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**THE ROLE OF BRANDING IN THE KEEPIN' IT REAL SUBSTANCE USE
PREVENTION CURRICULUM**

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by

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ABSTRACT

While branded health messages are often effective in promoting healthy behaviors, it is not clear how this strategy produces protective effects. To better understand the role of branding in health prevention and promotion, the current research investigated the underlying mechanisms explaining branding's effects on youth substance use in the *keepin' it REAL (kiR)* substance use prevention curriculum.

Chapter 2 described cultural grounding approach as a method to develop a brand and conceptualized the *kiR* as a brand for substance use prevention. With a case study of the *kiR* curriculum, this chapter provided an effective way to create and develop health messages utilizing branding principles and cultural/social elements.

Using a cross-sectional data ($N = 296$) from the middle schools in Phoenix, AZ, an empirical study is reported in Chapter 3 that examined the effects of brand equity on youths' substance use through social cognitive processes. Structural equation modeling (SEM) analysis revealed that as hypothesized brand equity affected refusal efficacy and the efficacy that, in turn led to decrease intent to use substances. Based on the evidence it is concluded that the *kiR* brand equity serves as a protective factor for adolescent substance use.

A second empirical study is reported in Chapter 4 utilizing a longitudinal data ($N = 1,151$) to investigate the effectiveness of branded drug prevention videos on youth recent use of substances. This study hypothesized that attitudes toward ad (A_{ad}) would mediate branded message effectiveness. Consistent with predictions, results indicated that likability (or attitudes) of the *kiR* mediated the relationship between message perceptions and youth substance use.

These findings are discussed in Chapter 5 with regard to the theoretical contribution and practical implications. Future directions are also discussed along with the studies' major limitations.

TABLE OF CONTENTS

List of Tables	vii
List of Figures	viii
Acknowledgements	ix
Chapter 1. Introduction	1
Branding as a New Strategy	2
Effectiveness of Branding in Health Campaigns	8
Challenges in Branding Research.....	12
Conclusion	13
Chapter 2. Branding through Cultural Grounding: The <i>keepin' it REAL</i> Curriculum.....	15
Principles of Cultural Grounding Approach	17
Cultural Grounding as a CBPR Method for Developing a Brand.....	21
Drug Resistance Strategies (DRS) Project: A Case Study in the Culturally Grounded Approach.....	25
Comparing Cultural Grounding and Branding.....	31
Challenges to Cultural Grounding to Branding	34
Conclusion	37
Chapter 3. Examining Protective Effects of Brand Equity in the <i>keepin' it REAL</i> Substance Use Prevention Curriculum	39
Method.....	47
Results.....	52

Discussion	55
Conclusion	58
Chapter 4. Longitudinal Effectiveness of the <i>keepin' it REAL</i> Drug Prevention Videos	66
Method	75
Results	79
Discussion	81
Conclusion	83
Chapter 5. Concluding Remarks	91
References	102
Appendix A. Survey Questionnaire of Wave 6	129
Appendix B. Survey Questionnaire of Wave 2 & Wave 3	131

LIST OF FIGURES

Figure 3.1	
Brand Logo of <i>keepin' it REAL</i> Curriculum.....	63
Figure 3.2	
Second-Order CFA Model of <i>keepin' it REAL</i> Brand Equity	64
Figure 3.3	
Structural Paths of Influence Wherein <i>kiR</i> Brand Equity Affects Youth Substance Use	65
Figure 4.1	
Hypothesized Path Model.....	89
Figure 4.2	
Longitudinal Effects of <i>keepin' it REAL</i> Videos: Mediation of <i>kiR</i> Likability and Attitudes to Substance Use	90
Figure 5.1	
Social Cognitive Process Model of Branded Health Messages.....	101

LIST OF TABLES

Table 3.1	
Bivariate Correlation Matrix and Summary Statistics	59
Table 3.2	
First- and Second-Order Factor Structure of <i>keepin' it REAL</i> Brand Equity	61
Table 3.3	
Robust Weighted Least Square Parameter Estimates	62
Table 4.1	
Descriptive Statistics	85
Table 4.2	
Robust Weighted Least Square Parameter Estimates	87

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CHAPTER 1

INTRODUCTION

Media and school-based interventions hold promise for reaching and persuading people to adopt new and healthier behaviors and lifestyles (Austin, Field, Wiecha, Peterson, & Gortmaker, 2005; Flynn, Worden, Bunn, Dorwaldt, Dana, & Callas, 2006; Roy, Denis, Gutierrez, Haley, Morissette, & Bourdreau, 2007; Waldron & Kaminer, 2004; Waldron & Turner, 2008). Mass media has been used to deliver intervention messages through various channels, including television, radio, print, and so on. It is true that mass media have been the primary means for message transmission in a variety of prevention campaigns and have frequently been the only component used to communicate a particular idea (Backer, Rogers, & Sopory, 1992; Flay, 1987; Palmgreen & Donohew, 2002; Rice & Atkin, 1994). Schools are common contexts for interventions due to their universal access to adolescents. School-based interventions are particularly important for adolescents given the significance of their critical developmental periods (Biglan, Ary, Smolkowski, Duncan, & Black, 2000; Slater, 2006).

Research suggests that media and school-based programs can influence adolescent substance use. A number of studies have proven that mass media interventions are effective in adolescents substance-use prevention (Flynn, Worden, Bunn, Dorwaldt, Connolly, & Ashikaga, 2007; Solomon, Bunn, Flynn, Pirie, Worden, & Ashikaga, 2007). Furthermore, school interventions have also been successful in preventing adolescent substance abuse (Biglan, et al. 2000; Ennett, Tobler, Ringwalt, & Firewelling, 1994; Snyder, Hamilton, Kiwanuka-Tondo, Fleming-Milci, & Proctor, 2004). However, these many of these interventions have faced

challenges because of their limited effectiveness and modest effect size ($r = .04 - .07$ for alcohol and smoking media campaigns; $r = .05 - .08$ for school-based substance prevention program) (Snyder, 2007; Snyder & Hamilton, 2002). This limited effectiveness has partly been due to adolescents' lack of sufficient exposure to anti-drug messages and partly due to the inappropriate execution of message strategies (Slater, 2006).

In the past, health intervention messages have utilized various strategies, such as fear appeals or informative evidence, in order to reduce adolescent marijuana, cigarette, and alcohol use (Roberto, Meyer, Johnson, & Atkin, 2000; Rye, 1998; Warren, Hecht, Wagstaff, Elek, Ndiave, Dustman, & Marsiglia, 2006). In many circumstances, these messages successfully increased teens' knowledge but, often, did not bring about behavioral change (Barnett, Far, Mauss, & Miller, 1996; Peeler, Far, Miller, & Brigham, 2000; Snyder, 2007; Werch, Pappas, Carlson, DiClemente, Chally, & Sinder, 2000). More seriously, health intervention messages (e.g., fear appeals) have at times resulted in unintended or iatrogenic effects (Hornik, Jacobsohn, Orwin, Piesse, & Graham, 2008; Witte & Allen, 2000). For instance the National Youth Anti-Drug Media Campaign had undesirable effects because it elevated positive drug cognitions and actual use.

Branding as a New Strategy

Branding has much potential for addressing the problems associated with current intervention programs. Recent research has found that branding approaches in health campaigns (e.g., truthsm and VERBTM) are effective in promoting healthy behaviors, particularly among adolescents (Farrelly, Heaton, Davis, Messeri, Hersey, & Haviland, 2002; Evans, Price, & Blahut, 2005; McKinnon, 2007) because public health brands emphasize positive images as well

as the ideal values and benefits of certain behaviors (Evans & Hastings, 2008). Through these approaches, a connection with adolescents can be created that encourages them to change their health behaviors, presumably not because they ought to but because they like or love to (McKinnon 2007). By creating appealing brands for kids, public health brands not only have the potential to promote healthy behaviors and lifestyles, but they can also establish a long-term relationship with their audiences (i.e., loyalty or trust) (Keller, 2007). Building a relationship between a consumer and a product or service is an essential aspect of branding (Aaker, 1991; Keller, 2007). Keller (1998) argues that the relationship between a product/service and consumers can be viewed as a type of “bond.” Public health brands are similar to commercial brands in that they build relationships between individuals and health behaviors. As such, these types of brands may be the tools necessary to overcome the limited effectiveness of traditional health campaigns.

In recent years, branding principles have been effectively applied to health message design in order to change health-related behaviors, including tobacco control (e.g., truthsm campaign), nutrition and physical activity (VERBTM: It’s What You Do” campaign), and substance use (“The Anti-Drug” campaign) (Huhman, Potter, Wong, Banspach, Duke, & Heizler, 2005; Evans, Price & Blahut, 2005; Jacobsohn & Hornik, 2008). While branding appears to be an effective prevention strategy, it is less clear *how* and *why* this effect occurs in health prevention and promotion campaigns. Thus, to understand the role of branding in health prevention and promotion more fully, it is necessary to examine the persuasive mechanisms of branding in health campaigns (e.g., modeling socially desirable behaviors) and how they contribute to behavioral change. Hence, using a branding perspective and social cognitive theory

as theoretical frameworks, this study investigates the underlying mechanisms explaining branding's effects in a school-based intervention program: *keepin' it REAL* curriculum.

This chapter begins with some basic notions about commercial branding, particularly brand equity, and then conceptualizes public health branding. At the end, the effectiveness of branding approaches in health prevention and promotion are discussed with empirical evidence.

Defining Commercial Branding

In the field of marketing and advertising, a brand is defined as a set of associations and properties linked to a name, logo, sign, and/or symbol that are associated with a product or service (Keller, 1993; Keller, 1998; Calkins, 2005). By creating a brand, marketers and advertisers can define how consumers think and feel about a particular brand when they see its name, logo, sign, or symbol (Asbury, Wong, Price, & Nolin, 2008; Batra et al. 1996). As consumers perceive greater advantages and benefits associated with the brand that they purchase (or health commitment in which they partake), they are more likely to have favorable attitudes toward the brand and continue to “buy” or accept it (i.e., trust or loyalty).

These benefits and values may not be necessarily functional in nature, as a brand can also serve as a symbolic device, allowing consumers to project their self-image (Keller, 1998). The tobacco industry has succeeded in influencing adolescents' smoking behaviors by associating cigarette brands with attractive images and outcomes that are highly valued by teenagers (e.g., popularity among peers) (Evans, Wasserman, Bertolotti, & Martino, 2002; Gordon, Biglan, & Smolkowski, 2008). The Marlboro brand is a good example because it demonstrates the way that consumers form positive associations with a brand. The Marlboro brand is associated with socially appealing imagery and characteristics, such as independence, strength, and confidence.

These associations with the Marlboro brand define how consumers see themselves as well as how they want to be seen by others (Evans & Hastings, 2008).

From a strategic standpoint, a question often arises: how does one build a strong brand? To answer this question, this chapter introduces the concept of “brand equity.” According to Aaker (1996), brands can have high equity if they have high awareness, many loyal consumers, and a high reputation for perceived quality or brand associations (e.g., personality associations). Consumers prefer high-equity brands since they often find it easier to interpret the benefits and values such brands offer and feel more confident and have more satisfaction from their purchase and use of this brand. As a result, marketers and advertisers attempt to build high equity by providing information regarding the brand’s attributes or benefits or by associating positive values and images with the brand.

Although there are various ways to define brand equity in the field of marketing and advertising, this chapter focuses on two noticeable frameworks for conceptualizing brand equity. First of all, Aaker’s framework (1991) suggests that a brand has equity with consumers (through high awareness and strong associations) as well as with distribution trade and other proprietary assets (Aaker, 1991). For instance, Coca-cola has high equity due to its worldwide distribution and reputation. Keller’s framework (1993), however, focuses more on the brand’s relationship with its consumers. He argues that strong brands have greater familiarity with the consumers as well as more favorable, strong, and unique associations with them, which leads to greater consumer preference (Batra, Myers, & Aaker, 1996). Both frameworks point out that brand equity is derived from many things, such as from reputation for quality or awareness, but the key

element for this equity is the associations (with the brand's properties and benefits) that the brand evokes in consumers (Batra et al. 1996; Keller, 2007).

Defining Public Health Branding

Branding has traditionally been related to commercial products and services. However, in the context of public health and social marketing, health-related issues and behaviors (e.g., not smoking) can be the products that are connected to labels, meanings, values, and images to which consumers aspire (Calkins, 2005; Keller, 1998). Evans and colleagues' comprehensive review of social marketing programs suggests that health behaviors and lifestyles can be branded by creating positive imagery and social models of certain behaviors and lifestyles through advertising and promotional activities (Evans & Hastings, 2008). For instance, the truthsm campaign advertising messages depicted positive images of youths as non-smokers who are cool and edgy while rebelling against the tobacco industry's control. The images projected by the truthsm brand are the very images projected by the tobacco industry's marketing efforts but emphasize healthy behaviors (i.e., not smoking) instead (Evans, Price, & Blahut, 2005). Likewise, through various marketing efforts such as advertising and promotional activities, public health brands can create individuals' cognitive awareness about and emotional affinity for particular health behaviors and they can build long-term relationships with their audience. Therefore, following the conceptualization of commercial branding, public health branding can be defined as a set of beneficial associations in individuals' minds that are linked to a specific health behavior or set of behaviors (Blitstein, Evans, & Driscoll, 2008).

Measuring the Public Health Brand

Marketing scholars proposed an overarching concept—brand equity—to assess a brand’s value that is added to the persuasive appeal of a product or service (Aaker, 1996; Batra et al. 1996; Calkins, 2005). In the commercial domain, brand equity is formally defined as the degree to which consumers associate with a brand and the product or service that it represents (Evans, Renaud, Blitstein, Hersey, Ray, Schieber, & Willett, 2007). Effective brands are able to make individuals develop associations with positive images and attributes regarding the products and services through strategic marketing communications (e.g., advertising). The individual associations with specific attributes collectively contribute to the level of brand equity (Evans & Hastings, 2008).

According to Aaker’s *Brand Equity Ten* measure (1996), brand equity is a multidimensional construct that measures brand associations, such as loyalty, personality, perceived quality, and so on. The branding measure has been developed with commercial products, such as automobiles and toothpaste. Of the proposed dimensions, monetary factors are not relevant in public health since health behaviors, such as choosing not to smoke, may be associated with monetary cost. As a result, Evans et al (2005) reinterpreted Aaker’s measure and applied it to the evaluation of public health brands. Then, they developed the second-order multidimensional construct of brand equity for the truthsm anti-smoking brand with respect to the campaign’s goal (Blahut, Evans, & Price, 2004; Evans et al. 2005).

Evans and colleagues (2005) suggest that brand equity is the key construct to capture the role of branding in public health campaigns and that it has a higher-order multidimensional factor structure. In particular, they developed and validated a brand equity scale tailored to the truthsm campaign. Based upon the information regarding the truthsm campaign, they suggested

that there are four dimensions of brand equity for the truthsm brand: brand awareness, leadership/popularity, brand personality, and brand loyalty. The first construct, awareness, measures the saliency of the truthsm campaign by examining adolescents' opinions and knowledge about the campaign (Blahut, Evans, & Price, 2004; Evans et al., 2005). The second construct is leadership/popularity, which is an indicator of the brand's position, merit, or popularity compared to the tobacco industry's brands (Blahut et al. 2004) that may be related to normative issues (Evans, Renaud et al., 2007). Third, brand personality represents potential emotional and self-expressive benefits of the brand (Batra, Myers, & Davis, 1996; Blahut, Evans, & Price, 2004). Finally, loyalty is a measure of how willing consumers are stick to the truthsm brand. As long as the consumers realize benefits and satisfaction from consuming the brand, they are likely to continue to buy it. Studies on branding consistently indicate that brand loyalty is powerful to sustain and enhance consumer relationships (Aaker, 1996). Thus, these four dimensions represent multiple aspects of brand equity.

Effectiveness of Branding in Health Campaigns

This section reviews several examples of successful branded health campaigns and demonstrates the role of branding in substance-use prevention and related fields. To evaluate the role of branding in public health and social marketing programs, Blitstein and colleagues (2008) suggested the use of three types of evaluation framework for branded health campaigns: formative evaluations (assessing if the branding messages are understood and relevant to the target audiences), process evaluation (determining whether the target audience was adequately exposed to the brand messages), and outcome evaluation (measuring the effects of brand exposure on related attitudes, beliefs, and behaviors) (Blitstein, Evans, & Driscoll, 2008).

Even though formative and process evaluations can be used to reflect important aspects of branding efforts, outcome evaluation is the most common way to assess individuals' exposure to branded messages on health-related behaviors. Prior research provides the framework for the outcome evaluation of branded health campaigns (Evans, Blitstein, & Hersey, 2008). More specifically, this framework focuses on the role of brand equity in mediating the relationship between branded campaign exposure and sustained behavioral change.

There are several examples showing the effectiveness of branding in the public health domain.

The truthsm Campaign

The American Legacy Foundation's truthsm anti-smoking campaign provides empirical evidence for the effectiveness of branding in health promotion. The campaign developed a brand to which teenagers could aspire that could compete with tobacco industry brands. Using diverse message strategies, including hard-hitting advertisements, it branded non-smoking adolescents with the appealing label of "truth teens," establishing the socially desirable imagery of not smoking and a rebellious youth culture confronting the tobacco industry's manipulation (Farrelly, Heaton, Davis, Messeri, Hersey, & Haviland, 2002). For example, a well-known truthsm advertisement, called "Body Bag" features teens piling body bags in front of a tobacco company and broadcasting loudly that these represent "1200 people who die from smoking every day." This example shows that the series of ads, including the body bag advertisement, how the truthsm brand was linked to positive images of youth as nonsmokers and rebels against forces that would prevent from the tobacco industry (Evans, Wasserman, Bertolotti, & Martino, 2002; Evans, Price, Blahut, Ray, Hersey, & Niederdeppe, 2004).

Evans and colleagues tested whether the truthsm brand equity mediated the relationship between adolescents' exposure to the truthsm campaign messages and their tendency to initiate smoking. (Evans et al. 2005). Equity of the truthsm brand was measured based on the associations between individuals who were exposed to the branded campaign and their resulting behaviors (i.e., not smoking). The evaluation findings suggest that the truthsm campaign was effective in reducing youths' intentions to smoke (Farrelly, Healton, Davis, Messeri, Hersey, & Haviland, 2002) and onset of smoking behaviors (Evans et al. 2002; Evans et al. 2005). In other words, greater exposure to the truthsm campaign messages elevated the level of brand equity, which in turn led to declines in youth smoking (Farrelly et al., 2005; Hersey, Niederdeppe, Evans, et al., 2005). Therefore, it is concluded that brand equity served as a protective factor for adolescents' smoking behaviors in the truthsm campaign.

Longitudinal data from Florida campaign showed mixed results. The analysis found that adolescents at 12 to 13 years who were exposed to baseline truthsm advertisements reported low level of progression to established smoking, while those aged 14 to 15 years showed no effects of exposure to the campaign messages (Siegel & Biener, 2000). Finally, Florida and Massachusetts countermarketing campaigns, as well as other studies suggests that the truthsm campaign exposure was positively associated with anti-tobacco industry (counter-industry) attitudes, which in turn lead to the reduction of smoking behaviors (Niederdeppe, Farrelly, & Haviland, 2004; Sly, Trapodi, & Ray, 2002). This indicates that many youth who were exposed to the truthsm ads understood industry manipulation and formed negative attitudes toward the tobacco industry.

The Stand Anti-Tobacco Campaign

The Ohio Stand anti-tobacco campaign is another example of the prevention effects branding can have on adolescent smoking. The Ohio Tobacco Prevention and Control Foundation sponsored a statewide branded tobacco prevention program that included a counter-marketing media campaign (Evans, Renaud, Blitstein, Hersey, Ray, Schieber, & Willett, 2007). The Stand campaign utilized multiple components, including television, radio, print, and billboard as well as the Internet to encourage anti-smoking behaviors.

To evaluate the campaign, Evans and colleagues (2007) conceptualized the Stand brand equity as consisting of four subscales based on the campaign's goals (i.e., maintenance of nonsmoking status): awareness, loyalty (e.g., will you continue with the healthy behavior?), leadership (e.g., is the brand better than competitors?), and personality (e.g., do you perceive the brand characteristics as being cool?). Using a longitudinal survey data, they found that adolescents with higher levels of brand equity reported lower levels of smoking initiation. Consistent with previous work with the truthsm campaign, the brand equity in the Ohio Stand campaign acted as a protective force against youth's initiation of smoking. In addition, among the four subscales of the Ohio Stand brand equity, leadership/popularity and personality exhibited strong prevention effects on adolescent smoking (Evans et al., 2007; Evans, Blitstein, & Hersey, 2008).

The VERBTM Campaign

The Centers for Disease Control and Prevention (CDC) has implemented the VERBTM, It's What You Do" campaign to promote physical activity among preadolescent youth between the ages of nine and thirteen (tweens) (Collins, & Wechsler, 2008). Through various communication channels, such as mass media, community outreach, and mobilization, the

campaign attempted to build youth's understanding about the benefits of being physically active (e.g., exercise is cool, fun, and exhilarating). Advertising was the primary vehicle to motivate tweens to be physically active, emphasizing freeing kids to play out their dreams ("I can NOT play!" and "Be active and you can live your dreams"). The VERB™ advertisements emphasized the benefits that were promised by its brand, thus furthering the understanding of the brand. The ads stimulated tweens' brand awareness and emotional affinity with the brand (e.g., likability, attraction) (Asbury, Wong, Price, & Nolin, 2008).

To evaluate the role of branding for promoting tweens' physical activity, the VERB™ continuous tracking survey (CTS) measured brand awareness and brand affinity on a monthly basis for the first two years of the campaign. The CTS data revealed that the VERB™ campaign successfully created brand awareness and affinity. For example, approximately 73% of tweens recognized the VERB™ brand over the two-year tracking stage and more than half of the respondents agreed that VERB is *cool* and *fun*. Moreover, the tracking data showed that tweens' beliefs about the benefits of physical activity and their actual behaviors had changed as a result of the campaign (Huhman et al. 2005).

Challenges in Branding Research

Branding in the public health domain is inherently different from that in the commercial marketing domain. When applying branding principles in public health, the differences among these two contexts should be taken into consideration. Whereas commercial branding typically offers a monetary benefit or an incentive, there is rarely monetary exchange with the adoption of health behaviors. The benefits promised by public health brands are symbolic rather than monetary or functional. Besides, the health-enhancing benefits that consumers achieve from

health-related campaigns actually require some physical costs, including time and effort, as well as psychological costs. Finally, the health benefits resulting from health campaigns often involve benefits that go beyond the individual level to the societal level (McCormack, Lewis, & Driscoll, 2008).

As a result, many health campaigns may fail because what many campaigns ask of their audience is not relevant to that population's own self-interests or benefits and does not provide an explicit payback to compensate for the behavior they are giving up (e.g., quitting smoking) (Rothschild & Andreasen, 1998). To overcome the challenges of public health branding, campaign researchers and practitioners need to think about ways that branded health messages can effectively deliver a promise and incentive that encourage healthy behaviors and/or discourages unhealthy ones and benefit the audience enough that they will want to give up and/or begin certain habits.

Conclusion

Branding is a promising strategy for substance use prevention. Recent research indicates that substance-use prevention brands (e.g., truthsm and *STAND*) are effective in influencing substance-related beliefs, attitudes, and behaviors (Farrelly, Healton, Davis, Messeri, Hersey, & Haviland, 2002; Evans et al. 2005; Evans et al. 2007). By emphasizing positive images and the ideal values of certain behaviors (e.g., not smoking through branding), audiences are likely to view a campaign's targeted behaviors as being beneficial and attractive, which will, in turn, motivate them to act in a desired way (Evans & Hastings, 2008).

Brand equity is the key construct to capture the role of branding in public health campaigns. As discussed above, Evans et al. (2005) developed a brand equity scale tailored to

the truthsm campaign and tested whether the truthsm brand equity mediated the relationship between adolescents' exposure to the campaign messages and their smoking initiation (Evans et al., 2005). The evaluation findings suggest that the truthsm campaign is effective in reducing youths' intentions to smoke (Evans et al. 2002; Evans et al. 2005). In other words, greater exposure to the truthsm campaign's messages elevated levels of brand equity, which, in turn, lead to a decline in the prevalence of youth smoking behaviors (Farrelly et al. 2005; Hersey, Niederdeppe, Evans, et al. 2005).

While branding research has primarily examined the prevention effects of branding in the context of mass media intervention, less is known about the effects on substance use in school-based intervention. The remaining parts of the dissertation consist of four chapters focusing on the case of a school-based, evidence-based substance use intervention, *keepin' it REAL (kiR)* curriculum. Chapter 2 discusses cultural grounding to branding as a method to developing a brand for the *keepin' it REAL* curriculum. The chapter also provides the conceptual foundation of the *kiR* as a brand. Chapter 3 examines the cognitive mechanisms explaining branding's effects on adolescent substance use, based on social cognitive theory. The chapter tests the hypothesized causal relationships, leading from exposure to branded message, through brand equity and social cognitive constructs, to youths' substance use intentions and behaviors. Chapter 4 examines on the longitudinal effects of narrative-based message perception on youth substance use in the context of branded health campaign. In particular, this chapter focuses on the mediating role of likability of the *kiR* program in the branded message processing. Finally, Chapter 5 wraps up the entire findings from previous chapters. Practical implications and future directions for adolescent substance use prevention are discussed.

CHAPTER 2

BRANDING THROUGH CULTURAL GROUNDING:

THE KEEPIN' IT REAL CURRICULUM¹

In the traditional marketing perspective, brand is defined as the association of favorable imagery created by messages. A brand image is created that reflects what people think, feel, and visualize when they see the brand's symbol or name. Effective brands evoke richer, stronger, and more consistent favorable meanings and associations (Batra et al., 1996). In order to develop strong brand, brand images must be interpretable within the symbolic system of the culture, communicated in a form that is consistent with cultural practices, and invoked within the nexus of identities that characterize group memberships. As a result, the social marketing approach has long long recognized the need to blend brands with regional / cultural concerns and to appeal to diverse customer bases. This necessitates attention to culture, a driving force in consumer segmentation (McCracken, 1986), particularly in global markets (Mooij, 2009).

Culture is also important for health-promotion interventions because the norms, attitudes, and behavioral repertoires that adolescents use to make and enact decisions about risky behaviors are derived, at least in part, from their cultural backgrounds and identities. Effective health messages, like all communication, require adaptation to the intended audiences. It has long been recognized among communication scholars that the adaptation includes the situation, topic, context, and other communicators (Street & Giles, 1982). Despite this, many prevention

¹ This chapter is adapted from a book chapter, "Hecht, M. L., & Lee, J. K. (2008). Branding through cultural grounding: The *keepin' it REAL* curriculum. In W. D. Evans & G. Hastings (Eds.) *Public health branding: Applying marketing for social change*. Oxford, UK: Oxford University Press."

messages are not suited to the groups for which they are intended. For example, a major criticism of the U.S. “Just Say No” campaign that began in the 1980s is that it promotes a singular resistance strategy that was at odds with the language practices of mainstream U.S. youth culture (Hecht & Krieger, 2006). As a result health message design theory has recently paid attention on the role of culture in health prevention and promotion.

This leads to the question ‘What is culture?’ Although no single definition of culture is universally accepted in social science, there is generally agreement that culture is learned, shared, and transmitted from one generation to the next, and it can be seen in a group’s values, norms, practices, systems of meaning, ways of life, other social regularities and so on (Baldwin, Faulkner, Hecht, & Lindsley, 2006; Kreuter, Lukwago, Buchholtz, Clark, & Sanders-Thompson, 2003). Elaborating on this basic premise, we define culture as *code* (a system of meanings or rules), *conversation* (a way of interacting) and *community* (a sense of membership) (Philipsen, 1992; Hecht, Jackson, & Ribeau, 2003). These dimensions provide the basis for developing tailored and targeted health promotion messages because they help us to describe the cultural experiences and voices of group members as well as identify cultural similarities and differences across groups. Based on this definition, designers of health messages need to consider how members of a group interpret message (code), the best medium or form for conveying the message (conversation) to them, and the most salient identities of the target audience (community). This chapter explicates these ideas, describing a cultural approach to branding, called *cultural grounding* (Hecht & Krieger, 2006).

Culturally grounded branding is an audience-driven approach to understanding the “culture” of groups as a starting point for health message design rather than adding culture to

messages. The cultural grounded approach is predicated on the essential role of codes, conversations, and communities in health message processing. Instead of universal messages focusing on dominant cultural values or even the modification of universal messages to “other” cultures, a culturally grounded intervention creates a brand that involves cultural/social elements of branding because it utilizes the symbolic representations, norms, values of each identity group and communicates in a form and style that reflects those found within the culture. Cultural grounding attempts to make a network of associations of these branding elements (Mooij, 1998) through multi-delivery strategies such as videos, billboards, product ancillaries, etc., in turn, it creates positive imagery associated with a brand and builds up strong relations with audiences. These networks emerge from the cultural code and are transmitted through social interaction among members of a community. As a result, brands can be developed *from* the codes, conversations, and communities in order to make them more accessible to the target audience and promote identification and loyalty.

Cultural grounding is a method for developing a health brand by calling upon their own meanings, messages, and identities. This chapter introduces *keepin' it REAL (kiR)* curriculum as an example of a culturally grounded approach to branding health promotion messages. At the heart of this process is the community-based participatory formative research that was used to derive the brand from the culture. Thus, the chapter begins with describing the principle of cultural grounding as a method for developing a health brand and then discuss the ways that *kiR* was developed and implemented for multicultural, school-based substance use prevention.

Principles of Cultural Grounding Approach

Grounding means starting with the basic elements of culture articulated in our definition. Various cultural groups differ in their systems of meanings (codes), ways of interacting (conversation), and sense of memberships/identity (community). In public health branding, culture plays an important role in branding because it provides a framework for targeting or tailoring messages for identity groups and their members as well as identifying the means of communicating messages that will appeal to local meanings and values. Thus the chapter discusses branding through the lens of code, conversation, and community.

Code

Effective brands have significance that goes beyond their physical properties, utilitarian character, and commercial value (Aaker, Benet-Martinez, & Garolera, 2001) that largely rests upon their symbolic representations and expressions of cultural meanings and values (Aaker et al., 2001; Richins, 1994). Shavitt asserted that culture-specific meaning typically resides in the abstract qualities of the brand that provide primarily symbolic or value-expressive functions to the consumers (Shavitt, 1990), what is commonly known as “brand image”.

For instance, the National Pork Board (NPB) launched the “*El cerdo es bueno* (Pork is Good)” campaign for the Hispanic market. Due to the experiences brought from their home countries, where pork-related illnesses are pervasive, many Hispanics, particularly among those who are immigrants or first generation US Americans, have health-related concerns regarding pork. The campaign was effective because it addressed key barriers to pork consumption based on their cultural experiences with a simple and straightforward message. “Pork is Good” conveying the meaning that US pork is safe, delicious, and healthy (Korzenny & Korzenny, 2005).

The truthsm campaign is another example of how effective branding utilizes cultural codes and images. The campaign builds a positive and anti-smoke identity through “hard-hitting” advertisements that features teens confronting the tobacco industry (Farrelly, Heaton, Davis, Messeri, Hersey, & Haviland, 2002). A well-known truthsm advertisement, called “Body Bag”, features teens piling body bags in front of a tobacco company’s headquarter and broadcasting loudly through megaphone that these represent 1200 people who die daily from smoking. This example demonstrates that the series of ads, including “Body Bag”, tells how risky smoking is using images such as the piling of body bags.

Conversation

Effective branding also must consider the messages and the channels through which they are presented. Brands tell stories or narratives that must resonate with cultural identities through culturally appropriate media. Cultures differ in their style of communicating (Hecht, Jackson, & Ribeau, 2003) and this necessitates different branding messages. For example, Kishii (1998) identified several message characteristics that distinguish between Japanese and American culture. According to his findings, indirect rather than direct forms of expression are preferred in the messages. This roundabout way of expression is pervasive in all kinds of communication in Japanese culture. Only brief dialogue or narration is often used in TV commercials in Japan because the more one talks, the less others perceive him or her trustworthy in Japanese culture (Keegan & Green, 2005).

Cultural differences also exist in media use among cultural groups. The use of billboards is extremely effective in reaching African American consumers in central cities. Large billboards deliver specific messages to an entire neighborhood, playing off the sense of community that is a

high priority among African Americans (Campanelli, 1991). A recent innovation in outdoor advertising has been increasing the use of smaller posters in African American urban communities. Compared to the large highway billboards, the main advantage of the small posters is that they can be placed low and close to the street, thus facilitating greater accessibility to passersby of all age groups (Williams, & Tharp, 2001).

Another example is the radio soap opera, termed *telenovela*, which was a culturally appropriate way to broadcast AIDS prevention messages to the intended audience in Tanzania. In 1993, over half of the Tanzanian households owned a radio and about 60% of them listened to radio regularly when the campaign was launched. The radio telenovela was an especially effective way to reach truck drivers who were most at risk of AIDS infection because it was the primary communication source for the drivers on the road. With the culturally preferred medium, the entertainment-education radio soap opera was a successful AIDS prevention strategy in Tanzania (Vaughan & Roger, 2000).

Community

Successful brands also create a sense of membership or loyalty that builds on identities in the community (Keller, 2007). In the commercial domain, brand communities are organized and facilitated based on a structured set of relationships among admirers of a brand (Algesheimer, Dholakia, & Herrmann, 2005). The truthsm campaign provides an excellent example of a health campaign that built a brand community. The campaign created a sense of membership in a rebellious youth culture around the code or image of “truth”. It branded non-smoking adolescents with the appealing label of “truth teens,” establishing an idealized social image to which youth could then aspire (Evans, Price, & Blahut, 2005). As youth were exposed to the truth messages,

they were expected to have a sense of membership as “truth teens” combined with positive social imagery of not smoking. This membership led community members to resist adult influence and decrease the progression to established smoking.

Another example is the Philip Morris “anti-smoking prevention” campaign. This “anti-smoking campaign” created an image of the non-smoker that at-risk kids would not want to hang out with so that the “models” being presented in the campaign were negative examples. This message almost invites a boomerang effect by creating a community of nonsmokers that many adolescents would not want to join. This is a kind of challenges to branding approaches, which build alternative identity for intervention. I will discuss this issue later.

Cultural Grounding as a CBPR Method for Developing a Brand

The cultural grounding approach develops brands that are grounded in the salient identities by reflecting the symbolic representations, norms, values of each identity group and communicating in a form and style that reflects those found within the culture. To identify the norms, attitudes, values of each identity group, this approach requires the active participation of the group members in health message design and production. Active participation increases the chances that culturally grounded brands will be consistent with the values and norms of the culture and reflect their members’ cultural identities, meanings and values. These voices can be incorporated in many ways. Many use a “community-based participatory approach,” or CBPR (Gosin, Marsiglia, & Hecht, 2003; Minkler & Wallerstein, 2008; Wallerstein & Duran, 2006). Through group members’ active participation in message production, the cultural grounding to branding can develop effective branded messages that communicate in a form that is consistent with cultural values and invoke within the nexus of identities that characterize group

membership. Therefore this approach emphasizes the role of narratives for communicating about adolescents and provides opportunity for behavior change modeling by building on adolescents' personal lives and experiences (Warren et al. 2006).

Narratives

Narratives are an essential part of the grounding process. Narrative theory conceptualizes human thoughts and behaviors based upon narratives or stories. Narrative is both a way of coding or storing information (Howard, 1991) as well as a method for expressing or communication a meaning (Hecht & Miller-Day, 2003). Narratives serve as the primary means for making sense of experiences and provide models for adolescent behavior (Bandura, 1986). Several studies indicate that people see narrative messages as more realistic than statistical evidence (Greene & Brinn, 2003) and that messages that combine narrative and statistical evidence are more persuasive than those presenting either type of evidence alone (Allen et al., 2000). They have proven effective in health promotion (Green, 2006).

The cultural grounding approach utilizes the narratives/stories of the group members as reflections of the values, beliefs, and implicit assumptions of their culture (Gosin, Marsiglia, & Hecht, 2003). These narratives provide good reasons, which justify actions based upon the dominant stories within the group (Fisher, 1987). Effective narratives have fidelity, or "ring true" to cultural group members, and are coherent, or hold together as a narrative or story (Fisher, 1987; Hecht & Miller-Day, in press). Different cultures are characterized by different narratives, both as a way of thinking as well as a style of expression. For example, Native American narrative is typically organized nonlinearly, like the spokes of a wheel, reflecting a central organizing element (the hub) and various story lines (the spokes) rather than a chronological

progression (Lake, 1997). In contrast to Western linearity expressed in deductive or inductive organization, this nonlinear narrative starts with a basic premise and then can go off in multiple directions, all held together by their common premise. Branded messages targeting this culture should reflect this narrative style.

The Joe Camel campaign provides an excellent example of narrativity. Joe is not just a “cool looking” hippodrome who smokes, but a story about what it means to be a cool guy – hanging out in bars, with lots of girl friends, dressing stylishly and so forth. Cultural grounding allows a brand to draw upon culturally shared symbol systems, which express membership while making stories meaningful to the intended audience.

Identity

Identity is a second aspect of grounding. Identity reflects a sense of membership in a group, be it national, religious, ethnic or other basis in origin. For example, racial/ethnic identity includes several elements such as ethnic pride, affinity for in-group culture (e.g., food, media and language), involvement with in-group and out-group members and so on (Resnicow et al., 1999). These identities provide a powerful basis for communication. Recent theorizing argues that messages and relationships, themselves, are often manifestations of identity (Hecht, 1993; Hecht, Warren, Jung, & Krieger, 2004).

Culturally grounded branding emphasizes group membership in a number of different ways. Brands can call upon existing identities, linking to those ways of being to establish a positive image or bond people to the message or product by developing new identities that connect people together around produce usage. In the first approach, the images and narratives created by cultural grounded approach are derived from within the community, enhancing

community involvement and engagement (Algesheimer et al., 2005). If cultural group members recognize their identities and accept its association with the product or idea, a strong brand loyalty toward their community will be created. For example, Hallmark Cards launched its Afrocentric brand, Mahogany to meet the needs of African American ethnic consumers. In 1987, Mahogany started with only 16 cards but it offers about 1000 cards today (Kotler, 2002).

On the other hand, brands also can create an identity group. This is very similar to brand community, which shares common values, norms, and rituals among the brand community members. Brand community leads to greater community engagement and brand loyalty (Algesheimer et al., 2005). Harley-Davidson's Harley Owners Group (HOG) is a prototypical example of a brand community. As mentioned before, the truthsm campaign created an identity group labeled as "truth teens." The truthsm messages established an ideal social imagery to which teens aspire and lead them to have a membership as "truth teens", which resist the social influence of smoking (Evans et al., 2005).

Evidence for a Cultural Grounding Approach to Branding

In some senses, cultural grounding parallels cultural sensitivity in that it is essential to general communication effectiveness (Hammer, 1989) as well as interventions (Koss & Vargas, 1992). Communication which adjusts to and accommodates culture is more effective (Hecht et al. 1993). Effective messages must be based on the underlying world views that develop through enculturation, and this is particularly true of interventions that seek to promote change (Koss & Vargas, 1992). Schinke and his associates argued that interventions targeting minority youth should emphasize ethnic pride and cultural identity (Schinke, Botvin, Orlandi, Schilling, & Gordon, 1990).

Some researchers assert that the targeted media are most effective when the symbols, characters and values depicted in the media drawn from the intended audience's cultural background (Appiah, 2001; McGuire, 1984). Culturally specific ads allow the audience to better identify with the message and the source of the message (Appiah, 2001). Besides, people who are more likely to identify with media characters and perceive themselves to be similar to media characters, are more influenced by media content in which those characters are portrayed (Huesman, Eron-Klein, Brice, & Fisher, 1983). For example, Black characters are more likely to identify with, and evaluate more favorably, ads depicting Black characters than ads featuring White characters (Whittler, 1991). This tendency is also observed in other ethnic groups such as Hispanics who seek out representations of their own culture (Stevenson & McIntyre, 1995).

In recent years, new technology has enhanced the efficacy of culturally matched messages. Appiah investigated the effect of culturally targeted message on the Internet. The results showed that Black audiences with strong ethnic identities respond more favorably to Black-targeted online media and less favorably to White-targeted media, whereas Blacks with weak identities responded no differently to the online media based on the ethnic target of the Internet site (Appiah, 2004). Prior empirical studies have demonstrated that cultural grounding often produces better outcomes than mismatched or half matched culturally grounded programs because people are more likely to accept targeted messages reflecting their cultural narratives, values and norms (Hecht, Graham, & Elek, 2003; Kulis, Marsiglia, Elek, Dustman, Wagstaff, & Hecht, 2005).

Drug Resistance Strategies (DRS) Project:

A Case Study in the Culturally Grounded Branding Approach

keepin' it REAL (kiR) curriculum is a culturally grounded approach to branding for multicultural, school-based substance use prevention. The curriculum was developed and implemented by Drug Resistance Strategies (DRS) Project, which was among the first to systematically investigate the social processes involved in drug uses among adolescents. The project created a culturally grounded prevention program from this research using a participatory action approach to message design (Gosin, Dustman, Harthun, & Drapeau, 2003; Hecht & Miller-Day, in press). The curriculum was built around understanding the narratives reflecting youth, gender, and ethnic/racial identities in the urban middle schools of Phoenix, Arizona area that was used to develop a branded, school-based substance use prevention curriculum. These narratives provided access to their shared experiences, knowledge, and values. The voices of target group members are essential to design a culturally grounded intervention that incorporates traditional ethnic values and practices that promote protection against drug use.

Strong brands include various elements, such as brand name, logo, slogan, attributes, images, user identity, and so on. Branding strategies make associations between and among these elements that are consistent with consumers' values, norms, or identity, thereby building strong relationships with consumers. To create culturally-targeted branded prevention curricula, the DRS team considered not only symbolic representations of culture, such as visual image and language reflecting that of the participants, but also the variability inherent within a specific cultural group.

Finally, to insure that the brand emerged from the culture rather than having culture added to it, community-based participatory research was used to develop the curriculum. Teams of students, teachers, and community members developed the lessons with us in an iterative

process. I believe the fidelity and coherence are enhanced when group members participate in designing and producing the materials and messages themselves (Fisher, 1987). The chapter now describes these processes in more detail.

The Role of Narratives and Identity in keepin' it REAL

The *keepin' it REAL* curriculum is a culturally grounded approach utilizing branding concepts and narrative techniques to infuse cultural elements into the curriculum. Prior research has shown that narratives play a crucial role when studying adolescents because they allow adolescents to conceptualize and express their thoughts and behaviors (McAdams, 1993; Warren et al. 2006). Bandura's social cognitive theory (1986, 2001) provides a theoretical framework explaining the way that adolescents' beliefs and behaviors are influenced through their learning processes by observing. According to the theory, adolescents are more likely to be receptive to models to which they can aspire or with which they can identify. For the reason narratives are persuasive form to provide the connection which can serve as an impetus for encouraging adolescents' behavior change. The curriculum was developed in based on cultural narratives. Narratives or stories were collected from adolescents in each ethnic group through narrative interviews (Hecht & Miller-Day, in press) and used to create the performance-based elements of the curriculum. As mentioned above, brand is not just image, but also stories or narratives associated with products/services. Narrative interviews are designed to elicit stories through questions that are not easily answerable in yes or no or didactic responses. For example, tell me about what goes on in your neighborhood is more likely to elicit a narrative response than asking if people know each other in their neighborhood. Other techniques (tell me a story about, recall a time when) also are used.

Since the mid-1980's the Drug resistance Strategies Project (DRS) has conducted extensive research using a variety of techniques to identify drug resistance narratives in order to design, implement, and evaluate a substance abuse prevention program, *keepin' it REAL (kiR)*. This research identified the ways that offers were made (i.e., who, how and where) as well as how they were resisted and why. While the unique focus of this research was on describing a set of strategies adolescents use to refuse drug offers it also helped us understanding their decision making process. The narratives collected in this process not only provided the content of the prevention messages (i.e., examples of how to assess risks, make decisions, and refuse drug offers), but they also determined what the curriculum was about. In the process of this research, the refusal strategies reflected a brand. "REAL" is an acronym to brand the refusal strategies in a term in common parlance in youth culture ("get real", "be real"). REAL summarizes four refusal strategies used among youth from elementary through college ages: Refuse (simple no), Explain (no with an explanation), Avoid (avoid the situation or offer), and Leave (remove yourself from the situation). Thus, REAL became the central brand image of the curriculum and was used to teach strategies for resisting drug offers and other skills.

The narratives collected from the kids were the bases of a series of award-winning series of five videotapes and public service announcements created by high school students at South Mountain High School in Phoenix, Arizona. The high school students developed scripts from prototypical narratives for each strategy and produced 5 videos that provided an overview of the program and taught each resistance skills through enactments or models of successful drug resistance in recognizable locales, by youth similar to the students in age and ethnicity (Hecht & Miller-Day, in press). In addition to the videos, classroom-based materials and activities (e.g.,

role plays created from the narratives) provide practices for assessing risk, making decisions and using the strategies (Gosin et al., 2003). Branding continued with focus groups with teachers and students. These groups suggested content and form for the lesson and lead to adopting the phrase, “keepin’ it REAL” as our curriculum name and the logo that begins this chapter. Focus groups also were used to pilot test the lessons.

The result was three versions of the curriculum that ethnically matched each of the main ethnic groups in the school population were developed (i.e., Mexican American and White/Black versions) and created a multicultural version that cut across these groups. As a result, *kiR* consists of three parallel versions of a 10-session classroom curriculum: a Mexican American centered version (Mexican American) targeting the largest ethnic group in the schools; a non-Mexican American centered version (Black/White) that targeted the second and third largest ethnic groups in the schools; and a Multicultural version that incorporated five lessons each from the first two versions and appealed to all three of the primary ethnic groups. The emphasis on Mexican American youth culture responds to the needs of an under-researched community and at the same time provides a useful example of a specific culturally grounded program.

The keepin’ it REAL Curriculum: Multi-Delivery Strategies

One of the aims of branding is to build relationships between consumers and products by reflecting consumer voices and adding meanings and values to their objects. The *REAL* curriculum used multi-delivery strategies and tactics to reach out the target audience effectively so that they interpret cultural elements in light of their motivations and aspirations.

Brand name or logo is an important branding element because it captures the central theme of the *kiR* curriculum and effectively connects it to the target audience. Seventh-grade

students in Phoenix, Arizona participated in creating the name, logo, and slogan of the curriculum. The students determined that the best name for the curriculum was *keepin' it REAL* because “it sounded like something I would say” and recommended the use of “bubble letter” artwork and skits because the graffiti style of writing related to their urban environment (Gosin, Dustman, et al., 2003). The *kiR* used incentives with program name and logo such as pens, baseball caps etc. to reward involvement and reinforce the brand image.

The *keepin' it REAL* curriculum was implemented with multiple delivery methods such as videos, role plays, billboards, boosters and so forth based on the belief that effective communication tools that are consistent over different media and over time should be developed for building and maintaining a strong brand (Aaker, 1996). Similar information was included in each communication tool to offer consistency and facilitate building a strong and favorable brand (Keller, 1998). The strategies were taught through the videos and class discussions. Other examples and exercises such as role playing using culturally appropriate techniques and scenarios provided practice in using the strategies (Gosin et al., 2003). Billboards, radio and television public service announcements (PSAs) were created from the in-class videos to reinforce the program's content (Hecht & Krieger, 2006). Research suggests, however, that it is primarily the classroom videos that account for the success of the intervention (Warren et al., 2006)

Effectiveness of the keepin' it REAL Curriculum

A randomized trial was conducted among thirty-five middle schools (6,035 students) that were randomly assigned to one of four conditions: Mexican American curriculum, White/Black curriculum, Multicultural curriculum or control. A pretest was administered prior to the

intervention and 3 posttests administered during an 18-month follow up to examine the efficacy of the cultural grounding approach by examining its effects on substance use and comparing the effects of cultural matching (Mexican Americans in the Mexican American-oriented program; European Americans and African Americans in the Black/White program), inclusion or partial matching (all three groups in the multicultural program), and mismatches (Mexican Americans in the Black/White program; European Americans and African Americans in the Mexican American program). Results supported the overall efficacy of the intervention but provided little substantial support of the cultural matching hypothesis (Hecht et al., 2003; Hecht et al., 2006). The tests demonstrated that the Mexican American and Multicultural versions both produced significant effects relative to control group (standard/existing intervention), indicating that it is not necessary to ethnically segregate students into narrowly matched programs. Instead, the process of incorporating a representative level of relevant cultural elements into the prevention message appeared critical (Hecht et al. 2003; Hecht et al. 2006). In addition, the intervention proved effective even for those who had initiated use prior to the pretest (Kulis, Nieri, Yabiku, Stromwall, & Marsiglia, 2007) and was equally effective for males and females (Kulis, Yabiku, Marsiglia, Nieri, Crossman, 2007). Based on these findings, *kiR* was selected for listing by U.S. Substance Abuse and Mental Health Services Administration on its National Registry of Evidence-based Programs and Practices.

Comparing Cultural Grounding and Branding

There are several ways in which branding and cultural grounding diverge. First, branding is typically developed by marketing and advertising practitioners while cultural grounding approach is more interactive and participatory (e.g., community-based participatory research). In

the marketing domain, marketers recognize the important role of culture and they attempt to develop culturally specific program, which is commonly known as *diversity marketing*. The diversity marketing program grew out of careful marketing research to identify different ethnic needs (Kotler, 2002). However, many culturally tailored marketing approaches seem to be superficial because they simply modified universal messages, even stereotypic featured developed for dominant culture (i.e., in the U.S., European American culture). For example, many African American targeted programs have simply employed the images of black superstars such as Michael Jordan, Shacquille O'Neal, Halle Berry and so on (Kotler, 2002).

The culturally grounded approach typically employs community-based participatory research or a comparable method for formative research. The findings of this research are used to create messages that move beyond superficial dimensions of culture (changing the ethnicity or appearance of role models) to include the fundamental aspects of culture such as cultural narratives, values, beliefs, and norms (Castro et al., 2004; Hecht & Krieger, in press; Kreuter et al., 2003; Resnicow et al., 1999). The cultural grounded approach requires health message designers engage the voices cultural group members and work with them to develop culturally targeted messages reflecting the deep structure of each culture (Gosin et al., 2003; Hecht et al., 2006). As Kreuter and his colleagues argued, the socio-culturally based programs and materials should understand culturally normative practices and beliefs-the inner workings of culture rather than just outward appearances (Kreuter et al., 2003).

Another difference is that branding often creates something new or unique to differentiate the brand from other competitors whereas cultural grounding tries to have the brand emerge from the culture. Marketers attempt to associate brands with favorable images and build unique

identities to differentiate their brands from other competitors (Kotler, 2002). They can differentiate their brand images using symbols, colors, slogans, and special attributes. For instance, the image of Apple computer was built around its unique symbol, the apple. Some companies employ color identifier such as blue (IBM), yellow (Kodak), or a specific piece of sound or music. In contrast, the cultural grounding approach to branding tries to identify values, norms, and identities embedded in culture and derive the brand from those cultural elements. Cultural grounding does not necessarily create something new; instead, it tries to understand the existing thoughts and ideas embedded in each culture and derive the brand from them. For example, the phrase “*keepin’ it REAL*”, was developed by students to explain or brand the REAL program. The phrase, itself, was in common use within the culture and has (fortunately) remained in use.

Finally, branding often is associated with favorable images (how a person should be) while cultural grounding is more than just images. In the commercial sector, branded messages create the associations with the brand. Brand image encompasses all the associations that a consumer holds for the brand. These include colors, sounds, smells, thoughts, feelings, and imagery (Batra et al., 1996, p.321). For instance, McDonald’s is connected to an images of “typical user” with the character, Ronald McDonald and a feeling of having fun with the symbol, golden arches (Kotler, 2002).

Cultural grounding involves telling a story that reflects cultural elements based upon formative research with group members. As mentioned above, the *kiR* drug prevention curriculum is culturally grounded and derived from the narrative theory and research. The program drew upon the stories which are salient to adolescents through the active participation of

high school and middle school students (Hecht & Miller-Day, in press). Formative research was conducted to explicate adolescents' experience of drug use and drug offers (Hecht & Krieger, 2006). The findings of this research led to the development of the *kiR* curriculum with students, teachers and community members utilizing narratives in which peer models of adolescents refuse drug offers to redefine the story of drug use norms and risk, as well as to develop communication competence and life skills (Hecht & Miller-Day, in press).

Challenges to Cultural Grounding to Branding

Branding in the public health arena is inherently different from that in commercial marketing arena. Commercial branding typically suggests a benefit or an incentive, building the brand by presenting positive images of the product. However, while some health messages encourage the adoption of health behaviors, many stress avoidance of unhealthy behaviors. Members of the culture may not recognize the health brand as an incentive. Many health campaigns fail because what the campaigns ask the target audience to do is in opposition to their own self-interest or benefit and does not provide an explicit payback to compensate for what should not be done (e.g., smoke quitting) (Rothschild & Andreasen, 1998). Health messages are challenged to show people being healthy as something to which people aspire. HIV/AIDS testing in Africa is the case for that issue. HIV/AIDS prevention campaigns are using advertising and mass media to emphasize the benefits of HIV testing such as user-friendly, high-technical service, and support for those infected but people may refuse HIV testing, sometimes as a result of the threatened stigma, abandonment, violence, or murder. The potential for negative consequences hinders them from obtaining the desirable treatments needed to combat the disease (Cock, Mbori-Ngacha, & Marum, 2002).

This raises the question of ‘how health branding messages can deliver a promise or incentive (e.g., smoke quitting makes you healthier) that encourages healthy behaviors and/or discourages unhealthy ones. The cultural grounding approach suggests calling upon cultural identities and narratives that represent desirable health practices. For instance, peer pressure (e.g., norms) plays an important role in drug use among adolescents. The most common narrative among them presents drug users as mature and glamorous – cool guys in peer groups. This is reinforced in much of the media (DiFranza, Richards, Paulman, Wolf-Gillespie, Fletcher, Jaffer, & Murray, 1992). Branding approaches are challenged by this narrative. However, the peer influence may also involve in drug abstinence as well (Elek, Miller-Day, & Hecht, 2006; Robin & Johnson, 1996). Kids who see their friends using drugs are more likely to follow whereas kids who believe their friends are anti-drug are more likely to abstain (Strasburger, 2000). Narratives in which teens do not use substances and still have fun can be powerful means to shaping behavior. Here is the possibility that alternative identities and narratives may change normative behavior (e.g., drug use), if health messages are grounded in group members’ experiences.

To overcome the challenges to culturally grounded branding, this chapter proposes the following solutions for health implementers. First, they have to consider people’s perceptions of the identities and meanings in health messages. There often has been a lack of understanding of the cultural meanings and preferred modes of communication at the level of message design. Health message designers can use various methods (e.g., community-based participatory research) to understand how members of a group identify with health messages. Particularly, the designers need to focus on developing benefit-based messages so that their intended audiences are more prone to change rather than resistant to change. For instance, the *Small Step* campaign

conducted qualitative research to identify barriers to healthy habits (USDHHS, 2004). Based on the findings, the campaign encouraged adoption of healthy lifestyles to prevent obesity and consequent health risks. The campaign emphasized the “small step” in everyday lives lead to positive spin potentials. Once the designers understand the way that they perceive the messages, they may link relevant benefits and incentives to the messages with various marketing and branding strategies and tactics.

Second, health campaign should be audience-driven by listening to the voices of group members to identify cultural norms and values consistent with what they deliver in brands by listening to the voices of group members. If they do not understand what audiences want, message-audience nonfit may occur and lead to a boomerang or iatrogenic effect. Cultural adaptation is required to avoid this nonfit. The chapter suggests that health message designers employ participatory and interactive research to reflect cultural norms, values embedded in each culture. By doing so, health messages can deliver the messages that resonate cultural identities/membership.

Third, health implementers should prepare for unintended effects. After the prevention program, the program should be evaluated to investigate if there are any unintended effects. The DRS research team measured the effectiveness of culturally grounded prevention program at the immediate posttest as well as fourteen month follow-up test (Hecht, Graham, & Elek, 2006). The tests may increase the chances to detect unintended effects because these provide important information about the effect of the program on the rate and pattern of change in substance use over time (Hecht, et al., 2003).

Finally, narratives can be an alternative to resolve challenges to branding approaches. As I discussed above, a brand is not just images, but stories in public health context. If health implementers utilize the stories of the group members, they can effectively reflect the implicit assumptions of each culture. By doing so, these narratives can also provide “good reasons” to justify their actions based upon the dominant stories within each group and do so with fidelity and in a coherent fashion.

Conclusion

The cultural grounded approach to branding is based upon an elaborated conceptualization of culture that considers cultural codes (system of meaning), conversations (way of interacting), and communities (membership). Cultural grounding starts with the experiences of group members and identifies their stories in order to capture these three aspects of culture. Traditionally, culturally-adapted approaches just modified the universal messages but culturally grounding emphasizes messages that incorporate the deep structure of culture such as values, norms, and identity while starting with the code, conversation, and communities of a culture rather than adding these features later.

The *keepin' it REAL* curriculum is a culturally grounded approach to adolescents' substance use school-based prevention that provides a template for branded health messages. Through formative research the Drug Resistance Strategies project has developed health messages that are grounded in group members' salient meanings, narratives, and identities. The cultural narratives identified in this research lead to highly salient health messages that provide “good reasons” to justify actions as well as models for their behaviors. This multicultural curriculum, with its proven efficacy, provides a model of developing culturally-grounded,

branded health messages. There is, of course, much to learn in this area. *keepin' it REAL* is meant to be an exemplar of a method for developing health messages that provides a starting point for developing culturally grounded health brands.

Research Questions/Hypotheses

The *keepin' it REAL* is culturally grounded approach to branding. As discussed above, through the narrative and formative research, the *kiR* brand emerged as a “kid-centric” story about drug use that was internalized through social modeling. With the central image of the curriculum - REAL, the curriculum-lessons imbue reflect a “kids-eye worldview” teaching a set of refusal strategies and decision-making skills through multiple channels including videos and other class activities. While some prior research demonstrates the efficacy of a kid-central and culturally grounded approach to teach ways of resisting drugs effectively (e.g., Hecht, Graham, & Elek, 2006), little is known about the underlying mechanisms of branding in the *kiR* curriculum as well as the role of perceptions of the branded messages. Thus I pose the following overall research question for this dissertation:

How does branding work for adolescent substance use prevention in a school-based substance intervention program?

This question is discussed and examined substantively next in Chapter 3.

CHAPTER 3

EXAMINING PROTECTIVE EFFECTS OF BRAND EQUITY IN THE KEEPIN' IT REAL SUBSTANCE USE PREVENTION CURRICULUM

Branded message design strategies have much potential to advance health prevention theory and practice. In recent years branding has been effectively applied to tobacco control (e.g., truthsm campaign) (Evans, Price & Blahut, 2005), nutrition and physical activity (VERBTM: It's What You Do campaign) (Asbury, Wong, Price, & Nolin, 2008; Huhman, Potter, Wong, Banspach, Duke, & Heizler, 2005), and substance use ("The Anti-Drug" campaign) campaigns (Jacobsohn & Hornik, 2008). Whereas efficacy has been established for these individual mass media interventions, little is known about whether branding works in school-based interventions nor *why* or *how* it works in general. Using the branding perspective and social cognitive theory as frameworks, this study examined explanatory mechanisms for the effects of branding in the *keepin' it REAL* school-based substance use prevention curriculum.

Defining Branding

In the field of marketing and advertising, a brand is defined as a set of associations and properties that are communicated by a name, logo, sign, or symbol associated with a product or service (Keller, 1993; Keller, 1998; Calkins, 2005). By creating a brand, marketers and advertisers define how consumers think and feel about the product when the consumers see its name, logo, sign, or symbol (Asbury et al. 2008). As consumers perceive greater advantages and benefits associated with the brand that they purchase, they are more likely to "buy" or accept the product (Batra, Myers, & Aaker, 1996). The benefits promised by a brand are not

necessarily functional in nature; they can serve as symbolic devices that allow consumers to project their self-image (Keller, 1999).

This approach has been used by companies seeking to promote legal substance use, with spill over into underage consumption. The tobacco industry has succeeded in influencing adult and adolescent smoking behaviors by associating cigarette brands with attractive images and highly valued outcomes, particularly those valued by teenagers (e.g., popularity among peers) (Evans & Hastings, 2008; Gordon, Biglan, & Smolkowski, 2008). The Marlboro brand provides a good example, having come to be associated with socially appealing imagery and characteristics such as independence, strength and confidence. These associations define how consumers see themselves as well as how they want to be seen by others (Evans & Hastings, 2008).

While branding has traditionally been related to commercial products and services, recently researchers have shown that it can be applied to health-related issues and behaviors (e.g., smoking). Evans and colleagues' comprehensive review of social marketing programs suggests that health behaviors and lifestyles can be branded by messages creating positive imagery and social models through advertising and promotional activities (Evans & Hastings, 2008). For instance, the truthsm campaign depicted positive images of youth as non-smokers who are cool and edgy while rebelling against tobacco industry control and communicated them through a series of public service announcements/ads. The images projected by the truthsm brand make use of the very images used in the tobacco industry's marketing efforts, but turn them to anti-smoking messages (Evans, Wasserman, Bertolotti, & Martino, 2002; Evans, Price, & Blahut, 2005). Therefore, following the conceptualization of commercial brand, public health brand can

be defined as a set of beneficial associations in the mind of an individual that are linked to a health behavior or set of behaviors (Blitstein, Evans, & Driscoll, 2008).

Branding Drug Resistance Strategies: The keepin' it REAL Curriculum

To date, branding has been applied to health messages utilizing mass media (e.g., advertisement or PSAs), yet little is known about the role of branding in prevention messages in school-based interventions. Schools are an important context for reaching adolescents with health messages because of their universal access to adolescents (Biglan, Ary, Smolkowski, Duncan, & Black, 2000; Gordon et al. 2008; Slater, 2006). Given the critical developmental period of early adolescents, middle schools, in particular, are the site of numerous prevention interventions (Skara & Sussman, 2003). *keepin' it REAL (kiR)* curriculum is an evidence-based, substance abuse prevention program targeting middle school students that utilizes branding concepts and narrative techniques to develop health messages that teach strategies for resisting drug offers and decision making skills (Hecht & Lee, 2008).

The *keepin' it REAL* or *kiR* “brand” is apparent in a number of ways (Hecht & Lee, 2008). First the *keepin' it REAL* brand was strategically created through narrative and formative research. ‘REAL’ is not only an acronym for the four resistance strategies (i.e., ways of saying no to drug offers and resist peer pressure) that emerged from a line of formative, narrative research (Hecht & Miller-Day, in press), but also an appealing brand image that communicates a “kids-eye worldview”. The *kiR* brand image is that it is “real/REAL”; derived and based on real youth narratives and models told by youth with whom the audience can identify (Hecht & Lee, 2008). To build a positive image, the *keepin' it REAL* curriculum presented an appealing identity and social benefits through multiple components that involve and engage youth, including

classroom videos, role plays, discussions, radio, television PSAs/ads, and billboards (Hecht & Lee, 2008). In addition, the brand name and logo are important elements of branding because they capture the central theme of the *kiR* curriculum and effectively connect it to the target audience. Focus groups of teachers and seventh grade students suggested content and form for the lessons and led to the adoption of the phrase, ‘*keepin’ it REAL*’ as the brand name and to the development of the brand logo (see Figure 3.1).

For the reasons described above, we believe that the implementation of the *keepin’ it REAL* intervention provided an ideal opportunity to study to assess the role of branding in the *keepin’ it REAL* curriculum and test whether brand equity explains the success of the brand in school-based substance use prevention.

Factor Structure of kiR Brand Equity

From strategic standpoint, the question arises, what is a strong brand? Aaker (1996) proposed the construct of brand equity to answer this question, postulating that equity will be high if messages create high awareness, many loyal consumers, a reputation for perceived quality, and/or positive brand associations. Consumers prefer high-equity brands since they can find it easier to interpret their benefits and values as well as feeling more confident and satisfied with their purchase and use (Aaker, 1996; Batra, Myers, & Aaker, 1996). As a result, marketers and advertisers attempt to build high brand equity by providing information regarding attributes or benefits or by associating positive values and images with the brand.

On the basis of previous studies of branding (Aaker, 1991, 1996; Blahut, Evans, & Price, 2004; Evans, Renaud, Blitstein, Hersey, Ray, Schieber, & Willett, 2007), *keepin’ it REAL* brand equity is conceptualized as having four dimensions. The first dimension is awareness, which

involves a set of knowledge and opinions about the *kiR* brand (Blahut, Evans, & Price 2004; Evans et al. 2005; Evans et al. 2007). The second construct is defined as popularity among peers, an indicator of the brand position or merit (Blahut et al. 2004) that may be related to normative issues (Evans, Renaud et al., 2007). Third, brand personality is defined as the human characteristic associated with the *kiR*, representing potential emotional and self-expressive benefits of the brand (Batra, Myers, & Davis, 1996; Blahut et al. 2004). Finally, loyalty is how willing consumers are stick to a brand (Batra et al. 1996; Price, Potter, Das, Wang, & Huhman, 2009). Studies on branding have consistently indicated that brand loyalty is powerful to sustain and enhance consumer relationship (Aaker, 1996).

Recent research suggests that brand equity has a hierarchical structure, consisting of multiple sub-dimensions, loading on a single higher-order factor (Blahut et al., 2004; Evans et al., 2005). Brand equity is viewed as the cumulative effects of awareness, leadership/popularity, personality, and loyalty; that is, if a message evokes these reactions it has high equity. From a measurement perspective, these four factors are considered lower-order constructs with equity an overarching or higher order one. Thus the following hypothesis was posed regarding the conceptualization and measurement of brand equity:

Hypothesis 1: keepin' it REAL brand equity has a second-order four-sub-dimensional structure consisting of awareness, popularity, personality, and loyalty.

Protective Effects of kiR Brand Equity

Evans and Hastings (2008) maintained that brand equity plays a central role in evaluating how branded health campaigns work. Prior consumer studies on branding consistently argued that strong brands are more familiar and have more favorable, strong, and unique associations with them, which leads to greater consumer preference and purchase (Batra, Myers, & Aaker, 1996; Cobb-Walgren, Ruble, & Donthu, 1995; Keller, 1993). In the field of social marketing and public health, recent research (e.g., Gordon, Biglan, & Smolkowski, 2008; Evans et al., 2005, 2007) demonstrates that greater levels of brand equity are negatively associated with risky behaviors such as youth smoking. Likewise effective public health brands create brand equity (i.e., awareness, popularity, personality, and loyalty) and influence the audience in the desired action directly. Thus a causal hypothesis is implicitly engendered in this view: creating brand equity leads to targeted behaviors. In this study we anticipated that the *kiR* curriculum will be successful in impacting adolescent substance use by creating brand equity. Intentions were used for a proxy for actual behaviors given the young age of sample who had less experiences of substance use than adult sample. Hence, the following hypothesis was posed:

Hypothesis 2: kiR brand equity is inversely related to adolescents' intent to use substances.

Underlying Mechanisms of Branding: Social Modeling

This study employed social cognitive theory as framework to examine the mechanisms explaining branding's effects in the *keepin' it REAL* curriculum. Social cognitive theory (SCT), the theoretical basis for much health prevention and promotion research, is a good fit to branding

because it posits that social modeling promotes emulation and behavioral adoption (Bandura, 2001; 2004; Evans, Blitstein, & Hersey, 2008). Models, an essential element of branding campaigns, are presented to promote vicarious learning and influence knowledge, attitudes, and behaviors since people acquire a particular beliefs, knowledge, or behavior by observing others' behavior (Bandura, 1986, 2004; Sheeshka, Woolcott, & MacKinnon, 1993).

Vicarious learning is one of the keys of SCT and it is governed by the processes of attention, retention, production, and motivation (Bandura, 2004). Branding message elements, such as name, logo, or symbol enhance attention and encourage retention processes (Keller, 2008). In turn, the retained symbols and images stored in memory are converted into behavior by practice (Pajares, Prestin, Chen, & Nabi, 2009). More importantly, branding can promote “motivational” learning processes by delivering benefits and incentives that are symbolic rather than functional in nature. For instance, the motivational processes are reinforced when branded media characters performing healthy behaviors are depicted as positive and socially attractive (Nariman, 1993; Singhal & Rogers, 1999).

According to SCT theory, knowledge and skills are the precondition for behavioral change. Without knowledge and skills, people are unlikely to engage in behavioral change. However sufficient level of knowledge does not always guarantee behavioral change. Bandura (1999, 2004) argues that observed behaviors obtained through vicarious learning may not be enacted unless people form self-efficacy beliefs. Peer models can be used to build beliefs regarding efficacy for particular health behavior (e.g., avoiding smoking initiation) when the models and their behaviors are perceived as socially desirable or attractive through branding (i.e., benefits or incentive) (Evans et al., 2004; Evans et al., 2008). In effective branded messages,

healthy behaviors are branded by attaching the behaviors to socially accepted images and models in order to encourage adoption of the healthy behaviors (Evans & Hastings, 2008). The underlying strategy featuring socially desirable imagery or models has been validated in avoiding smoking initiation, increased physical activity, and condom use (Evans, Price, Blahut, Hersey, & Niederdeppe, 2004; Huhman et al. 2008). In this study, this theorizing is extended through social cognitive theory to posit that the branding of refusal strategies and decision-making skills not only enhances knowledge of drug resistance skills, but also encourages beliefs of self-efficacy through social modeling that, in turn, affects intentions and behaviors regarding substance use.

kiR Modeling

The *kiR* branded messages were developed to target the perception of efficacy and knowledge of resistance skills through modeling socially desirable behaviors by adolescents. As described earlier, the *kiR* curriculum branded the social skills of resisting drugs effectively to youth through behavioral modeling. As adolescents are exposed to the branded messages through a series of videos and participate in class activities and other events to reinforce the brand and provide practice, adolescents are likely to understand the meanings of the *kiR* (e.g., “saying no is cool”) as well as form favorable, strong associations with the brand (e.g., “*kiR* is popular” or “*kiR* looks like real”). In turn, the familiarity and the associations with *keepn’ it REAL* (i.e., brand equity of the *kiR*) and practice in their use are intended to lead adolescent to learn the skills needed to make healthy decisions as well as enhance beliefs of resisting drug offers from peers and families. Hence, greater level of brand equity and association are predicted to increase refusal efficacy and resistance skills. The following hypothesis was posed to test this relationship:

Hypothesis 3a: The *kiR* brand equity is positively associated with refusal self-efficacy and resistance skills.

Hecht and colleagues argue that preadolescents' refusal efficacy and resistance skills significantly affect their substance use intentions and behaviors (Hecht, Warren, Wagstaff, & Elek, 2008). Adolescents who believe that they can enact behaviors related to refusing substances and that those behaviors will lead them to their goal (refusal efficacy) and who demonstrate knowledge of skills to enact those behaviors (resistance skills) are less likely to use substances (Conrad, Flay, & Hill, 1992; Levin & Hart, 2003; Morrongiello & Dawber, 2004). To test these relationships the following hypotheses were posed:

Hypothesis 3b: Refusal efficacy and hypothetical resistance are negatively associated with intent to use substances.

If brand equity enhances perception of efficacy and resistance skills, which lead to reduce adolescents' intent to use substances, then it is also reasonable to anticipate that:

Hypothesis 3c: Brand equity has an indirect influence on adolescent substance use intentions through refusal-efficacy and resistance skills.

Method

Participants and Procedure

This study utilized a cross-sectional, self-report dataset from a larger intervention evaluation study (Hecht, Warren, Wagstaff, & Elek, in press). Data were collected from 296 8th grade students in the middle schools in Phoenix, Arizona where *keepin' it REAL* curriculum was implemented during the 2007-2008 school year (September through May). All the participating students completed assent forms and their parents completed consent forms informing them of the voluntary and confidential nature of the students' questionnaire participation. The mean participants' age was 13.6 years old ($SE = .60$ years) and females were 56% of the participants. Approximately 80% of the students self-identified as Mexican or Mexican-American; 10% self-identified as African American; 8% self-identified as White or Anglo; 1% self-identified as Native American; less than 2% self-identified with some other racial/ethnic group.

Measures

From a larger survey in the main study, the following measures were employed in the analyses.

Brand equity. Fifteen survey items were adapted from the truthsm brand equity scale developed by Blahut, Evans, and Price (2004) to measure *kiR* brand equity. The original measure of the brand equity consisted of four dimensions as follows: brand awareness, brand leadership/popularity, brand personality, and brand loyalty. The items were responded to using a 4-point agree-disagree scale ranging from 1 (strongly disagree) to 4 (strongly agree). The examination of Cronbach's alpha coefficients indicated that the four subscales exhibited high levels of internal consistency in the current sample. Cronbach's alpha coefficients for the first-

order factors were 0.94 for awareness, 0.91 for leadership/popularity, 0.94 for personality, and 0.90 for loyalty respectively.

Hypothetical drug resistance. Hypothetical rather than actual resistance was selected for this study because only 11% of the respondents reported receiving a substance use offer and focused on alcohol (rather than other substances) due to the expectation that these students would be more likely to face offers of alcohol, the most frequently used substance in the sample. This variable was assessed with 4 items measured on a 4-point scale ranging from 1 (definitely) to 4 (definitely not) (Hecht, Warren, Wagstaff, & Elek, 2008). The common stem consisted of “*If your friend offered you a beer at a party, would you...*” The stem was completed with “*...say ‘No’ without giving a reason why?*,” “*...give an explanation or excuse to turn down the beer?*,” “*...just leave the situation without accepting the beer?*,” “*...find some other way to not accept the beer?*,” or “*...avoid getting into that situation because you think beer might be offered there?*” The scores on the scale were reverse-coded so that higher scores indicated greater willingness to use one of the four resistance strategies to refuse an alcohol offer. Cronbach’s alpha in the current sample was 0.69.

Refusal self-efficacy. Perception of efficacy was measured with three items responded to the 4-point scale ranging from 1 (very sure) to 4 (not at all sure). These items were modified from those used by Kasen, Vaughan, and Walter (1992) to assess self-efficacy for refusing sexual intercourse. The items were, for instance, “*Are you sure you would say no if a family member or close friend offered you alcohol?*” (Cronbach’s alpha = 0.69).

Intent to use substances. We measured intentions as a proxy for use given the young age of the sample and that fact that they reported few experiences of actual use at pretest. Intent has

proven to be an accurate proxy for use in similar studies (Ary & Biglan, 1988; Sterling, Diamond, Mullen et al. 2007; Tyc, Hadley, Allen et al. 2004). The measure assessed adolescents' substance use intentions (alcohol, cigarette, and marijuana) based on previous work with older samples (Hecht, Graham, & Elek, 2006). The items (e.g., "If you have a chance this weekend, would you use alcohol?") were responded to on the 4-point scale indicating the degree of likelihood (1=definitely yes, 2=yes, 3=no, and 4=definitely no) of performing the behaviors. These items were reverse-coded (i.e., high scores reflected greater intent to use) for ease of interpretation (Cronbach's alpha = 0.70).

History of substance use. Three binary items represented history of substance use. The items asked students if they ever used alcohol, cigarette, and marijuana at least once in their lifetime (0 = never used; 1 = ever used).

Demographics include gender (male adolescents were coded 0, female adolescents were coded 1) and age.

SPSS 15.0 was used for preliminary analyses. To accommodate the missing data, multiple imputation procedures were performed using NORM 2.03 (Schafer, 1997). Recent missing data techniques (e.g., multiple imputation and FIML) offer unbiased estimates of missing parameters, while retaining natural variability in the missing data and incorporating uncertainty caused by estimating data (Schafer & Graham, 2002). Table 3.1 displays the summary statistics and the bivariate correlation matrix for the survey items. Inspection of the inter-correlations indicated that most correlation coefficients were in the expected direction.

Data Analysis Plan

To test the hypothesized models, structural equation modeling (SEM) analyses were performed using *Mplus 5.2* (Muthen & Muthen, 2007). The parameters were estimated using the robust weighted least square estimated mean- and variance-adjustment method (i.e., WLSMV) since the models included ordinal and non-normally distributed variables (Muthen & Muthen, 2007). The primary fit indices used to evaluate the model fit of the hypothesized SEM model, were the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the weighted root mean square residual (WRMR) (Kline, 2005; Hu & Bentler, 1999; Yu, 2002). Following convention (Boomsma, 2000; Kline, 2005), an $RMSEA \leq .05$ was considered to be a close approximation, an RMSEA between .05 and .08 was reasonable, and a value equal to or exceeding .10 was a poor fit. As for CFI and TLI, a value of .95 or above was satisfactory. The weighted root mean square residual (WRMR) is a relatively new fit index that is particularly suited to categorical data. A WRMR value close to 1.0 depicts a good fit (Hancock & Mueller, 2006; Yu, 2002).

The modeling strategy of the current study was first, to develop the hypothesized higher-order factor model of the *keepin' it REAL* brand equity, then to test the hypothesized path model of the effects of the *kiR* brand equity on adolescent substance use. To test the higher-order factor structure, the fifteen brand equity measures used in this study were subjected to a second-order confirmatory factor analysis (CFA). For the hypothesized path model, brand equity was used in the analysis as exogenous variables, while hypothetical resistance skills, refusal efficacy, and intent to use substances were used as endogenous variables. Given the relatively small sample size of the study, the observed indicators of the first-order brand equity constructs were aggregated, then entered into the model in order to alleviate the model complexity that may

cause estimation instability (MacCallum, Wildaman, Zhang, & Hong, 1999; Matsunaga, 2008). As postulated, hypothetical resistance skills and refusal self-efficacy were entered as mediators in the model. These intervening variables were allowed to be inter-correlated in order to take into account the interdependence between the variables (Preacher & Hayes, 2008). The control variables (i.e., gender, age and prior substance use) were included as exogenous variables, from which paths were drawn to all the endogenous variables.

This study bootstrapped the indirect effects of brand equity on substance use intentions by repeatedly 5000 times sampling cases with replacement from the data (i.e., 5000 bootstrap sample draws). The bootstrap method is known as useful means to alleviate statistical problems associated non-normal distributions of indirect effects because it does not hold any “a priori” assumptions about sample distributions (Hayes, 2009; Preacher & Hayes, 2008). I determined the statistical significance of the indirect effects using 95% biased-corrected confidence intervals (CI) estimated by the bootstrap method.

Results

Testing Factor Structure of kiR Brand Equity

As discussed earlier, brand equity is conceptualized as consisting of multiple constructs. Aaker (1996) originally proposed 10 constructs but in later analyses Blahut et al., (2004) and Evans et al. (2005) reduced this number to four constructs of brand equity: awareness, leadership/popularity, personality, and loyalty. Preliminary analyses of the current data revealed that the four, first-order constructs were highly correlated one another ($r = .69$ to $.89$), leading to question the discriminant validity. This is not surprising given that Evans et al. and Blahut et al. argue that there is a hierarchical, second-order structure to the data. Highly-correlated constructs

can be related through what they all share, common higher-order brand equity. Including these constructs as the constituent building blocks of the higher-order factor structure resolves the high inter-correlation because that is expected in a second-order model.

Confirmatory factor analyses (CFA) were implemented using the mean and variance adjusted weighted least square parameter estimates (i.e., WLSMV) to test the factor structure of the brand equity scale. For validating the hypothesized hierarchical structure over the first-order multidimensional structure, this study compared the second-order orthogonal model to the first-order oblique model.

To compare the model fit of these two factor models (first- and second-order models), the *DIFFTEST* command in the Mplus program was used instead of conventional Chi-square difference test. The reason is that the Chi-square difference between two nested models using WLSMV estimators is not Chi-square distributed (Yu, 2002). The difference test using the *DIFFTEST* option indicated that the model fit did not improve significantly from the second-order to the first-order models: $\chi^2_{DIFF}(2) = 2.62, (p = .269)$ (Muthen & Muthen, 2007). Hence I chose the second-order model representing the hierarchical structure of *kiR* brand equity. (H1 supported).

Table 3.2 presents the loadings of the first and second-order constructs and their standard errors. In the second-order model, all factor loadings of the four subscales were statistically significant and the magnitudes of loadings ranged from 0.87 to 0.96. In addition, factor coefficients loaded on the second-order construct were statistically significant and fairly high ranging from 0.79 to 0.99 (see Figure 3.2 for visual summary).

Testing Protective Effects of kiR Brand Equity

A path analysis using *WLSMV* estimator was carried out to test the hypothesized effects of *kiR* brand equity on adolescent intent to use substances, posited by hypothesis 2 and 3. The hypothesized path model yielded a good fit to the data: $\chi^2(31) = 112.04$; CFI = .957; TLI = .964; RMSEA = .094; WRMR = 1.02. Most estimates were in the predicted direction, yet some estimates were not statistically significant.

Consistent with the hypothesis (H2), the path analysis revealed that the direct pathway from brand equity (BE) to substance use intentions (SI) was statistically significant (for BE \rightarrow SI, unstandardized $\beta = -.29$, $SE = .07$, $p < .001$). The analysis also found that the brand equity was positively related to refusal efficacy (RE) and hypothetical resistance skills (RS) (for BE \rightarrow RE, unstandardized $\beta = .17$, $SE = .07$, $p < .05$; for BE \rightarrow RS, unstandardized $\beta = .23$, $SE = .07$, $p < .001$). Thus the findings supported H3a. In addition these two variables were hypothesized to be inversely associated with intent to use substances (SI). While refusal efficacy was negatively related to intent to use substances (for RE \rightarrow SI, unstandardized $\beta = -.48$, $SE = .07$, $p < .001$), there was no significant relationship between hypothetical resistance skills and substance use intentions (for RS \rightarrow SI, unstandardized $\beta = -.13$, $SE = .07$, $p = .051$).

The bootstrap test using 5000 bootstrap resamples revealed significant indirect effects on substance use intentions via refusal efficacy because the 95% biased-corrected confidence interval did not include the bootstrap estimates of zero (null hypothesis of indirect effects): bootstrapped 95% biased-corrected CIs for the (unstandardized) effects of brand equity via refusal efficacy (BE \rightarrow RE \rightarrow SI) = $-.170 - -.001$. However the analysis indicated that there was no significant indirect effects of brand equity via hypothetical resistance skills (BE \rightarrow RS \rightarrow SI) = $-.093 - .003$. Hence, it was concluded that refusal self-efficacy (RE) *partially* mediated the

relationship between the brand equity and adolescents' intent to use substances, given the presence of the direct effects of brand equity on intent to use substances.

Finally, the demographic variables (i.e., gender and age) introduced into the model were not significant predictors of adolescent substance use. However, prior use of substances appeared significant predictors because the variables demonstrated statistical significance in the pathways to the endogenous variables (refusal self-efficacy, resistance skills, and substance use intentions). Overall, the predictors, mediators, and control variables in the model accounted for 69% of the variance in adolescent substance use intentions. Table 3.3 presents the unstandardized parameter estimates and their standard errors (see Figure 3.3 for visual summary).

Discussion

This study was designed to investigate the underlying mechanisms of branding in school-based substance use interventions and test the branding effects of the *keepin' it REAL* curriculum. The findings confirmed theoretically-derived expectations indicating that branded messages affected substance use intentions directly and through social cognitive processes. More specifically, adolescents with high brand equity in the *keepin' it REAL* curriculum exhibited a decreased level of substance use intentions. In addition, branded messages were associated with increased levels of refusal efficacy and hypothetical resistance skills and in turn, the efficacy was significantly associated with reduced substance use intentions, whereas the resistance skills were not. Overall, it is concluded that *kiR* messages that build brand equity acts as a protective factor for substance use prevention and the effects are mediated by the targeted efficacy.

Although brand equity has been traditionally related to consumer products, our findings suggest that it can be extended to behavioral/social phenomena (Blahut et al 2004). A *kiR* brand

equity scale was developed and then analyzed to test the fit of the second-order, multi-subscale factor model. Consistent with prior studies such as Blahut et al (2004), the confirmatory factor analysis showed multidimensional aspects of branding in the *kiR* curriculum: brand awareness, leadership/popularity, brand personality, and brand loyalty. In other words, adolescents can have high brand equity if they have high awareness and reputation about the *kiR* curriculum as well as unique associations of the *kiR* brand. Thus I expect that the findings help clarify the conceptualization of branding in the context of substance use prevention.

More importantly, the path analysis reveals the mechanisms of branding through social cognitive processes because refusal efficacy served as mediators of the relationship between the *kiR* branded message exposure and youth substance use. The *kiR* curriculum successfully created the kid-centric “REAL” brand through formative research and offered the promise (or symbolic benefits / incentives) by imbuing a set of refusal strategies and social skills with socially acceptable imagery and models about real kids from real narratives salient in adolescents’ lives. Hence it can be concluded that the positive associations of the *kiR* brand messages enhanced the perception of efficacy and knowledge of refusal strategies through modeling socially desirable adolescents and their behaviors (i.e. modeling how to refuse drug offers effectively). These findings promote our understanding of how branding functions in the school-based substance use intervention and advance theorizing about health message design.

However, our findings should be carefully interpreted within the limitations of this study. First the data used in the current study did not include a control group. Although the initial dataset from a larger intervention study had control group, the control group did not respond to the branding measures for administrative reasons (i.e., they did not receive a message). In the

absence of control group, the branding effects found in the study should not be regarded as program effects. This limitation should be investigated in the future research.

Another limitation is that the study relied solely on cross-sectional data and thus causality cannot be established with full confidence. While the temporal pathways in our model make theoretical sense the hypothesized directionality cannot be assumed even with these findings. We believe that longitudinal data would allow for investigation of causal relationship between branding and adolescent substance use. In addition, the study used intentions as the outcome variable and did not include self-reported behaviors. Intent to use substances was used as a proxy for use given the young age of the sample and that fact that they reported few experiences of actual use. An important next step is, therefore, to examine the protective effects of brand equity on actual use of substances with longitudinal data to consider temporal and causal sequences as substance use initiates over time.

These findings provide several implications. First the availability of a brand equity scale contributes to the development and evaluation of school-based health campaigns. Our analysis indicates that four dimensions (i.e., awareness, popularity, personality, and loyalty) result in overall second-order brand equity. Evaluation of health messages with the scale in formative research can help enhance brand equity. Similarly, the scale can then be used in program evaluation when a branding strategy has been applied. Our findings should encourage campaign researchers and practitioners to consider multiple aspects of brand equity in developing their branded messages as well as in assessing the role of branding in health campaigns.

Second, the findings that brand equity influenced adolescent substance use through social cognitive processes indicate that message designers need to be clear about how to influence

target cognitions and behaviors through branded health prevention messages. *keepin' it REAL* was designed to impact social cognitive variables (i.e., refusal-efficacy and resistance skills) and behaviors by associating a set of resistance strategies and skills (i.e., REAL) with socially desirable models and positive imagery. These associations in the minds of adolescents are an essential part of branding in the school-based interventions. When adolescents perceive benefits / advantages (e.g., *kiR* is cool, *kiR* is fun) or the popularity (kids like *kiR*) of *kiR* brand, their positive perceptions and associations with the brand (i.e., brand equity) promote motivational learning processes that lead to intended behavior through modeling. The strategic development of branded health messages that target specific skills (here drug resistance strategies) and build brand equity seems to have promise in prevention theory and practice.

Conclusion

In summary, the current study uncovered the underlying mechanisms of branding in the school-based substance use intervention, *keepin' it REAL* through the application of Social Cognitive Theory. As predicted, brand equity consisting of higher-order, multidimensional components, lead to decrease adolescent substance use. In addition, these effects were mediated via social cognitive processes. Although this study contains several limitations, I believe that the findings contribute to our understanding of the effects of branded school-based substance use intervention and have implications for the development of effective campaigns utilizing branding principles.

Table 3.1

Bivariate Correlation Matrix and Summary Statistics (N = 296)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. BA	—											
2. LP	.72**	—										
3. BP	.74**	.86**	—									
4. BL	.71**	.86**	.91**	—								
5. RE	.33**	.11*	.15**	.12*	—							
6. RS	.31**	.22**	.20**	.22**	.41**	—						
7. SU	-.50**	-.36**	-.34**	-.34**	-.51**	-.42**	—					
8. Gender	.11	-.02	.05	.04	.10	.10	-.01	—				
9. Age	.02	.08	.05	.09	-.06	-.00	.02	-.07	—			
10. PAU	-.09	-.09	-.10	-.15**	-.24**	-.26**	.35**	.10	.01	—		
11. PCU	-.25**	-.19**	-.17**	-.17**	-.22**	-.26**	.37**	.02	.04	.37**	—	
12. PMU	-.32**	-.19**	-.19**	-.23**	-.31**	-.27**	.52**	-.09	.05	.37**	.45**	—
<i>M</i>	3.09	2.78	2.89	2.73	3.08	2.64	1.62	0.56	4.57	0.50	0.16	0.27
<i>SD</i>	0.87	0.90	0.89	0.92	1.00	1.01	0.69	0.50	0.58	0.50	0.37	0.45
<i>Skewness</i>	-0.89	-0.38	-0.52	-0.45	-0.82	-0.22	0.96	-0.23	0.22	0.00	1.84	1.02
<i>Kurtosis</i>	0.18	-0.59	-0.37	-0.43	-0.61	-1.09	0.14	-1.96	-0.60	-2.01	1.40	-0.97

Note. BA = Brand Awareness, LP = Leadership / Popularity, BP = Brand Personality, BL = Brand Loyalty, RE = Refusal Efficacy, RS = Hypothetical Resistance Skills, SU = Intent to Use Substances, PAU = Prior Use of Alcohol, PCU = Prior Use of Cigarette, and PMU = Prior Use of Marijuana. Gender (0 = male, 1 = female), prior use of alcohol, cigarette, and marijuana (0 = never-use, 1= ever-use) are dummy-coded variables.

* $p < .05$; ** $p < .01$.

Table 3.2

First and Second-Order Factor Structure of keepin' it REAL Brand Equity

Item Statements	1 st -order				2 nd -order
	Brand Awareness	Leadership / Popularity	Brand Personality	Brand Loyalty	Brand Equity
Saying no is cool	.87 (.017)				
Drug is risky	.91 (.013)				
I can say no	.91 (.011)				
I can explain why	.94 (.010)				
I avoid situations	.92 (.012)				
<i>kiR</i> is popular		.93 (.009)			
<i>kiR</i> is like me		.88 (.014)			
Kids like <i>kiR</i>		.91 (.012)			
<i>kiR</i> is interesting			.94 (.008)		
<i>kiR</i> is fun			.96 (.006)		
<i>kiR</i> is cool			.94 (.007)		
<i>kiR</i> looks like real			.88 (.013)		
I talk about <i>kiR</i>				.88 (.014)	
I like having <i>kiR</i>				.93 (.008)	
School keeps <i>kiR</i>				.91 (.010)	
Brand Awareness					.79 (.021)
Leadership / Popularity					.95 (.007)
Brand Personality					.97 (.006)
Brand Loyalty					.99 (.007)
α for Scale	.94	.91	.94	.90	

Note. Factor coefficients in the table are standardized and the numbers in the parentheses are their standard errors.

Table 3.3

Robust Weighted Least Square Parameter Estimates

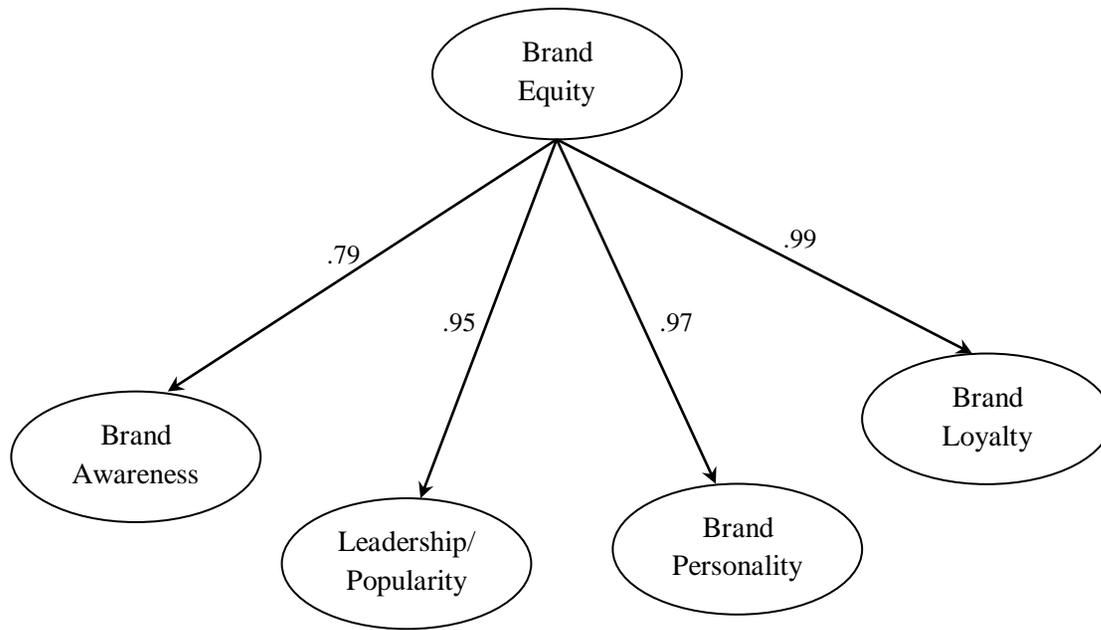
Parameter	Refusal Efficacy	Resistance Skills	Use Intentions
<i>Direct Effects of Predictors and Covariates</i>			
Brand Equity	0.17* (.07)	0.23** (.07)	-0.29** (.06)
Gender	—	—	—
Age	—	—	—
Prior Alcohol Use	-0.27* (.12)	-0.29* (.12)	—
Prior Cigarette Use	—	-0.35* (.16)	—
Prior Marijuana Use	-0.50** (.14)	-0.30* (.14)	0.52** (.12)
<i>Direct Effects of Intervening Variables</i>			
Refusal Efficacy			-0.48** (.07)
Hypothetical Resistance Skills			—
<i>Indirect Effects of Predictors via Intervening Variables</i>			
Brand Equity via Refusal Efficacy			-0.08* (.03)
Brand Equity via Resistance Skills			—
Sum of Indirect Effects			-0.11** (.04)

Note. Path coefficients are unstandardized estimates and numbers in the parentheses are their standard errors. Dashes in the top panel indicate non-significant pathways.

* $p < .05$; ** $p < .01$.

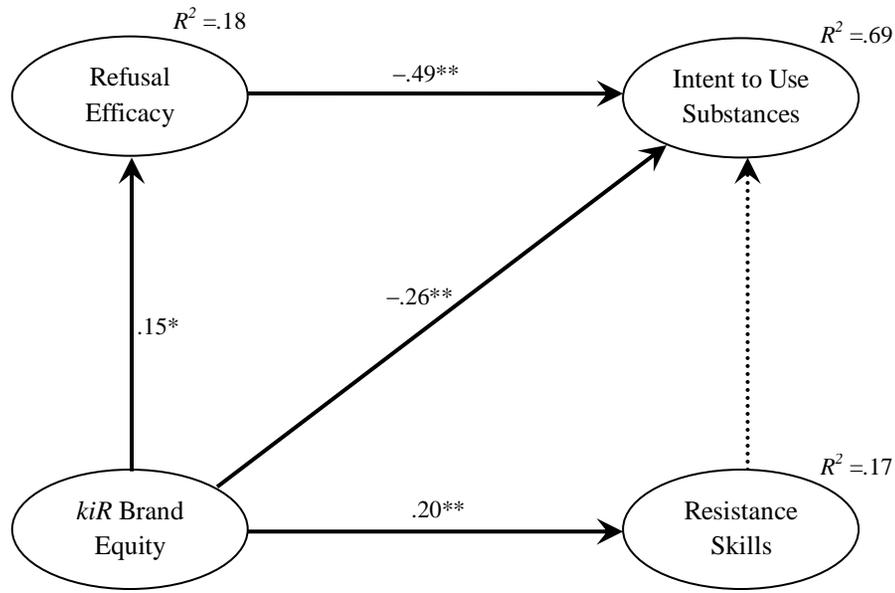


Figure 3.1. Brand logo of *keepin' it REAL* curriculum.



$\chi^2 (28) = 254.92$
 CFI = .954
 TLI = .993
 WRMR = 1.16

Figure 3.2. Second-order CFA model of *keepin' it REAL* brand equity. Factor loadings presented in the figure are standardized estimates.



χ^2 (31) = 112.04
 CFI = .957
 TLI = .964
 WRMR = 1.02

Figure 3.3. Structural paths of influence wherein *kiR* brand equity affects youth substance use. All estimates in the figure are standardized. Effects of gender, age and prior substance use were statistically controlled but the pathways are not shown in the figure. Subscales of brand equity and observed indicators of each latent construct are not shown for reasons of clarity.

* $p < .05$; ** $p < .01$

CHAPTER 4

LONGITUDINAL EFFECTIVENESS OF THE KEEPIN' IT REAL DRUG PREVENTION VIDEOS

Marketing and advertising literature has consistently indicated that consumers' favorable perception / receptivity to ad messages leads to more positive feelings toward the brand and greater buying intentions and behaviors (Batra & Ray, 1986; MacKenzie & Lutz, 1989; MacKenzie, Lutz, & Belch, 1986). In the commercial domain, mass media advertising is an essential tool in building strong brands and persuading consumers to purchase the products that the brands endorse (Batra, Myers, & Aaker, 1996). In the field of public health, health educators and implementers use various media such as TV, radio, video, DVD as a tool for delivering health messages to the intended audiences and persuading to promote their healthy behaviors (Herek, Gillis, Glunt, Lewis, Welton, & Capitanio, 1998). Among these media, research reveals that videotape is an effective medium for health promotion and prevention because it is relatively inexpensive, widely availability, and capable of delivering consistent messages (Hecht, Corman, & Miller-Rassulo 1993; Kalichman, 1996; Polansky, Buki, Horan, Ceperich, & Burrow, 1999; Warren, Hecht, Wagstaff, Elek, Ndiave, Dustman, & Marsiglia, 2006).

While videos sometimes prove effective, little is known about what causes these effects. This is true of the branded substance abuse prevention curriculum, *keepin' it REAL (kiR)*, that utilizes a series of five videos to introduce the program and teach the four refusal strategies (refuse, avoid, explain, and leave). These videos have demonstrated an independent effect on substance use (Warren et al. 2006). However, it is unclear why they manifest such an effect.

Since this curriculum is efficacious (cite article and NREPP website) and now among the most widely distributed school-based intervention through its adoption by D.A.R.E. (cite DARE website), it is particularly important to understand these effects. This chapter, based on an extension of social marketing and attitude toward ad (A_{ad}) theories, proposes that video message perceptions have an effect on substance-related attitudes and behaviors through general liking for the *kiR* brand. In this paper, a theoretical model is derived from marketing and advertising theory and research suggesting reception of messages along with perceptions of those messages influence the “likability” of the promotion campaign and attitudes towards substances. Likeability and attitudes, in turn, affect youth’s substance use. I start with this literature

Consumer Responses to Branded Health Messages

Social marketing theory recently identified “branded messages” as a key to persuasive message processing (Evans & Hastings, 2008). Recent branded campaigns (e.g., truthsm anti-tobacco campaigns, VERBTM physical activity promotion campaign) suggest that audiences form a general attitude toward a campaign (or campaign likability) based on the “brand” image. Likability (or attitude), then, is a key factor in promoting healthy behaviors (Slater, 2006). Thus it is important to explore factors that contribute to attitudes toward a branded campaign and to what extent these attitudes influence the action or issue advocated in the campaign messages.

Evans and colleagues (2009) suggest that it is important to assess how an audience responds to branded campaign messages because message perception leads to desired outcomes (e.g., reduction of smoking initiation) (Evans, Davis, & Farrelly, 2009). For instance, the truthsm campaign utilized “ad receptivity” measure to capture the degree to which youth responded favorably or unfavorably to specific messages. Using a longitudinal data from a larger

intervention study, this paper, therefore, focuses on a causal framework postulated to underlie the attitude to ad (A_{ad}), that has received little attention in the field of public health and communication (Nan, 2008).

Attitude Toward Ad (A_{ad}) Theory

Branded health messages use the same strategy as commercial ad messages, in that both two message strategies involve building strong brands in order to bring about behavioral change. To understand branded message processing, this chapter draws up the attitude toward ad (A_{ad}) theory, a well-established framework in the field of marketing and advertising that has received little attention in the field of public health and communication. According to theory, attitudes toward ad (A_{ad}) are defined as the overall liking for an advertisement (MacKenzie & Lutz, 1989). This definition is consistent with Fishbein and Ajzen's (1975) definition of attitude in that it views A_{ad} as evaluative or affective responses to advertisement messages. However, in this article I did not distinguish between affect and evaluation, nor did I embrace cognitive or behavioral aspects in the definition.

The theory suggests that A_{ad} is an important mediator of message effects by describing how an ad message affects consumer buying behaviors (MacKenzie, Lutz, & Belch, 1986). A number of studies have found that A_{ad} has a significant positive effect on brand attitude and buying behaviors (Batra & Ray, 1986; MacKenzie, Lutz, & Belch, 1986). Similarly, Slater (2006) suggests the potential role of liking for an Ad / PSA message in influencing issue attitudes and behaviors (Slater, 2006). Recent research found that one's attitude toward a PSA (A_{psa}) exerted a positive impact on issue attitude that the PSA messages endorsed. Furthermore some researchers anticipate that the effect of the campaign likability on issue attitudes and actual

behaviors may be more potent and robust than that of liking for a single PSA (Nan, 2008; Slater, 2006).

In addition to attitude to ad theory, theories of cognitive consistency (e.g., balance theory) can provide an overarching framework for this study. These theories postulate that tension or unpleasantness is produced in response to inconsistencies that results in attitude change in order to restore consistency or balance (Chaiken & Eagly, 1993). These theories can explain how adolescents who like an anti-drug brand/program change their perceptions about positive outcomes related to drug use. Due to the tendency to resolve inconsistency between the positive perceptions of the *kiR* and positive attitudes to substances as well as actual use, adolescents may change their positive attitudes if the branded messages create strong liking for the *kiR*.

For the reasons, I expect to find similar relationship between attitude toward health campaign / program and issue stance (in the case of *kiR*, drug use expectancies / attitudes). Thus, the present study considers the liking for the (branded) campaign as an important construct mediating the effects of branded health messages health-related attitudes and behaviors. However, while an important variable in the behavior change process, little is known about the antecedents of A_{ad} .

Message Perception as Antecedents of Ad Likability

Branded message design can be guided by identifying antecedents of A_{ad} to understand what makes a strong or favorable brand. It seems clear that there are significant dose effects of ad / campaign messages on knowledge, attitudes and behaviors (Berkowitz, Huhman, & Nolin, 2008; Farrelly, Davis, Haviland, Messeri, & Heaton, 2005; Sly, Trapod, & Ray, 2002). In other

words, repeated exposure to ad messages lead to enhance brand attitude and purchasing behaviors. However beyond message exposure, audience members' message perceptions play a crucial role in attitude formation and behavioral change. Advertising messages create and enhance brand perceptions and attitudes through associating the brand with positive imagery, meanings, and values (Batra et al. 1996). In other words advertising is capable of adding values and meanings to the brand so that it helps consumers form positive feelings and associations that are linked to the brand in the consumer's memory (Plummer, 1985). These perceptions / responses to ad messages precede forming favorable evaluation the messages (MacKenzie et al. 1989).

The processes through which health messages in various media formats (e.g., TV, radio, DVD, video, etc) influence health behaviors appears to be identical to commercial advertising in that these messages intend to bring about changes in attitudes and behaviors (Nan 2008). As a result branded health messages may work through creating positive associations such as likability of the campaign (Evans et al. 2005; Evans et al. 2008; Slater, 2006; Petty & Cacioppo, 1986).

Past research in the field of communication supports this theoretical model. Several determinants of message persuasiveness have been identified, including perceived message sensation value (Stephenson, 2003), perceived realism (Andsager et al. 2001), and the presentation of exemplars (Limon & Kazoleas, 2004). Besides, recent studies have paid much attention to narrative message perceptions because health prevention messages have often utilized dramatic features and techniques (i.e., narratives or educational entertainment) and they have proven effective in health prevention and promotion (Allen & Preiss, 1997; Hecht, Corman,

& Miller-Rassulo, 1993; Kalichman, 1996; Polansky et al. 1999; Rye, 1998; Warren et al. 2006). These studies identified perceptions of authenticity (Guttman, Gesser-Edelsburg, & Israelashvili, 2008), realism, (Beltramini, 1988; Wilson & Busselle, 2004; Miller, Stiff, & Hecht, 1998), transportation (Green & Brock, 2000; Green, Brock, & Kaufman, 2004) and identification (Slater & Rounter, 2002; Slater, Rounter, & Long, 2006) that mediate the effects of health prevention messages on health beliefs and behaviors. Next, this paper applies these findings to the *kiR* drug prevention videos.

kiR Drug Prevention Videos

The *keepin' it REAL* curriculum utilizes a multi-component approach that includes a series of drug prevention videos as one of its key components. The 10-lesson *kiR* narrative-based curriculum teaches risk assessment, decision making, and communication skills that include four resistance strategies for refusing drug offers (Hecht & Miller-Day, in press). Five of these lessons are video-based. The introductory videotape tells a story that overviews the curriculum development and develops an anti-drug use norm, while the four remaining videotapes, each present a story modeling the use of one of four substance resistance strategies (refuse, explain, avoid, and leave) derived from previous research (Hecht & Miller-Day, 2007). The four, strategy-specific videos, which were developed from narrative interviews, present a substance offer and describe a relationally-competent way of refusing or resisting the offer set in the contexts in which youth substance use naturally occurs (Hecht & Miller-Day, in press; Warren et al., 2006). The four strategies are refuse (simple no), explain (no with an explanation), avoid (avoid the offer) and leave (leave the situation).

As discussed in the chapter 2, the *kiR* curriculum employs narrative forms of drug prevention messages attaching REAL images to the brand. While watching a series of peer-produce videos, adolescents may be involved with the video messages in a different way that they are involved with argument-based commercial messages (i.e., issue involvement) (Slater & Rounter, 2002). Although the previous studies examined message perception in various topics and contexts, perception of engagement is the overarching concept that is particularly crucial for explaining the role of narratives in message processing. For example, a recent conceptual process model of narrative messages based on the *Extended Elaboration Likelihood Model* proposed the construct of absorption, which is conceptually similar to engagement, as a the key construct in the narrative message processing (Slater & Rounter, 2002). This chapter, therefore, focuses on perception of engagement with narrative messages to examine the role of narrative messages for persuasion in the context of health prevention.

When considering the narrative message form used in the videos, this study explores how perceptions of narratives influence adolescents' liking for the brand and substance use behaviors. To examine the degree to which audience members are engaged with the *kiR* narrative-based drug prevention message, this study focused on two aspects of narrative engagement (i.e., interest and realism) proposed by Miller and colleagues (1998). The first construct, *interest* was conceptualized as the degree of attention to the narrative performance, considered an important component of aesthetic engagement by Berleant (1993). Audience members are less likely to feel close to a performance that bores them; while they are more likely be engaged with a performance that elicits interest. Miller et al (1998) defined the second component, *realism*, as the audience's experience of the situation as authentic. Establishing a perception of realism is

necessary for engagement with narrative messages. If audience members perceive a performance as unrealistic, they experience increased disengagement from the event.

Drama and narrative theorists suggests that engagement with narratives affects health-related attitudes and behaviors (Green, 2004; Green & Brock, 2000; Green, Brock, & Kaufman, 2004; Slater & Rounter, 2002). For instance Miller, Hecht and Stiff (1998) showed the significant impacts of engagement with anti-drug performances on drug-related beliefs and behaviors. Besides as I discussed earlier, these cognitive aspects of perceptions may be associated with favorable evaluation of a campaign / program (i.e., overall liking), which in turn affects issue stance and issue-related behaviors that the campaign or program endorses.

Taken together, the current study considers four hypotheses as follows. These hypotheses are visually summarized in Figure 4.1.

Hypothesis 1: There will be a significant relationship between health video message exposure/reception and perceptions (frequency of videos exposed, interest, and realism) and recent substance use.

Hypothesis 1a: Greater level of exposure to *kiR* videos will lead to increased level of recent substance use.

Hypothesis 1b: Greater level of interest will lead to increased level of recent substance use.

Hypothesis 1c: Greater level of perceived realism will lead to increased level of recent substance use.

Hypothesis 2: There will be a significant relationship between health video message perceptions (frequency of videos, interest, and realism) and likability of *kiR* (attitudes to *kiR*).

Hypothesis 2a: Greater level of exposure to *kiR* videos will enhance likability of *kiR* (attitudes to *kiR*).

Hypothesis 2b: Greater level of interest will elevate the level of likability of *kiR* (attitudes to *kiR*).

Hypothesis 2c: Greater level of perceived realism will lead to an increased level of likability of *kiR* (attitudes to *kiR*).

Hypothesis 3: There will be a significant relationship between likability of *kiR* (attitudes to *kiR*) and attitudes to substance use, which they will in turn, affect recent use of substance.

Hypothesis 3a: Likability of *kiR* will lead to decrease attitudes to substance use.

Hypothesis 3b: Positive attitudes to substance use will lead to increases in reports of recent use of substances.

If audience members' video perceptions affect likability of *kiR*, which it in turn, leads to their actual use of substances, then it is also reasonable to expect the following:

Hypothesis 4: Video perceptions will have a significant indirect influence on recent use of substances via likability of *kiR* and attitudes to substance use.

Hypothesis 4a: Exposure to *kiR* videos will have a significant indirect influence on recent use of substances via likability of *kiR* and attitudes to substance use.

Hypothesis 4b: Perception of interest will have a significant indirect influence on recent use of substances via likability of *kiR* and attitudes to substance use.

Hypothesis 4c: Perception of realism will have a significant indirect influence on recent use of substances via likability of *kiR* and attitudes to substance use.

Method

Participants and Procedure

The current study utilized self-report longitudinal data from 5th through 6th grade students who participated in a school-based substance use prevention program, *keepin' it REAL* (Hecht, Warren, Wagstaff, & Elek, 2008). Data were collected in spring 2005 (Wave 2) and spring 2006 (Wave 3) following the implementation of the *keepin' it REAL* curriculum in 23 public schools in Phoenix, Arizona. Control group participants were excluded because they had not seen the videos. The 1,151 participants who participated in the curriculum were included in these analyses. Based on Wave 2 data, 49% were male and 51% were female and the average age was 10.8 years ($SD = .62$). Parents provided active informed consent prior to the data collection and students provided informed assent for participation. As an indicator of low socioeconomic status, 87% of the students reported taking part in the “free or reduced price lunch program.”

Measures

From a larger survey in the main intervention study, the following measures were employed in the analyses. From wave 2, youth self reports of video perceptions, likability of the

kiR and demographic variables. Wave 3 measures of substance-related outcomes (i.e., positive expectancies and recent use of substances) were collected one year following the Wave 2 data. SPSS 15.0 was used for preliminary analyses to examine the inter-item correlations of the scales along with the means, standard deviations, and reliability.

Exposure to keepin' it REAL videos. A single item was used to measure how many drug prevention videos students watched as a part of the *keepin' it REAL* substance use prevention curriculum. Students responded with a 6-point scale (0 = "None", 1 = "One", 2 = "Two", 3 = "Three", 4 = "Four", 5 = "Five").

Interest. To assess the degree of attention to narrative messages presented in a video, three items were taken from The Perception of Narrative Performance Scale (Lee, Hecht, Miller-Day, & Elek, in press; Miller, Stiff, & Hecht, 1998). This introduction asked participants, "Please tell us what you thought about the *keepin' it REAL* videos that were part of the lessons:" to which they responded using a 4-point agree-disagree scale ranging from 1 (strongly disagree) to 4 (strongly agree). The items were "The video was interesting," "it's easy to pay attention to the story," and "I was bored during the video." Before analysis, the item "*I was bored during the video*" was reverse coded, so that all items measured positive perceptions (Cronbach's $\alpha = .75$).

Realism. Perception of realism was measured using three four-point agree-disagree items. It was also one of the dimensions of narrative engagements from Lee et al's Perception of Narrative Performance Scale. The three items were "The video looked real to me," "The story was very believable," and "I could not see kids getting into a situation like that," (Cronbach's $\alpha = .65$).

Likability of keepin' it REAL. A single item was employed to measure liking for the *keepin' it REAL* brand: "What do you think about *keepin' it REAL*?" The responses were assessed using a 4-point scale (1 = "Hated It", 2 = "Didn't Like It", 3 = "Liked It", 4 = "Loved It"). Responses "don't know what this is" were treated as missing data since they mean there is not brand to be rated.

Attitudes to substance use. There were three 4-point agree-disagree scale (1 = "Strongly Agree", 2 = "Agree", 3 = "Disagree", 4 = "Strongly Disagree") items to tap the level of adolescents' positive drug expectancies. It was assessed based on the participants' responses to the three items (e.g., "*drinking alcohol makes parties more fun*", "*smoking cigarettes makes people less nervous*", and "*smoking marijuana makes it easier to be part of a group*"). High scores on this scale indicate students have more positive drug expectancies (Cronbach's $\alpha = .75$).

Recent use of substances. Three 7-point items tapped adolescents' substance use behaviors including alcohol, cigarette, and marijuana. These specific behaviors were assessed according to the amounts that young adolescents consume three different types of substance: *tobacco*, *alcohol*, and *marijuana* (Cronbach's $\alpha = .77$).

Prior use of substances. Three binary items represented history of substance use. The items asked students if they ever used alcohol, cigarette, and marijuana at least once in their lifetime (0 = never used; 1 = ever used).

Demographics include gender (0 = male; 1 = female) and age.

SPSS 15.0 was used for preliminary analyses. Table 4.1 summarizes descriptive statistics including means and standard deviations.

Data Analysis Plan

A structural equation modeling (SEM) analysis was performed to test the hypothesized relationships among the constructs using *Mplus* 5.2 (Muthen & Muthen, 2007). Since χ^2 is influenced by sample size, in particular given this study's large sample, this study focused on three indices of practical fit for model evaluation: the root mean square error of approximation (RMSEA) and the comparative fit index (CFI) (Browne & Cudeck, 1993). For RMSEA, smaller values indicate better fit. Following the convention of Hu and Bentler (1999), RMSEA < .08 was considered favorable. As for CFI and TLI, values closer to 1 are preferred and, in particular, values of .95 or above were considered satisfactory (Kline, 2005; Hu & Bentler, 1999).

For model testing, all parameters were estimated using the robust weighted least square estimator with mean- and variance-adjustment (i.e., WLSMV). While maximum likelihood is the most popular estimation method in SEM analyses, this method requires the assumptions that the data are continuous and normally distributed. These assumptions however are not met with ordinal measures that used in this study and have been found to result in biased parameter estimates (Flora & Curran, 2004; Yu, 2002). For the reasons, the current study employed WLSMV method given the data are ordinal (4- point agree-disagree scale) and not normally distributed.

Exposure to videos (dosage), perceptions of interest and realism were entered into the hypothesized model as exogenous variables, whereas likability of the *kiR*, positive expectancies regarding substances and recent use of substances were used as endogenous variables. Besides, ratings of the likability of the *kiR* and positive expectancies were treated as mediators in the hypothesized model (see Figure 4.1). To control for the effects of demographic variables, gender,

age, and prior substance use were entered into the model as exogenous variables, from which pathways were drawn to all endogenous variables.

To test the mediation of *kiR* likability and attitude to substance use, this study bootstrapped indirect effects of the predictors by repeatedly sampling cases with replacement from the data (5000 bootstrap sample draw). The bootstrap method is known as useful means to alleviate statistical problems associated with non-normal distributions of indirect effects because it does not require any “a priori” assumptions regarding sampling distributions (Hayes, 2009; Preacher & Hayes, 2008). I determined the statistical significance of indirect effects on the basis of 95% bias-corrected confidence intervals (CI) estimated by the bootstrap method.

To address the missing data, this study used NORM 2.03 for multiple imputation procedures (Schafer, 1997). Recent missing data techniques such as multiple imputation and FIML appear stronger methods to estimate unbiased parameters than traditional missing procedures (e.g., listwise and pairwise deletion) (Graham, Cumsille, & Elek-Fisk, 2003).

Results

Testing the Hypothesized Model

Using the longitudinal data, the hypothesized model yielded a reasonably good fit to the data: $\chi^2(53) = 256.95$; CFI = .958; TLI = .957; RMSEA = .062. Most estimates were in the expected direction, yet some estimates were not statistically significant.

The SEM analysis revealed that none of the predictors (exposure to *kiR* videos, interest, and realism) exerted direct effects on recent use after controlling for the mediators (H1 not supported). However the analysis found the significant effects of exposure to *kiR* videos (dose effects) and perception of interest on likability of the *kiR* brand (for exposure to videos → *kiR*

likability, $\beta = .13$, $SE = .03$, $p < .001$; for interest \rightarrow *kiR* likability, $\beta = .67$, $SE = .08$, $p < .001$), indicating that greater exposure to the video messages and greater levels of interest led to increased levels of liking for the *kiR* curriculum. However there were no significant effects of realism on the likability. In addition, consistent with anticipations, likability of the *kiR* was negatively related to positive attitudes to substance use (for *kiR* likability \rightarrow attitudes to substance use, $\beta = -.15$, $SE = .04$, $p < .001$) and in turn, it led to decline youth recent substance use (for attitudes to substance use \rightarrow recent use, $\beta = .51$, $SE = .06$, $p < .001$). Thus H3 was supported.

The bootstrap test indicated the existence of indirect (or mediated) effects of exposure to videos and perception of interest on recent use of substances, whereas the indirect effects of perceived realism did not reach the statistical significance. 95% bias-corrected confidence intervals (CI) for exposure to videos and interest did not include the bootstrap estimates of zero (null hypothesis of indirect effects): bootstrapped 95% CI for the (unstandardized) effects of exposure to videos via *kiR* likability and attitudes to substance use = $-.026 - -.003$; for the effects of interest via *kiR* likability and attitudes to substance use = $-.089 - -.019$. (H4a and H4c supported).

Finally, the demographic variables introduced into the model were not significant predictors of youth substance use because these variables did not reach statistical significance in the pathways to the endogenous variables, except the effects of gender on likability of *kiR* (for Female \rightarrow *kiR* likability, $\beta = .20$, $SE = .08$, $p < .05$). The effects of gender indicate that female students reported higher levels of likability of *kiR* program relative to females. Besides prior use of substances were significant predictors of youth recent use of substances. In particular prior

alcohol and marijuana use demonstrated statistical significance in the pathways to recent substance use (for prior alcohol use \rightarrow recent use, $\beta = .28$, $SE = .10$, $p < .01$; for prior marijuana use \rightarrow recent use, $\beta = .54$, $SE = .19$, $p < .01$). With regard to youth recent use of substances, all of the predictors and intervening variables accounted for 40% of the variance. Table 4.2 presents the unstandardized parameter estimates and their standard errors (see Figure 4.2 for visual summary).

Discussion

Using the longitudinal data from a school-based intervention project, the current study tested a structural model examining the effects of the *keepin' it REAL* videos, which are one of the essential components of the evidence-based middle school substance use prevention curriculum. Consistent with predictions based on previous studies (Nan, 2008; Slater, 2006), the likability of the *kiR* mediated the effects of the drug prevention videos on youths' substance use. More specifically greater levels of video exposure and perception of interest elevated liking for the *kiR* and, these factors, in turn, led to decrease the level of attitudes toward substance use.

In addition to the relationship between the video message perceptions and the likability, this study found the significant indirect influences of the perceptions on youths' substance use through the *kiR* likability and attitudes to substance use, yet contrary to predictions there were no direct effects of the perceptions on substance use behaviors. In particular exposure to the video messages and perceptions of interest had the significant indirect effects on recent use via these intervening variables. Overall, the findings lend support to predictions deriving from the attitude toward ad (A_{ad}) theory (Batra et al. 1996; MacKenzie et al. 1986; MacKenzie and Lutz, 1986) and extend this theorizing to branded substance use prevention.

The study also examined structural antecedents of attitude toward ad (A_{ad}) in the context of branded narrative-based substance prevention. Whereas perceived realism was not a significant predictor of the *kiR* likability, exposure to video messages and perception of interest enhanced liking for the *kiR* brand. These findings provide evidence of the dose effects of the drug prevention videos on likability of the *kiR* but also support the prediction that higher level of attention to messages led to elevate the overall liking for the *kiR*. Hence the video perceptions can be regarded as antecedents of A_{ad} .

Theoretical and Practical Implications

By drawing upon the attitude toward ad theory, this study sheds light on the underlying mechanisms of the effects branded substance use prevention messages via campaign likability (or attitudes). Consistent with expectations (Evans, 2009; Slater, 2006), *kiR* likability mediated the relationship between the perceptions of the *kiR* video messages and youth substance use. Since the findings suggest campaign likability is an important mediator of branded message effectiveness, health researchers and practitioners are encouraged to consider how to create likable branded health messages. Slater (2006) argues that poorly-designed health messages are not effective to bring about intended changes and furthermore, may result in a boomerang effects. Both design for and pilot testing of likability can correct these flaws.

This is the first line of research identifying the determinants of attitude to campaign. Analysis revealed that greater levels of exposure and message attentiveness (interest) led to decrease youth recent substance use behaviors through attitude to the *kiR*. In particular, concerning the dose effects, repeated exposure to *kiR* branded message influenced forming positive attitudes to the *kiR* campaign. This is consistent with prior studies on branded campaign

indicating that there was significant dose-response relationship between branded message exposure and perceptions / behaviors (Farrelly et al. 2005; Huhman et al. 2008; Sly et al. 2002). In addition, perception of interest was a significant predictor of attitudes to campaign. In other words, as adolescents are more attentive to branded health messages, they are more likely to have strong likability of campaign. When planning and creating branded campaign messages, these factors should be considered.

While this study found some significant antecedents of attitudes, future researchers may explore other predictors of attitudes to campaign such as message execution, message credibility, and past experiences and information regarding campaign. In addition to message factors, individual as well as socio-demographic variables should be considered to understand how these variables are associated with attitudes to campaign and health-related perceptions. By doing so, branded message design can be guided by various determinants of attitude to ad / campaign.

The findings can also be extended by including moderating influences. Although the relationship between attitudes to ad and brand perceptions / attitudes appears robust in the commercial domain, the relationship may be contingent upon moderators. For example, marketing researchers suggest that perceived relevance, brand familiarity, message tones can moderate the relationship between attitudes to ad and brand perception and attitudes (Petty & Cacioppo, 1986; MacKenzie & Lutz, 1989). By examining the influences of potential moderators, it is possible to better understand the effects of branded health message along with a central-peripheral processing continuum. Future should address this issue by including the potential moderators.

Conclusion

This study suggests that overall liking for the branded campaign plays a crucial role in branded message processing. As predicted, the *kiR* likability mediated the relationship between the *kiR* video message perceptions and youth substance use attitudes and behaviors. While perceived realism did not affect youth substance use directly or indirectly, message dosage and attentiveness had indirect influences on substance use through the liking for the *kiR* and attitudes to substance use. These findings extend attitudes toward ad (A_{ad}) theory to substance use prevention and provide significant implications for media-based branded substance use prevention intervention.

Table 4.1

Descriptive Statistics (N = 1,151)

Item Statements	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
How many videos did you watch	4.11	1.21	-1.65	2.50
The video was interesting	3.41	0.75	-1.38	1.84
It was easy to pay attention to the story	3.35	0.80	-1.23	1.14
I was bored during the video	1.82	0.99	1.02	-0.80
The video looked real to me	3.29	0.88	-1.19	0.66
The story was believable	3.30	0.84	-1.16	0.81
I could see get into a situation like that	2.72	1.10	-0.31	-1.22
Think about the <i>keepin' it REAL</i>	3.36	0.79	-1.68	3.97
Alcohol makes parties more fun	1.62	0.84	1.26	0.75
Cigarettes makes people less nervous	1.69	0.92	1.09	0.05
Marijuana makes it easier to be part of a group	1.46	0.85	1.85	2.44
How many drinks of alcohol have you had consumed?	1.37	0.91	3.44	14.17
How many cigarettes have you had used?	1.15	0.63	5.19	31.60
How many marijuana have you had used?	1.18	0.77	4.89	25.67
Have you tried alcohol, even if it was only once or only a little?	0.22	0.42	1.33	-0.23
Have you tried cigarettes or tobacco, even if it was only once or only a little?	0.04	0.19	4.76	20.68
Have you tried marijuana, even if it was only once or only a little?	0.03	0.16	6.03	34.40
Female	0.51	0.50	-0.57	-2.00
Age	4.75	0.62	0.46	1.95

Note: Gender (0 = male; 1 = female) and prior use of substances (0 = not marked; 1 = marked) were dummy-coded.

Table 4.2

Robust Weighted Least Square Parameter Estimates

Parameter	<i>kiR</i> Likability	Attitudes to Substance	Recent Use
<i>Direct Effects of Predictors and Covariates</i>			
Exposure to Videos	0.13** (.03)		—
Interest	0.67** (.08)		—
Realism	—		—
Gender	—	—	—
Age	0.20* (.08)	—	—
Prior Use of Alcohol	-0.30** (.04)	0.48** (.09)	0.28** (.10)
Prior Use of Cigarette	—	—	—
Prior Use of Marijuana	-0.74** (.20)	0.54** (.20)	0.54** (.19)
<i>Direct Effects of Intervening Variables</i>			
Likability of <i>kiR</i>		-0.15** (.04)	
Attitudes to Substance Use			0.51** (.06)
<i>Indirect Effects of Predictors via Intervening Variables</i>			
Exposure to Videos via <i>kiR</i> Likability and Attitudes to Substance Use			-0.01* (.00)
Interest via <i>kiR</i> Likability and Attitudes to Substance Use			-0.05* (.01)
Realism via <i>kiR</i> Likability and Attitudes to Substance Use			—

Note: Path coefficients are unstandardized estimates and numbers in the parentheses are their standard errors. Dashes in the top panel indicate non-significant pathways.

* $p < .05$; ** $p < .01$.

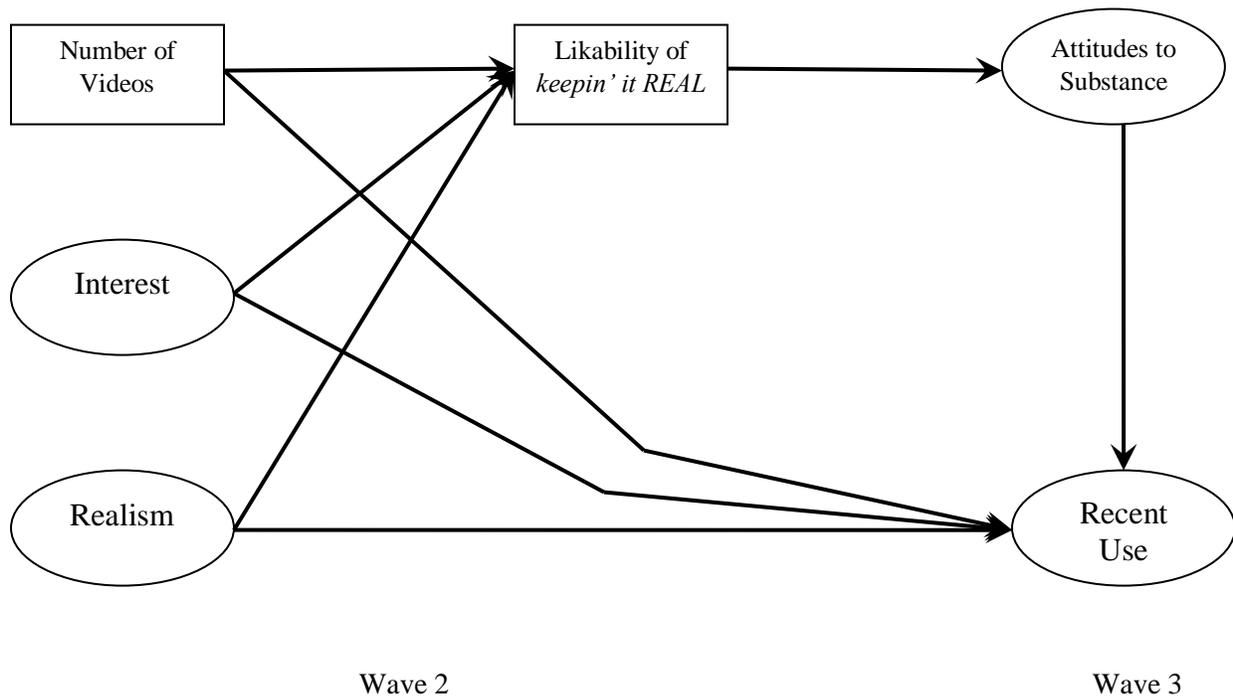


Figure 4.1. Hypothesized path model. The effects of *keepin' it REAL* videos on youth substance use as mediated by likability of *keepin' it REAL* brand and attitudes to substance use.

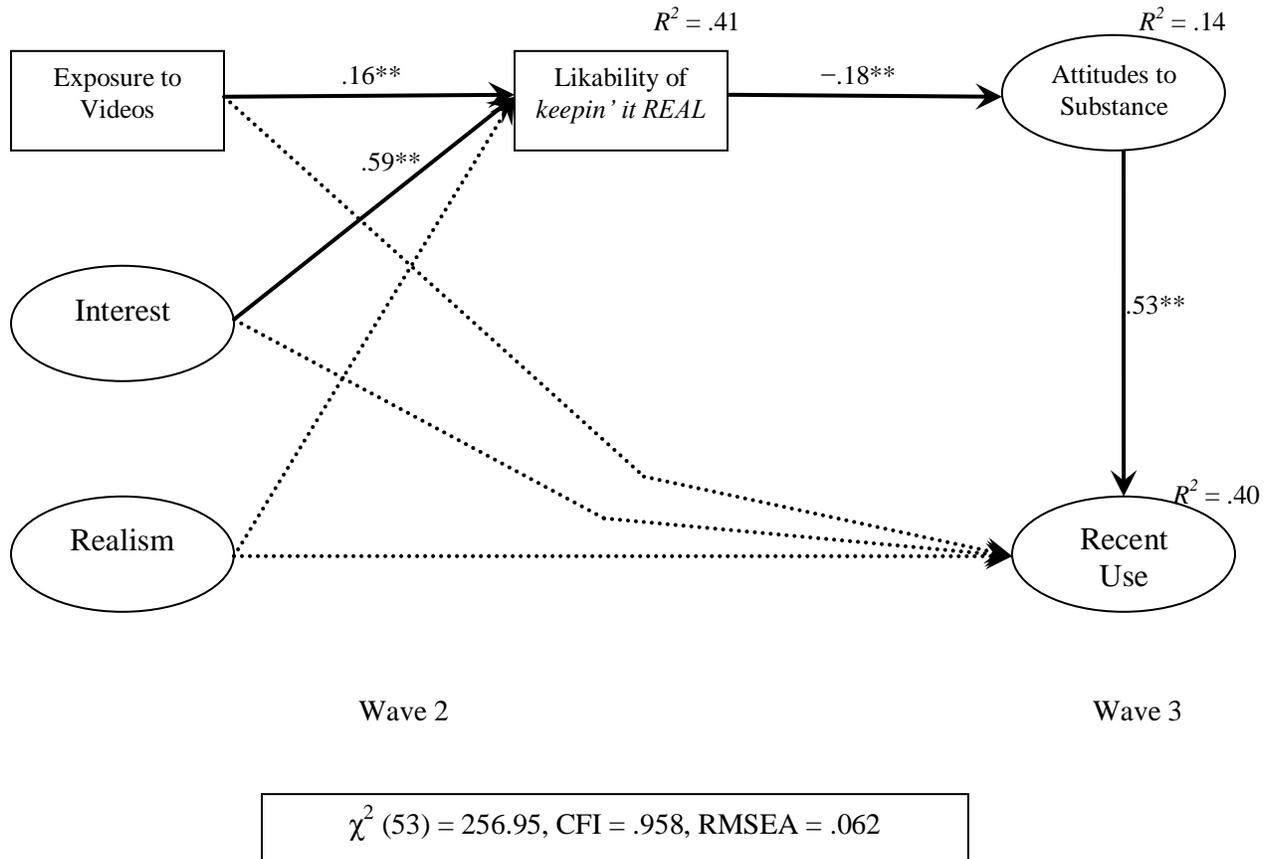


Figure 4.2. Longitudinal effects of *keepin' it REAL* videos: Mediation of liking for *kiR* and attitudes to substance use. Path coefficients in the figure are standardized and significant pathways are highlighted by boldface. Effects of gender, age, and prior use of substances were controlled but the pathways are not shown in the figure for reasons of clarity.

* $p < .05$; ** $p < .01$.

CHAPTER 5

CONCLUDING REMARKS

In recent years commercial branding principles have begun to be applied to health communication campaigns. While the use of branding has proven effective in promoting healthy behaviors (e.g., physical activity in the case of *VERB*; not smoking in the case of *truth*), little is known about the underlying mechanisms of branding in the context of school-based substance use prevention. This dissertation, therefore, investigated the role of branding in school-based substance use prevention. Chapter 1 introduced the conceptual definitions of branding and the effectiveness of previous branded health campaigns. Chapter 2 discussed cultural grounding approach to explain how one branded curriculum, *keepin' it REAL (kiR)* was developed through narrative and formative research. Chapter 3 reported the results of an empirical study testing a theoretical model to test the hypothesis that social cognitive constructs (i.e., efficacy and resistance skills) and brand equity mediated the relationship between branded message exposure and intent to use substances. Next, Chapter 4 extended these analyses, examining the effects of narrative-based video perceptions on youth substance use. The chapter tested the hypothesis that the likability of the *kiR* mediated the effects of branded message cognitive processing. Chapter 5 now wraps up the main findings and conclusions along with theoretical contributions and provides a discussion of practical implications.

Theoretical Contributions

Branding is a promising strategy for health promotion and prevention. Public health brands that appeal to youth not only promote health behaviors and lifestyles, but also they

establish a long-term relationship with their audiences (i.e., loyalty or trust) (Keller, 2009). To understand the role of branding in the branded *keepin' it REAL* middle school intervention, this dissertation blended the branding perspective (Aaker, 1996; Keller, 2009) with social cognitive theory (Bandura, 2003) to identify the causal mechanisms through which branded health messages operate. From branding perspective, brand equity is a key construct to evaluate the effects of branding (Evans et al. 2005; Evans et al. 2007; Evans and Hastings, 2008) and it is usually defined as the degree to which consumers associate with a brand (Aaker, 1996; Evans & Hastings, 2008). As discussed in Chapter 3, recent studies on branding suggest that brand equity is a higher-order construct consisting of four sub-dimensions: brand awareness, leadership / popularity, brand personality, and brand loyalty (Blahut et al. 2004; Evans et al. 2005; Evans et al. 2007). Brand equity represents the cumulative effects of the four aspects of branding; that is if a branded message with high equity evokes these reactions from consumers. From a measurement perspective, these four factors are considered lower-order constructs with equity an overarching or higher-order one. Measurement terms, brand equity is seen as a second-order construct consisting of four lower-order subscales. Based on previous evidence, this research developed and validated a brand equity scale for the *kiR* curriculum. Consistent with anticipations, a confirmatory factor analysis (CFA) revealed that the *kiR* brand equity had a second-order structure, consisting of the four subscales loading on the second-order factor. I now switch to social cognitive theory to further explore the underlying, causal mechanisms.

Behavioral modeling is one of the keys of social cognitive theory (SCT) (Bandura, 2004) and is the underlying strategy featured in the *kiR* substance use prevention curriculum. In effective branded messages, healthy behaviors are branded by associating the behaviors to

socially ideal imagery and models to encourage the adoption of the behaviors (Evans et al. 2004; Evans et al. 2008). As described in Chapter 2, the *kiR* substance use prevention curriculum was strategically designed and developed to teach drug resistance strategies through narrative and formative research that identified realistic models for healthy behaviors such as decision making and refusal skills (Hecht & Lee, 2008). The curriculum was based on these models, branding resistance strategies and social skills through modeling. As students are exposed to the branded messages through a series of videos and participate in class activities and other events, they understand the meaning of the *kiR* as well as form strong associations with the brand. These associations with the *kiR* (i.e., brand equity of the *kiR*) are important in school intervention because they may not only motivate students to learn the refusal strategies and skills, but also enhance beliefs to resist drug offers from peers and families.

The findings reported in Chapter 3 support this conceptualization, indicating that greater levels of the *kiR* brand equity lead to reduce youth substance use through social cognitive processes. More specifically youth who perceive favorable, strong associations with the *kiR* are likely to have more confidence and knowledge of resisting drug effectively and they are, in turn unlikely to use substances. As discussed in Chapter 3, vicarious learning is essential in SCT (Bandura, 2004), and effective branded messages can promote youth learning process by emphasizing the positive images and benefits of resisting drugs to youth through social modeling. Therefore the strategic development of branded health messages targeting specific skills (here drug resistance strategies) and build brand equity appears to have promise in school-based prevention intervention program.

Using the longitudinal data, Chapter 4 examined the impacts of narrative-based anti-drug video perceptions on youth substance use. In the field of marketing and advertising, attitudes to ad (A_{ad}) are viewed as an important mediator of advertising effectiveness by describing how advertising messages affect consumer's brand attitudes and purchasing behaviors (Batra et al. 1996; Keller, 2009; MacKenzie et al. 1989). Drawing upon the attitudes toward ad (A_{ad}) theory, this research found that the likability of the *kiR* mediated the branded health message processing. Specifically, results of the analyses support the hypothesized theoretical model that greater levels of message dosage and attentiveness led to enhance the *kiR* likability, which in turn affected substance-related attitudes and behaviors, whereas perceived realism did not exert a significant impact on substance use. Thus the findings lend support to anticipations deriving from the theory and extend this theorizing to branded substance use prevention. This is particularly significant as the first line of research exploring the antecedents of attitudes toward branded campaign.

Practical Implications

Chapter 2 demonstrates how to develop effective public health brand with the case study of the *keepin' it REAL* curriculum. The cultural grounding approach was used to develop the brand. Cultural grounding is an audience-driven approach based upon group members' experiences and stories in order to understand their values, norms, and identities. To deliver a promise and incentive that encourages health behaviors or discourages unhealthy behaviors, the cultural grounding approach calls upon cultural identities and narratives to represent desirable health practices. In particular, cultural narratives identified through formative research lead to highly salient health message providing 'good reasons' to justify actions as well as social models for healthy behaviors. Thus, the case studies in this dissertation suggest that cultural grounding

provides an effective way for health message designers to develop health messages utilizing branding principles with cultural/social elements and characteristic.

The study in Chapter 3 indicates that branding through modeling is an effective prevention strategy in the school-based intervention because brand equity had protective effects on youth substance use via refusal efficacy. The findings suggest that branding can promote youth learning process and the process, in turn, enhances beliefs to resist drugs effectively by delivering promise and incentives that appeal to youth. For example, students are motivated to learn and reinforce beliefs to promote healthy behaviors when media characters performing the behaviors are depicted as positive and socially desirable (Nariman, 1993; Singhal & Rogers, 1999). Research is needed to specify these motivation properties and test their addition to the model. Present findings do allow us to conclude that school prevention programs need to create and develop an appealing brand that promote motivational learning by attaching positive imagery and ideal peer/social models to the brand.

In addition, the study in Chapter 4 indicates that overall liking for branded campaign is an important mediator of branded message effectiveness. By assessing the likability for pilot testing and program evaluation, health researchers and practitioners can identify and correct some flaws in branded health messages. Thus I suggest health researchers and practitioners include attitudes to campaign when evaluating the effectiveness of branded health messages. Besides the findings from the longitudinal data revealed that message dosage and message attentiveness predicted the likability of the *kiR* which in turn affects substance-related attitudes and behaviors. These message perceptions are the crucial determinants of overall liking for branded campaign messages. Thus health message designers should consider effective message appeals and features

that make consumers like branded campaign when creating branded messages for health prevention and promotion.

Limitations and Future Directions

The studies in this dissertation made the significant theoretical contributions, yet there are several limitations to be addressed. These include limitations in the data set as well as those inherent in a confined number of studies.

First the study in Chapter 3 revealed that brand equity had a significant effect on youth substance use through refusal efficacy. However the findings should be carefully interpreted within the limitations of the study. First the data used in Chapter 3 did not include a control group. Although the initial dataset from a larger intervention study had control group, the group did not respond to the branding measures for administrative reasons (i.e., they had no stimulus to which to respond). In the absence of control group, the branding effects found in the study should not be interpreted as program effects. This limitation should be investigated in the future research utilizing a randomized controlled trial (RCT) to provide strong evidence of branding's effects (Huhman, Potter, Nolin, & Judkins, 2009).

Second, the findings of Chapter 3 cannot guarantee causality with full confidence since the study utilized cross-sectional data. I believe that longitudinal data would allow for investigation of causal relationship between brand equity and adolescent substance use. In particular, Latent Growth Modeling (LGM) analysis can provide a promising opportunity to estimate the rate of change in health behaviors that a campaign promotes along with multiple time-point measures of the behaviors (Evans, Blitstein, & Hersey, 2008). By using this emerging

method, future researchers can test the change over time after exposure to branded health messages.

Next, the results in Chapter 4 revealed that there was a significant relationship between liking for the *kiR* and attitudes to drug use. Although this finding is consistent with previous studies (e.g., Nan, 2008), other potential moderators should be considered before reaching firm conclusions. For example, research in the field of marketing suggests that brand familiarity, perceived relevance moderate the relationship between attitudes toward ad and brand perceptions and attitudes (MacKenzie et al. 1989; Muehling, Laczniak, & Stoltman, 1991; Muehling, Stoltman, & Mishra, 1990; Petty & Cacioppo, 1986). Therefore future efforts must be made to examine other moderating influences on the relationship.

Finally, Chapter 4 identified some significant predictors of attitudes to campaign. However, future research is needed to explore other possible antecedents of the attitudes. For example marketing research suggests that message execution, message credibility, and previous experiences and information regarding ad influence attitudes toward ad (A_{ad}) (Batra et al. 1996; MacKenzie et al. 1989; Muehling et al. 1990). In addition to message factors, socio-demographic factors can be considered to examine how these factors influence attitudes to branded campaign and health-related behaviors.

Social Cognitive Process Model of Branded Health Messages

The theoretical discussion of branding and the findings from the two empirical articles reported in this dissertation suggest directions for future research and guide me through the development of a new theoretical model to explain the effects of branded prevention message through social cognitive processes. The model continues to utilize social cognitive theory along

with a social marketing approach to branding to delineate both potential moderators and mediators of branding effects. As a result, the model is titled, the “Social Cognitive Process Model of Branded Health Messages,” (see Figure 5.1).

This model begins with the assumption that branded, non-branded, and control messages should be compared with the expectation that branded messages will be more effective. In addition, as in previous branding work, dosage effects also are considered to determine the effective level of message exposure.

Next, the model specifies potential moderators based on marketing and advertising theory. These include message involvement, brand familiarity, and environmental factors. As Evans and colleagues (2008) suggested, branding effects are likely to be conditioned by a host of moderator variables including message features, personal/socio-demographic characteristics and external factors such as media and parental influences. In particular, branding’s effects may be contingent upon message (topic/issue) involvement based on the theoretical predictions postulated by elaboration likelihood model (ELM) (Petty & Cacioppo, 1981, 1986; Muehling et al. 1991). The ELM framework suggests two routes of persuasion: central and peripheral routes: the higher the involvement, the greater the tendency toward central processing, wherein message content is the primary influence, yet the lower the involvement, the less the tendency to peripheral processing, in which audience is affected more by contextual factors than actual contents. By including the message involvement as a moderator, it is possible to investigate the two different persuasive mechanisms of branding’s effects (i.e., central vs. peripheral routes of message processing).

The model also specifies mediation processes derived from social cognitive theory. These include efficacy, expectancies, norms, skill, and knowledge. Especially, the model postulates that

efficacy is a critical behavioral determinant of intended outcomes. To perform a behavior, an individual must believe that he or she has the capability to perform the behavior. Besides, incentives are essential to perform the behavior. When the behavior is perceived as benefits (either functional or symbolic), the individual is motivated to perform the behavior. By attaching positive imagery and socially appealing models to a target behavior through various communication channels, audiences are more likely to perceive benefits and enhance beliefs to perform the behaviors.

By incorporating the potential moderators and mediators, this model provides a framework that responds to theoretical as well as practical needs from a number of domains. The model will be useful in developing and pilot-testing branded campaign messages as well as evaluating the effectiveness of the campaign messages. In addition, it guides the future research needed to test the effects of branding through social modeling in various health context.

Conclusion

In sum, this dissertation examined the underlying mechanisms explaining branding's effects in the context of school-based substance use prevention curriculum. Findings indicate that social modeling is an effective mechanism of branding for adolescent substance use prevention. When adolescents perceive socially desirable or attractive peer models performing health behaviors, social modeling can significantly affect health behaviors. Given the predominant influence of peers in this stage of adolescents (Bauman & Ennett, 1994, 1996), peer models can be used to build beliefs regarding efficacy and norms for health behaviors that in turn influence the behaviors. In addition, this research indicated that attitudes to campaign are a significant mediator of branded message effectiveness. Therefore health campaign designers should

consider the ways that audiences perceive public health brands associated with health behaviors as self-interest and benefits through strategic marketing and communication plans.

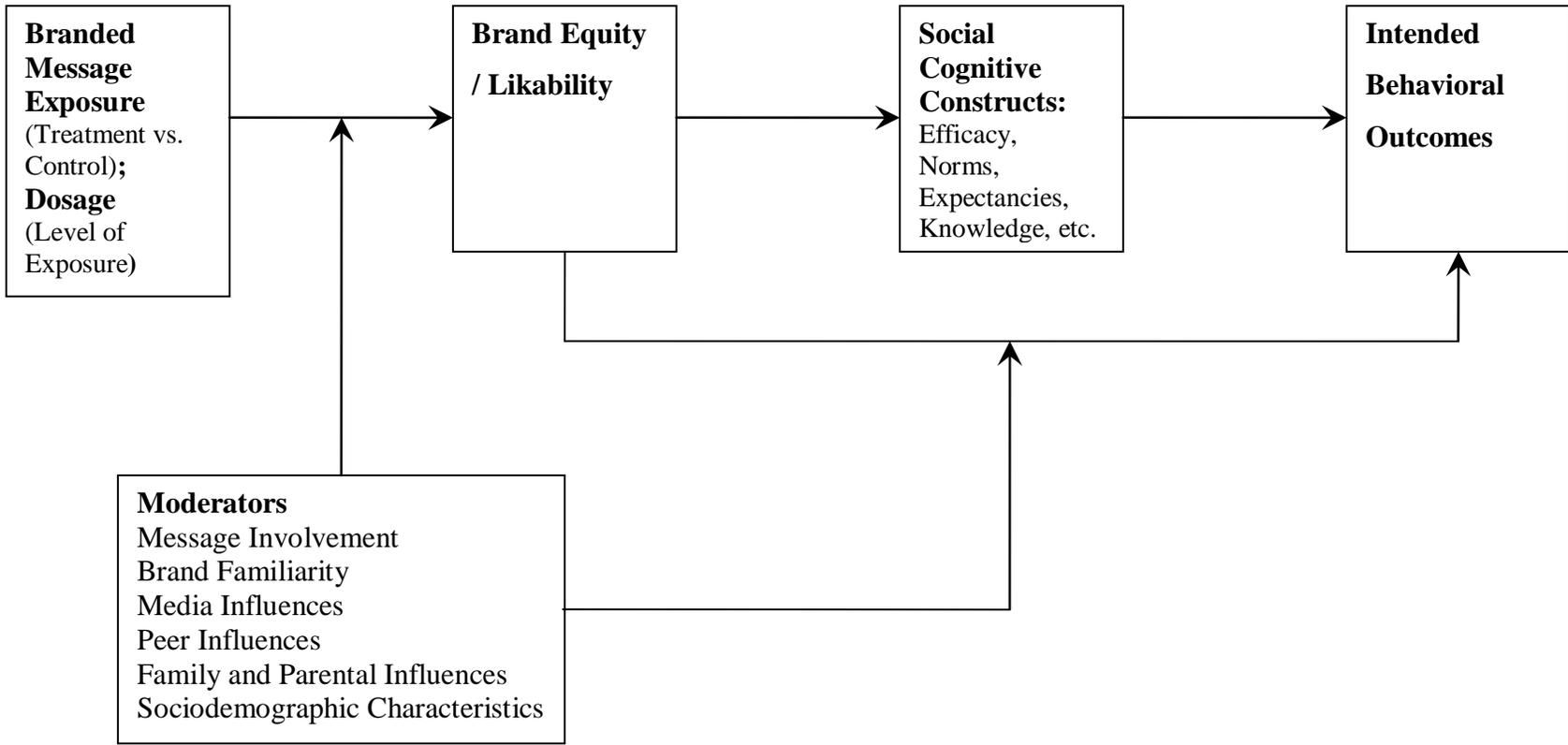


Figure 5.1. Social Cognitive Process Model of Branded Health Messages.

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Appendix A

The Survey Questionnaire of Wave 6 (Fall 2007- Spring 2008)

Brand Equity (Wave 6)	
“When I think about <i>keepin’ it REAL</i> , I think that:” (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree)	
1	Saying no to drugs use is cool
2	Drug and alcohol use is risky
3	I can say no to drug and alcohol offers
4	I can explain why I don’t accept drug and alcohol offers
5	I can avoid situations in which drugs and alcohol are present
6	<i>keepin’ it REAL</i> is becoming more popular with kids like me
7	<i>keepin’ it REAL</i> is for people like me
8	The kids in my class like <i>keepin’ it REAL</i>
9	The <i>keepin’ it REAL</i> lessons (including videos and other in-class activities) are interesting
10	The <i>keepin’ it REAL</i> lessons (including videos and other in-class activities) are fun
11	The <i>keepin’ it REAL</i> lessons (including videos and other in-class activities) are cool
12	The <i>keepin’ it REAL</i> lessons (including videos and other in-class activities) look real
13	I talk about the <i>keepin’ it REAL</i> videos and lessons with my friends
14	I liked having <i>keepin’ it REAL</i> as part of my class
15	My school should keep using <i>keepin’ it REAL</i>

Hypothetical Resistance (Wave 6) – Reverse Coded	
“If your friend offered you a beer/alcohol at a party, would you:” (1 =definitely, 2 = probably, 3 = probably not, 4 = definitely not)	
1	...say ‘No’ without giving a reason why?
2	...give an explanation or excuse to turn down the beer?
3	...just leave the situation without accepting the beer?
4	...avoid getting into that situation because you think beer might be offered there?

Refusal Self-Efficacy (Wave 6) – Reverse Coded	
“Are you sure you would say no, if:” (1 = very sure, 2 = sure, 3 = not sure, 4 = not at all sure)	
1	...a family member offered you alcohol?
2	...a close friend offered you marijuana?
3	...a kid at school offered you a cigarette?

Substance Use Intentions (Wave 6) – Reverse Coded	
“If you had a chance this weekend, would you use:” (1 = definitely yes, 2 = yes, 3 = no, 4 = definitely no)	
1	... alcohol?
2	...cigarette?
3	...marijuana?

History of Substance Use (Wave 6)	
“Which of the following have you tried, even if it was only once or only a little?” (0 = not marked, 1 = marked)	
1	Alcohol (beer, wine, liquor)
2	Cigarettes or tobacco
3	Marijuana (sniff glue or paint)

Gender (Wave 6) – Dummy Coded
“I am a” (1 = boy, 2 = girl)

Age (Wave 6)
“How old are you?” (1 = 7 years, 2 = 8 years, 3 = 9 years, 4 = 10 years, 5 = 11 years, 6 = 12 years, 7 = 13 years, 8 = 14 years, 9 = 15 years)

Appendix B

The Survey Questionnaire of Wave 2 (Spring 2005) & Wave 3 (Spring 2006)

Exposure to the <i>keepin' it REAL</i> Videos (Wave 2)	
“How many of the <i>keepin' it REAL</i> videos have you seen?” (0 = none, 1 = one, 2 = two, 3 = three, 4 = four, 5 = five)	

Interest (Wave 2)	
“Now tell us what you thought about the <i>keepin' it REAL</i> videos that were part of the lessons.” (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree)	
1	The videos are interesting
2	It was easy to pay attention to the stories in the videos
3	I was bored during the videos – reverse coded

Realism (Wave 2)	
“Now tell us what you thought about the <i>keepin' it REAL</i> videos that were part of the lessons.” (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree)	
1	The characteristics in the videos seemed like real people to me
2	The stories in the videos were very believable
3	I know kids who sometimes get into situations like the ones in the videos

Likability of the <i>keepin' it REAL</i> (Wave 2)	
“What do you think about <i>keepin' it REAL</i> (the whole program overall)?” (1 = hated it, 2 = didn't like it, 3 = liked it, 4 = loved it)	

Prior Use of Substances (Wave 2)	
“Which of the following have you tried, even if it was only once or only a little?” (0 = not marked, 1 = marked)	
1	Alcohol (beer, wine, liquor)

2	Cigarettes or tobacco
3	Marijuana (sniff glue or paint)

Gender (Wave 2) – Dummy Coded	
“I am a” (1 = boy, 2 = girl)	

Age (Wave 2)	
“How old are you?” (1 = 7 years, 2 = 8 years, 3 = 9 years, 4 = 10 years, 5 = 11 years, 6 = 12 years, 7 = 13 years, 8 = 14 years, 9 = 15 years)	

Attitudes to Substance Use (Wave 3) – Reverse Coded	
“Agree or Disagree?” (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree)	
1	Drinking alcohol makes parties more fun
2	Smoking cigarettes makes people less nervous
3	Smoking marijuana makes it easier to be part of a group

Recent Use of Substances (Wave 3)	
(1 = none, 2 = 1 – 2, 3 = 3 - 5, 4 = 6 – 9, 5 = 10 – 19, 6 = 20 – 39, 7 = 40 or more)	
1	How many drinks of alcohol (more than a sip of beer, wine, or liquor) have you had in the last 30 days?
2	How many cigarettes have you smoked in the last 30 days?
3	How many hits of marijuana (pot, weed) have you had in the last 30 days?

VITAE
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Education

- 2010 PhD, Communication Arts and Sciences, The Pennsylvania State University
2006 MA, Advertising, Michigan State University
2002 BS, Business Administration, Hanyang University, Seoul, Korea

Employment

- 2007-2010 Research Assistant, Drug Resistance Strategies Project (DRS), The Pennsylvania State University
2009-2010 Teaching Associate, Department of Communication Arts and Sciences, The Pennsylvania State University
2009 Intercultural Communication Coordinator, Leonhard Center for the Enhancement of Engineering Education, The Pennsylvania State University

Publications

- Lee, J. K. & Hecht, M. L. (under review). Examining protective effects of brand equity in the *keepin' it REAL* curriculum. *Health Communication*.
- Lee, J. K., Shin, Y., & Hecht, M. L. (under review). A longitudinal analysis of media and parental influences on Mexican-heritage youth alcohol use. *Journal of Children and Media*.
- Shin, Y., Lee, J. K., & Miller-Day, M. (under review). The effects of maternal emotional well-being on mother-adolescent communication and youth emotional well-being. *Journal of Family Communication*.
- Lee, J. K., Hecht, M. L., Miller-Day, M., & Elek, E. (in press). Evaluating mediated perception of narrative health messages: The perception of narrative performance scale. *Communication Methods and Measures*.
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Awards

- Sparks Graduate Fellowship, College of Liberal Arts, The Pennsylvania State University, 2006-2007