behavior include:

- What is it to be sedentary?
- What do you know about sedentary behavior?
- What are some questions you might have about sedentary behavior?
- Do you think about the consequences of sedentary behavior?
- How sedentary are your friends and family members?

Sedentary behavior is a term used to describe activities that require little energy and includes such activities as sitting, resting, sleeping, and watching television. Sedentary behaviors can negatively affect health. For example, it can increase the risk of emotional and mental health problems, academic achievement, obesity, diabetes, and high blood pressure. In fact, sedentary behavior is linked with poorer physical fitness and muscle tone in adults, children, and adolescents. Many adults, children, and adolescents spend a large amount of their time watching television and playing video games. However, just standing up for 15 minutes to every hour of sitting provides significant health benefits to the body, and it is something easy to do.



Being active is key to maintaining a healthy lifestyle.
Take time to *learn, plan*, and *move* your body!