THE RELATIONSHIP BETWEEN INVOLVEMENT IN UNSTRUCTURED UNSUPERVISED LEISURE AND SUBSTANCE USE IN A COHORT OF ADOLESCENT MALE SKATEBOARDERS

A dissertation submitted to the Kent State University College and Graduate School of Education, Health, and Human Services in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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The purpose of this study was to analyze the relationship between skateboarding and substance use among a cohort of adolescent male skateboarders residing in two metropolitan regions in the Eastern United States. The tenets of the individual level routine activity theory (Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996), provided the theoretical foundation for this study. The routine activity theory suggests activities that combine: (a) socializing with peers, (b) freedom from adult supervision, and (c) a lack of structure provide an environment uniquely conducive for problem behavior including substance use.

Using a location-based intercept protocol, a purposive sample of 124 male skateboarders in grades 9–12 was recruited from 14 skate parks and street skating spots. Skateboarding involvement and substance use data were collected using a self-administered, 45-item instrument. Objective measures of skateboarding included time spent skating, primary skating location, and skating with peers. Subjective measures assessed leisure identity and enduring involvement with skateboarding. Current (within the previous 30 days) alcohol, tobacco, and marijuana use data were analyzed as dichotomous variables (has used/has not used) in chi square tests and Generalized Linear Modeling (SPSS).
Findings revealed no statistically significant relationship between involvement in skateboarding and current alcohol, tobacco, and marijuana use among this sample of skateboarders. Spending more or less time skating was not found to significantly interact with the relationship between skateboarding involvement and substance use. These findings did not support the supposition that involvement in skateboarding was associated with substance use, as the theoretical and evidentiary literature suggests.
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CHAPTER I

INTRODUCTION

According to the National Center for Education Statistics, adolescents in the United States spend an average of 6.8 hours per day in school. Once the school day has concluded, these adolescents enjoy between 6.5 and 8 hours of the remaining hours as free time or time not otherwise committed to compulsory activities including eating, school, homework, chores, or working for pay (Larson & Verma, 1999).

Today, it is common for many adolescents to return home from their school day to find their parents away from home, usually at work. According to a joint report published by the U.S. Departments of Education and Justice (U.S. Department of Education, 2000), the time gap between the work schedules of parents/guardians and the school schedules of their children can amount to 20 to 25 hours per week. As such, for 55% of high school age youth, self care is the primary after-school supervision arrangement (After-School Alliance, 2009).

This gap in supervision between school dismissal times and the time that parents return home from work can pose challenges for both students and their custodial caregivers. In fact, the hours immediately following school dismissal are considered the most risky part of the day for an adolescent. This is particularly true if teens are left unsupervised during this time. Crime statistics confirm that the hours between 3 p.m. and 6 p.m. have been linked to elevated levels of smoking, alcohol, and marijuana use, and increased engagement in sexual intercourse (Caldwell & Smith, 1995; Gottfredson, Gottfredson, & Weisman, 2001; Richardson et al., 1989). Mahoney, Eccles, and Larson
(2004) explained that the risks during the hours following school dismissal tend to be associated with one or more of the following conditions: (a) a lack of adult supervision, (b) a lack of socially acceptable structured activities, and (c) an aggregation of antisocial peers.

To mitigate the risks associated with these conditions, one strategy often employed is installing after-school activity programs. Such programs have been identified as an effective means of providing greater supervision and structure during peak crime hours after school (Kleiber, 1999). After-school programs benefit youth by offering them positive and healthy alternatives to drug, alcohol, and tobacco use, criminal activity, and other high-risk behaviors (Eccles, Barber, Stone, & Hunt, 2003; Mahoney, Larson, Eccles, & Lord, 2005). Early support for these initiatives can be found in the report, *Adolescent Time Use, Risky Behavior, and Outcomes: An Analysis of National Data*, published by Zill, Nord, and Loomis (1995). Using longitudinal data from several large national databases collected during the late 1980s and early 1990s, Zill et al. found that participation in school-sponsored after-school programs predicted less engagement in a range of health risk behaviors. Compared to their counterparts who reported having spent at least one hour per week in an extracurricular activity, students who reported spending no time in school-sponsored activities in the after school hours were 49% more likely to have used drugs; 37% more likely to become teen parents; and 35% more likely to have smoked cigarettes.

Several years later, Eccles and Barber (1999) broadened their examination of after-school programs beyond school-sponsored activities to include participation in
pursuits sponsored by community service organizations and church youth groups. Using cross-sectional and longitudinal data collected as part of the *Michigan Study of Adolescent Life Transitions*, these researchers matched information about activity participation among students with their self-reported involvement in risky behavior. Consistent with the earlier work of Zill and colleagues, Eccles and Barber found that participation in at least one after-school activity during the high school years was associated with reduced involvement in alcohol, marijuana, and “hard drug” use (Eccles & Barber, 1999, p. 14).

Additional authors have published similar findings. Harrison and Narayan (2003) sampled a representative selection of ninth grade students attending public schools in Minnesota. In addition to measuring involvement in substance use and antisocial behaviors, these authors collected data about participation in community-based activities, school-sponsored sports, and school-sponsored activities. Findings from this study led Harrison and Narayan to conclude that students who were involved in at least one activity context were significantly less likely than their non-involved counterparts to skip school, get into fights, vandalize property, binge drink, use marijuana, smoke tobacco, or have sexual intercourse.

In a study conducted several years later, Darling (2005) followed a diverse sample of youth from six California high schools over a three-year period. Echoing previously reported findings, Darling noted lower levels of marijuana and other drug use among activity participants when compared to that of non-participants. These studies and others cited in the literature from disciplines as disparate as leisure studies, sociology, sports psychology, and adolescent development, provide support for the hypothesis that
participation in after-school programs is associated with reduced involvement in problem behaviors such as substance use and delinquency (Eccles & Templeton, 2002; Feldman & Matjasko, 2005; Fredricks & Eccles, 2006).

In the seminal report, *A Matter of Time: Risk and Opportunity in the Nonschool Hours*, the Carnegie Council of Adolescent Development (1992) lauded after-school programs for their potential to do more for youth than simply keeping them occupied and out of trouble. The Council asserted that such programs could contribute positively to youth development by providing opportunities for youth to develop critical life skills, social competencies, and a sense of belonging.

Recent examinations of nationally representative samples of school-age youth indicate that a majority of teens do participate in after-school programs. In *All Work and No Play*, a study of the opinions of students and parents about after-school programming, Duffett, Johnson, Farkas, Kung, and Ott (2004) documented that over half of the students surveyed (57%) reported participating in some kind of out-of-school activity program “every day” or “almost every day.” Further, data collected by the Centers for Disease Control and Prevention [CDC] (2010) during the bi-annual Youth Risk Behavior Survey [YRBS] revealed that nationwide, 64% of boys and 52% of girls in grades 9 through 12 played on at least one sports team (run by their school or by community groups) during the 12 months preceding the survey.

These data portray evidence about the rates of youth participation in *structured* leisure contexts. In the study cited above by Darling (2005), the author suggested that the benefits associated with participation in such activity contexts stem from the high degree
of structure and conventionality they provide. According to Darling, in such environments, “adolescents can exert control and express their identity through choice of activity and actions within the setting, but which do not normally facilitate experimentation with roles and activities that are not sanctioned by adults” (p. 493).

A number of descriptions and operational definitions have been suggested for the term *structured*. Mahoney and Stattin (2000) described highly structured activities as activities characterized by “regular participation schedules, rule-guided engagement, direction by one or more adult activity leaders, an emphasis on skill development that is increasing in complexity and challenge, activity performance that requires sustained active attention, and clear feedback on performance” (pp. 114-115).

The Carnegie Council on Adolescent Development (1992) report on the risks and opportunities in the after-school hours used the term *high yield* rather than *structured* to refer to activity contexts believed to offer greater benefits to participants than can lower yield activities. Without singling out activities by name, the report contends that “high yield” activities typically (a) are goal-oriented and/or creative and expressive in nature, (b) require discipline and focused attention, (c) offer challenges to overcome, (d) build skills and increase one’s level of confidence, and (e) require persistence, commitment, and continuity to participation over time.

Eccles and Barber (1999) referred to structured or organized activities that are directed or overseen by adults as *constructive leisure*. The authors explained that constructive leisure is assumed to hold a greater potential to impart developmental benefits than relaxed or passive leisure pursuits because they offer youth opportunities:
(a) to acquire and practice specific social, physical, and intellectual skills that may be useful in a wide variety of settings; (b) to contribute to the well-being of one’s community and to develop a sense of agency as a member of one’s community; (c) to belong to a socially recognized and valued group; (d) to establish supportive social networks of both peers and adults that can help one in both the present and the future; and (e) to experience and deal with challenges. (Eccles & Barber, 1999, pp. 11-12)

Possessing many of the attributes outlined above, organized youth sports programs have been thought to be a useful tool in promoting youth development for many years. In the late 19th century, organized sports programs were advocated as a means for instilling in immigrant youth the basic American values of hard work, cooperation, discipline, and respect for authority (Kleiber & Powell, 2005). Traditional youth sports have been characterized as “embodying desirable social norms and values relating to leadership, discipline, teamwork, health, hard work, and competition” (Hills & Vassil, 2008, p. 171). Today, youth sports programs are led by adults, governed by a formal set of rules, conducted according for specific practice and playing schedules, and driven by competition (Hills & Vassil, 2008; Rinehart, 2000). Based on this description, youth sports programs function as highly structured leisure activity contexts as defined by Mahoney and Stattin (2000).

As noted, just over half of all adolescents report participating in some type of structured, adult-supervised after-school or out-of school sports program. Importantly, however, this means that nearly half of all adolescents in the United States do not
participate in such programs. It must be noted that, due to the manner in which participation and involvement data are collected, the percentage of youth classified as non-participants or as uninvolved might be inflated. Owing to the prominence placed on organized and structured activities, informal and less-structured forms of sport and leisure are frequently omitted as activity choices in the response sets of data collection instruments. To illustrate, studies about the risks and benefits associated with participation in extracurricular programs conducted by Eccles and Barber (1999) provided students with a seemingly comprehensive list of 16 sports and 30 school and community clubs and organizations from which to choose. However, 31% of the sample reported that they did not participate in any of the activities listed. The students who did not indicate involvement in at least one of the activities provided are typically classified as non-participants or as uninvolved (i.e., Bartko & Eccles, 2003; Darling, Caldwell, & Smith, 2005; Feldman & Matjasko, 2007).

Unfortunately, the students who participate primarily in non-traditional sports or recreational activities (i.e., sport climbing, skateboarding, snowboarding, motocross racing) rather than in the traditional youth sports (i.e., baseball, football, soccer) and activities found on participation scales are classified, by default, as non-participants. This method of classifying participants takes place without any regard to the high degree of time and personal commitment that is often exhibited by participants in these alternative pursuits. Because of this practice, self-reported risk behavior data collected from individuals who might be highly involved in non-traditional but constructive activities (see Eccles & Barber, 1999) tend to be aggregated with data obtained from individuals who
truly do not participate in any form of constructive activity. Consequently, less is understood about the potential risks and benefits associated with participation in non-traditional sports and recreational activities than in participation in long-standing, mainstream youth sports (Caldwell & Smith, 2006; Kleiber, 1999).

Youth who find the traditional sports environment too prescriptive and constraining may be drawn to the growing sports genre of non-traditional or *alternative sports* (Hills & Vassil, 2008). Rinehart (2000) defined alternative sports as “activities that either ideologically or practically provide alternatives to mainstream sports and to mainstream sport values” (p. 507). Alternative sports, then, can be conceptualized as the alter-ego of traditional or mainstream youth sports.

Known by an array of descriptive terms, common vernacular for “alternative sports” include extreme, adventure, whiz, lifestyle, and action sports. Rinehart explained that the allure of alternative sports to faithful participants lies in a number of attributes shared across the genre. First, all alternative sports necessitate, and at times venerate, a degree of physical risk-taking and thrill-seeking. Second, most alternative sports are individual pursuits. Third, as primarily outdoor pursuits taking place in natural settings, alternative sports require participants negotiate an array of environmental obstacles and challenges.

A great variety of activities has been categorized as alternative sports. Some activities including caving, mountaineering, snowshoeing, and kayaking have long histories. Other more recent formulations include adventure racing, ultimate Frisbee, and geo-caching. There are high speed pursuits including speed skiing, street luge, and
mountain bike racing, and aerial sports including cliff diving, sky diving, and hang gliding. Still other activities are hybrids of existing alternative sports such as boarder-cross (a cross between snowboarding and motocross racing), BASE-jumping [an acronym for buildings, antennas, spans, and earth] (mixing paragliding with sky diving), and ice sailing (blending ice skating and sailing). Often, one alternative sport will evolve into an entirely new activity. This can be said of board sports, another subgroup of adventure sports. Board sports began with surfing and now encompass surfing’s progeny including wakeboarding, snowboarding, and skateboarding.

Commercial skateboards, the first of which was the Roller Derby Skateboard manufactured by the Roller Derby rollerskate company, hit department store shelves in 1959. The popularity of skateboarding quickly grew among West Coast surfers who were looking for an alternative to surfing when the waves were flat. Arlo Eisenberg (2003), an essayist featured in Rinehart and Sydnor’s examination of alternative sports, credited the practicality of activities such as skateboarding for at least some of their popularity among youth. According to Eisenberg, the increasing popularity of skateboarding (or simply “skating”) as well as other wheeled varieties of alternative sports is due, at least in part, to their functionality as a means of transportation, unlike “other action sports such as surfing or snowboarding, which require an ocean or a mountain” (Eisenberg, 2003, p. 24).

Today, according to the Sporting Goods Manufacturers Association [SGMA], there are just over 7.8 million children and young adult skateboarding participants in cities and towns all over the United States (2009). Skateboarders (or “skaters”) are most likely to live in the South Atlantic area (19.6% of all participants), the Pacific Coast area
(18.0%), and the East North Central area (15.7%). Skaters were least likely to live in the New England area (5.3%). Primarily an activity favored by young males, skateboarding participants are predominately male (77.1%) and under the age of 18 years (70.0%).

In spite of the popularity of this activity among youth, the American public maintains a complicated love-hate relationship with skateboarding. To the uninitiated, the distinctive rumble of an approaching skateboard might conjure up the image of packs of slovenly dressed adolescent boys, marauding the concrete cityscape like modern-day pirates in search of fresh terrain on which to skate, beyond the purview of a responsible adult. Woolley and Johns (2001) explained that this view of skaters is an artifact of the outward expression of the phenomenon of skater identity:

Skateboarders have a unique and strong identity, ethos and outlook, which set them apart from their peers. Through a combination of style of dress, musical preferences, and the activity of skateboarding itself, there is a strong sense of self-identity to be found as a ‘skater.’ (p. 215).

Wheaton (2004) classified skateboarding as a lifestyle sport due to the unique leisure subculture and social identity shared among its participants described in the Woolley and Johns quote. According to Wheaton, “participation [in lifestyle sports such as skateboarding] takes place in local sub-cultural spaces, spaces that are often quite ‘luminal,’ lacking regulation and control, and the sports are performed in ways that often denounce—or even resist—institutionalization, regulation, and commercialization” (p. 4). The proclivity toward skateboarding exhibited by youth is influenced, at least in part, by perceptions of their own personal and social identity as well as the reputation of the other
skaters or characteristics of the activity (Eccles & Barber, 1999; Haggard & Williams, 1992; Hills & Vassil, 2008; Moore & Werch, 2005).

The enduring notoriety of skateboarding as problematic can be attributed to several factors. The first is an artifact of the structural characteristics of skateboards and the suitability of terrain on which to skate. Skateboards use small polyurethane wheels ranging from 52 to 60 mm in diameter (Landis, Petritsch, & Huang, 2004) that tend to roll best over smooth surfaces such as concrete or polished stone. This fact has placed skateboarders and their use of public spaces for skating at odds with advocates for the “proper” use of such spaces. To elaborate, whereas most people might look across a city plaza and only see stone fountains, park benches, and concrete steps, skaters see a virtual playground (known as “skate spots”) of obstacles to spring over, slide down, and skate across (Jones & Graves, 2000). Atencio, Beal, and Wilson (2009) interpreted street skaters’ use of “typically unsupervised, dangerous, and off-limits spaces” (p. 6) as an outward expression of the value skaters place on individual freedom and their keenness for rebellion and physical risk-taking.

This use of public spaces for skating, arguably a purpose for which urban planners never intended, has sparked conflict between skaters and city authorities (Chiu, 2009). Claiming that skateboarders were frightening off potential customers, business owners have tasked their security guards with chasing skateboarders away from their store fronts and out of their parking lots (Woolley & Johns, 2001). Citing fears of injury to pedestrians, liability for property owners, a number of municipalities have passed ordinances that classify skateboards as a form of transportation thereby restricting them
from being ridden on pedestrian thoroughfares including sidewalks, stair cases, plazas, and accessibility ramps (Rankin, 1997). Other municipalities have entirely prohibited the use of skateboards in city centers. “No skateboarding permitted” signs are now common fixtures along city sidewalks and in park plazas, essentially rendering skateboarding an illicit activity and criminalizing skateboarding youth. Individuals caught violating skateboarding laws can be fined and/or have their skateboards confiscated (Chiu, 2009; Heizer, 2004).

Further suggestive of America’s conflicted relationship with skating, a second source of trepidation about skateboarding is rooted in the inherent nature of skateboarding and the key to the sport’s allure. In his essay about alternative sports, Rinehart (2000) explained that part of the appeal of skateboarding among youth lies in their perception that it is an activity they could do by themselves without adult supervision, with no formal rules, and without interference from coaches and officials. Skateboarders and skate culture value participant control and self-expression over competition and conformity (Beal & Weidman, 2003).

Seifert and Hedderson (2009) recently published an ethnographic study describing the subjective experiences of skaters. The researchers observed individual skaters overcome repeated failures and frustrations as they attempted to learn new stunts: “skateboarders were confronted with self-selected challenges that constantly tested and improved their skills. Having set their own challenges, skateboarders then persisted in their attempts to conquer the challenge” (p. 12). The skaters in this study described the subjective experience of skateboarding as one marked by a sense of freedom,
self-determination, and “flow” (e.g., Csikszentmihalyi, 1990). Skaters also described the high value they placed in selecting their own challenges and performance goals as well as their dedication to self-improvement. Skaters described their feelings of pride and accomplishment resulting from their perseverance and successes. These subjective experiences the authors attributed to the high levels of self-efficacy, mastery goal pursuit, and a sense of agency among skaters. Reflecting the experiences and perceptions described in the Seifert and Hedderson study, a number of leisure researchers support the premise that unstructured activities can offer adolescents the freedom to experiment with roles, behaviors, and ideas that aid in shaping identity and develop personal control and autonomy (e.g., Caldwell & Smith, 2006; Eccles & Barber, 1999).

Contrary to the positive characterization above, the intrinsic nature of skateboarding as an unstructured and participant-controlled activity is also one of the reasons why skateboarding also is presupposed as problematic—a case of guilt by association. At the very least, unstructured activities, as a family of pursuits, are understood to be less beneficial because they are judged to be less likely than structured activities to foster initiative. The construct of initiative, as defined by Larson (2000), consists of the ability to be motivated from within to direct attention and effort toward a challenging goal (p. 170). According to Larson, unstructured and passive leisure activities including watching television and socializing with friends do not foster initiative because they fail to provide sufficient levels of challenge and complexity so as to support sustained effort and concentration.
By contrast, rather than unstructured activities simply being less beneficial from a developmental perspective, the lack of structure associated with some leisure contexts has been associated with problem behaviors such as substance use and delinquency. Youth-initiated leisure activities like skateboarding typically lack the adult supervision and guidance believed necessary to ensure that youth do not become involved in problem behavior such as substance use. Mannell and Kleiber (1997) suggested that adolescents were choosing to engage in problem behavior during their free time as a form of leisure. Also, selective participation in activities such as skateboarding might influence the prevalence of problem behavior depending on the values reflected in the associated peer network and leisure culture (Darling, 2005; Feldman & Matjasko, 2005).

In 2006, Caldwell and Smith published a review of research that examined the association between youth leisure and involvement in problem behavior from a criminology perspective. They concluded that the research relating to leisure and delinquency among adolescents could be summarized by several related perspectives:

- **Filled time perspective**—Time filled with prosocial activities cannot be filled with deviant activities.
- **Association with deviant peers perspective**—Certain activities are more likely to instigate deviant behavior through an association with a deviant subculture.
- **Activity structure perspective**—Time spent in informal and/or unsupervised activities is likely to promote deviance, while time spent in supervised activities protects against it. (Caldwell & Smith, 2006, p. 399)
Caldwell and Smith (2006) concluded that the four perspectives identified through their review were distilled from several theories that inform the current views on delinquency. One such theory, the individual level of the routine activities theory (Osgood, Wilson, O’Malley, Bachman, & Johnston, 1996), is of particular utility in examining the hypothetical association between participation in skateboarding and involvement in problem behavior. Osgood and colleagues adapted the routine activity theory developed by Cohen and Felson (1979) to elucidate individual delinquency. In specific, the individual level routine activity theory was developed in part to “better explain a wider range of deviant behavior—behaviors that are disapproved by conventional normative standards and that typically provoke attempts at social control if detected by authority figures” (Osgood et al., 1996, p. 636).

A central tenet of the individual level routine activities theory is the concept of situational motivation (Osgood et al., 1996). Situational motivation is the idea that motivation for delinquency is inherent in the situation rather than in the person. Research by Osgood et al. determined that certain situations or activity contexts are more conducive for problem behavior than are others. In particular, the authors found that opportunities for deviance are concentrated greatest in activities that combine: (a) socializing with peers, (b) freedom from adult supervision, and (c) a lack of structure.

The individual level routine activities theory provides an important clue as to why skateboarding may be associated with adolescent problem behavior while other forms of youth sports are not. In many towns across the country, well-manicured Little League baseball fields and soccer pitches are prominently featured in the community landscape.
However, in stark contrast to these Norman Rockwellian scenes, many skateboarders feel they have been afforded little space within the community, both in a literal and a figurative sense, in which to participate in the leisure activity of their choice. When left without sanctioned spaces, youth seeking reprieve from the castigatory eye of city authorities may commandeer clandestine skate spots (Chiu, 2009; Nemeth, 2006). When youth gather for these impromptu and unsupervised skate sessions, the three conditions posited by authors of the routine activities theory to be highly conducive of adolescent problem behavior are present (i.e., socializing with peers, freedom from adult supervision, and lack of structure).

Caldwell and Smith (2006), writing about the importance of leisure in the lives of adolescents, stated:

Of all the contexts in an adolescent’s life, leisure has great potential for personally meaningful activity, enjoyment, autonomy, self-determination, becoming connected to community, developing competence, forming durable relationships with adults, voicing opinions, being listened to, feeling a sense of belonging and mattering, and having control over one’s actions. (p. 400)

**Significance of the Study**

Skateboarding, although unstructured and often unsupervised, has been described by participants as offering most, if not all, of the positive outcomes and experiences outlined in the quote above. Yet, within the framework of the individual level routine activities theory, the skateboarding as an activity context is presumed to be problematic due to the unstructured and unsupervised nature of the activity (Bradley, 2010). The
contextual influence of skateboarding as an asset or a liability in moderating risk of substance use has not been fully explored (Bradley, 2010; Shannon & Werner, 2008). More research needs to be conducted to determine when, under what conditions, and for whom are unstructured activities such as skateboarding linked with protective or risk factors (Caldwell & Smith, 2006; Kleiber, 1999).

**Purpose of the Study**

The purpose of the present study was to analyze the relationship between skateboarding and current alcohol, tobacco, and marijuana use among a cohort of adolescent male skateboarders residing in two metropolitan regions in the Eastern United States. In specific, the aim of this research is to:

1. Determine the nature of the relationship between time spent skateboarding and self-reported ATOD use in a cohort of male skateboarders; and
2. Test the potential of selected individual and contextual variables (e.g., skating location, skating in groups with other skaters present, leisure identity, and enduring involvement) to influence this relationship.

In addition to time spent skateboarding, the additional measures of involvement in skateboarding, leisure identity, enduring involvement, skating location, and the presence of peers were included because prior research indicates that they could be expected to play a role in the relationship between skateboarding and substance use.

**Research Questions**

A comprehensive review of literature has resulted in the identification of several individual and contextual factors that, theoretically, should influence the relationship
between various measures of skateboarding involvement and the use of tobacco, alcohol, and marijuana (ATOD). Informed by this review, the current investigation addresses the following questions:

1. To what extent does the amount of time spent skating influence the amount of self-reported ATOD use among 9th through 12th grade male skaters?

2. To what extent does skateboarding with a group of friends (rather than skating alone) influence the amount of self-reported ATOD use among 9th through 12th grade male skaters?

3. To what extent does primary skating location influence the amount of self-reported ATOD use among 9th through 12th grade male skaters?

4. To what extent does skater identity influence the amount of self-reported ATOD use among 9th through 12th grade male skaters?

5. To what extent does level of enduring involvement in skating influence the amount of self-reported ATOD among 9th through 12th grade male skaters?

6. To what extent does the interaction between time and individual and contextual factors (i.e., skating location, enduring involvement, skater identity, and skating with friends) influence the amount of self-reported ATOD use among 9th through 12th grade male skaters?

**Definition of Terms**

*Alternative sports:* “Activities that either ideologically or practically proved alternatives to mainstream sports and to mainstream sport values” (Rinehart, 2000, p. 507).
**Enduring involvement:** Leisure researchers (Havitz & Dimache, 1997) have defined the multidimensional construct of involvement as

An unobservable state of motivation, arousal or interest toward a recreational activity or associated product. It is evoked by a particular stimulus or situation and has drive properties . . . In other words, leisure involvement refers to how we think about our leisure and recreation, and it affects our behavior. (p. 246)

**Leisure identity:** An identity that is strongly influenced by or founded upon participation in leisure or sport.

**Primary skating location measure:** The primary skating location measure was measured on a four-point Likert scale. One end of the Likert scale represents skating exclusively at publicly or privately sanctioned skate parks or skate plazas. The opposite end of the Likert scale represents skating exclusively in unsanctioned locations such as public streets, sidewalks, parking lots, city plazas and other co-opted spaces where skateboarding may be tolerated but is not explicitly permitted or may be categorically prohibited.

**Problem behavior:** The term problem behavior is often used synonymously with the terms risk behavior and deviant or delinquent behavior. In the current investigation, substance use is the problem behavior of interest. Richard Jessor, author of a theory focused on the co-morbidity of problem behavior, defined the term as

Behavior that which is socially defined as a problem, as a source of concern, or as undesirable by the social and/or legal norms of conventional society and its institutions of authority; it is behavior that usually elicits some form of social
control response, whether minimal, such as a statement of disapproval, or extreme, such as incarceration. (Jessor, n.d.)

**Limitations of the Study**

The current investigation used location-based, intercept sampling to recruit a purposive sample from the target population. Location-based sampling is designed to recruit study participants in places and at times where they would reasonably be expected to gather (Muhib et al., 2001). This method has been shown to be an efficient and effective means of accessing rare or hard-to-reach populations (Muhib et al., 2001; Voas et al., 2006). A limitation specific to location-based sampling is the assumption that members of the target population will be present at the locations where and when data collection is taking place. Although attempts have been made to gather data at a variety of skateboarding outlets (i.e., public and privately operated skate parks plus well-frequented skate spots) and during various times of the day and days of the week, some members of the target population might not skateboard at the selected locations or might attend very rarely and therefore had very little chance of participating in the study as a result (Muhib et al., 2001).

A second limitation of the current investigation stems from the decision to use a purposive rather than a random sampling method. The need to use an efficient and cost-effective means of reaching a small, widely dispersed population like that of skateboarders was the driving force behind this decision to use purposive, intercept sampling (Voas et al., 2006). Any conclusions reached as a result of this investigation, however, might be unique to this sample of skateboarders and therefore cannot be
presumed to represent all male skateboarders in the United States (Portney & Watkins, 1999).
CHAPTER II

LITERATURE REVIEW

Purpose of the Study

The purpose of the present study was to analyze the relationship between skateboarding and current alcohol, tobacco, and marijuana use among a cohort of adolescent male skateboarders residing in two metropolitan regions in the Eastern United States. The literature reviewed for this investigation spans the fields of leisure studies, positive youth development, health behavior, and criminology and is summarized in three large sections. The review begins with a comprehensive description of adolescent leisure. In the second section, out-of-school programming is discussed as one of the strategies used to curb problem behavior among adolescents during the after-school hours. In the final section, alternative sports are introduced and an in-depth discussion of skateboarding is provided.

Adolescent Leisure

Adolescents and Spare Time

There are 1,440 minutes in a day. According to the National Sleep Foundation (2006), adolescents in the United States spend an average of 456 those minutes or 7.6 hours of their day sleeping. With the exception to several hours dedicated to obligatory activities including eating, doing chores, completing homework, working for pay, and more eating, what remains is a large amount of free time. As the youth developmental specialists Larson and Seepersad (2003) insisted, however, “the important question is not how much free time teens have but how they use this time” (p. 55). Scholars from the
field of leisure studies contend that the benefits associated with free time are contingent upon sustained engagement in freely chosen, meaningful, and interesting experiences (Csikszentmihalyi, 1990; Sharp, Caldwell, Graham, & Ridenour, 2006).

An operational definition of leisure. The difficulty in defining what might and what might not be considered leisure is rooted in the experiential and subjective nature of leisure (Mannell & Kleiber, 1997). In a sense, if an activity or experience *feels* like leisure to someone, then to that person, it is leisure. On the other hand, another person engaged in the same activity may not share the same sentiment. To define leisure from an operational perspective, Mannell and Kleiber distilled from the literature three central qualities or attributes used to distinguish an experience as leisure. These scholars contend that these qualities serve to differentiate leisure from the many routine and often compulsory experiences in the daily lives of teens. The most central of these attributes focused on perceived freedom; the perception that one was free to choose whether or not to participate. Neulinger (1981) described the concept as a “state in which the person feels that what he or she is doing is done by choice and because one wants to do it” (p. 15). The second attribute is closely related to the first one. In activities or experiences interpreted by an actor as leisure, participation is intrinsically motivated. Not only is participation perceived to be a matter of free choice, but the rewards associated with participating come directly from engaging in the activity itself. These rewards might include among others feelings of competence, self-development and enrichment, self-actualization, self-expression, and enhanced self-image (Kleiber, 1999; Mannell & Kleiber, 1997).
Finally, a third attribute of leisure is based on the subjective quality of the experience. When participation in an activity is experienced as relaxing, gratifying, or enjoyable, the activity is often construed as leisure. In summary, any activity might be construed as leisure if the actors engaged in the activity believe that their decision to participate is of their own volition, that their participation is intrinsically motivated, and they would describe their experience as fun or in some other way enjoyable.

Although the terms leisure and recreation might be used interchangeably, use of the term recreation is typically reserved for physically active pursuits (i.e., skateboarding or kayaking) whereas leisure is often used to refer to either less physically demanding activities (i.e., playing video games or listening to music) or collectively to all types of activities. Stressing the important role of leisure in the lives of youth, Caldwell and Smith (2006) stated:

Of all the contexts in an adolescent’s life, leisure has great potential for personally meaningful activity, enjoyment, autonomy, self-determination, becoming connected to community, developing competence, forming durable relationships with adults, voicing opinions, being listened to, feeling a sense of belonging and mattering, and having control over one’s actions. (p. 400)

**Definition of positive youth development.** As suggested in the statement by Caldwell and Smith (2006), involvement in leisure can enrich the lives of youth in a number of important ways. The term positive youth development (PYD) is used frequently throughout this document to refer to the ways in which leisure supports positive changes in youth psychosocial development. The emphasis on PYD in youth
programming began to be operationalized during the 1990s. PYD represented a step forward and away from the deficit-based, secondary and tertiary prevention focus that characterized youth programming during the 1970s and 1980s.

Today, characterized by the mantra, “problem-free is not fully prepared” (Pittman, Irby, Tolman, Yohalem, & Ferber, 2003), the still-evolving PYD paradigm employs a strengths- or assets-based approach to supporting health promotion and youth development. Rather than targeting only high-risk or risk-involved youth, PYD directs the provision of voluntary services and activities to all youth. As an ecological planning model, PYD emphasizes the importance of collaboration between families, communities and other institutions to meet the needs of youth. This ecological approach is similar to the concept of external developmental assets and asset-building communities championed by Benson, Leffert, Scales, and Blyth (1998). One final point stressed by Pittman et al. (2003) was the recognition of youth as valuable members of society, deserving of meaningful opportunities to engage in and influence the communities in which they live.

PYD in youth is characterized by the development of a number of competencies believed to be essential as they prepare to assume the roles and responsibilities of adulthood. These competencies include:

- Social competencies, such as work and family life skills, problem-solving skills, and communication skills;
- Moral competencies, such as personal values and ethics, a sense of responsibility and citizenship (including participation in civic life and community service);
Emotional competencies, such as a sense of personal and social identity, self-confidence, autonomy, and the ability to resist negative peer pressure;

Physical competencies, such as physical conditioning and endurance, and an appreciation for and strategies to achieve lifelong physical health and fitness; and

Cognitive competencies, such as knowledge, reasoning ability, creativity, and a lifelong commitment to learning and achievement. (Carnegie Council on Adolescent Development, 1992; National Youth Development Information Center, n.d.)

A program, service, or activity that is believed to foster PYD is one that provides support or opportunities for the development of these competencies in youth.

The Developmental Elements of Leisure

Caldwell (2005) has asserted that in order to understand how recreation and leisure contribute to PYD, one must recognize that “recreation is more than just participating in an activity” (p. 171). The outcomes and the developmental potential associated with leisure participation are influenced by the activity itself, the experiences that accompany engaging in the activity, and the context in which the activity takes place (Caldwell, 2005). Caldwell identified three constructs, activity, context, and experience, as the developmental elements of leisure. These interrelated elements provide a useful means of framing the discussion of how, why, and in what ways participation in leisure activity is more or less likely to support positive youth development.
**Context.** The first of these elements is context. Context has been defined by Caldwell (2005) as including “all of the elements or things within the environment that surround and can influence behaviors in a particular setting” (p. 173). In a recreational context, a number of factors influence PYD. The presence of adult supervision and the level of structure and organization have been shown to bear heavily on developmental outcomes. Although the bulk of the discussion tends to focus on effects of the level of structure rather than supervision, these closely related concepts are often discussed concurrently in the literature.

**Adequate supervision.** The amount and type of supervision needed is influenced in part by the age of the participants and by the complexity or physical risks associated with the specific activity (Caldwell, 2005). The presence of adult supervision often refers to the presence of an authority figure, someone who by virtue of their role in the situation carries a responsibility for maintaining safety and social control (Osgood et al., 1996). Beyond ensuring social control, Caldwell (2005) suggested that youth contact with caring, non-familial adults (i.e., leaders, facilitators, coaches) in leisure settings promotes:

- a sense of belonging
- psychological safety
- competence
- feeling one matters
- opportunities for skill building
- feeling of connection with the community (p. 179)
**Adequate structure.** The impact of the degree of structure or organization imposed upon youth leisure and recreation activities is a common topic of discussion in the literature. In simple terms, structure refers to “the extent to which activities include clear expectations for how [participants] should spend their time” (Rorie, Gottfredson, Cross, Wilson, & Connell, 2010, p. 1). Describing an activity context as *organized* connotes a high degree of structure as defined plus an emphasis on promoting skill-building and positive development and the presence of adults to provide supervision and direction. Mahoney and Stattin (2000) described highly organized youth leisure contexts as characterized by “regular participation schedules, rule-guided engagement, direction by one or more adult activity leaders, an emphasis on skill development that is increasing in complexity and challenge, activity performance that requires sustained active attention, and clear feedback on performance” (pp. 114-115). Examples of organized activity contexts include community and school-level sport, music and theatre programs, as well as youth service organizations and church groups.

As a rule, participant-controlled activities that lack the presence of a custodial adult to impose order are deemed categorically to be of lesser developmental value. Yet, several scholars in the leisure field contend that the developmental outcomes associated with participation in unstructured activity contexts have gone relatively unrecognized and under-researched (Caldwell & Smith, 2006; Kleiber, 1999; Shannon & Werner, 2008). Providing an opposing view, Caldwell and Smith (2006) argued that participation in unstructured activities provide adolescents with “the freedom to experiment with roles, behaviors, and ideas that aid in shaping identity, and develop personal control and
autonomy” as well as “help youth learn to negotiate with peers and develop cooperative behaviors” (p. 401). In fact, research on skate parks, an unstructured and loosely supervised activity context, revealed that the parks support all of these developmental benefits and more for the youth who skated there (Bradley, 2010; Shannon & Werner, 2008).

While the provision of adult supervision and guidance is important, doing so becomes problematic if it is perceived by youth as gratuitous or excessive. Kleiber (1999) cautioned, “Highly structured activities that are designed to keep children and adolescents off the street may become so unappealing that they pale in comparisons to the attractions of the street” (p. 82). For example, Iso-Ahola and Crowley (1991) found that when teens lose interest in or are denied access to pro-social forms of leisure, some youth were likely to seek excitement and challenge in antisocial forms of leisure. After reviewing a number of studies on the issue, Caldwell and Smith (2006) concluded that too much or too little of either one can “enhance or thwart the acquisition and practice of self-determined behavior and competence” as well as possibly result in “disinterest, extrinsic motivation, or amotivation” (p. 402).

Clearly, striking the right balance between inadequate and excessive supervision and guidance is the key. For the most part, however, past research has documented that organized, structured, and supervised activities can be relied upon to provide a greater number of positive outcomes with better consistency than do unstructured, unsupervised settings (Bartko & Eccles, 2003; Gottfredson, Gerstenblith, Soulé, Womer, & Lu, 2004; Gottfredson et al., 2001; Rorie et al., 2010). The effects of inadequate supervision and/or
structure have a demonstrated association with risky health behavior and delinquency. This association is discussed further in a later section.

**Activity.** Just as not all leisure contexts are equal in their capacity to support or foster PYD, the same statement can be made about the activities themselves. Caldwell (2005) also stressed that the activity takes place in a context and therefore should be understood to mutually influence each other. To illustrate, consider swimming in the ocean during an outbound rip current—the activity may be freely chosen, personally meaningful, and sufficiently interesting, but it is also potentially dangerous in the given context. Gambling on a poker game with one’s parents, a second example of a dubious pairing, is a highly organized and adult-supervised context, but not necessarily one strongly associated with positive youth development.

The importance of looking beyond the structured/unstructured dichotomy to consideration of the mutual influence of setting and the inherent potential an activity context has to produce positive experiences has been suggested (Caldwell, 2005; Carnegie Council on Adolescent Development, 1992). In that vein, rather than singling out specific activities (i.e., soccer, ballet, hiking) as better for or more supportive of development, several scholars have identified various characteristics or attributes shared among activity contexts with the greatest potential have been identified and described in the literature.

One of the earliest of these descriptions was found in the seminal report published by the Carnegie Council on Adolescent Development (1992), entitled *A matter of time: Risk and opportunity in the non-school hours*. These authors used the phrase *high yield* to refer to activity contexts believed to offer greater benefits to participants than could lower
yield activities. Building upon this concept, Caldwell (2005, p. 183) further delineated high yield activities as ones that

(a) are goal-oriented and/or creative and expressive in nature
(b) require discipline and focused attention,
(c) offer challenges to overcome,
(d) build skills and increase one’s level of confidence, and
(e) require persistence, commitment, and continuity to participation over time.

Applying this taxonomy, examples of higher yield activities might include learning to cross country ski, playing an instrument, or going rock climbing. Located at the opposite end of the continuum and classified as low-yield leisure are sedentary and often less engaging activities such as chatting on the phone or going to the movies.

Preferring to use the term constructive leisure to refer to activities that “required effort and provided a forum in which to express one’s identity or passion for sports, the performing arts, and leadership activities,” Eccles and Barber (1999) provided a similar description of developmental activity contexts from a slightly different perspective. These authors explained that constructive leisure was often assumed to impart a greater potential for developmental benefits than relaxed or passive leisure pursuits because they offered youth opportunities to:

(a) to acquire and practice specific social, physical, and intellectual skills that may be useful in a wide variety of settings; (b) to contribute to the well-being of one’s community and to develop a sense of agency as a member of one’s community; (c) to belong to a socially recognized and valued group; (d) to establish supportive
social networks of both peers and adults that can help one in both the present and the future; and (e) to experience and deal with challenges. (Eccles & Barber, 1999, pp. 11-12)

Eccles and Barber (1999) contrasted these five attributes of constructive leisure with relaxed leisure which was described in very similar terms as was low yield activities (Carnegie Council on Adolescent Development, 1992), referring to enjoyable but passive activities like watching television or listening to music. In the current investigation, constructive leisure, as defined by Eccles and Barber, is the term used to refer to all leisure activities and contexts believed to possess the attributes associated with PYD.

One of the most recent iterations of constructive leisure was suggested by Bradley (2010). Bradley applied the work of Cook, Herman, Phillips, and Setterstein (2002) about developmentally superior contexts to frame his conclusions about skate parks. This author defined developmentally superior leisure contexts as ones that

Activate healthy and positive processes such as (a) learning to focus and sustain concentration on a task, (b) recognizing, using, and developing competencies, (c) exploring, achieving, and expressing identity, (d) setting goals and striving to achieve them, and (e) interacting socially and feeling accepted and supported by others. (Bradley, 2010, pp. 292-293)

Leisure settings that support PYD. Deviating from focusing on the potential of particular types of activities to foster PYD is the conceptualization of leisure settings with greater potential to support positive development. After extensive review of the theory, research, and best practices in community-level programming to promote youth
development, Eccles and Gootman (2002) identified and described in detail eight features of settings that maximized positive youth development. Accordingly, activity settings are more likely to foster positive development if they provide

- Appropriate structure and supervision;
- Physical and psychological safety and security;
- Supportive relationships with parents, non-familial adults and peers;
- Opportunities to feel a sense of belonging;
- Positive social norms;
- Support for efficacy and mattering;
- Opportunities for skill building; and
- Integration of family, school, and community efforts.

Recreation and leisure programs and activities provide excellent contexts for facilitating developmental outcomes because they naturally contain many of the features that promote PYD (Caldwell, 2005).

Although leisure settings cannot be expected to support all eight of these features all of the time, Eccles and Gootman (2002) argued that developmentally supportive settings are complementary in nature. By involving youth in a variety of settings, any deficits associated with one setting can be offset or supplemented by another. From an ecological perspective, research by Cook et al. (2002) demonstrated that the protective or deleterious effect of developmental settings were multiplicative in nature, suggesting that the combined effect was greater than the sum of their parts (individual settings). In summary, the PYD literature supports the assertion that youth enjoy the greatest
developmental benefit when they are engaged in numerous settings including recreation and leisure programs and activities that foster growth across a broad range of competencies.

Among the variety of descriptions of constructive activity contexts are scattered throughout the leisure and PYD literature, several common themes prevail. Descriptions of constructive activity contexts all depict settings with the demonstrated capacity to support safe, self-determined, active, and creative engagement; to foster skill development, identity formation, and connectedness; and interesting and challenging enough to encourage sustained focus and effort over time. Although the literature suggested that these qualities were more often associated with organized and supervised leisure and recreation settings, no contention that these qualities are found exclusively in such settings has been made. Caldwell and Smith (2006) have argued that many of these features of developmental contexts do exist in unstructured/unsupervised settings. For instance, skateboarding is a leisure activity that takes place in an unsupervised, participant-controlled context, yet several researchers have documented that skateboarding was associated with a number of positive developmental outcomes (Bradley, 2010; Seifert & Hedderson, 2009; Shannon & Werner, 2008). Leisure scholars caution, however, that additional research is needed to clarify for whom and under what circumstances unstructured leisure may promote PYD (Caldwell & Smith, 2006; Kleiber, 1999).

**Experience.** The last of the developmental elements Caldwell (2006) described was *experience*, which pertains to the subjective experiences associated with leisure time. Reinforcing the interdependent nature of the elements, the author explained that these
experiences, be they positive or negative, “are influenced by the nature of the leisure context as well as the nature of the activity” (Caldwell, 2006, p. 186). Although a wide array of experiences might be associated with leisure, Caldwell indicated that the literature highlighted the interrelated experiences of interest, intrinsic motivation, and flow as being of particular importance to PYD.

**Interest.** Caldwell (2006) simply defined interest as the opposite of boredom. Sharp and colleagues (2006) characterized *interested* adolescents as those who were “caught up, fascinated, and excited in what they were doing” (p. 361). Among a cohort of high school juniors and seniors, Hunter and Csikszentmihalyi (2003) documented that spending time engaged in activities distinguished by higher levels of interest was associated with several measures of physical and psychological well-being including a drop in heart rate and higher levels of self-esteem, internal locus of control, and optimism. Conversely, boredom, the lack of interest in the free time context has been linked with higher rates of risk behavior including cigarette smoking and drug and alcohol use by a number of investigators (Caldwell & Smith, 1995; Iso-Ahola & Crowley, 1991; National Center on Addiction and Substance Abuse, 2003). The level of interest that adolescents experience during an activity is enhanced when participation is perceived as self-determined and intrinsically motivated (versus perceived as obligatory or by default due to lacking any other options; Caldwell, Darling, Payne, & Dowdy, 1999).

**Intrinsic motivation.** Finding interest in what one is doing fosters intrinsic motivation. Intrinsic motivation is defined as engaging in an activity for the inherent satisfaction of the activity itself (Ryan & Deci, 2000). Deci and Ryan (1985) highlighted
the power of being intrinsically motivated in the statement, “when people are intrinsically motivated, they experience interest and enjoyment, they feel competent and self-determined, they perceive the locus of causality for their behavior to be internal, and in some instances they experience flow” (p. 34). Like interest, intrinsic motivation is increased when involvement is perceived as self-determined and optimally challenging. Intrinsic motivation is also enhanced in activities and environments that afford self expression and satisfy the need for competence and relatedness (Kleiber, 1999; Ryan & Deci, 2000).

**Flow.** Flow, conceptualized and described by Csikszentmihalyi (1990), is the third leisure experience that Caldwell (2006) linked to PYD. At its core, flow theory examines the quality of the mental and emotional experiences that occur at the moment when the skills that an individual believes himself/herself to possess in relation to an activity, and the perceived challenges of this activity interact. If engaging in an activity is perceived to be too easy, boredom and disinterest quickly follow. Conversely, if the activity is perceived to be too difficult, anxiety and discomfort ensue, and participation is often discontinued. A optimal experience of flow occurs when “energies and personal resources are sufficiently matched to the challenges of a situation to elicit an extended period of rapt attention” (Kleiber, 1999, p. 23).

Csikszentmihalyi (1990) has maintained that enjoyment, marked by the experience of flow, appears at the boundary between boredom (too easy or not challenging enough) and anxiety (too difficult). Research by this author found very similar descriptions of enjoyment to persist across a variety of activities and participants
regardless of culture, social class, age, or gender (Csikszentmihalyi, 1990). Eight qualities characterizing flow experiences have been identified as a result of this research:

1. *A challenging activity that requires skill* (Enjoyment occurs when the rigors of the activity are perfectly matched to the skill level or capabilities of the participant).

2. *The merging of action and awareness* (participants become so involved in what they are doing that the activity becomes spontaneous and automatic—they stop being aware of themselves as separate from the actions they are performing).

3. *Clear goals and immediate feedback* (facilitate flow by forming the basis upon which the balance of skill and challenge are judged).

4. *Concentration on the task at hand* (achieving and sustaining flow requires such focus that irrelevant stimuli are shut out or ignored).

5. *The paradox of control* (described as involving a sense of control or as lacking the sense of worry about losing control or failing).

6. *The loss consciousness of the self* (allows a chance to expand the concept of who one is, self-transcendence, to a feeling that the boundaries of one’s being have been pushed forward).

7. *The distortion of the perception of time* (a by-product of the intense concentration required for the activity).

To repeat and maintain the occurrence of flow experiences necessitates pursuing ever-increasingly difficult and complex challenges in order to offset the cultivation of improving and expanding skills. This point, coupled with the fact that flow experiences are perceived as interesting, exciting, and intrinsically rewarding, provides strong incentive for future participation (Caldwell, 2005). Youth who participate in challenging and interesting leisure activities are rewarded for their persistence with heightened feelings of self-esteem and competence. Furthermore, discretionary activities that facilitate experiences of flow, personal expressiveness, and goal-directed behavior present an ideal medium for identity exploration and formation (Coatsworth et al., 2005).

Leisure and Identity Formation

One of the most important developmental tasks associated with adolescence is the establishment of a sense of personal identity (Erikson, 1963). Participation in constructive leisure provides a rich context for identity exploration and formation (Coatsworth et al., 2005; Kivel, 1998; Kleiber, 1999; Waterman, 1990). The process of identity formation, the search for an individual and autonomous sense of self and a social sense of self, is a dynamic process requiring both self-expression and interaction with other people (Kleiber, 1999; Mannell & Kleiber, 1997). Research has confirmed that it is within the “liberating context of leisure” that individuals find the freedom to express themselves, to explore personal interests, and to discover new talents. In this voluntary and self-determined context, leisure can provide opportunities to “play and experiment with the kind of person someone might want to be” (Mannell & Kleiber, 1997, p. 293). By linking individuals with peers through shared activities, leisure also can foster the development of satisfying
connections with others in the social milieu. Depending on the discipline, the terms used to refer to an identity that is strongly influenced by or founded upon participation in leisure or sport include leisure identity (Mannell & Kleiber, 1997), an activity-based persona (Barber, Stone, Hunt, & Eccles, 2005) or a sport-related identity (Miller, 2009).

Haggard and Williams (1992) suggested that the decision to begin a particular activity may be influenced by the symbolic meanings associated with either the activity or with its participants. These symbolic meanings are represented by identity images based upon assumptions held about the stereotypes and reputations of people who participate in different activities. For instance, skateboarding, and by association those who ride skateboards, have a reputation for being edgy, aggressive, adventurous, self-directed, and independent. Haggard and Williams argued that youth might take up skateboarding, at least in part, to communicate to themselves and to others that they too are (or aspire to be) edgy, adventurous, and independent.

“Looking the part” by wearing certain clothes and having the “right” equipment also signifies and reaffirms the significance or salience of the activity to one’s identity (Haggard & Williams, 1992; Mannell & Kleiber, 1997). Revisiting the skateboarding example, leisure symbols commonly associated with skateboarding might include a unique style of sneakers, skateboard-themed tee-shirts, or a particular style of music. Putting the two concepts together, Haggard and Williams (1992) would contend that not only might a boy wear skate clothes to symbolize that he is a skater, but he might become a skater to affirm attributes about himself and signify to others that he is edgy, adventurous, and independent. In this sense, Miller (2009) argued that “the relationship between identity
and behavior is circular” suggesting that “an individual may construct an identity that reflects his or her activities, and then subsequently seek out other activities congruent with that now-existing identity” (p. 71).

Barber and colleagues (2005) referred to the value or capacity of an activity to demonstrate to oneself and to others that “one is the kind of person one most hopes to be” as the attainment value of an activity (p. 188). Research conducted by Coatsworth et al. (2005) indicated that activities with the highest attainment value, which they referred to as self-defining activities, are central to adolescent identity formation because they provide

- a broad social identity that suggests acceptable behaviors and how one fits in the social milieu; [as well as]
- opportunities to explore whether a specific social identity and all that goes with it is comfortable and consonant with one’s true self and to do the considered, identity reflective work necessary for true identity integration. (p. 363)

Shamir (1992) found that leisure identities swell in salience in proportion to the degree to which they validate and express one’s values, attitudes, skills, and talents and to which they afford social recognition of one’s commitment to the activity. Accordingly, individuals vary greatly in their activity preferences based upon the identity-defining experiences they are seeking as well as the meanings they attach to group or team membership (Barber et al., 2005; Palen & Coatsworth, 2007; Shamir, 1992).

By fostering a sense of group membership and providing opportunities to explore and affirm one’s place in the social milieu, activity involvement also plays a role in the development of social identity (Barber, Eccles, & Stone, 2001). Activities also serve to
shape peer groups by connecting individuals with different types of peers (Barber et al., 2001). This convergence of participation in an activity and the peer group associated with the activity is referred to as the leisure culture. Association with a leisure culture has important implications for the behavior of individual members. Eccles and colleagues (1999; Barber et al., 2005) explained that, as individuals become integrated into the leisure culture associated with an activity, they become more likely to engage in behaviors associated with the group.

*Enduring involvement* is a multidimensional construct developed to conceptualize and assess the degree to which personal meaning and salience is attached to participation and association with an activity. Laurent and Kapferer (1985) suggested that enduring involvement in an activity “derives from the perception that the [activity] is related to centrally held values, those defining one’s singularity, and identity, one’s ego” (p. 42). Interestingly, research conducted by Shamir (1992) indicates that level of personal meaning attributed to activity involvement or the salience of the associated leisure identity is not dependent upon the number of years of participation in an activity but does correlate directly with the desire to continue or increase involvement.

Scholars in the leisure and PYD fields agree that self-defining activities are more likely to occur in organized and structured settings (Barber et al., 2005; Coatsworth et al., 2005; Eccles et al., 2003). More important to identity exploration and formation than the level of organization or structure, however, is the degree to which individuals feel the activity meshes with and communicates their perception of “this is who I really am” and “this is who I want others to believe me to be” (Coatsworth et al., 2005; Mannell &
Kleiber, 1997). From this position, self-defining experiences can conceivably occur in unstructured contexts as well.

In conclusion, scholars from wide range of disciplines agree that participation in leisure enriches the lives of youth in a number of ways. As a context for PYD, leisure holds great potential because it

- provides for self-determined behavior;
- supports intrinsic motivation, interest development, and persistence of interests;
- increases the ability to experience positive emotions and [to] self-regulate emotions;
- facilitates decision making and planning skills;
- increases interaction with peers, adults, and the community in meaningful ways; [and]
- contributes to identity development. (Caldwell, 2005, p. 189)

When a favorable balance among the elements of context, activity, and experience are established and maintained, stage is set of the positive developmental outcomes associated with leisure involvement to occur (Caldwell, 2005). Notwithstanding, the relationship between leisure and PYD is complicated. There also exists, within the literature, evidence that leisure time is not inherently or inevitable positive for young people.
The Confluence of Adolescent Leisure and Problem Behavior

Free Time in the Absence of Adult Supervision

The period of time after school dismissal offers optimal leisure time for teens in the United States who enjoy as much as 6.5 to 8 hours of free time (Larson & Verma, 1999). For many of these adolescents, these hours after school are spent without a parent or guardian nearby to monitor their actions. According to the U. S. Departments of Education and Justice (U. S. Department of Education, 2000), the gap between the work schedules of parents or guardians and the school schedules of their children can amount to as many as 25 hours per week. Consequently, in the absence of parental supervision, self-care is the primary after school arrangement for 55% of high school age youth (After-School Alliance, 2009). During the summer months and other times of the year when school is not in session, the number of hours youth spent without parental supervision are often much greater. Consequently, whether or not this time is beneficial or detrimental depends largely on what youth do with it (Larson, 2001).

Although youth can engage in problem behavior during any time of the day, the gap in supervision that exists between the time of school dismissal and when parents or guardians return home from work can spell trouble for many teens. Crime statistics published by Office of Juvenile Justice and Delinquency Prevention (Snyder, Sickmund, & Poe-Yamagata, 1996), and confirmed in subsequent research (Gottfredson et al., 2001; Richardson et al., 1989) indicated that the hours between 3 p.m. and 6 p.m. have been linked to elevated levels of youth involvement in a range of problem behaviors including smoking, and alcohol and marijuana use.
Several scholars have suggested that adolescents are engaging in risk behaviors during their free time as a form of leisure (Caldwell & Smith, 1995; Mannell & Kleiber, 1997). This notion should not be surprising. By definition, nearly any activity can be construed as leisure as long as participation is deemed self-determined, intrinsically motivated, fun, and exciting (Mannell & Kleiber, 1997). As leisure, delinquent and problem behaviors may also be perceived as “ability testing and socially integrative in establishing an adolescent’s status with peers” (Kleiber & Powell, 2005, p. 29). Under these terms, it is understandable how many of the problem behaviors to which teens may be attracted (i.e., drinking alcohol at a party, smoking marijuana, engaging in sexual relations) might be construed as leisure (Caldwell & Smith, 1995; Mannell & Kleiber, 1997).

Adolescent Problem Behavior

The prevalence of youth risk behavior. Predicated on the Healthy People agenda, the Centers for Disease Control and Prevention (CDC, 2010) began to monitor the prevalence of six priority health risk behaviors through the Youth Risk Behavior Surveillance System in 1991. These six priority risk behaviors include tobacco use, alcohol and other drug use, unintentional injury and violence, sexual risk-taking, unhealthy dietary behaviors, and physical inactivity. Although these six specific behaviors represent only a small fraction of the troublesome behaviors in which youth might be involved, the CDC selected them, in part, because they are responsible for nearly 70% of adolescent mortality and morbidity in the United States (Allensworth, Lawson, Nicholson, & Wyche, 1997; Centers for Disease Control and Prevention, 2004). Data are collected bi-annually from public and private high school students via the self-administered, confidential Youth
Risk Behavior Survey (YRBS). The most recent administration of the YRBS occurred during the 2008-2009 academic year. Following a complicated three-stage cluster sampling design, usable questionnaires were obtained from 16,410 subjects from 42 states and 20 local sites, comprising a representative sample of all students in grades 9-12 attending public and private schools in the United States. The current investigation will focus on the use of three substances monitored by the CDC through the Youth Risk Behavior Surveillance System: Cigarettes, marijuana, and alcohol. The following synopsis of youth risk behavior prevalence data was drawn from the 2009 YRBS Surveillance Summary (CDC, 2010).

**Current cigarette use.** According to the CDC (2010), nationwide, the percentage of youth who reported being current cigarette users in 2009, defined as having smoked at least one cigarette during the 30 days before the survey, was 19.5%. According to the data, the percentage of reported current cigarette use increased with grade level, with the lowest prevalence of 13.5% occurring in the 9th grade, increasing to 18.3% in the 10th grade, to 22.3% in the 11th grade, to the highest prevalence rate of 25.2% occurring in the 12th grade. Current cigarette use reported by female students in grades 9 and 10 outpaced current use reported by their male counterparts (9th grade: 15.2% to 12.1%; 10th grade: 18.7% to 17.8%) until the 11th grade when the trend reversed (11th grade: 20% to 23.9%; 12th grade: 22.4% to 28.1%).

**Current alcohol use.** According to the CDC (2010), although nationwide over 72% of youth reported having consumed at least one drink of alcohol at least once during their lifetime, the percentage of youth who reported current alcohol use, defined as having
consumed at least one drink of alcohol during the 30 days preceding the survey, was 41.8%. The reported current alcohol use grew more prevalent in each successive grade level (9\textsuperscript{th} grade: 31.5%; 10\textsuperscript{th} grade: 40.6%; 11\textsuperscript{th} grade: 45.7%; 12\textsuperscript{th} grade: 51.7%). Grade level comparisons among the male and female samples yielded a trend similar to that of reported current cigarette use. The current alcohol use reported by females exceeded use by males in the 9\textsuperscript{th} and 10\textsuperscript{th} grades until the 11\textsuperscript{th} grade when the trend reversed. By the 12\textsuperscript{th} grade, a greater percentage of males reported current alcohol use than did females (52.7\% vs. 50.7\%).

**Binge drinking.** In 2009, according to the CDC (2010), the overall percentage of youth who reported drinking five or more drinks in a row (i.e., binge drinking) on at least one day during the 30 days before the survey was 24.2\%. As was the case with current alcohol use, overall binge drinking was reported with greater frequency as grade level increased (9\textsuperscript{th} grade: 15.3\%; 10\textsuperscript{th} grade: 22.3\%; 11\textsuperscript{th} grade: 28.3\%; 12\textsuperscript{th} grade: 33.5\%). The prevalence of binge drinking was found to be greater among males at the 10\textsuperscript{th} (23.3\%), 11\textsuperscript{th} (30.0\%), and 12\textsuperscript{th} (36.6\%) grade levels than among females at the 10\textsuperscript{th} (21.1\%), 11\textsuperscript{th} (26.4\%), and 12\textsuperscript{th} (30.4\%) grade levels. Only at the 9\textsuperscript{th} grade level did females report more frequent binge drinking than did males (17.2\% vs. 13.6\%).

**Current marijuana use.** Nationwide, 20.8\% of students reported having used marijuana at least once in the 30 days prior to the survey (i.e., current marijuana use) conducted by the CDC (2010). In the overall sample, the prevalence of reported current use again increased with each grade level beginning with 15.5\% in the 9\textsuperscript{th} grade increasing to 24.6\% by the 12\textsuperscript{th} grade. This trend also occurred in the male-only sample in which use
by 12th grade males (29.9%) exceeded use reported by 11th grade males (26.7%), who exceeded use reported by 10th grade males (23.9%), all of who exceeded use reported by 9th grade males (15.5%). The reported current use by males surpassed reported use by females at every grade level except in the 9th grade when the reported prevalence rate for both groups was equal (15.5%).

In summary, three patterns in the YRBS data were consistent across all three substances (cigarettes, alcohol, and marijuana; CDC, 2010). First, in the overall sample, the percentage of youth who reported being current users (i.e., using at least once in the 30 days before the survey) of these substances increased with each grade level. Second, by the 12th grade, the percentage of males who reported being current users exceeded the percentage of female current users. This occurred even though in the 9th grade, the percentage of female current users of each substance exceeded the percentage of male current users. Third, since data collection began in 1991, the percentage of youth who reported being current users of each of the three substances increased until the late 1990s, when the upward trends in reported prevalence reversed course. Since then, the overall prevalence of youth who reported being current users has declined biannually for all three substances.

The semantics of risk behavior. Scholars from a number of academic fields have developed parallel literatures that focus on health compromising, anti-social, and illegal behavior in adolescents. As a result, several terms are commonly used to classify and label the deleterious or aberrant behaviors of adolescents—problem behavior and delinquent or deviant behavior. Research by Jessor and Van Den Bos (1995) categorized
a wide range of risky behaviors collectively as problem behavior, including the six CDC health risk behaviors of tobacco use, alcohol and other drug use, unintentional injury and violence, sexual risk-taking, unhealthy dietary behaviors, and physical inactivity. Richard Jessor, author of a theory focused on the co-morbidity of problem behavior, defined the term as

Behavior that which is socially defined as a problem, as a source of concern, or as undesirable by the social and/or legal norms of conventional society and its institutions of authority; it is behavior that usually elicits some form of social control response, whether minimal, such as a statement of disapproval, or extreme, such as incarceration. (Jessor, n.d.)

Demonstrating the breadth of the use of the term, research conducted by this and other authors also included under the umbrella of problem behavior such diverse activities as substance use, gambling, stealing, lying, physical fighting, and vandalism. In literature published outside the United States, problem behavior is often referred to as anti-social behavior (e.g., Mahoney & Stattin, 2000; McAtamney & Morgan, 2009). For example, Mahoney and Stattin (2000) referenced antisocial behavior in their article, Leisure Activities and Adolescent Antisocial Behavior: The Role of Structure and Social Context which expounded on the additive effects of low or inadequate structure and aggregation of antisocial peers.

The second terms, delinquent and deviant behavior, are often used in the literature to refer to illegal acts committed by juveniles and comprise a sub-set of problem behaviors (e.g., Haynie & Osgood, 2005; Miller, Melnick, Barnes, Sabo, & Farrell, 2007; Osgood et
Delinquent behavior includes criminal acts such as interpersonal violence, property offenses (i.e., trespassing, vandalism, shoplifting, and theft), and the use or sale of illegal drugs (and tobacco and alcohol use for juveniles) among others.

A number of scholars have broadened the definition and investigation of delinquency by including measures of risky or problematic, but not necessarily illegal behavior in their studies of more serious forms of delinquency. Often classified as minor delinquency, these behaviors included dangerous driving, physical thrill-seeking, truancy, academic cheating, running away, lying, defiance, and violating curfew (e.g., Rorie et al., 2010).

An advantage to including measures of both illegal and legal but still risky and health-compromising behaviors in the same study, proposed Booth, Farrell, and Varano (2008), is that although risky behaviors are not necessarily illegal, they often fulfill many of the same basic impulses of legally proscribed acts. These authors argued that, at least in some instances, youth were substituting minor forms of delinquency for more serious, illegal forms of delinquency. In the literature, the terms problem behavior and delinquent behavior are often used interchangeably except in studies that examine both legal and illegal behaviors concurrently. In such cases, risky but legal behavior is typically referenced as problem behavior while the terms delinquency and delinquent behavior are reserved for illegal behavior.

The Theoretical Association Between Leisure and Problem Behavior

In an effort to elucidate the association between youth leisure and involvement in problem behavior, Caldwell and Smith (2006) expanded their review of the research
conducted within the fields of leisure and developmental science to include an exploration of research conducted in the field of criminology. These authors concluded that the science linking leisure to problem behavior and delinquency among adolescents could be summarized by several, related perspectives:

- Filled time perspective—Time filled with prosocial activities cannot be filled with deviant activities.
- Association with deviant peers perspective—Certain activities are more likely to instigate deviant behavior through an association with a deviant subculture.
- Activity structure perspective—Time spent in informal and/or unsupervised activities is likely to promote deviance, while time spent in supervised activities protects against it. (Caldwell & Smith, 2006, p. 399)

These three perspectives all relate either directly or indirectly to the individual level of the routine activity theory, an important theory often invoked to examine the association between leisure and adolescent problem behavior and delinquency. The routine activity theory serves as the foundation for examination of the link between participation in skateboarding, a popular form of unstructured and unsupervised leisure, selected risk behaviors.

**Individual-Level Routine Activity Theory**

The routine activity theory, as conceived by Cohen and Felson (1979), was based on the premise that a motivated offender, in the absence of effective social controls, will engage in a criminal act whenever or where ever the presence of a suitable target and the opportunity to act coincide. Taking a situational approach, the authors argued that crime
and victimization is dependent upon opportunity rather than on the individual psychology or socialization of the offender. Osgood et al. (1996) extended the routine activity theory to explain delinquency and transgressive behavior. A central tenet of the individual-level routine activities theory is the concept of situational motivation (Osgood et al., 1996). Situational motivation is the idea that motivation for delinquency is inherent in the situation rather than in the person. Rather than dichotomizing youth as either deviant or non-deviant, the routine activity theory assumes that youth vary widely in their susceptibility to deviance and that nearly all young people have the potential for at least occasionally succumbing to an opportunity for deviant behavior. The routine activity theory provides a rationale for why opportunities for problem behavior and deviance are especially concentrated in leisure activities characterized by the confluence of three otherwise innocuous conditions: socializing with peers, a lack of structure, and the absence of authority figures (Osgood, Anderson, & Shaffer, 2005; Osgood et al., 1996).

**Time with peers.** Diverging other theories on delinquency and crime, Osgood et al. (1996) suggested that youth are not tempted to engage in deviant acts because they have weak social bonds and reject conventional values (i.e., social control theory; Hirschi, 1969) or because they are unduly influenced by deviant peers (i.e., differential association theory; Sutherland, 1947). Rather, they contend that the presence of peers greatly increases the temptation to engage in problem behavior and deviance by making the behavior easier (by providing material means or serving as a look-out) and more rewarding. Osgood et al. (2005) emphasized that “the companionship of friends is central to symbolic rewards for problem behavior because peers provide an appreciative audience
so that deviant exploits can bolster a social identity as brave, adventurous, or tough” (p. 51). Therefore, spending more time with peers exposes an individual to more opportunities for problem behavior, subsequently leading to higher rates of problem behavior.

**The absence of authority figures.** Based on the precepts of the routine activity theory, a situation is more conducive to problem behavior if no authority figure is present. Osgood et al. (1996) defined an authority figure as someone who, by virtue of their role in the situation, carries a responsibility for maintaining safety and social control. In organized leisure settings, supervising adults (including parents/guardians, coaches, teachers, activity leaders, etc.) are obliged to intervene when problem behavior occurs. On the other hand, in unsupervised leisure activities, the potential for social control responses to deviance is reduced, resulting in higher rates of problem behavior. To a teenager, the lack of a guardian is also reinforcing a sense of freedom and autonomy (Kleiber & Powell, 2005).

**A lack of adequate structure.** According to Osgood and colleagues (1996), the degree of structure in an activity influences whether or not an activity is conducive to problem behavior. Unstructured activities, defined by the authors as “activities that carry no agenda for how time is to be spent” (p. 640), are assumed to be more conducive for two reasons. First, compared to organized activities, unstructured activities away from home are less likely to have an authority figure in place to maintain social control and to intervene when problem behavior occurs. Second, spending time in organized or
structured activities leaves less time and fewer opportunities to become involved in problem behavior and deviance.

To test their hypothesis, Osgood and colleagues (1996) analyzed five consecutive waves of longitudinal data from the Monitoring the Future study drawn from a nationally representative sample of 18- to 26-year-old young adults. Their analysis yielded two important findings. The authors found a strong, positive association between participation in unstructured and unsupervised social activities away from home (i.e., going to parties, riding around in the car, hanging out with friends) and acts of deviance (i.e., criminal behavior, substance use, dangerous driving). The authors also found that unsupervised but structured socializing with peers while away from home (i.e., going to the movies or out on a date) was not associated with increased deviance.

**Empirical Evidence Supporting the Routine Activity Theory**

Additional support for Osgood et al.’s (1996) version of the routine activity theory was been reported in a number of subsequent studies. Osgood and Anderson (2004) were interested in whether or not the theory could account for rates of delinquency based on the average amount of unstructured socializing among groups of youth. A core assumption of the routine activity theory is that opportunities for problem behavior are more prevalent when adolescents gather together to socialize. Therefore, the authors hypothesized that high average rates of unstructured socializing among a group of youth would increase opportunities for problem behavior in two ways. First, higher average levels of unstructured socializing would increase the pool of potential confederates, thereby making finding co-offenders easier. Second, a higher rate of unstructured socializing among a
group of youth would increase the number of encounters, thus increasing the number of opportunities to engage in problem behavior.

To test their hypotheses, the authors (Osgood & Anderson, 2004) studied a sample of 8th grade students \( n = 4359 \) attending 36 schools in 10 cities. They collected individual- and school-level data on self-reported delinquency, unstructured socializing (i.e., “In an average week, how many hours do you spend hanging around with your current friends, not doing anything in particular, where no adults are present?” [p. 530]) and a wide range of control variables. Their individual-level analysis revealed that unstructured socializing accounted for a considerable portion of the variation in individual rates of reported delinquency that remained after controlling for other variables (i.e., demographics, parental monitoring, school climate, etc.). At the aggregate level, school-level means for unstructured socializing were also found to be strongly associated with both individual- and school-level rates of delinquency. Osgood and Anderson argued that these findings supported their supposition that the opportunity processes framed by a routine activity perspective on individual behavior contributed to aggregate rates of delinquency.

An investigation published in the following year by Haynie and Osgood (2005) sought to determine whether unstructured socializing was still related to delinquency after controlling for peer delinquency. In this study, longitudinal and cross-sectional data originating from the 1995-1996 National Longitudinal Survey of Adolescent Health (Add Health; \( n = 8,838 \)) was used for analysis. The Add Health survey is a nationally representative sampling of adolescents in grades 7 through 12. The dependent variables
examined included measures of unstructured socializing, peer delinquency, and 14 self-report delinquency items.

Association with delinquent friends was found to exert a small but statistically significant normative influence on self-reported delinquency. The authors found no empirical evidence that this association was influenced by the level or strength of emotional bonds to their friends. Further analysis, however, showed that spending a lot of time hanging out with friends was associated with higher rates of delinquency, regardless of the level of delinquency of one’s friends. Based on this research, Haynie and Osgood (2005) concluded that the relationship of activities to deviance in this sample was the result of situational opportunities rather than normative or socialization processes.

One of the most recent examinations of the individual level extension of the routine activity theory was published in a paper by Svensson and Oberwittler (2010). This paper provided mixed support of previous research on the association between unstructured routine activities, the presence of peers, and delinquency. For this study, data about routine activity involvement, time spent with friends, self-reported and peer delinquency, and various demographic and social control variables were collected. Study subjects were drawn from two independent samples of high school students residing in three cities of various size; one moderately-sized city in Sweden \( (n = 1003) \) and one large one small city in Germany \( (n = 955) \).

Regression analysis included controls for demographic and social control variables and exposed a number of significant interactions among the three variables. First, in alignment with previous research, the relationship between delinquent friends and
self-reported delinquency was positively influenced by the amount of time spent in unstructured activities such that self-reported delinquency values increased with higher numbers of delinquent friends. Second, the effect of delinquent friends on self-reported delinquency was influenced by the amount of time subjects spent in unstructured routine activities. For subjects with the greatest number of delinquent friends, the effect of unstructured routine activities on delinquency was the most pronounced. Conversely, for subjects with no or very few delinquent friends, an increase in unstructured routine activities was not found to be associated with an increase in delinquency. This finding contradicts Haynie and Osgood (2005), who reported that time spent in unstructured routine activities has an unconditional effect on delinquency.

The results reported by Svensson and Oberwittler (2010) provided support for the individual-level routine activity theory, particularly in regards to the influence of spending time in unstructured activities in the company of delinquent friends on one’s own delinquent or problem behavior. Importantly, however, these authors argued that Adolescents without any affiliations to delinquent peers are not more likely to offend only because they are in situations which offer opportunities to commit crimes and lack supervision by adults. . . . The findings of our analyses suggest otherwise . . . The urge to break the law [i.e., engage in problem behavior] is not a ubiquitous element of mainstream culture, not even of adolescent culture, but depends on the co-occurrence of situational factors which present opportunities for and facilitate crime [delinquency], and of social and personal factors which help to legitimize, rationalize and support deviant behaviours. (pp. 1011-1012)
The relationship between adolescent substance use and the three key conditions hypothesized by the routine activity theory to contribute to the situational motivation to engage in problem behavior (socializing with peers, a lack of structure, and the absence of authority figures) has been explored. Research conducted by Barnes, Hoffman, Welte, Farrell, and Dintcheff (2007) examined the comparative effects of various categories of time use on self-reported tobacco, alcohol, substance use, and other problem behaviors. Their study was based on data collected from 606 subjects ranging in age from 15 and 18 years old ($M = 16.5$ years) interviewed in the third wave of a six-wave longitudinal study of the development of alcohol misuse and related problem behaviors. Dependent measures studied included frequency of binge drinking, cigarette smoking in the month preceding the interview, and use of marijuana and other drugs within the previous year. In addition to sociodemographic factors, the predictor variables investigated comprised of a selection of activities and the hours spent engaged in each. The selection of activities included individual, peer- and family-based, and group activities characterized by varying degrees of structure and supervision.

Analysis of the data indicated that, consistent with the routine activity theory, the “time spent with peers” variable, an aggregate category consisting of peer-focused social activities (i.e., going to the movies, the mall, or to parties, and hanging out with friends) had a highly significantly positive relationship to all the problem behaviors investigated including heavy drinking, cigarette smoking, and illicit drug use as well as engaging in sexual intercourse and delinquency. Conversely, time spent participating in or attending sporting events was negatively associated with cigarette smoking and illicit drug use.
Time spent with family was discovered to be strongly negatively associated with all problem behaviors investigated.

The authors concluded that their findings supported the assertion that time spent with peers is a risk factor for problem behaviors such that the more time subjects spent in unsupervised peer-centered contexts, the more likely they were to report substance use and other problem behaviors. This relationship was found to exist even after controlling for the influence of time spent on homework, extracurricular activities, sports, or paid work. In addition, no evidence was found for a buffering effect of family time on the positive associations between unsupervised peer time and problem behaviors. This work by Barnes and colleagues (2007) provides important evidence in support of the link existing between unsupervised peer-focused socializing and substance use and other problem behaviors.

The utility of the routine activity theory stems from the suggestion of a triad of environmental and social conditions that support opportunities for problem behavior to occur. Importantly, however, both the original version of routine activities theory and its extension into explaining delinquent behavior in general may suffer from an important limitation (Bratt, 2008). The situational approach taken by the routine activity theory does not explain how some individuals come to be motivated to engage in problem or delinquent behavior. For instance, Bratt pointed out that the routine activity theory does not help elucidate why some adolescents more than others are attracted to places where problem behavior is likely to occur. Despite this significant limitation, the routine activity
theory provides important clues as to why some forms of adolescent leisure and recreation may be associated with problem behavior while other forms are not.

**Out-of-School Programs to Reduce Problem Behavior**

Mahoney et al. (2004) have suggested that the risks associated with free time in these hours following school dismissal tend to be related to one or more of three conditions: (a) a lack of adult supervision; (b) a lack of socially acceptable, structured activities; and (c) an aggregation of antisocial peers. Consistent with the tenets of the routine activity theory, when these conditions co-occur, the likelihood that youth will engage in problem behavior becomes greater as the amount of time spent in this context increases (Mahoney & Stattin, 2000; Richardson, Radziszewska, Dent, & Flay, 1993). Providing youth with organized out-of-school programs has been suggested as a means of mitigating these risks. The term *out-of-school programs* (OSPs) is used to encompass the full range of activities and programs in which youth take part during their out-of-school time (Duffett et al., 2004).

The type of OSP that garners the highest rate of participation at the secondary school level is school-based or school sponsored programs, referred to as *extracurricular activities* (ECAs). Mahoney, Schweder, and Stattin (2002) reported that 75% of 14-year-olds participate in ECAs. These programs are typically considered supplemental to the school curriculum but still play an important role in the school’s overall mission of meeting the needs of the whole child (Kleiber & Powell, 2005).
Overview of ECAs and Problem Behavior

Curiously, no singular, overarching theoretical model has been developed to explain why participation in ECAs influences involvement in problem behavior (Feldman & Matjasko, 2005; Hoffman, 2006). Moreover, due to the lack of experimental and longitudinal research, the exact causal links between participation and risk or protection remain unclear (Darling et al., 2005; Eccles & Templeton, 2002; Gottfredson et al., 2004; Wilson, Gottfredson, Cross, Rorie, & Connell, 2010). Nonetheless, ECAs are assumed to reduce problem behavior in youth participants through a number of mechanisms. One mechanism for which evidence has been found pertains to the situational context in which ECAs are conducted. According to Wilson et al., activities conducted in environments qualified as organized, structured and supervised were linked to more positive outcomes (i.e., measures of PYD, reduced problem behavior; Agnew & Peterson, 1989; Gottfredson et al., 2004; Mahoney et al., 2005; Mahoney & Stattin, 2000). These findings lend credence to the influence of situational contexts identified in the routine activity theory (Osgood et al., 1996) which suggests that activity contexts that are weak in these three areas are more conducive to problem behavior. The effects of activity organization, structure, and supervision were described earlier in this document in the discussion of the contribution by leisure and recreation to PYD.

In addition to these contextual variables, several additional mechanisms are believed to be involved in the reduction of problem behavior. From the filled time perspective, for example, ECAs are presumed to reduce problem behavior because they occupy out-of-school time with organized and constructive activities, leaving less time for
engaging in problem behavior and delinquency (Caldwell & Smith, 2006; Eccles et al., 2003). A similar argument suggests that ECAs provide a source of adult supervision, thereby reducing the amount of time youth spend in unsupervised leisure contexts. One last example is the assumption that ECAs reduce problem behavior by connecting youth with prosocial peer groups whose collective behavior may positively influence the behaviors of each member (Eccles et al., 2003).

In an extensive examination of the role of ECAs on PYD, Feldman and Matjasko (2005) emphasized that the mechanisms through which participation in ECAs is likely to affect PYD and problem behavior are probably influenced by a multitude of mediating and moderating factors (i.e., gender, peer networks, race, self-perceived identity, type of activity, degree of activity involvement, total number of activities, and interactions between these contextual factors). To date, experimental and quasi-experimental studies in which these factors have been isolated and controlled are sparse (Feldman & Matjasko, 2005; Gottfredson et al., 2004; Zarrett et al., 2009). Consequently, to understand exactly how ECAs function to influence involvement in problem behavior, these authors insisted that a great deal of work has yet to be done.

Despite the lack of direct evidence of a causal link, the hypothesis that participation in ECAs is associated with reduced problem behavior is well supported by research in the fields of sociology, sports psychology, adolescent development, and leisure studies (Fredricks & Eccles, 2006). Early evidence of the association between participation in ECAs and reduced problem behavior can be found in the report, *Adolescent Time Use, Risky Behavior, and Outcomes: An Analysis of National Data,*
published by Zill et al. (1995). Using longitudinal data from several large national
databases collected during the late 1980s and early 1990s, Zill and colleagues found that
participation in ECAs predicted less engagement in a range of problem behaviors.
Compared to their counterparts who reported having spent at least one hour per week in an
ECA, students who reported spending no time in school-sponsored activities were 49%
more likely to have used drugs; 37% more likely to become teen parents; and 35% more
likely to have smoked cigarettes. This research also found a dose-response relationship to
exist between participation in ECAs and substance use. In this regard, when adolescents
participated in 1 to 4 hours of activities per week, they were significantly less likely to use
drugs or smoke cigarettes. The effect of activity participation on drug use prevention was
even stronger, however, when adolescents spent 5 to 19 hours per week in extracurricular
activities.

Several years later, Eccles and Barber (1999) broadened the examination of ECAs
to include participation in other OSPs such as those sponsored by community service
organizations and church groups. Using cross-sectional and longitudinal data collected as
part of the Michigan Study of Adolescent Life Transitions, these researchers matched
information about activity participation among students with their self-reported
involvement in problem behavior. Consistent with the work of Zill et al. (1995), Eccles
and Barber found that participation in at least one out-of-school activity during the high
school years was associated with reduced involvement in alcohol, marijuana, and “hard
drug use” (Eccles & Barber, 1999, p. 14).
Additional authors have published similar findings. Harrison and Narayan (2003) sampled a representative selection of ninth grade students attending public schools in Minnesota. In addition to measuring involvement in substance use and antisocial behaviors, these authors collected data about participation in community-based activities, extracurricular sports, and other school-sponsored activities. Findings from this study led Harrison and Narayan to conclude that students who were involved in at least one activity context were significantly less likely than their non-involved counterparts to skip school, get into fights, vandalize property, binge drink, use marijuana, smoke tobacco, or have sexual intercourse.

In a study conducted several years later, Darling (2005) followed a diverse sample of youth from six California high schools over a three year period. Echoing previously reported findings, Darling noted lower levels of marijuana and other drug use among activity participants when compared to non-participants. Interestingly, however, Darling found no association to exist between time commitment (i.e., the total amount of time spent on all school-sponsored extracurricular activities in the course of a week) and tobacco, alcohol, and marijuana use. This finding, which was later confirmed by Gottfredson et al. (2004), contradicts the assumption that increasing the time youth spend in organized and supervised activities will reduce substance use by simply decreasing the amount of time spent in unsupervised contexts.

These studies and others cited in the literature from disciplines as disparate as leisure studies, sociology, sports psychology, and adolescent development, provide support for the hypothesis that participation in ECAs, on the whole, is associated with
reduced involvement in problem behaviors such as substance use and delinquency (Eccles & Templeton, 2002; Feldman & Matjasko, 2005; Fredricks & Eccles, 2006; Larson, 2000).

**Athletics and Problem Behavior**

Among the wide variety of OSPs available to adolescents, extracurricular sports (intramural and interscholastic) and community-sponsored sports attract the greatest share of participants (Darling et al., 2005). For instance, the recent YRBS report from the CDC (2010) revealed that during the 2009 school year, 64% of boys and 52% of girls in grades 9 through 12 played on at least one sports team (run by their school or by community groups) during the 12 months preceding the survey.

Historically, participation in organized sports programs was assumed to confer the same protection against problem behavior that has been associated with participation in ECAs in general (Lisha & Sussman, 2010). Importantly, however, when the effects of involvement in sports are studied in isolation or disaggregated from the general category of *involved in at least one organized activity after school*, the evidence of such a benefit becomes far less clear.

Recently, a meta-analysis of the empirical literature exploring the relationship between participation in interscholastic and intercollegiate sports and drug use and abuse was published by Lisha and Sussman (2010). Conducting a thorough search of electronic databases and printed bibliographies, these authors identified 275 data-based, peer-reviewed studies published between January 1988 and December 2008 that examined the relationship between athletes versus non-athletes and drug use. The application of
additional inclusion criteria (i.e., reported quantitative data, examined drugs other than steroids, age of subjects between 13 and 24 years) reduced the number of studies retained for analysis to 34.

High school athletes were the focus of nine of the 34 studies, 24 included intercollegiate athletes and one study included a general population sample from New Zealand. In the majority of studies, the sports activities studied were grouped under the designation “involvement in an organized sports team.” As a result, specific sport type was typically not differentiated ($n = 23$).

Analysis of the studies indicated that the relationship between sports participation and drug use and abuse differs by type of drug. Of the 34 studies reviewed, cigarette smoking was investigated in 15 of them. In 14 of the 15 studies, participation in sports was negatively related to cigarette use. Chi Squared Goodness-of-Fit analysis conducted by Lisha and Sussman (2010) revealed that there was a significant difference between the number of studies that reported each relationship, $\chi^2(2) = 16.63, p < .001$, indicating that the majority of the studies documented an inverse relationship between participation in sports and cigarette smoking. Subsequently, the authors concluded that participation in interscholastic and intercollegiate sports is protective against cigarette smoking.

With regard to marijuana use and illicit drug use by athletes, the authors found that the results were mixed. Marijuana and other illicit drug use were investigated in 15 of the 34 studies reviewed. Marijuana was the sole illicit drug studied in seven of these articles. Although participation in sports was related to lower drug use in nine of the 15 studies, a positive relationship was found to exist in two of them. Furthermore, the relationship
between participation and drug use in three more studies was dependent on sport and gender. For example, in one of these studies, higher levels of marijuana use by male ice hockey and female soccer team members was reported among a cohort of college athletes (Ford, 2007). Despite the mixed findings in the literature reviewed, Chi Squared Goodness-of-Fit analysis conducted by Lisha and Sussman (2010) showed that there was a significant difference between the number of studies that reported each relationship, \( \chi^2(3) = 8.50, p < .05 \), suggesting that the majority of the studies indicated an inverse relationship between the variables. As a result, the authors concluded that participation in interscholastic and intercollegiate sports is protective against marijuana and illicit drug use.

A study focusing on high school athletes published by Moore and Werch (2005) also found marijuana use to vary by sport and by gender. To illustrate, this investigation showed that males participating in school-sponsored football and swimming were significantly more likely to report marijuana use than male athletes in any other school-sponsored sport. Conversely, no significant relationship, positive or negative, was found to exist between female swimmers and marijuana use.

The protective benefit of participation in sports appears to reverse course when alcohol consumption among participants is examined. In the Lisha and Sussman (2010) review, 29 of the 34 studies examined the relationship between participation in sports and alcohol consumption. The majority of these studies (\( n = 22 \)) indicated a positive relationship between sports participation and alcohol consumption. Three additional studies reported that the relationship was dependent on the sport and the subject’s sex. In
the meta-analysis of the 29 studies in which alcohol consumption was investigated, a significant difference was found to exist between the number of studies that reported each relationship, \( \chi^2(3) = 40.10, p < .001 \), suggesting that the majority of the studies documented a positive relationship between sport participation and alcohol consumption.

This conclusion reached by Lisha and Sussman (2010) was reflective of longitudinal research conducted earlier by Barber and colleagues (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003). The first phase of the study investigated the link between involvement in various types of activities and substance use and other measures of PYD in a cohort of high school students \((n = 1259)\) taking part in the Michigan Study of Adolescent Life Transitions. Activity involvement and substance use data (i.e., “drinking,” “getting drunk,” “using marijuana,” and “using hard drugs” in the 6-month period preceding the survey) was collected from participants in grade 10 and then again in grade 12. Overall, the majority (69%) of the sample reported participating in at least one organized activity after school (“participants”). For data analysis, students who reported playing on at least one school sports team (55%) were grouped together and compared against students who reported participating in four other broad categories of school-based and other OSPs (e.g., prosocial, performance, school involvement, and academic activities).

Results from this study showed a significant association between participation in sports and alcohol use (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003). At grade 12, both the males and females in the team sports group reported drinking and getting drunk more often than did the students in the other four activity groups. Also,
sports team members had a higher proportion of friends who drank alcohol than did their peers in other activity groups. Last, the data revealed that being involved with team sports predicted significant increases in alcohol use and getting drunk over the high school years after controlling for mother’s education, student gender, and intellectual aptitude.

The exhaustive literature review conducted by Lisha and Sussman (2010) revealed that the relationships between sport participation and substance use were mediated by sex, activity, and substance. Similar discrepancies were detected by Moore and Werch (2005) in a cohort of adolescent team and individual sport/recreational activity participants. It is quite likely that the discretionary nature of these activities, combined with the mediating and moderating effects of self-selection, accounts for some of the inconsistent or divergent results with respect to the influence of athletic participation on problem behavior (Feldman & Matjasko, 2005; Moore & Werch, 2005).

Feldman and Matjasko (2005) and others contend that different types of youth are attracted to different types of sports (i.e., different strokes for different folks; e.g., Coatsworth et al., 2005; Eccles et al., 2003). One of the ways in which youth differ from one another is in their emerging personal and social identities. In weighing which activity to invest in, certain youth may be attracted to a particular sport based on assumptions or stereotypes about the activity or the people involved. This idea is based on work by Haggard and Williams (1992) who argued that individuals selectively engage in activities that they believe reflect and affirm their personal values and identity. An identity that is strongly influenced by, or founded upon, participation in sport or leisure is referred to as a leisure identity.
Two groups of researchers have investigated the relationship between leisure identity and problem behavior. In the second phase of a longitudinal study described previously in this document, Barber and colleagues (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003) focused on the influence of social identity, peer contexts, and leisure culture on self-reported substance use. Participants were instructed during the first wave of data collection (10th grade) to indicate which of five “identity” characters they felt was most like them. The selections from which to choose were based upon the popular John Hughes film, *The Breakfast Club*, and included “the jock,” “the princess,” “the brain,” “the basket case,” or “the criminal.” Substance use data (i.e., “drinking,” “getting drunk,” “using marijuana,” and “using hard drugs” in the 6-month period preceding the survey) were collected from participants in grade 10 and then again in grade 12. Because the collective behavior of peer groups likely influences the behavior of individual members, participants were also asked to report on the substance use behavior of their friends (“risky peer contexts”) on the 10th and 12th grade surveys. Data analysis involved comparing reported substance use across the different identity groups. The results pertaining specifically to the “jocks” and the team sports group are of particular relevance to the current investigation.

Among those who reported participating in at least one activity, 67% of males and 46% of females reported playing on a school or community sports team (“team members”). Individuals who identified with the *jock* character were heavily represented in the team sports group (87%). Only 69% of male team members, however, self-identified as *jocks*. The discrepancy was even greater among female team members, in which only 22%
identified as *jocks*. The percentage of team members who identified as *jocks* was shown to vary by sport, indicating that different sports might attract different types of individuals. For example, among males in the sample, 82% of basketball team members identified as *jocks* compared to 73% of ice hockey team members. Likewise, in the female sample, 42% of soccer team members identified as *jocks* compared to only 16% of the swim team members.

Consistent with other studies, Barber and colleagues found that at grade 12, both the male and female sports team members reported drinking and getting drunk more often than did non-sports team members (Barber et al., 2001; Eccles & Barber, 1999; Eccles et al., 2003). Accordingly, reported alcohol use among the *jocks* was relatively high, second only to use by the *criminals* identity group. Male jocks were more likely than female jocks and other identity groups to report an increase in the proportion of risky peers from the 10th grade to the 12th grade.

Data analysis revealed several significant interactions between identity, sports participation, and peer context. Jocks who reported consistently having riskier friends had significantly higher levels of drinking across the two waves than those who had less risky friends at either wave. Furthermore, having an increasingly risky peer group (i.e., an increase in the proportion of friends who use drugs from the 10th grade to the 12th grade) was associated with “comparatively large increases in drinking frequency” for all sports team members (Barber et al., 2005, pp. 201-202).

In light of these findings, Barber and colleagues suggested that the risks associated with activity participation are likely influenced by the interaction between emerging
individual and social identities with the surrounding leisure culture (aspects of the activity and the peer network associated with it). They concluded, “to the extent that this is true, some of the behavioral differences associated with activity participation may be a consequence of the behavioral difference of the peer groups and the peer cultures associated with these different activity clusters” (Eccles et al., 2003, p. 875).

Research by Barber and colleagues examined the influences of social identity, activity types, and leisure culture on self-reported substance use. The jock identity as a subjective measure of sports participation and its relationship with problem drinking was the focus of a study conducted by Miller et al. (2003). In the introduction to the study, the authors summarized numerous arguments explaining why the jock identity might deter or facilitate drinking. Jocks are presumed to have a strong commitment to athletic performance and the desire to maintain optimal physical fitness and competence and therefore might be less inclined to drink. Also, the fear that getting caught drinking will jeopardize playing eligibility might also be a strong deterrent. Adolescent jocks, however, are immersed in a leisure culture of peers and adults who may facilitate access to alcohol and reinforce the “perceived appropriateness of drinking” (Miller et al., 2003, p. 449). Subsequently, the authors argued that, “to the extent that identification with the ‘jock’ label reflects immersion in a sport subculture, jock identity should be associated with higher rates of drinking” (Miller et al., 2003, p. 449).

Based on the literature, Miller and colleagues (2003) hypothesized that adolescent jocks are more likely to engage in more binge drinking and report more alcohol-related social problems than non-jocks. To test this, Miller and colleagues used data collected
from a regionally representative sample of adolescents between the ages of 14 and 19 years as part of the Family and Adolescent Study conducted in Western New York. The sample included both sports participants (“athletes”) and non-sports-participants (“non-athletes”).

At wave 1, subjects \( n = 597 \) were asked to indicate how well the “jock” label fit them. Those who responded “very well” or “somewhat well” were coded as jocks, which served as a dichotomous independent variable. Data on three dependent variables were gathered at wave 3: Drinker classification (a measure combining frequency and quantity ranging from abstainer to heavy); frequency of binge drinking; and negative consequences or events as a result of drinking.

Examination of the alcohol use data showed that the majority of the sample reported at least some alcohol consumption and 38.5% could be classified as moderate to heavy drinkers (defined as drinking small quantities at least once a week or moderate amounts 3-4 times a month or large quantities once a month [moderate] to drinking large quantities at least once a week [heavy]). Nearly half (49.9%) of the sample reported binge drinking and 62.5% had experienced some sort of alcohol-related social problem at least once in the year preceding the survey. Approximately one-third of the sample (35%) identified with the jock label. Males were more likely to identify as jocks than females (48.9% to 22.6% respectively), a finding that concurred with previous work published by Barber and colleagues.

Analysis of the data in the Miller et al. (2003) study revealed several significant findings with respect to the jock identity. First, compared to their non-jock peers, male
and female self-identified jocks scored significantly higher on the drinking classification scale ($p > .001$, $p > .01$, respectively). Second, male jocks reported a significantly higher frequency of alcohol-related social problems ($p > .05$) than did male non-jocks. Perhaps the most noteworthy finding was that the jock identity was a significant predictor of all three dependent variables even after controlling for age, gender, race, SES, and frequency of athletic participation. Specifically, Miller and colleagues found that “respondents who perceived themselves as jocks drank more heavily [$p > .001$], binge drank more often [$p > .05$], and reported more alcohol-related social problems [$p > .01$]” (p. 456).

Interestingly, Miller et al. (2003) did not find frequency of athletic participation to be related to any of the three drinking behaviors examined. Other studies have documented similar null effects between objective measures of athletic involvement (i.e., frequency, time, or team membership) and substance use (see Darling, 2005; Gottfredson et al., 2004). Miller and colleagues argued:

This finding provides support for the supposition that what matters about sport is not merely its function of filling adolescents’ time with structured, sanctioned, and supervised activities [thus displacing experimentation with illicit substances], but also its contributions to setting the normative parameters of adolescent identity. (Miller et al., 2003, pp. 457-458)

These authors asserted that, in order to untangle the complicated relationship between athletic participation and substance use, future research must consider the influence of leisure- and sport-related identity rather than relying solely on measures of athletic activity (also see Miller, 2009).
Limitations of the Extant Research

The overwhelming consensus among leisure and developmental experts is that participation in organized sports and other constructive, structured, adult-supervised activities supports positive youth development and discourages problem behavior (Caldwell, 2005; Eccles et al., 2003; Feldman & Matjasko, 2005). To date, however, very little empirical evidence supporting this supposition exists (Darling et al., 2005; Eccles & Templeton, 2002; Gottfredson et al., 2004; Wilson et al., 2010). Furthermore, the relationship between participation in sports and other activities is likely influenced by a host of mediating and moderating factors, yet studies in which efforts to isolate control possible mediating and moderating factors remain sparse (Feldman & Matjasko, 2005; Gottfredson et al., 2004; Zarrett et al., 2009).

The manner in which study data is often aggregated for analysis is an important limitation shared among studies that have found participation ECAs to be associated with reduced problem behavior. In these studies, a common practice employed by researchers has been to ask subjects to indicate in which activities they participate from a comprehensive list of common school-sponsored activities and traditional youth sports (e.g., Barber et al., 2001; Darling et al., 2005). Subjects who reported participating in at least one ECA were grouped together into a general category of “participants.” The students who did not indicate involvement in at least one of the activities provided are typically classified as non-participants or as uninvolved (i.e., Bartko & Eccles, 2003; Darling et al., 2005; Feldman & Matjasko, 2007). Problem behavior and other data from all participants were then aggregated together and compared against the group of
non-participants. Aggregating data in this manner has the effect of obscuring any mediating or moderating factors that may have been unique to a particular activity or to a group of participants, making inferences about which specific aspects of the activities or participants might be responsible for influencing problem behavior “quite speculative” (Eccles & Templeton, 2002, p. 123).

A second limitation resulting from the aggregation of data across disparate participants and activities occurs when students who participate primarily in non-traditional sports or recreational activities (i.e., sport climbing, skateboarding, snowboarding, motocross racing) rather than in the traditional youth sports (i.e., baseball, football, soccer) and activities found on participation scales are classified, by default, as non-participants. This practice of classifying participants occurs with no regard to the high degree of effort, personal commitment, and involvement that is often exhibited by participants in these alternative pursuits. Because of this practice, self-reported problem behavior data collected from individuals who might be highly involved in non-traditional but constructive activities tend to be aggregated with data obtained from individuals who truly do not participate in any form of constructive activity. Consequently, less is understood about the potential risks and benefits associated with participation in non-traditional sports and recreational activities than in participation in long-standing, mainstream youth sports (Caldwell & Smith, 2006; Kleiber, 1999).

A pervasive source of bias and a serious limitation in studies on organized sports and other OSPs in which participation is discretionary originates from self-selection. Leisure scholars suggest that adolescents will self-select into activities that they believe
will allow them to explore, affirm, and express their personal and social identities (i.e., Barber et al., 2005; Coatsworth et al., 2005; Haggard & Williams, 1992; Mannell & Kleiber, 1997). Feldman and Matjasko (2005) illustrated the importance of controlling for self-selection when studying the association between sports participation and substance use:

The question arises as to whether adolescents who would be more likely to use substances, even in the absence of extracurricular activities, choose to participate in activities that will afford them an opportunity to engage in drug use, such as sports, or whether students who participate in these activities end up using substances as a result of participation. (Feldman & Matjasko, 2005, p. 186)

Moore and Werch (2005) explained, “A decision to participate in a particular sport or use certain substance is likely to both grow out of and be reinforced by emerging adolescent identities, particularly those identities linked to finding one’s place in the social milieu” (p. 492). Subsequently, selective participation in some activities might influence the prevalence of substance use and other problem behaviors depending on the values and behaviors reflected in the associated peer network and leisure culture (Barber et al., 2005; Darling, 2005; Feldman & Matjasko, 2005).

Youth who find the traditional sports environment too prescriptive and constraining may be drawn to the growing sports genre of non-traditional or alternative sports (Hills & Vassil, 2008). Rinehart (2000) defined alternative sports as “activities that either ideologically or practically proved alternatives to mainstream sports and to
mainstream sport values” (p. 507). Alternative sports, then, might be conceptualized as the alter-ego of traditional or mainstream youth sports.

**Alternative Sports**

In the sports and leisure literature, an important distinction has been made between traditional sports and alternative sports. Suggesting that traditional sports might be more accurately referred to as *achievement* sports, Eichberg (1998) stressed that traditional sports are grounded in production: producing results, measuring and comparing distances and times, tallying wins and losses, and raising standards. In this context, a simple definition of alternative sports has been suggested by Rinehart (2000) as “activities that either ideologically or practically provide alternatives to mainstream sports and mainstream values” (p. 507). Virtually any activity that does not adhere to Eichberg’s description of a traditional or achievement sport may be considered an alternative sport. Known by a wide variety of descriptive terms, the common vernacular for alternative sports includes whiz, extreme, adventure, action, gravity, vertigo, and lifestyle sports. A list of alternative sports intended to highlight the diversity found among activities might include the following examples:

- activities with long histories such as caving, mountaineering, snowshoeing, and kayaking;
- more recently created activities such as adventure racing, ultimate Frisbee™, and geo-caching;
- water-based activities such as surfing, waterskiing, white-water rafting, and SCUBA (self contained underwater breathing apparatus) diving;
high speed pursuits such as speed skiing, street luge, bicycle motocross (BMX), and ice sailing (Rinehart, 2000); and

hybrids or mutations of existing activities such as boarder-cross (a cross between motocross racing and snowboarding), BASE [building, antenna, span, earth]-jumping (a variant of bungee jumping) and wakeboarding (blending surfing and waterskiing).

As a sporting genre, the list of alternative sports is ever expanding, fuelled by the desire for novel experiences and limited only by the creativity and ingenuity of its participants (Tomlinson, Ravenscroft, Wheaton, & Gilchrist, 2005). More important, however, is the fact that common to all variants of alternative sports is a philosophy shared among their participants:

Underpinning all forms of [alternative] sport are lived cultures that are fundamentally about ‘doing it’; about taking part. The sports tend to have a participatory ideology that promotes fun, hedonism, involvement, self actualization, ‘flow’ (see Csikszentmihalyi, 1990), living for the moment, adrenaline and other intrinsic rewards. They often denounce, and in some cases even resist, institutionalization, regulation and commercialization, and tend to have an ambiguous—if not paradoxical—relationship with forms of traditional competition. (Tomlinson et al., 2005, p. 7)

This statement provided by Tomlinson et al. underscored not only the ways in which alternative sports differ from traditional sports but it provided clues to understanding the wide-spread appeal of alternative sports. Additional statements about alternative sports,
drawn from across the sports and leisure literature, provide a richer picture of what alternative sports are all about:

- They are primarily individual pursuits in form and/or attitude (Puchan, 2004; Rinehart & Sydnor, 2003; Wheaton, 2004).
- They are non-aggressive activities in that they do not involve bodily contact (Wheaton, 2004) yet they all embrace some degree of physical risk-taking and thrill-seeking (Rinehart, 2000).
- They are fundamentally about participation for the intrinsic rewards associated with participating; they are rarely conducted for spectators or competitive practice (Tomlinson et al., 2005; Wheaton, 2004).
- They are participant-controlled (Rinehart, 2000; Wheaton, 2004).
- They are self-organized rather than adult-organized or run. There are no formal try-outs, eligible team rosters, established practice times, or coaches (Rinehart & Sydnor, 2003).
- They are not institutionalized with governing bodies and official rules (Rinehart & Sydnor, 2003).
- Participants value freedom of expression, creativity, authenticity, and technical ability over competition and elitism (Beal & Weidman, 2003; Weiner, 2001).
- They usually take place outdoors, in new or appropriated spaces, often without fixed or artificial boundaries (Wheaton, 2004), with the physical environment presenting an added level of novelty and challenge (Willig, 2008).
• There exists a commitment in time and/or money and a style of life and forms of collective expression, attitudes, social identity and sub-cultural codes of behavior that develop in and around the activity (Tomlinson et al., 2005; Wheaton, 2004).

• They fuel a voracious appetite for the newest innovations in equipment and technology (Wheaton, 2004).

Research into the history and growth of alternative sports has revealed that they are very popular among teens, the demographic group often referred to as Generation Y (children born between the years of 1977 and 1997; Rinehart, 2000; Weiner, 2001). For instance, according to the *Special Report on Youth*, a report documenting participation in outdoor sports and recreation published by The Outdoor Foundation (2010), 83% of all skateboarders, 70.9% of all BMX riders, and 59.7% of all snowboarders were between six and 24 years of age.

Youth are drawn to a number of attributes associated with alternative sports. Offering an explanation of the phenomenal popularity of alternative or “extreme” sports among young people, Frank Farley, then a psychologist at Temple University and a past president of the American Psychological Association was quoted in a 1998 Los Angeles Times (Perry, 1998) article:

“I’m one of those who believes that the extreme sports, the adventure sports, the thrill-seeking sports are more in tune with what America is all about than the traditional three B’s [of] basketball, baseball, and bowling. The new sports are
more individualistic, riskier, and allow for greater creativity than the highly structured and repetitive traditional sports. (p. 1)

The distinctive qualities of alternative sports often are judged to be contrary to the defining characteristics associated with traditional sports (i.e., teamwork, cooperation, sacrifice for the greater good, leadership, character building, and competition). More important, however, it is the divergent nature of alternative sports that have driven the enormous appeal of the sports, especially among youth. Youth are attracted to alternative sports, a sports genre seemingly custom made for Generation Y, not only for the rush of riding a wave of adrenaline on the “edge of disaster” but also for the myriad of ways in which alternative sports are thought to differ from traditional team sports.

According to the work of a number of authors, participation in alternative sports has taken on a much deeper meaning for the members of Generation Y. Seeking an explanation for meteoric rise in alternative sports participation among youth, a reporter from the Philadelphia Inquirer interviewed Fran Richards, the former publisher of Transworld Skateboarding magazine, during the height of the conflict over skateboarding in Philadelphia’s LOVE Park. This periodical editor attributed the rise in alternative sports participation at least in part to a “backlash against rigid, hierarchical team sports by a generation that rejects the values they embody” (as cited in Weiner, 2001, p. A1).

Harvey Lauer, the president of The American Sports Data, Inc. [ASD], framed youth participation in alternative sports as an expression of the attitudes and values shared among the members of Generation Y. In a press release from ASD in January 2002, Lauer described the increasing affinity among youth for alternative sports as a
“reflection…of the new “in-your-face” ethic characterized by fierce individualism, alienation, defiance and inwardly-focused aggressive behavior” (American Sports Data Inc., 2002a). A second release from ASD (American Sports Data Inc., 2002b) further clarified the kinship linking Generation Y with alternative sports:

[Participation] in and of itself becomes a celebration of defiance and unconventional behavior, as statement that announces: ‘I’m doing this because it’s cool and different, to thumb my nose at the world, and for the absolute thrill and excitement of it—even if it means putting myself at risk. (¶ 8)

Alternative sports might be characterized accurately as the antithesis of traditional sports. As the statements above testify, to the members of Generation Y, participation in alternative sports is a statement of revolution and solidarity. Influenced most certainly by the sheer numbers of Generation Y youth, participation in alternative sports has shown a steady rise for over a decade (American Sports Data Inc., 2002b).

**Lifestyle Sports**

Another appealing aspect associated with participation in many of the alternative sports derives from the personal connection that develops between participants and the activity. Recent examination of alternative sports has resulted in the delineation of a sub-category of activities into a class referred to as lifestyle sports. Lifestyle sports fit nearly, if not all, of the descriptors associated with other alternative sports. What distinguishes lifestyle sports from other alternative sports (as well as from traditional sports) is the degree to which participants come to identify with the sports. Barber et al. (2005) referred to this concept as the *attainment value* of an activity, or “the value of an
activity to demonstrate to oneself and to others that one is the kind of person one most hopes to be” (p. 188).

For serious participants in a lifestyle sport, an interest in the sport moves beyond casual involvement to full immersion, with the activity occupying a central role in their personal and social identities. The sport becomes the way in which the participants define themselves as well as the person they want others to believe them to be. Lifestyle sport participants form social networks with other devotees, constructing a leisure culture that revolves around the activity (Barber et al., 2005). Members of the leisure culture identify themselves and other devotees through recognizable styles, expressions, and attitudes that develop in and around the activity (Tomlinson et al., 2005). The sport of skateboarding (also referred to as skating) has a strong tradition as a lifestyle sport.

**Skateboarding**

**Participation Data**

Among the lifestyle sports, skateboarding is particularly accessible to youth due to the minimal reliance on specialized or expensive equipment associated with participation and the fact that skateboards can be ridden (legality aside) anywhere a suitable surface is found (Eisenberg, 2003). Although the number of youth who report participating in skateboarding tends to fluctuate slightly from year to year, the popularity of skateboarding remains strong. To that end, a recent press release by the National Sporting Goods Association (NSGA; 2008) documented that participation in skateboarding among school-aged youth had increased by 74.1% from approximately 5.8 million participants in 1998 to the recent peak of 10.1 million participants in 2007.
The following participation data were collected and published in 2009 by the Sporting Goods Manufacturers Association [SGMA], a sports marketing research firm. Data on participation is collected annually using a panel-based omnibus sports marketing survey. According to SGMA, just over 7.8 million skateboarding participants (known herein as both skaters and skateboarders) in the United States reported skating at least once in 2009. Among all youth between the ages of 6 and 18, nearly 11% of all boys and girls in the United States reported skating at least once in 2009. Skateboarding is activity favored by the young, where 70% of all skateboarding participants were under the age of 18 after which the prevalence declines with each successive age group. Skateboarding is also an activity dominated by males, with 77.1% of all skateboarding participants being male. Of all males in the United States between the ages of 6 and 18, 16% reported skating at least once in 2009 versus only 5% of all girls in the same age range.

Geographically, 65% of all skaters lived in urban centers of 500,000 or more residents. This fact is likely an artifact of the abundance of suitable surfaces on which to skate found within urban centers. Finally, SGMA (2009) research indicates that skateboarders in the United States were most likely to live in the South Atlantic area (19.6% of all participants), the Pacific Coast area (18.0%), and the East North Central area (15.7%). Skaters were least likely to live in the New England area (5.3%).

An Abridged History of Skateboarding

From its very inception, the act of skateboarding or skating has been an expression of individualism and creativity. The first clues to the appeal of skateboarding as a lifestyle sport as well as its association with conflict and problem behavior lie in its history. In his
book, *The concrete wave: The history of skateboarding*, Michael Brooke (1999) used the metaphoric term ‘waves’ to describe each cyclic rise and fall in the popularity of skateboarding.

**The first wave (1959-1965).** Perhaps in response to the question, “what else can we do with these tired old roller skates?” the earliest skateboards date back to early 1900s and were essentially metal roller skates nailed to the bottom of a wooden two-by-four (Brooke, 1999). The first commercially produced skateboard, manufactured by the Roller Derby rollerskate company, hit the marketplace in 1959. On the West Coast, the first wave of skateboarding popularity corresponded with a popular time for surfing. Skating quickly grew popular with surfers as “sidewalk surfing” (Davidson, 1985), an alternative to surfing when the water was flat (Brooke, 1999). Highlighting the early association of skating with a certain lifestyle, Davidson (1985) explained that “with a skateboard, everyone could be part of the surfer set epitomized by the Beach Boys” (p. 146). In 1963, Venice Beach lifeguard Larry Stevenson established Makaha, a skateboard company that took the look and style of surfing (dubbed “surf skate”) and created the first modern day skateboard to be produced and marketed to professionals (Makaha Skateboards, n.d.). Later that same year, Stevenson formed an exhibition team to travel the country promoting skating and Makaha skateboards (Brooke, 1999). In late 1964, *Skateboarder* magazine appeared, an event of unusual consequence due to how dependent skaters will later become on print media as a means of linking skating communities together across the country (Borden, 2001).
Unlike the relatively advanced boards produced by companies such as Makaha, most skateboards were produced by toy manufacturers and sold through department stores (Brooke, 1999). Considered to be little more than toys, early boards resembled tiny surfboards made of wood, plastic, or fiberglass and ranged between 18” and 29” in length. These early boards sold for less than $15 (Brooke, 1999). Incredibly, over 50 million skateboards were purchased between mid-1963 through the end of 1965.

Peaking in popularity during the winter of 1965, several factors subsequently conspired to bring about the end of the first wave. The first decline in participation was precipitated at least in part to the meteoric rise in the popularity of skateboarding. To meet market demand, the mass production of skateboards was driven by quantity, rather than quality. In an article that paralleled the ups and downs in skateboarding popularity with advances in skateboard technology, Davidson (1985) described a market that became saturated with “inexpensive, poorly made equipment unresponsive to manipulation by the skater and extremely breakable” (p. 147). Expressly, the metal (and later clay) wheels and simple axle design did not grip the pavement well and could not absorb vibration and shock from the road surface. These features limited what maneuvers could be performed safely, frustrating the skaters who consequently moved on to other pursuits (Davidson, 1985).

A second factor contributing to the end of the first wave was concerns over safety. Pushing beyond the technical limits of skateboards led to bad crashes and injuries and even a few deaths (Brooke, 1999). In response, the National Safety Council issued warnings about the dangers of skateboarding (Davidson, 1985). Shortly thereafter cities
began banning skating in public spaces, citing concerns for the health and safety of skaters (Brooke, 1999). Fearing for the safety of their children, parents stopped buying skateboards, leaving skateboard manufacturers with ledgers full of cancelled orders and warehouses packed with millions of dollars worth of skateboards that no one wanted to buy (Brooke, 1999). Finally, another indication of the declining interest in skateboarding, Skateboarder magazine was forced to halt publication due to a drop in readership (Borden, 2001).

Between the first and subsequent waves of popularity, skateboarding was kept alive by small pockets of dedicated skaters who were not influenced by the cyclic ebb and flow in the popularity of the sport (Brooke, 1999). According to Lorr (2005), these “core” skaters made up the “structure of the subculture of skateboarding” (p. 141), which served as reservoirs of institutional knowledge and resident skills.

**The second wave (1973-1980).** In 1973, after a nearly eight-year hiatus, the second wave in skateboarding popularity began (Brooke, 1999). Skateboarding in the early 1970s was revived in part by innovations in skateboard design, which facilitated greater speeds and difficult maneuvers. These innovations included the introduction of polyurethane skateboard wheels (providing better grip than the steel or clay wheels), improved trucks (axle assemble incorporating a rubber pad providing better turning and shock absorption), precision sealed ball bearings (providing quieter, smoother, faster speeds), and new deck materials (providing greater variability in flexibility, strength, shape; Borden, 2001; Brooke, 1999; Davidson, 1985). Soon, a number of small independent manufacturers, inherently more agile due to their smaller size and better able
to keep pace with the changing demands of their customers, began to burgeon throughout the skateboard industry. These smaller outfits targeted specialty markets such as sporting goods stores and surf shops rather than toy and department stores which served to elevate the skateboard from a child’s toy to a legitimate piece of sports equipment (Brooke, 1999).

By the mid 1970s, Skateboarder magazine reappeared, uniting communities of skaters around the country and providing a medium through which trends in skateboarding culture were disseminated (Borden, 2001). The first modern outdoor skate park opened in Florida in 1975 followed by hundreds of others all over the United States (Brooke, 1999). Initially popular with skaters as a means to escape growing conflicts with irritated pedestrians and motorists as well as to assuage the safety concerns of city officials (Davidson, 1985), early skate parks featured simple designs with vertical bowls and snaking slalom runs designed to mimic the sensation of surfing (Borden, 2001; Brooke, 1999; Davidson, 1985).

Toward the late 1970s, skateboarding culture began to mesh with the punk counterculture movement. The punk movement was more than simply a musical or fashion style. Humphreys (1997) described the punk phenomenon as a “dystopian and nihilistic countercultural movement” that promoted antiestablishment values (p. 150). Humphreys described the convergence of the skate and punk cultures in the following manner:

Skaters espoused the punk ‘do what thou will’ philosophy and rejected mainstream norms and values. In turn, the unregulated, free nature of skateboarding appealed to punks. . . . Moreover, members of the respectable middle class deemed both
skating and punk socially irresponsible. The skater’s lifestyle centered on what the middle classes considered unproductive and irresponsible play. (pp. 150-151)

Humphreys (1997) attributed the decline of skateboarding during the late 1970s to this affiliation of skating with the punk culture and the hedonistic and nihilistic ‘I can do whatever I want and who are you to tell me I can’t’ posture associated with it. By the end of the decade, skateboarding had again fallen out of favor. As was the case at the end of the first wave, parents refused to buy skateboards for their children but this time it was due in large part to the marriage of skateboarding with punk culture (Humphreys, 1997). Additionally, fears over safety and injury liability drove the cost of insurance for skate parks beyond what the market could bear and the parks were forced to close (Borden, 2001; Brooke, 1999).

**The third wave (1983-1991).** The resurgence of the popularity of skateboarding in the third wave ushered in a number of wholesale changes to the sport, both on and off the board. One such change was fueled by a renewed focus on skateboard-themed media such as the magazines *Thrasher* and *Transworld Skateboarding* and videos such as *Bones Brigade*, released by the skateboard company Powell Peralta (Brooke, 1999). In the mid- to late-1980s, skateboard shoe companies and skate-related clothing became popular, even among non-skaters (Brooke, 1999). Lorr (2005) described this commercialization of skateboarding as being “commodified by the popular culture industry” (p. 145). This stood in stark contrast to the attitudes of skaters from the second wave who were staunchly anti-establishment and for whom authenticity and originality were highly revered.
The third wave also brought about changes in the way in which people skated. Born out of need for accessible and affordable alternatives to bowl-shaped skate parks and vertical ramps (Heizer, 2004), skateboarding shifted away from vert[ical] and transitional skating towards street skating, or skateboarding primarily on obstacles found in urban or suburban cityscapes (Brooke, 1999). The use of public spaces for skating, arguably a purpose for which urban planners had not intended, sparked conflict between skaters and city authorities that continues today. By 1991, a worldwide economic recession, which affected skate industry as well as the skaters themselves, prompted the end of third wave.

**The fourth wave (1993 to present).** In 1993, skateboarding was resurrected once again with its fourth and current wave (Brooke, 1999). Street skating, which gained popularity toward the end of the third wave, became the dominate skating style because it could be practiced on nearly any smooth surface (Borden, 2001; Heizer, 2004). Although a number of fourth wavers are second generation skaters whose parents skated in the 1970s, they are also the youth of Generation Y. Paralleling the remarks by Lorr (2005) about the commercialization and commodification of skateboarding in the late 1980s, Cleland (2001) contrasted the experiences of fourth wavers with those of their fathers who skated during the second wave. “These types of action sports [i.e., skateboarding] have gone from being an activity of fringe groups to an ingrained part of a generation that influences its fashion, music and entertainment” (Cleland, 2001, p. 22).

To capitalize on the relatively untapped viewership in Generation Y, ESPN 2 aired the inaugural Extreme Games featuring skateboarding in addition to competitions in other action sports (Borden, 2001). Held in Newport, Providence, and Middletown, Rhode
Island, over 198,000 spectators attended the first Extreme Games. Top tier sponsors of the first Extreme Games, lured possibly by the burgeoning purchasing power of Generation Y, included Mountain Dew, Taco Bell, Chevy Trucks, AT&T, Nike, and Miller Lite Ice and the pain reliever Advil (EXPN.com, 2001). The following year, in an effort to appeal to a wider array of viewers and sponsors, ESPN shortened the word extreme, to the current X Games title. A decidedly lucrative venture for ESPN, the summer of 2010 marked the 16th anniversary of the X Games.

Skateboards and skating have come a long way since the first skateboards hit the department store shelves in the early 1960s. Skateboarding has shed much of its counterculture mystique of the late 1970s, making skating an easier sell to parents who may have otherwise been leery of the sport’s shady past. The fourth and current wave of skateboarding, backed by the omnipotent sports media, corporate sponsorship, and the voracious consumption of Generation Y, may in fact be a permanent wave.

Since its most recent return in the mid-1990s, and buttressed from a variety of sources, skateboarding has gained support as a legitimate form of sport. For instance, in California, Jeffery Stern, the father of a young skater recognized in his son a need for new skating challenges. In 2006, Stern founded the National High School Skateboard Association with the goal of providing high school skaters an opportunity to develop and demonstrate their skills in a competitive forum while respecting the history and tradition of skateboarding as an expressive and free-spirited activity (National High School Skateboard Association, n.d.).
The merits of skateboarding as a competitive sport have also being debated at a much higher level. In 2006, as part of an effort to draw the attention of a younger audience, the International Olympic Committee [IOC] began to discuss the pros and cons of adding skateboarding as a new sport to the program of the 2012 London Summer Olympics Games (Beard, 2008). The discussion has since shifted to possibly adding skateboarding as a “discipline” rather than as a “sport” to the 2016 Olympic Games in Rio de Janeiro. Several barriers to adding skateboarding as a fully recognized sport in the Olympic Games have yet to be overcome. The first is the current lack of an internationally-recognized governing body, which is required of all Olympic disciplines. The second barrier originates from within the sport and from a number of skateboarders themselves, who believe that becoming an Olympic sport will threaten the anti-establishment values that have defined skateboarding and skateboarding culture throughout its history.

Although the plan to make an Olympic sport out of skateboarding has at least temporarily faltered, other people have begun to appreciate the value of skateboarding as a challenging, non-competitive form of physical exercise. To that end, Richard Cendali, a physical education teacher from Denver, Colorado, and Erik Klassen, a former professional snowboarder collaborated on *Skate Pass*. Skate Pass is a skill-based skateboarding curriculum for elementary and middle school physical education. Skate Pass is currently being offered in 28 states (including Ohio) as well as in Germany, Canada, and Singapore (Weller, 2010). Since the initial rollout of the curriculum, more than a million students have taken part. The curriculum includes a class set of skateboards
and safety equipment and covers topics such as safety, etiquette, and basic skills (www.skatepass.com).

**Exploring the Reasons Why Youth Enjoy Skateboarding**

As a lifestyle sport, skateboarding shares many of the attributes common to most alternative sports outlined previously. These attributes include being primarily an outdoor, individual activity that involves a degree of physical risk taking and thrill-seeking, and over which there exists no formal set of rules or governing body. Unlike other alternative sports that might require special training or expensive equipment, skateboarding is uniquely accessible to youth (Eisenberg, 2003). Youth are attracted to skateboarding as strongly by what the sport is as by what the sport is not. In this regard, most skaters and those who have studied skateboarding would defend that skateboarding is unlike other traditional sports in a number of ways (Beal, 1999; Rinehart & Sydnor, 2003; Seifert & Hedderson, 2009). To better understand what has drawn youth to skateboarding, extensive research into the subculture of skateboarding has been conducted and published by Beal (1995), Beal and Weidman (2003), and Beal and Wilson (2004). Subsequent research by Seifert and Hedderson (2009) added descriptions of subjective experiences reported by skateboarders. Based upon interviews and participant observation of skaters, this body of literature included several key findings.

**Participant-control and self-organization.** Beal (1995) and Beal and Weidman (2003) identified participant control and self-organization collectively as one of the core values of the skateboarding community and by far one of the most influential sources of its appeal. Skaters stated that a big part of what they liked about skateboarding was that
that they could choose for themselves when, where, and how they skated. According to Beal and Weidman (2003) and supported by Seifert and Hedderson (2009), skaters appreciated being free to choose which tricks to practice, to progress at their own pace, and to set their own criteria by which to measure success. This aspect of skating differs significantly from traditional youth sports programs where, according to Beal and Weidman (2003), “an outside authority sets the goals for all participants and success is distributed only to those who win” (p. 341). Beal (1995) concluded that the ability to control their own participation facilitated feelings of empowerment, autonomy, and self-determination.

Cooperation valued over competition. The de-emphasis on competition was a second factor identified by Beal (1995) and Beal and Weidman (2003). Earlier work conducted by Beal (1995) and then later expanded upon by Beal and Weidman (2003) revealed that social status within the skating community was earned largely through promoting cooperation and inclusion rather than through competition and exclusivity. Bradley (2010) found that this interaction fostered a strong sense of camaraderie and solidarity between skaters. Beal (1995) observed that the emotional support and technical tips (sometimes referred to as ‘beta’) shared between skaters was vastly different than that which was common in traditional youth sports. The skaters interviewed by Beal (1995) scoffed at the emphasis on competition and winning-at-all-costs that they felt epitomized traditional sports and plagued its athletes.

Creativity and self-expression. A third feature of special importance to the skateboarding community is the opportunities for creativity and self-expression the
activity affords participants. In interviews, skaters asserted that the informal atmosphere surrounding skateboarding allowed for greater freedom of exploration, originality, and self-expression (Beal & Weidman, 2003). This was another feature of skateboarding that is thought to stand in stark contrast to traditional youth sports. In addition, skaters shared that because they were not competing in a contest, they were free to work through learning new moves without feeling like they were being judged or fearing letting their teammates down if they failed (Beal, 1995). Skaters felt that these freedoms were made possible by the fact that there were no adults standing over them, dictating to them what they should do and how it should be done (Rinehart, 2000; Seifert & Hedderson, 2009).

**Challenge, perseverance, and success.** A fourth characteristic associated with skateboarding is the way in which the activity affords skaters plenty of opportunities for personal challenge. Skateboarding, with countless maneuvers and combinations, is not an easy activity to master. Seifert and Hedderson (2009) observed skaters work with dogged determination as they attempted to complete or ‘land’ a new trick. Skateboarding provides performers with instant and unfettered feedback, requiring no additional contribution from a coach, judge, or any other outside authority (Beal & Weidman, 2003). Seifert and Hedderson (2009) documented that the satisfaction and sense of accomplishment felt by a skater when he or she first landed the trick was clearly evident and appeared to be a strong motivating force behind attempting new challenges. In addition, striking the optimal balance between the level of challenge and requisite skills combined with immediate performance feedback facilitated experiences of flow in participants, another powerful incentive for continued engagement.
The skater identity. The ability of skateboarding to provide opportunities for creativity and self-expression has been lauded by both participants and scholars. Personally expressive activities like skateboarding provide adolescents with ample opportunities to explore, affirm, and express emerging personal and social identities. Coatsworth et al. (2005) would argue that the youth who gravitate toward skateboarding, have done so because they feel the activity offers the greatest potential to be self-defining. For the youth who identify with skateboarding (q.v., activity-based or leisure identity), their involvement becomes the vehicle through which they communicate to themselves and to others that “this is who I am,” or “this is what I believe I am meant to do” (Barber et al., 2001, p. 431). Woolley and Johns (2001) described the rich culture and easily recognizable leisure images that distinguish the skater identity:

Skateboarders have a unique and strong identity, ethos and outlook which set them apart from their [non-skating] peers. Through a combination of style of dress, musical preferences, and the activity of skateboarding itself, there is a strong sense of self-identity to be found as a ‘skater.’ (p. 215)

For youth who espouse the skater persona, the salience of the identity will grow in proportion to the degree to which the identity affirms and expresses their values, attitudes, skills, and talents and to which it affords social recognition of their commitment to the skateboarding (Shamir, 1992).

Skateboarding as a Context for Positive Youth Development

As mentioned earlier in this document, the theoretical constructs of the routine activity theory (Osgood et al., 1996) suggest that participating in skateboarding,
characterized as an unstructured, participant-controlled activity that takes place in unsupervised spaces away from home (Chiu, 2009; Nemeth, 2006) should be conducive to problem behavior (Bradley, 2010). Perhaps because of this assumption, only a small number of studies have investigated the developmental significance of skateboarding. One investigation used skateboarders as subjects against which to compare team sport athletes (baseball players) in an examination of self-perceptions and social identity (Brown & Francis, 1993). A second study utilized skateboarding as an independent variable to test the association between activity context and substance abuse (Moore & Werch, 2005). Two additional studies focused on the capacity of skate parks to support PYD (Bradley, 2010; Shannon & Werner, 2008).

To determine if the perceptions of increased social acceptance that accompanies participation in organized sports also accompanied participation in less traditional sports, Brown and Francis (1993) chose skateboarders to represent individual sport athletes. Baseball players were selected to represent team sport athletes. The study sample consisted of 161 skateboarders and 60 high school varsity and junior varsity baseball team members, whose average age was 16 years. In addition, an independent sample of 50 college students, equally divided between males and females, was included to assess adult beliefs about the two groups.

The skateboarders and baseball players completed a 50 item questionnaire that included subscales to measure beliefs about adult and peer acceptance, perceived athletic skill, social competence, and family cohesion. Also, both groups of athletes also indicated how involved they were in their particular disciplines. The college student sample
completed a separate instrument to assess their attitudes towards the two groups using a series of word associations.

The study yielded a number of significant results. First, skateboarders were viewed more negatively than baseball players by the sample of college students. In this convenience sample of college students, skateboarders were deemed “bad rather than good, dirty rather than clean, unsociable rather than sociable, vulgar rather than refined, and less wise” than their counterparts who played baseball (Brown & Francis, 1993, p. 387).

Among the sample of athletes, the study revealed that the skateboarders differed significantly from the baseball players regarding their beliefs about adult acceptance. Skateboarders reported believing that adult attitudes towards them were relatively negative. In contrast, the baseball players reported believing that adult attitudes towards them were positive. Brown and Francis (1993) concluded that the skaters in this study maintained positive feelings about themselves and their social abilities despite their perception that adults held negative attitudes towards skateboarding.

Last, both groups reported spending a similar number of hours devoted to their sport (between 20 and 30 hours per week). Only for the skateboarding group, however, were measures of athletic skill level and social competence significantly and positively related to the measure of time commitment. The positive self-evaluations (i.e., measures of self-esteem and attractiveness to peers) of skaters were associated with level of sport involvement, improving as involvement increased.
In light of the results of their work, Brown and Francis (1993) concluded that skateboarding, as an opportunity for socialization, might provide a source for “peer support and a sense of belonging” (p. 390) to adolescents for whom traditional community or school-based activities were unavailable. These conclusions echo the assertion by Tomlinson et al. (2005) that skateboarding and other alternative sports create opportunities for participation and social engagement for individuals who otherwise have been “alienated by traditional school-based and institutional sport practices” (p. 8).

Moore and Werch (2005) noted that previous research exploring the association between sport participation and substance use has focused primarily on school-sponsored team sports, at the expense of non-school sponsored or out-of-school individual sports and physical activities. Seeking to fill this gap in the literature, the investigators examined the relationship between substance use and participation in skateboarding as well as other individual and non-school sponsored sports.

Study subjects consisted of eighth grade students (n = 891) from three middle schools in northeast Florida. The study sample was 42.6% male (n = 380) and 57.4% female (n = 511). Self-reported data were collected via confidential questionnaire. The questionnaire measured 30-day frequency of alcohol, heavy alcohol (defined as consuming ≥ 5 drinks per episode), tobacco and marijuana use, alcohol and drug consumption, as well as risk and protective factors associated with alcohol and other drug use, and other health behaviors. School-sponsored and non-school sponsored sports and physical activity participation were assessed by asking subjects in what sports or activities did he or she play outside of school as well as for his or her school this year.
Logistical regression was employed to separate substance users from non-substance users across each of the 19 sports/physical activities for which both males and females indicated participation. Initial analysis of the data revealed that skateboarders were significantly more likely to drink heavily than non-skateboarders ($p < 0.05$). Skateboarders also were significantly more likely than non-skateboarders to smoke marijuana ($p < 0.01$). No relationship was found to exist between skateboarders and cigarette use. Additional analysis, however, indicated that the relationship between skateboarding and alcohol and marijuana use was influenced by gender. In the males-only analysis, the relationship between skateboarding and substance use no longer reached statistical significance ($p < .05$). By contrast, female skateboarders were 4.63, 3.12, and 3.56 times more likely to drink heavily, smoke cigarettes, and use marijuana, than their non-skating counterparts.

Overall, Moore and Wersh (2005) did not find a stable relationship to exist between participation in either sports context and substance use. Rather, as was illustrated in the comparison between skateboarders and non-skateboarders, the researchers concluded that substance use among this sample of middle school athletes varied by activity context, gender, activity, and substance. Involvement in some sports and physical activities were associated with an increased likelihood of substance use, others were associated with a decreased likelihood, and still others showed no relationship at all. For example, in comparisons across school-sponsored and out-of-school contexts within the same activity, out-of-school cheerleading was positively associated with alcohol use whereas a negative association with alcohol use was detected in school-sponsored cheerleading. Across genders, school-sponsored swimming was positively associated with
alcohol use and heavy drinking among the male sample but not in the female sample. Across sports, out-of-school basketball was negatively associated with alcohol use but unrelated to heavy drinking, cigarette smoking, or marijuana use. These findings were consistent with the work of Lisha and Sussman (2010), whose exhaustive meta-analysis of 34 peer-reviewed quantitative data-based studies completed on high school and college sports involvement and drug use also documented that relationships between youth and sports participation were mediated by race, gender, activity, and substance.

Moore and Werch (2005) posited several plausible explanations for the relationship between female skaters and reported substance use. They suggested that the unstructured and male-dominated culture surrounding skateboarding may have a negative influence on the risk behaviors of female skaters. They also hypothesized that females participating in a male-dominated sport such as skateboarding or surfing “may be trying to break an image of femininity and gender-based expectation, which increased substance use might help achieve” (Moore & Werch, 2005, p. 491).

To date one of the most extensive explorations of the potential of skateboarding to foster positive youth development was a qualitative study conducted by Shannon and Werner (2008). These authors investigated the ways in which the opening of an indoor skate park in eastern Canada influenced the leisure experiences of young skateboarders who frequented the park. The authors conducted semi-structured, one-on-one interviews with eight skateboarders ranging in age from 13 to 18 years, three skate park supervisors, and the youth services coordinator from the municipal recreation department who had overseen the development of the skate park facility. Following a grounded theory
approach, data analysis yielded three main themes: Enhanced leisure, enhanced skateboarding experiences, and valued space as a youth leisure setting.

The first theme discussed, *enhanced leisure*, summarized three positive changes to the leisure experiences of the youth in the study facilitated by the introduction of the skate park. Access to the new skate park afforded greater amounts of physically active leisure which took the place of more passive forms of leisure (i.e., watching television, playing video games, ‘partying’ with friends). Access to the new skate park provided youth with more opportunities to participate in their preferred leisure activity as well as to develop their skating skills. Prior to the opening of the skate park, youth were constrained by the lack of suitable opportunities or locations to skate. The last enhanced leisure item revealed that access to the skate park provided increased access to social interaction. The skate park provided a place where youth could connect with other skaters and hang out with their friends, rather than skate alone in their neighborhoods like they had done prior to the construction of the park.

The second major theme identified by Shannon and Werner (2008), an *enhanced skateboarding experience*, took several forms. All the youth in the study reported increasing their skating involvement, reporting that they spent more time skating than they had before the skate park was constructed. The skaters also reported a greater sense of freedom to skate. Prior to the park, they struggled to find interesting places to skate without being chased away by someone who did not want them skating there. Additionally, the youth stated that the challenging terrain featured at the new park provided them with more opportunities to develop their skateboarding skills than did the
terrain they had access to around their neighborhoods. Finally, in regards to the enhanced skateboarding theme was the observation that the youth really enjoyed skating. Similar to the observations recorded by Seifert and Hedderson (2009), Shannon and Werner reported that the excitement and enjoyment that youth experienced when mastering a new trick was clearly evident from the interviews. When a skater, after many attempts, finally landed a new trick, everyone seemed to celebrate the accomplishment, sharing in the successes of their peers. The authors found that, for the youth in this study, helping other skaters develop new skills and providing support and encouragement to each other was an integral part of the skateboarding experience.

The third and final theme, valued and symbolic space, described the very positive feelings that youth held toward the introduction of the park. Interviews with park staff and the youth services coordinator revealed that the youth who used the park often expressed their appreciation to park staff by thanking them for providing the skating community with a place to skate. The staff agreed that the skaters demonstrated their appreciation by complying with park rules and treating park staff with respect.

Shannon and Werner (2008) found that some of the youth felt that the facility was “a tangible indicator that the community cares about skateboarders and their sport” as well as “an opportunity for people in the community to develop a better understanding of what skateboarding is about and what the youth who participate in it are like” (pp. 51-52). This perspective differs greatly from published arguments contending that skate facilities have been constructed only so that street skating could be banned in other locations around town (e.g., Jones & Graves, 2000; Nemeth, 2006).
A principal conclusion of Shannon and Werner (2008) was that this skate park shared a number of characteristics with the eight features of positive developmental settings outlined by Eccles and Gootman (2002) and described earlier in this document. Framing the discussion of their findings around each of the developmental settings, in the passage quoted below, the authors argued that the facility fostered positive youth development in a number of ways:

Clear rules for the facility were established which were enforced by supervising staff and adhered to by the youth. These rules and monitoring by staff not only promoted physical safety, but also suggested that appropriate structures were in place to support positive interactions and development [physical and psychological safety and appropriate structure]. The youth perceived staff and other skateboarders who were also present at the facility as supportive of their activity participation [supportive relationships]. The facility was a space where skateboarders felt their activity was accepted, were able to develop a sense of belonging, and practiced positive social norms (e.g., helping/teaching each other; taking care of the equipment/facility) [opportunities to belong and positive social norms]. The skate park was a symbol that the youth mattered in the community [support for efficacy and mattering]. (Shannon & Werner, 2008, p. 52)

Highlighting these benefits or outcomes associated with the introduction of the skate park, the authors suggested, might help improve the dubious perception of skateboarding and the value of skate parks held by the public.
Shannon and Werner (2008) argued that although only a small percentage of youth may utilize a skate park, the decision to provide such a facility may have far-reaching implications. In the absence of adequate skate facilities, to satisfy their needs for social interaction and challenging skate spots, history dictates that youth will commandeer their own places to skateboard (e.g., Woolley & Johns, 2001). The subsequent aggressive measures taken to remove skateboarders from public and private property have fed the public’s perception of skateboarding as public nuisance and skaters as juvenile delinquents. Previous research has indicated that youth internalize the messages communicated to them by adults in the community (Blyth & Leffert, 1995), interpreting the No Skateboarding signs to mean they, and not just skateboarding, were unwelcome in their own communities (Stratford, 2002).

Conversely, Shannon and Werner (2008) argued that constructing a skate park with the goal of meeting the needs of youth (rather than purely as a measure taken to reduce street skating and remove youth from public/private property) communicated a much different message. After investigating the ways in which the new skate facility influenced the experiences park users, the authors concluded that when “the community values skateboarders, treats them like athletes, and supports their activity, it can enhance the self-esteem of those youth who participate and may improve the connection they feel to their communities” (Shannon & Werner, 2008, p. 54).

The most recent examination of the relationship between skateboarding and adolescent psychosocial development was a mixed-methods study conducted by Bradley (2010). Specifically, this researcher sought to test the validity of a number of common
stereotypes about skateboarders and skate parks and to investigate the psychosocial outcomes associated with skateboarding and skate park usage. The Bradley research consisted of three studies; each utilized a different data collection method. The first (the interview study) and third study (the questionnaire study) yielded a number of findings that contribute to the growing body of literature.

Bradley (2010) referred to the first study as the interview study. This study involved semi-structured, individual interviews with 12 adults chosen for their expertise or interest in skate parks, skateboarding, and/or adolescent leisure behavior and also focus groups conducted with 8 adolescents, 4 who were park users, 4 who were not.

The interview study yielded several results of note. First, non-park users held a variety of negative opinions of the skate park and park users which focused chiefly on park unattractiveness, the negative qualities of some park users, and the frequency of antisocial behavior associated with the park. These attitudes were also shared among the non-skating youth who completed questionnaires during the third phase of the study.

Second, interviewees noted a skate park culture to exist among park users, exclusivity apparent in the distinctive clothing styles and distinctive language shared among the park users. Bradley (2010, p. 297) also observed a set of values “pertaining to risk, bravado, and skilled performance” that distinguished the skate park culture. The influence the shared culture and the bond between skaters was demonstrated by the “camaraderie” among the “fraternity” of skate park users (p. 298).

The final point of interest generated through analysis of the interview data was that a number of positive psychosocial outcomes were associated with skate park use.
Interviewees reported feeling that the park offered opportunities for youth to develop social skills, cooperation, and respect for self and others. Involvement with the development and management of the park was understood to have provided youth with opportunities for civic engagement and to experience a sense of ownership and responsibility.

The second Bradley study (2010), the observation study, was undertaken to reveal the exact nature of skate park usage including the behavior and activities that occur there. This study yielded 800 minutes of observation time during which 613 people were observed using two separate mixed-use facilities (skateboards, rollerblades, and BMX bicycles). Despite the fact that park users were predominately young males ($n = 588, 95\%$) and the parks were unsupervised, analysis of the observation data led the author to conclude that “the parks appeared to be friendly . . . peaceful and harmonious places” (Bradley, 2010, pp. 305-306). To be specific, no incidents of physical/verbal fighting or bullying/intimidation were recorded. Moreover, very few occurrences of substance use among park users were noted (smoking: 17/613, 2.8%; alcohol: 10/614, 1.6%). Finally, park users were observed abiding by social norms including waiting for one’s turn and sharing riding space. These findings, Bradley concluded, were counter to a number of the negative stereotypes about skate parks and park users.

The third study, referred to as the questionnaire study, was designed to sample a wider cross section of young people. In this inquiry, Bradley (2010) sought information from skaters/non-skaters and park users/non-park users and concerning their demographics, their levels of personal and social integration, and their attitudes towards
the other groups. Middle and high school students from two public secondary schools were invited to complete an anonymous questionnaire. The sample consisted of 177 subjects (56% female) between the ages of 12 and 17 ($M = 14.7$). Twenty-four percent of the sample reported skating at least one hour per week. Of the members of the sample who reported skating, the average time spent skating per week was 5.2 hours.

Consistent with findings generated during The Interview Study, analysis of this quantitative data indicated that the negative comments about skate parks and the users of skate parks outnumbered the positive comments by a ratio of two to one. Bradley concluded that “many of the negative comments were . . . consistent with the stereotypes of skate parks as unsafe places where drug taking, property damage, and physical aggression are rife” (p. 312). Past research has documented that negative attitudes toward skaters and skate parks were prevalent among adults (e.g., Carr, 2010; Penny, 2009; Woolley & Johns, 2001). Bradley found many adolescents held many of the same negative opinions of skaters and skate parks.

Bradley (2010) also was interested in determining if any of the negative stereotypes were justified. Addressing this concern, Bradley measured the extent to which subjects (skaters and non-skaters) engaged in six rule-breaking/delinquent behaviors in the preceding six months. The rule-breaking/delinquent activities included on the questionnaire were breaking school rules, stealing/shoplifting, vandalism/graffiti, violence, other minor rules, and bought or used drugs (unspecified), alcohol, or tobacco. Contrary to the public perception of skateboarders, with one exception, Bradley found no difference to exist in rule-breaking behaviors between any of the matched pairs (i.e.,
skateboard owners versus non-skateboard owners, skaters versus non-skaters, or those who identified with the skateboarder subculture versus those who did not). A significant association was found between skate park users and breaking school rules such that skate park users reported more often violating school rules that did non-skaters.

Similar to the conclusions reached by Shannon and Werner (2008), Bradley (2010) suggested that several positive developmental experiences and opportunities were associated with skate park usage. Likewise, the author argued that

Contrary to the notion that only structured and adult-supervised leisure yields favorable developmental outcomes, this research found links between “unstructured” activities that occur within skate parks, on the one hand, and opportunities for task focus and challenge, meaningful identity development, and wider social integration, on the other. (Bradley, 2010, p. 317)

The results from this study based on mixed-methodological research techniques conducted by Bradley (2010) provide additional support for a number of important findings described in earlier research. Findings confirmed the pervasiveness of the negative stereotypes of skateboarding and skateboarders held by adult and adolescent non-skaters and non-park users (e.g., Chiu, 2009; Nemeth, 2006). This study also provided evidence of the existence and characteristics of the skater culture/subculture (e.g., Beal, 1995; Beal & Weidman, 2003). This study documented the occurrence of a number of positive developmental experiences that were linked to skate park usage (e.g., Shannon & Werner, 2008). Finally, this study found no relationship between
skateboarding and the purchase or usage of tobacco, alcohol, or other drugs in the six months preceding the study (e.g., Moore & Werch, 2005).

**Skateboarding as a Context for Problem Behavior**

In spite of the potential of skateboarding to foster positive development and the popularity of the activity among youth, the American public has long-maintained a complicated love-hate relationship with skateboarding. One significant source of the ambiguity faced by skaters lies in the difficulty involved with finding a place where they might want to skate, which was not always found to be a location where they were allowed to skate.

**The Contentious Search for a Place to Skate**

Whether used as a mode of transportation or as an essential piece of sport equipment, skateboards roll best over smooth surfaces like concrete, polished stone, metal, wood, and fiberglass. Skaters search far and wide for such suitable surfaces, referred to as skate spots, on which to ride and perform tricks.

To identify and explore which qualities were commonly found in the best skate spots, Woolley and Johns (2001) conducted focus group interviews with skaters from three metropolitan cities (Sheffield, Manchester, Cardiff) in the United Kingdom. These scholars summarized four themes shared across the descriptions of skate spots provided by the skaters in their study. The first theme was accessibility, which described a location that could be reached easily by skaters from all parts of the city. The second theme was labeled as trickability, which was coined to describe landscapes that enabled a wide variety of tricks and maneuvers. Such landscapes featured a smooth surface, numerous
concrete fixtures (i.e., benches, ledges, stairs, etc.) upon which skaters could skate, multiple lines of approach, and an area large enough to accommodate a number of skaters. The third quality cited by skaters was *sociability*. Sociability referred to the degree to which skaters felt the site afforded the opportunity to watch others skate and to socialize while resting between runs. Last, a good skate spot had a high degree of *compatibility*. The compatibility of a site was an indication of the level of concordance between skaters and other users of the space (i.e., pedestrians, bicyclists, merchants, etc.). All skate spots facilitate varying degrees of accessibility, trickability, sociability, and compatibility. A significant source of the dissonance over skateboarding stems from where the most desirable skate spots are located within a community.

Skate spots can be categorized into two groups based on the extent to which skating is permitted at that location. *Sanctioned spots* include skate parks and skate plazas, facilities purposefully built by city planners for the purposes of skateboarding. *Unsanctioned skate spots* are commandeered through the unauthorized appropriation of public and private spaces by youth for the purpose of skating.

**Sanctioned skate spots.** Skate facilities provide youth with a legal or sanctioned space in which to skate, thereby reducing the presence and impact of youth skating on public and private property. *Skateboarder Magazine* lists more than 2,100 skate facilities in the United States, with parks in every state including Washington D. C. and Puerto Rico (“Skateparks,” 2006). In many cases, the provision of skate facilities has been used as leverage or justification to enact and enforce the prohibition of skateboarding in unsanctioned locations (i.e., town centers and shopping districts; Howell, 2008; Jones &
Graves, 2000; Owens, 2001; Rankin, 1997; Woolley & Johns, 2001). Urban managers and city officials argue that the provision of skate facilities addresses a number of concerns created by use of city streets and other public and private property for skating. Urban planners and other officials contend that corralling skaters into skate facilities has the potential to

- reduce the interruption to vehicle traffic and commercial use of the roadway caused by youth skating on public streets (Brooke, 1999; Howell, 2008; Owens, 2001);
- justify the passage of skateboarding bans and the removal of teens from the city center where their presence is deemed undesirable (Borden, 1998; Chiu, 2009; Valentine, 1996);
- reduce the likelihood of a skater being struck by an automobile, the number one cause of serious and fatal injury to skaters (S. B. Kyle, Nance, Rutherford, & Winston, 2002);
- assuage the concerns of business and property owners regarding possible liability for injuries incurred by skaters or by pedestrians injured in collisions with skaters while on their property (Borden, 2001; Brooke, 1999; Owens, 2001);
- reduce the damage to concrete structures (sometimes referred to as *skater vandalism*) caused by wheel scuff and the grinding the metal underside of a skateboard along the edge of the structure (Carr, 2010; Heizer, 2004; Howell, 2008; Owens, 1997);
• contribute to efforts to reduce crime as it has been noted that the presence of skateboarders function as “eyes on the street” (Howell, 2008, p. 485), discouraging criminal enterprises including drug use, prostitution, and vandalism (Howell, 2008; Jones & Graves, 2000).

In articles that discuss the management of community skate parks, authors have indicated that operating skate facilities has yielded several fortuitous yet advantageous outcomes. For example, Rankin (1997) found that many skate parks required less daily maintenance than expected because skaters typically assumed the responsibility for keeping their parks clear of litter and graffiti, especially if they believed the debris could exert an adverse impact on the skating surface or their access to the park. Spohn (2002) found that many skate parks required less direct supervision of the skating than expected because skaters shared the available space by taking turns and following their own rules of etiquette. Last, skate parks did not incur the onslaught of injury liability claims that many city officials feared. Skaters seemed to realize that there exists an “assumption of risk” with skateboarding (Spohn, 2002, p. 58) and that skaters felt responsible for their safety as well as for injuries should they occur (Thompson, 1998).

These points support the construction of skate facilities from the vantage point of urban managers and other city officials who have been tasked with maintaining public safety and order. Other authors have found that the provision of skate facilities has afforded a number of developmental opportunities to the youth involved in their creation. In this regard, skaters in a growing number of communities have been directly involved in advocating for the construction of their local skate facilities, often meeting with city
councils, organizing petition drives, conducting public information campaigns, and soliciting private and public funding (Howell, 2008; Jones & Graves, 2000). Skaters played an integral role in the planning process, collaborating with community adults, providing suggestions for suitable park locations and desired design elements (Jones & Graves, 2000; Owens, 2001; Spohn, 2002).

Howell (2008) recently explored the influence of urban governance on skateboarding youth. After conducting a comprehensive review of the literature from the fields of geography, architecture, planning, and urban design, Howell reported that the majority of studies reviewed emphasized the need to integrate skaters into the planning process. He stressed that the benefits afforded to youth involved in the “skate park movement” and the planning of public space are the products of ‘participatory governance’ (see Valentine, 2004). Citing Valentine, Howell concluded that one of the benefits to providing skaters with genuine opportunities to contribute to the process was that doing so helped the youth “develop a sense of empowerment and ‘ownership’ of the places and communities within which they live” (Valentine, 2004, p. 108).

**Unsanctioned skate spots.** All the arguments in favor of providing skating facilities still provide no guarantee that skaters will use them. An overwhelming majority of skaters (over 75%) say they prefer to street skate, an alternative to skating in sanctioned skating facilities (Rob Dyrdek-DC Shoes Skate Plaza Foundation, n.d.). Street skating is a style of skating that involves not only skating on public streets and in parking lots, but also using architectural structures and fixtures (i.e., benches, planters, fountains, hand rails, ledges, walls, ramps) found in the urban and suburban built environment as obstacles upon
which to maneuver and perform tricks. Unsanctioned skate spots might be found on university campuses, city plazas, office complexes, virtually any place featuring a smooth riding surface.

Much has been written about why skaters might prefer street skating to skating in purposefully-built skate facilities. One explanation is that street skating offers a constantly changing milieu of physical conditions and ‘natural terrain’ on which to skate. Such terrain is considered by skaters to afford a greater level of creativity and spontaneity than can park skating (Chiu, 2009; Woolley & Johns, 2001). Chiu (2009) has colorfully depicted streets skaters as urban explorers and equated street skating and the search for skate spots to that of an “urban journey” during which a skateboarder may “roll down the street, stop to hit [skate upon] an object, and keep moving to look for the next adventure” (p. 34). Through interviews with skaters, Owens (2001) learned that skaters wanted to skate when and where they liked and they felt that skate parks constrained these freedoms. Other authors have described street skating as a search by teenagers for a hang-out that they could call their own (Woolley & Johns, 2001) or for “a place to be seen [by peers] and not seen [by figures of authority]” (Jones & Graves, 2000, p. 137). More closely resembling a loose, unstructured form of play than a recognizable formal sport, the very practice of street skating has been discussed in yet another line of inquiry as a form of willful transgression against adult authority and control (e.g., Beal, 1995; Carr, 2010; Chiu, 2009; Penny, 2009; Stratford, 2002).
**Skateboarding as a Crime**

As street skating has grown in popularity, so has the contention surrounding the unauthorized appropriation of public spaces by skaters. This is evidenced by the growing number of cities and municipalities who have criminalized skateboarding by passing ordinances that restrict or prohibit the use of skateboards on city streets and other public property (Borden, 1998; Chiu, 2009; Flusty, 2000; Nemeth, 2006).

Efforts by city officials to curb street skating include passive and active strategies. In locations where skating is explicitly prohibited, one example of a passive strategy involves subjecting violating skaters to a variety of legal penalties. These penalties, often increasing in severity with repeat offenses, might include tickets with fines ranging from $25 to $200, community service, and skateboard confiscations (Chiu, 2009). In other cases, skaters have been cited for trespassing and institutional vandalism (Costello, 2005). The least effective passive strategy to deter street skating might be the posting of *No skateboarding allowed* signs (Chiu, 2009). While these signs are common fixtures seen in city squares, shopping centers, parking lots, and store fronts, they are frequently ignored by skaters who have mastered tactics to avoid detection and apprehension (Chiu, 2009; Woolley & Johns, 2001).

Another common passive strategy used to curb street skating involves making structural changes to building surfaces and urban street furniture thereby rendering them unskate-able or skate-proof. These are typically referred to as skate deterrents or skate stoppers (www.skatestoppers.com, 2007). Borden (1998), who likens the treatment of skaters to that of vagrants, described the application of such skate deterrents:
Where the homeless are ejected from business and retail areas by such measures like curved bus benches, window ledge spikes and doorway sprinkler systems, so skaters encounter similar treatment. Managers have added rough textured surfaces to discourage skaters, while more overt measures include spikes and bumps added to handrails, blocks of concrete placed at the foot of banks, chains across ditches and steps and new, unridable surfaces such as gravel and sand. (p. 48)

The application of skate deterrents as a passive strategy has proven to be an effective means of discouraging skateboarding in the locations where they have been deployed (Nemeth, 2006).

In addition to passive strategies, active strategies have been used to remove skaters from public and private property (Woolley & Johns, 2001). Often, local police are called upon to respond to requests from merchants to chase skaters away from in front of their shops. On privately-owned property such as shopping malls, office towers, or loading docks, private security guards are often tasked with chasing skaters off the property. In both examples of the ‘move-along’ approach, police and security guards engage in an on-going game of cat-and-mouse with the offending youth (Chiu, 2009; Stratford, 2002; Woolley, 2006). When removed from a skate spot, skaters usually do not stop skating. Rather, they simply skate off in search of another spot (Woolley, 2006). Jones and Graves (2000) found that in many cases, strategies aimed at curbing street skating were limited in their effectiveness. They argued that the majority of skateboarders were willing to risk the consequences of getting caught (i.e., getting a ticket, having their boards confiscated) just for the opportunity to skate in “an environment that offers challenge, variation, control,
place to be seen out but not be seen—in short, an environment that responds to teenage concerns in public space, not just the needs directly associated with the sport of skateboarding” (Jones & Graves, 2000, p. 137).

A number of scholars have sought to provide an explanation as to why city officials appear to pursue the prohibition of street skating with such vitriolic insistence. Much of the related discussion has been grounded in research conducted by Valentine (1996). In the article, *Children Should Be Seen and Not Heard: The Production and Transgression of Adults’ Public Space*, Valentine built a case for the assertion that public space is being produced as an adult space, rather than an open space where children and teenagers can freely participate. Valentine argued that parents have been influenced by sensationalized media depictions of neighborhood streets and parks as the hunting grounds of the omnipotent and ever-present pedophile, child abductor and drug dealer (i.e., stranger-danger). To that end, parents have become so fearful for the safety of their children that they no longer allow them to walk to a friend’s house or play in a local park without being accompanied by an adult. This perception of public space as exceedingly dangerous and of children as too vulnerable and “incompetent” to safely navigate on his or her own has become so pervasive, insisted Valentine, that a child walking alone now appears to be “out of place” (p. 212). Valentine concluded that sequestering children for their own protection and restricting their use of and presence in public spaces has resulted in the appearance of public space as “naturally or normally an adult space” (p. 212).

The perception of public space as rightfully an adult space has had far reaching repercussions for teens. Valentine (1996) found that when public spaces were perceived
as adult spaces, the very presence of teenagers in public space was interpreted by adults as trespassing and as a threat to adult control of the spaces. Groups of teens were regarded as potential threats to the safety and welfare of children and the elderly. Unaccompanied or unsupervised teenagers were viewed with suspicion as it was assumed that surely they were up to no good. Subsequently, teens have often been the target of various spatial and temporal controls including curfews, anti-loitering ordinances, and move-along tactics. Unlike adults, teens were denied the right to define their own ways of interacting in or using the space. As a result, Valentine concluded that for teens, public space is not open space. Instead, public space proved to be a closed and tightly controlled space in which teens were expected to show deference to adults and to abide by adults’ definitions of appropriate behavior. In this sense, Valentine challenged the premise that public space is truly public, given the observation that adults have constrained the access and use of such spaces by children and teenagers.

Researchers have used the arguments forwarded by Valentine (1996) to inform the discussion of the prohibition of street skating as a form of “spatial censorship” (Lorr, 2005, p. 143). First, as primarily older children and teenagers (SGMA, 2009), the mere presence of a skater in a public area but unaccompanied by an adult encroached on the presumptuous notion of public spaces as exclusively adult spaces (Penny, 2009). City officials asserted that, due to the potential threat to the physical safety and welfare of other users of the contested space (Valentine, 1996), the ban on skateboarding and by extension, the exclusion of skaters, was justified (Howell, 2008; Nemeth, 2006).
Nemeth (2006) and others have suggested that public space in urban areas has been set aside for use by members of the business community in support of commercial enterprise and the exchange of money, goods, and services (Stratford, 2002; Vivoni, 2009; Woolley & Johns, 2001). By using the space for skateboarding, skaters defied the parameters prescribed by city officials and urban planners as the proper use of such spaces (Borden, 1998; Chiu, 2009; Nemeth, 2006; Woolley, 2003). These authors noted that skaters used the space without participating in or contributing to the economic productivity associated with the space, much to the contempt of local business people. Consequently, Borden (1998) argued, “Skateboarders have encountered a politics of space similar to the experience of the homeless. Like the homeless, skateboarders occupy urban spaces without engaging in economic activity . . . As a result, urban managers have declared skaters as trespassers” (p. 50). Regarding street skating as a disruptive and transgressive use of public and commercial property and skaters as little more than urban squatters, city officials asserted that the ban on skateboarding, and by extension the exclusion of skaters, was justified (Carr, 2010; Howell, 2008; Nemeth, 2006).

The marginalization of skateboarding youth from city centers. The ramifications of skateboarding bans and the prejudicial treatment of skaters have been examined by several researchers from the academic disciplines of urban planning and public policy. While investigating the tensions between skaters and city officials in Australia, Stratford (2002) questioned skaters to determine how they felt regarding the skate-proofing strategies employed in their city. Several skaters in this study felt that the use of skate deterrents was less humiliating than the ‘No Skateboarding’ signs found
posted around the city. The signs were interpreted by the skaters to mean that they, as individuals, rather than the activity, were unwelcome.

Studying the conflict surrounding skateboarding in Philadelphia’s LOVE Park during the 1990s, Nemeth (2006) suggested that the exclusion and marginalization of skaters from public spaces has served to strengthen the suspicion, fear, and perceptions of difference existing between skaters and the non-skating public. The city of Philadelphia, siding with the local, non-skating residents who used the park far less frequently but in a more traditional manner, has since skate-proofed the park.

Several years later, Chiu (2009) conducted an ethnographic study of skateboarders in New York City to better understand why skaters continued to street skate despite city-wide sanctions against it. Chiu described the reality faced by many skaters in New York City and other urban areas. Skaters, because they are predominately young and considered to pose a danger to pedestrians, were labeled by the public as “noise makers, graffiti writers, juvenile delinquents, or simply ‘hoodlums’” (p. 36). The use of skate deterrents and anti-skateboarding signage had the effect of reinforcing the public’s perceptions that skaters were a group to be feared and contained (Chiu, 2009).

Investigating the impetus behind the increasing regulations to control urban skating, research conducted by Carr (2010) highlighted how differently skateboarding was viewed from other recreational sports:

Unlike other forms of urban youth recreation such as bicycling, basketball, or rollerblading, skateboarding’s popularity is attributable in large part to a culture of rebellion (Borden, 2001) that plays upon traditional fears associated with groups of
young men in public space. Likewise, the skateboard itself lends such young people a degree of unpredictable and transitory mobility that has long been deemed incompatible with Western cultural values of responsibility, belonging, and citizenship. (Carr, 2010, pp. 993-994)

The research conducted by Carr reflected earlier work by Valentine (1996) in reference to the distrustful and fearful perceptions of adults towards the young people roaming their city streets. Given the predominant youthfulness of most urban skateboarders, Carr (2010) argued that regulations and actions aimed at prohibiting skateboarding in the city have been understood by both skateboarders and cities as representing a broader drive to remove all types of young people from the urban core.

When considered together, the passive and active strategies employed by private citizens and city officials to curb skateboarding and reduce the presence of skaters within urban spaces, a vicious cycle becomes evident. Such measures serve to increase the social distance between skaters and the non-skating public, making the condemnation of teens who skate less objectionable and the enforcement of skateboarding bans and the marginalization of skaters more appealing (Alvarez & Bachman, 2008).

**A Routine Activity’s Approach to Skateboarding**

Historically, the majority of research on skateboarding and skateboarders has focused on the negative perceptions of skateboarding and the social problems associated with the activity (Shannon & Werner, 2008). According to the routine activity theory (Osgood et al., 1996), participation in unstructured, unsupervised leisure activities in the company of peers is uniquely conducive to problem behavior including substance use.
Simply put, the less structured and supervised a leisure activity, the more conducive to problem behavior it is likely to be. At first blush, skateboarding fits this dubious description. In many communities, skateboarders feel they have been afforded little space, both in a literal and a figurative sense, in which to participate in the leisure activity of their choice. When lacking adequate, sanctioned places in which to skate, youth will carve out their own space, repurposed from existing public and private property (Carr, 2010; Chiu, 2009; Woolley & Johns, 2001). When youth gather for these improvised and unsupervised skate sessions, the three conditions advanced by the routine activity theory to be highly conducive of adolescent problem behavior and delinquency are present. Specifically, skateboarding involves the gathering of male peers to engage in an unstructured, participant-controlled activity that takes place often in contested and unsupervised spaces away from home (Chiu, 2009; Nemeth, 2006). Applying the theoretical constructs of the routine activity theory (Osgood et al., 1996), one might argue that skateboarding as an activity context is conducive to problem behavior for the following reasons:

- Due to the spontaneous and highly mobile nature of skateboarding, the activity is more likely to take place in the absence of an authority figure responsible for maintaining social control and curtailing problem behavior;
- Due to the prohibition of skateboarding on public property (i.e., streets, sidewalks, plazas) in many cities and municipalities, skaters may seek out remote locations in which to skate to avoid social control;
Skateboarding in the presence of peers, and particularly among males, makes participating in problem behavior easier and more rewarding by providing willing accomplices, capable role-models, and an appreciative audience; and

The lack of structure in activities such as skateboarding leaves more time available for engaging in problem behavior.

**Conclusion**

Even though popularity of skateboarding among youth seems to have stabilized, the sport has been unable to completely shed the notoriety of its not-so-distant past. To the casual observer, skateboarding might appear to more closely resemble a reckless and subversive diversion than a self-expressive and constructive form of leisure. Adding credence to this supposition are the precepts of the routine activity theory (Osgood et al., 1996), which dictate that unstructured, unsupervised activities in the company of friends are especially conducive to problem behavior. In addition, studies have revealed involvement in problem behavior appears to vary across leisure identities, peer context, and activities (Barber et al., 2005; Miller et al., 2003). Importantly, however, skateboarding and other non-traditional, participant-controlled sports are rarely included in studies of ECA and OSPs upon which these conclusions are based. Subsequently, the potential risks and benefits associated with participation in these activity contexts are not well understood (Caldwell & Smith, 2006; Kleiber, 1999). The current study examines the relationship between involvement in skateboarding, a popular but unstructured and unsupervised form of leisure, and substance use in a cohort of adolescent male skateboarders.
CHAPTER III

METHODOLOGY

Purpose of the Study

The purpose of the present study was to analyze the relationship between skateboarding and alcohol, tobacco, and marijuana use (substance use) among a cohort of male skateboarders residing in metropolitan regions in the Eastern United States. In specific, the aim of this research is to:

1. Determine the nature of the relationship between time spent skateboarding and self-reported substance use in a cohort of male skateboarders; and
2. Test the potential of selected individual and contextual variables (e.g., skating location, skating with friends, skater-group identity, and enduring involvement) to influence this relationship.

Population and Sample

Adolescent male skateboarders aged 13 to 17 was the target population for this study. According to data based upon a national, random sample compiled by the Sporting Goods Manufacturers Association in 2009 (SGMA, 2009), there were 7.8 million skateboarders in the United States. Most of these skateboarders are male (77.1%, \( N = 6,022,000 \)). In fact, among all males in the United States between 13 and 17 years of age, the participation rate in skateboarding is 15.7%. This age group is the second largest segment of male skateboarders (31.9%; the largest group is boys between 6 and 12 years of age [39.8%]). The South Atlantic region of the United States (e.g., Virginia, West
Virginia, Washington, DC, Maryland, North Carolina, South Carolina, Georgia, and Florida) was home to the largest percentage of male skateboarders \( (n = 19.2\%) \).

The study population for the current investigation consisted of male skateboarders attending high schools in a very large school system located in the southeastern United States. Study subjects will herein be referred to as *respondents* or *skateboarders/skaters* to reflect the “active and consensual relationship the participant[s] have in the investigation” (Heppner & Heppner, 2004, p. 109). Based on the minimal accepted sample size required for regression analysis, completed questionnaires were obtained from a purposive sample of \( \geq 150 \) skateboarders.

The school system from which the study sample was drawn was one of the 100 largest school systems in the country and one of only 26 systems that serve more than 100,000 students (National Center for Education Statistics, 2010). Unless otherwise cited, the following school enrollment and demographic data were obtained from the school system’s public website accessed in December 2010. During the 2009-2010 school year, 122,649 students in kindergarten through the 12th grades attended public schools across the county-wide system. The ratio of male students to female student was nearly equal (50.5% to 49.5%). According to the U.S. Census, the 2008 median income for the county was $50,660 (U.S. Census Bureau, 2010). Just over half of the student membership (52.5%) qualified for free or reduced school lunches (Donna Theil, personal communication, December 2, 2010) through the federal National School Lunch Program, a proxy measure for socioeconomic status. The school system’s website listed 23 public high schools with a total enrollment of approximately 34,700 students in grades 9 through
12. The overall graduation rate for the 2008-2009 school year was 66.6%, 12 points lower than the state graduation rate of 78.6%.

**Sampling Method**

The current investigation used location-based, intercept sampling to recruit a purposive sample from the target population. Location-based sampling is designed to recruit study subjects in places and at times where they would reasonably be expected to gather (Muhib et al., 2001). This method provides an efficient and effective means of accessing rare or hard-to-reach populations (Muhib et al., 2001; Voas et al., 2006). Careful selection of the locations chosen for data collection served as the first step in the screening of study respondents (Muhib et al., 2001). A series of steps have been taken to identify and select appropriate sampling locations.

The initial step taken to narrow the sampling frame was to identify the cities and school systems (“YRBS cities”) in which local risk behavior data was collected during the 2008-2009 school year and reported in the 2010 YRBS Report (CDC, 2010). Sampling skateboarders who attend high schools in a YRBS city allowed for the comparison of ATOD use data collected from skaters in the study against similar data collected from their age-cohort peers. Of the 23 cities that participated in the YRBS, three cities (Houston, Baltimore, and Washington, DC) were eliminated from the pool because risk behavior data collected could not be weighted due to inadequate response rates (i.e., response rates < 60%). Several more YRBS cities (i.e., Milwaukee, Chicago, and others) were eliminated from consideration based on the expectation that seasonally inclement weather in these cities during the projected timeframe for data collection would not be
conducive to skateboarding outdoors. Finally, from the remaining 13 YRBS cities, one city was selected based on two strengths. First, the city is located in a region of the United States known to have a relatively high percentage of males who report that they participate in skateboarding (SGMA, 2009). Second, the area has both public (free and run by the city parks department) and private (pay-to-skate) skate parks as well as several notorious and frequently visited street skating locations (“skate spots”).

To identify the pool of locations where members of the study population were likely to skateboard, a thorough search was conducted to find all of the skate parks and skate spots located within the boundaries of the selected school system. The names and locations of five public skate parks were identified through computer searches of the official websites hosted by each city. Two privately owned and operated skate parks were identified by searching two on-line skate park directories, skateboardpark.com and thrashermagazine.com (Skateboardpark.com; Thrasher Magazine, n.d.). All of the public skate parks were also listed in the on-line directories. Due to the limited locations available for data collection, random site selection is not feasible.

Data Collection Protocol

Permission to Collect Data

Approval of this research project was granted from the Institutional Review Board (IRB) at Kent State University after several concerns of the board were addressed (see Appendices A through D). An additional IRB modification to the original protocol was later approved in which a second researcher was added to assist with data collection (see Appendix E). In order to obtain authorization to recruit study respondents and collect data
at the five city-operated skate parks within the county, letters of introduction (see Appendix H) were sent to the city authorities in each of the four municipalities. Two weeks later, each office was contacted by telephone to confirm that permission to collect data at the site had been granted. The same process was followed to request the cooperation of the owners of the two private skate parks in the county.

**Respondent Recruitment**

The study population for the current investigation consisted of a purposive sample of male skateboarders who were currently attending high schools in a very large school system located in a southeastern state of the United States. A two-phase, multi-step process was used to identify and recruit respondents. A detailed description of this process follows.

**Initial screening and recruitment phase.** First pass screening of potential study respondents involved a visual determination of the age and sex of skate park patrons as they entered the intercept area.

1. All male patrons who appeared to be between 13 and 19 years of age were approached for recruitment.
2. Any male patron who appeared to be much younger than 13 or much older than 19 years of age was not approached for recruitment.
3. Any patron who clearly appeared to be female was not approached for recruitment.
4. Patrons for whom age and/or sex could not be clearly determined were also approached for recruitment.
Secondary screening and participant enrollment phase. Once potential respondents have been identified through visual screening, they were approached or intercepted by survey staff for recruitment into the study and the second screening phase took place.

1. The researcher briefly introduced herself and then asked the skater if he was currently enrolled in a high school in the selected school system. The researcher kept a reference list of all of the high schools housed within the school system in the event that the skater did not know in which school system he was enrolled.
   a. If the skater was not enrolled in a high school within the selected school system (either because he was too young or too old or he attended school in another system) he was thanked for his time and dismissed.
   b. If the skater was enrolled in a high school in the selected school system, then the screening process continued.

2. The researcher read aloud the Verbal Consent Script (Appendix I) which explained the purpose of the study, the nature of the information sought, and what volunteering for the study entailed. Potential respondents were offered one 12-ounce bottle of Gatorade as compensation for their participation in the study.

3. After the recitation of the consent script, the skater(s) were asked to participate.
   a. Skaters giving their consent (study respondents) were directed to an area where they could sit down to complete the instrument.
b. Skaters who did not wish to participate were thanked for their time and dismissed. The number of intercepts, study recruits, and refusals were recorded on an Intercept Log for analysis (see Appendix J).

4. After respondents completed the instrument, they were instructed to place it into a large envelope, seal the envelope, and return it to the researcher.

5. Respondents were given a copy of the verbal consent script which included a brief description of the study and its purpose and contact information for the investigator and the Kent State University Institutional Review Board. An additional handout was also made available to any skater who requested information about substance abuse treatment services and resources in the local area (see Appendix K).

**Instrumentation**

Data was collected using an anonymous instrument comprised of four subscales to assess the dependent variable (current substance use) and the independent variables (measures of skateboarding involvement; Appendix L). A description of each of the subscales follows.

**Substance use subscale.** The first subscale (item numbers 1, 1a, 3, 3a, 4, and 4a) asked skaters to report the frequency with which they used alcohol, tobacco (in the form of smoking cigarettes), and marijuana during the 30-day period preceding data collection. The questions used on the instrument were taken directly after a portion of the Youth Risk Behavior Survey (YRBS; Centers for Disease Control and Prevention, 2010). The YRBS is a self-administered school-based instrument developed by the CDC to assess the
self-reported risk behavior of students in grades 9 through 12. The YRBS has been administered to nationally representative samples of high school students on a bi-annual basis since 1991 (CDC, 2004).

In the YRBS and in this study, current use is the term used to indicate use occurring during the 30 days prior to taking the survey. For example, “During the past 30 days, on how many days did you have at least one drink of alcohol?” (CDC, 2009, p. 10). Respondents indicate how many days they used the drug on continuous scales that ranges from 0 days to all 30 days (tobacco and alcohol use), from 0 days to 20 or more days (binge drinking), and from 0 times to 40 or more times (marijuana use). Although self-reported current use is recorded using continuous scales, data reported by the CDC for public consumption in documents such as the Morbidity and Mortality Weekly Report is compressed into a dichotomous outcome measure (e.g., “Nationwide, 19.5% of students had smoked cigarettes on at least 1 day during the 30 days before the survey;” CDC, 2010, p. 10).

Test-retest reliability of the YRBS was documented by Brener et al. (2002) using the 1999 YRBS questionnaire, the version upon which subsequent editions were based. Brener and colleagues reported their findings using kappa statistics. Kappas for the 72-item instrument ranged from 23.6% (“Ever been taught about AIDS or HIV in school”) to 90.5% (“Ever had intercourse”) with an average kappa value of 60.7% for the instrument as a whole. The kappa for current tobacco use was 80.9%. The kappa for current alcohol use was 70.9% and 67.7% for current binge drinking (defined as 5 or more drinks in a row, within a couple hours). The kappa for marijuana use was 76.0%. 
Factors that may influence the validity of self-reported measures of health risk behaviors were examined in a literature review conducted by Brener, Billy, and Grady (2003). According to the authors, most self-reported health risk behavior data cannot be “verified independently in a cost-effective, feasible, or ethical manner” (p. 437). The factors found to affect the validity of the self-reported data collected with YRBS are not unique to the instrument. The same factors tend to plague all questionnaires that require the retrospective self-report of risk behavior. Brener and colleagues organized the factors found in the literature to influence or threaten the validity of self-reported substance use data from adolescents into cognitive and situational categories.

Cognitive factors included difficulty in accurately recalling the frequency of use or the timeframe in which the substance use occurred. Requiring adolescents to recall substance use over a longer time interval (i.e., one year versus 30 days) resulted in less accurate recall and poorer reliability. A second cognitive factor stemmed from comprehension problems from unfamiliar terms and difficulty defining and using reference periods. For example, the authors (Brener et al., 2003) found that reports of “ever having used a substance” were more reliable than reports of substance use during a particular period of time.

Two situational factors, social desirability and fear of reprisal, were found to consistently threaten the reliability of self-reports of substance use and other health risk behaviors (Brener et al., 2003). Adolescents were more likely to underreport behavior they perceived to be socially undesirable or if they were afraid of getting into trouble, likely artifacts of the strong informal and formal sanctions against substance use. The
authors concluded that accuracy of adolescent self-reported substance use was affected, at least in part, by concerns for privacy and confidentiality.

**Measures of skateboarding involvement.** The instrument included five separate measures to capture and quantify skateboarding involvement in five different ways. Each measure represented an independent variable investigated in the current study. Included in these measures were:

1. **Time:** The amount of time spent skateboarding during a typical week.
2. **Group skating:** What proportion skateboarding during a typical week took place while in a group with other skateboarders. Response range was “none of the time,” “some of the time,” “most of the time,” and “all of the time.”
3. **Primary skating location:** What proportion skateboarding during a typical week took place in a skate park. Response range was “none of the time,” “some of the time,” “most of the time,” and “all of the time.”
4. **Leisure identity:** Consisting of a single forced-choice item, respondents were asked to select which of three terms or labels best fit how they described themselves. Possible responses were limited to “athlete,” “skater,” or “jock.”
5. **Enduring involvement:** The Modified Involvement Scale (G. Kyle, Absher, Norman, Hammitt, & Jodice, 2007) was used to measure the personal relevance of and identification with skateboarding. A detailed description of this scale follows.

**The Modified Involvement Scale.** In the current study, enduring involvement was assessed using the Modified Involvement Scale (MIS; G. Kyle et al., 2007). Enduring
activity involvement “emerges when there is congruence between personal needs, goals, and values and the attributes of an activity” (G. Kyle et al., 2007, p. 400). The multi-dimensional construct of enduring involvement has been used to help understand the personal involvement and leisure identity of participants across a diverse range of activities, including camping, rock climbing, scuba diving, cycling, golf, downhill skiing, windsurfing, and gambling (Dickson & Faulks, n.d.). The MIS is the refinement and extension of a previous enduring involvement instrument created by McIntyre (1989).

The MIS includes five subscales: (a) *Attraction*, which assesses perceptions of activity importance and the pleasure derived from the activity; (b) *Centrality*, which assesses the “the locus of the activity within the context of the individual’s lifestyle including lifestyle choices and personal investments (i.e., financial and social) made by an individual to support their continued association with the activity” (G. Kyle et al., 2007); (c) *Social Bonding*, which assesses the extent to which enduring involvement is driven by social ties; (d) *Identity Affirmation*, which assesses the degree to which the activity provides opportunities to affirm one’s self-identity; and (e) *Identity Expression*, which assesses the degree to which the activity provides opportunities to express the self to others. Each of these five subscales contains five items measured on a five-point Likert scale with 1 representing *strongly disagree* through 5 representing *strongly agree*. Higher scores indicate greater enduring involvement.

Kyle and colleagues published a detailed account of the steps taken to develop and test the scale (G. Kyle et al., 2007). Construct validity of the scale was confirmed though several tests of convergent validity (the degree to which two independent measures agree
in their assessment of the same construct) and discriminant validity (the extent to which the instrument can discern between two different constructs; Portney & Watkins, 1999). Reliability of the scale was confirmed by examining the internal consistency and the composite reliability of the MIS dimensions using a sample of campers \((n = 424)\) and a sample of anglers \((n = 430)\). The Cronbach’s alpha coefficients calculated for each of the subscales exceeded 0.7 in both samples (see Table 1).

Table 1

*Reported Cronbach’s Alpha Coefficients for the MIS Subscales*

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Campers ((n = 424))</th>
<th>Anglers ((n = 430))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attraction</td>
<td>.85</td>
<td>.84</td>
</tr>
<tr>
<td>Centrality</td>
<td>.83</td>
<td>.79</td>
</tr>
<tr>
<td>Social Bonding</td>
<td>.71</td>
<td>.77</td>
</tr>
<tr>
<td>Identity Affirmation</td>
<td>.73</td>
<td>.75</td>
</tr>
<tr>
<td>Identity Expression</td>
<td>.74</td>
<td>.74</td>
</tr>
</tbody>
</table>

The MIS was used in the current investigation to provide a measure of the personal significance attached to involvement in and identification with skateboarding. Permission to use the MIS instrument was granted by the original author. This approval letter is located in Appendix M.

**Demographics subscale.** The final section of the instrument focused on demographics. Several pieces of demographic information were collected from each
respondent. These included current age, number of years skating, parental guardianship, grade level, and academic performance.

Data Analysis

Research Hypotheses

To address the research questions stated earlier in this document, the current investigation examined the relationship between measures of skateboarding involvement and substance use among a cohort of adolescent male skaters. The variables of age, number of years skating, parental guardianship, grade level, and academic performance were also compared. The following research hypotheses were addressed.

Direct effects.

Hypothesis 1.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate for more time than their counterparts who skate for less time.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate for more time than their counterparts who skate for less time.

Hypothesis 2.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate with their friends and their counterparts who skate alone.
H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate with their friends and their counterparts who skate alone.

**Hypothesis 3.**

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who street skate and their counterparts who park skate.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who street skate and their counterparts who park skate.

**Hypothesis 4.**

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who self-identify as “skaters” than their counterparts who do not.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who self-identify as “skaters” than their counterparts who do not.

**Hypothesis 5.**

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skaters with high enduring involvement scores and their counterparts with low enduring involvement scores.
H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skaters with high enduring involvement scores and their counterparts with low enduring involvement scores.

**Interaction effects.**

**Hypothesis 6.**

H₀: There was no statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use.

H₁: There was a statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use.

**Hypothesis 7.**

H₀: There was no statistically significant interaction between time spent skateboarding and skating with friends on self-reported alcohol, tobacco, or marijuana use.

H₁: There was a statistically significant interaction between time spent skateboarding and skating with friends on self-reported alcohol, tobacco, or marijuana use.

**Hypothesis 8.**

H₀: There was no statistically significant interaction between time spent skateboarding and skater identity, on self-reported alcohol, tobacco, or marijuana use.
H$_1$: There will be a statistically significant interaction between time spent skateboarding and skater identity on self-reported alcohol, tobacco, or marijuana use.

**Hypothesis 9.**

H$_0$: There will be no statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use.

H$_1$: There will be a statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use.

**Operationalizing the Variables**

**Dependent variable.** The dependent variable in the current study was self-reported current tobacco, alcohol, and marijuana use (items 1 through 4a). The use of each of three substances was measured using an interval scale in response to the prompt, “During the past 30 days, on how many days did you . . .” Response options range from “0 days” to “All 30 days” (cigarette and alcohol use), “0 days” to “20 days or more” (binge drinking), and “0 times” to “40 times or more” (marijuana use). Substance use data generated with these items was to be analyzed as either interval or dichotomous variables depending on the distribution of the use of each substance across the sample data.

**Independent variables.**

**Time.** The amount of time spent skateboarding variable was measured with two items (items 6, 7). The total number of days during a typical week participation in
skateboarding was measured using a continuous scale with responses ranging from “0 days” to “6 or 7 days a week.” A second item assessed the total number of minutes or hours spent skateboarding during a typical week using a continuous scale with responses ranging from “60 minutes or less a week” to “14 hours or more hours a week.”

**Group skiing.** The proportion of skateboarding during a typical week that takes place while in a group with other skateboarders rather than skateboarding alone was assessed in item 9. Skaters responded to the stem, “How often do you go skateboarding in a group with other skaters?” on a four-point Likert scale. The scale ranged from “Never,” indicating that the participant skates exclusively by himself to “All of the time,” indicating skating exclusively in a group with other skaters.

**Location.** Primary skating location variable was assessed with a single item (item 10) using the stem, “During a typical week of skateboarding, how much of time is spent skating in a skate park?” Responses on the four-point Likert scale ranged from “None of the time,” indicating that the respondent skates exclusively in unsanctioned skate spots such as public streets, sidewalks, or parking lots, to “All of the time,” indicating skating exclusively at publicly or privately operated skate parks.

**Enduring involvement.** The MIS (G. Kyle et al., 2007) was used to assess personal involvement and investment in skateboarding (items 14-37). The scale included five subscales (attraction, centrality, social bonding, identity affirmation, identity expression) with five items in each. The MIS utilized a five-point Likert scale. Responses to the scale ranged from “Strongly Disagree” to “Strongly Agree” with a “Neutral” option. To generate a dichotomous measure, a mean score across all five subscales was calculated
for each respondent. The sample, then, was divided at the median into high- and low-involved groups. Membership in the high-involved group indicated a stronger identification and deeper involvement with skateboarding (G. Kyle, Theodorakis, Karageorgiou, & Lafazani, 2010).

**Control variables.** Several forms of categorical demographic data were collected and analyzed as control variables. Using a nominal scale, legal guardianship (item 39) was assessed using the stem “Which of the following people are your legal guardians?” Response options consisted of “Mother,” “Father,” “Stepmother,” “Stepfather,” “Grandparent(s) or other relatives,” “Foster parent(s),” and “Other.” Grade level was assessed with a single question (item 43) using a nominal scale with the responses consisting of “9th grade,” “10th grade,” “11th grade,” and “12th grade.” Academic performance (item 44) was assessed by asking skaters to respond to the stem, “Which letter grade best describes your academic performance?” Using an ordinal scale, response options included “A,” “A-,” “B+,” “B,” “B-,” … “D or lower.” Sex of the respondent (item 38), measured on a nominal scale with item responses of “male” or “female,” was included in this section of the questionnaire as a means of confirming membership in the target population.

**Data Analysis Protocol**

Analysis of the data collected in this study occurred in two phases. A preliminary analysis was necessary to determine the most appropriate way to represent the dependent variable, substance use, in the subsequent hypothesis testing. In specific, a judgment was made with respect to whether alcohol, tobacco, and marijuana use should be treated as
separate dependent variables and tested individually in each hypothesis or if a composite use index could be created that would adequately represent the use of the three substances as one dependent variable for testing. To aid in making this determination, several data management procedures were performed. Based upon the results of the descriptive analysis, dependent variables to represent the drug use data for the second phase of data analysis could take one or more of the following forms:

- A dichotomous composite variable could be created to represent the use of any of the three drugs or none of the three drugs (“have used any drug” versus “have not used any drug”);
- A continuous composite score of responses to all drug questions could be used in which the higher the score the more drug use;
- A ordinal score based on the number of three drugs used (range is 0=used no drugs to 3 = used alcohol, tobacco, and marijuana);
- A dichotomous variable for each drug (“has used” versus “has not used”) could be created with which all three substances would be analyzed individually for each hypothesis.

After a determination was made regarding what form the dependent variable would be used in hypothesis testing, the second phase of data analysis could begin.

In testing of the direct effects in hypotheses 1 through 5, chi square tests were performed because a dichotomous variable was selected to represent the dependent variables. Because continuous variables were not selected to represent substance use, two-tailed t-tests were not conducted. Testing of the interactions in hypotheses 6 through
9 were performed using the binomial logistic function of Generalized Logistical Modeling (GLM) of Statistical Package for the Social Sciences (SPSS). Significance level of \( p < .05 \) was used throughout. The research hypotheses, independent variables, and statistical analyses that were used to test each relationship are summarized in Table 2.

**Table 2**

*Null Hypotheses, Instrumentation, Variables, and Analysis*

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Independent variables</th>
<th>Item no.</th>
<th>Scale</th>
<th>Response range</th>
<th>Statistical analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 There will be no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate for more time than their counterparts who skate for less time.</td>
<td>2-tailed ( t )-test (interval/ratio DV) Chi-squared (dichotomous DV)</td>
<td>6, 7</td>
<td>Ratio</td>
<td>0 – 7</td>
<td></td>
</tr>
<tr>
<td>2 There will be no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate with their friends and their counterparts who skate alone.</td>
<td></td>
<td>9</td>
<td>Dichotomous</td>
<td>Most or all of the time to some or none of the time</td>
<td>Same as above</td>
</tr>
<tr>
<td>3 There will be no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who street skate and their counterparts who park skate.</td>
<td></td>
<td>10</td>
<td>Dichotomous</td>
<td>Most or all of the time to some or none of the time</td>
<td>Same as above</td>
</tr>
<tr>
<td>4 There will be no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who self-identify as “skaters” than their counterparts who do not.</td>
<td></td>
<td>13</td>
<td>Categorical</td>
<td>Athlete or skater or jock</td>
<td>Same as above</td>
</tr>
</tbody>
</table>

*(table continues)*
**Table 2 (continued)**

**Null Hypotheses, Instrumentation, Variables, and Analysis**

<table>
<thead>
<tr>
<th>Null hypothesis</th>
<th>Item no.</th>
<th>Scale</th>
<th>Response range</th>
<th>Statistical analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 There will be no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skaters with high enduring involvement scores and their counterparts with low enduring involvement scores.</td>
<td>14-37</td>
<td>Ordinal or dichotomous</td>
<td>5-pt. Likert or High/low</td>
<td>Same as above</td>
</tr>
<tr>
<td>6 There will be no statistically significant interaction between time spent skateboarding, skating with friends, and self-reported alcohol, tobacco, or marijuana use.</td>
<td>6, 7, 9</td>
<td>DV x ratio x dichotomous</td>
<td>General linear model (interval/ratio DV)</td>
<td>Generalized linear model (dichotomous DV)</td>
</tr>
<tr>
<td>7 There will be no statistically significant interaction between time spent skateboarding, skating location on self-reported alcohol, tobacco, or marijuana use.</td>
<td>6, 7, 10</td>
<td>DV x ratio x dichotomous</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td>8 There will be no statistically significant interaction between time spent skateboarding, skater identity on self-reported alcohol, tobacco, or marijuana use.</td>
<td>6, 7, 13</td>
<td>DV x ratio x dichotomous</td>
<td>Same as above</td>
<td></td>
</tr>
<tr>
<td>9 There will be no statistically significant interaction between time spent skateboarding, enduring involvement on self-reported alcohol, tobacco, or marijuana use.</td>
<td>6, 7, 14-37</td>
<td>DV x ratio x dichotomous</td>
<td>Same as above</td>
<td></td>
</tr>
</tbody>
</table>
The Pilot Study

A pilot study was conducted to determine the efficiency of the participant recruitment process and the efficacy of the data collection instrument created for this research. The Institutional Review Board at Kent State University has approved this pilot study (see Appendix D). Initially, two indoor skate parks were identified as potential sites for pilot testing. Efforts to gain access to the first indoor skate park, however, were unsuccessful. The owner of the skate park cited fears of negative publicity, an unwarranted association with drug use at his establishment, and possible reprisal from parents for involving their children in research without obtaining parental consent as the main concerns weighing in his decision to decline to participate in the pilot study. Verbal permission to pilot test the recruitment protocol and data collection was obtained from the proprietor at the second skate park, a privately owned, combination indoor skate park and retail skate shop in northeastern Ohio.

To test the efficiency of the recruitment process, an attempt was made to create similar circumstances around which potential study respondents would be approached for recruitment. Creating such circumstances proved challenging, however, due to the location chosen for the pilot study. In the full study, a venue-based intercept strategy similar to that which is often employed by marketing firms in shopping malls and other areas where people congregate was used: Male skateboarders of high school age were approached by survey staff as they entered the outdoor skate park, the confines of which were demarked only by the edges of the concrete skating surface, rather than by a fence or some other enclosure. As such, skaters entered and exited the area anywhere around the
entire perimeter of the park. At the pilot location, however, entry to the skateboarding area was far more restricted. Skaters must enter the facility through a front door and then walk through a retail space before reaching the room where the skateboarding takes place. This layout is similar to the pro shops that one might encounter at a golf course or a tennis club. Consequently, care was taken to assure that the recruitment process did not interfere with shop patrons and potential sales.

A second challenge stemmed from small square footage of the skating facility which limited the number of skaters who could safely skate in the space at any given time. Recognizing these limitations, the owner of the facility graciously invited the principal investigator into the shop on a weekend afternoon to collect data in conjunction with a skateboarding competition the shop was hosting, which promised to bring in additional potential study respondents.

Following the recruitment protocol as closely as possible, males between 11 and 20 years of age were approached, or intercepted, from within the shop. After reading aloud the Verbal Consent Script (see Appendix I), the principal investigator asked the skater or skaters if several eligible males were standing together to volunteer to complete the instrument (or “questionnaire”). Skaters were offered a 12-ounce bottle of Gatorade as compensation for their time and assistance. A total of 13 males between 12 and 19 years of age were intercepted over a period of two Wednesday evenings and one Saturday evening. All of the individuals who were intercepted agreed to participate. The participant recruitment process went smoothly and efficiently.
To complete the instrument, skaters were provided with a clipboard, a pencil, and a place to sit down. When they were finished, skaters were instructed to seal their completed instruments into a large envelope and return it to the principal investigator. Skaters took approximately 10 minutes to complete the survey. The time required to complete the entire process, from the initial intercept to returning the completed instrument, took approximately 20 minutes. Administration of the instrument to 13 skaters yielded 13 (100%) instruments that were retained for analysis. The length of the instrument, the depth and readability of the questions contained within, and the amount of time required to complete the instrument was appropriate for this population. Asking skaters to seal their completed instruments in envelopes proved to be an effective means of protecting their anonymity during the data collection process.

Several forms of analysis of the data collected in this pilot study were performed using SPSS software. Visual inspection of the data and frequency tables created by SPSS revealed no missing data for any items on the instrument. Descriptive statistics on the all-male sample revealed that the skaters participating in the pilot study ranged between 12 and 20 years of age ($M = 16.2$ years). Four of the skaters reported being in grade 9, one in grade 10, three in grade 11, and one in grade 12. In addition, two respondents were not yet in high school and two more were high school graduates. During the larger study, recruitment of respondents were delimited to skateboarders enrolled in grades 9-12 which resulted in a more homogenous sample with respect to age. Pilot data revealed that the number of years spent skating varied widely, ranging from 1 year to 13 years. The average number of years spent skateboarding was 6.71 years. Seventy-seven percent
(77%) of the sample reported skating on at least 5 days of a typical week. The amount of
time spent skateboarding during a typical week varied yet evenly across the study sample
from “2 to 3 hours a week” (n = 2, 15.5%) through “14 hours or more a week” (n = 5,
38.5%).

To determine the extent to which the instrument provided consistent results, a test
of internal consistency (i.e., Cronbach’s alpha) was conducted on the MIS subscale (G.
Kyle et al., 2007). The reliability analyses produced a reliability coefficient of α = .889,
confirming that the MIS subscale produced reliable and consistent data with subjects from
this population. Due to the small size of the pilot sample (n = 13) and the large number of
items in the MIS subscale (25 items), factor analysis could not be performed. Through
testing of the MIS instrument, including confirmatory factor analysis has been conducted
and the results published by the original author (G. Kyle et al., 2007).

In conclusion, results of the pilot study have confirmed the appropriateness of the
proposed research methods with the population under study. The participant recruitment
and consent process was conducted as planned and it ran smoothly and efficiently.
Importantly, the data collection instrument proved to be reliable, readable, and agreeably
brief; therefore no changes to the instrument were necessary.

Limitations

The current investigation uses location-based, intercept sampling to recruit a
purposive sample from the target population. Location-based sampling is designed to
recruit study subjects in places and at times where they would reasonably be expected to
gather (Muhib et al., 2001). This method provides an efficient and effective means of
accessing rare or hard-to-reach populations (Muhib et al., 2001; Voas et al., 2006). A limitation specific to location-based sampling is the assumption that members of the target population will skateboard at the locations where data collection is taking place. Although attempts were made to gather data at a variety of skateboarding outlets (i.e., public and privately operated skate parks plus well-frequented skate spots) and during various times of the day and days of the week, some members of the target population did not attend the locations or went very rarely and had very little chance of participating in the study (Muhib et al., 2001).

A second limitation of the current investigation stems from the decision to use a purposive rather than a random sampling method. Purposive, intercept sampling provided an efficient and cost-effective means of reaching a small, widely dispersed population like that of skateboarders (Voas et al., 2006). Any conclusions reached as a result of this investigation, however, is unique to this sample of skateboarders and cannot be presumed to represent all male skateboarders in the United States (Portney & Watkins, 1999).

**Delimitations**

The current investigation was delimited in several ways. First, the study was confined to males because males represent approximately 75% of all skateboarding participants (SGMA, 2009). Secondly, to facilitate comparisons with non-skateboarding counterparts using YRBS data, the study was restricted to a cohort of males who currently attend a high school (grades 9 through 12) within the designated YRBS city.
CHAPTER IV

RESULTS

Introduction

The purpose of the present study was to analyze the relationship between skateboarding and alcohol, tobacco, and marijuana use (substance use) among a cohort of adolescent male skateboarders residing in two metropolitan regions in the Eastern United States. The following research hypotheses were tested.

Direct Effects

Hypothesis 1.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate for more time than their counterparts who skate for less time.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate for more time than their counterparts who skate for less time.

Hypothesis 2.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate with their friends and their counterparts who skate alone.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who skate with their friends and their counterparts who skate alone.
Hypothesis 3.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who street skate and their counterparts who park skate.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who street skate and their counterparts who park skate.

Hypothesis 4.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who self-identify as “skaters” than their counterparts who do not.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between adolescents who self-identify as “skaters” than their counterparts who do not.

Hypothesis 5.

H₀: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skaters with high enduring involvement scores and their counterparts with low enduring involvement scores.

H₁: There was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skaters with high enduring involvement scores and their counterparts with low enduring involvement scores.
Interaction Effects

Hypothesis 6.

H₀: There was no statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use.

H₁: There was a statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use.

Hypothesis 7.

H₀: There was no statistically significant interaction between time spent skateboarding and skating with friends on self-reported alcohol, tobacco, or marijuana use.

H₁: There was a statistically significant interaction between time spent skateboarding and skating with friends on self-reported alcohol, tobacco, or marijuana use.

Hypothesis 8.

H₀: There was no statistically significant interaction between time spent skateboarding and skater identity, on self-reported alcohol, tobacco, or marijuana use.

H₁: There will be a statistically significant interaction between time spent skateboarding and skater identity on self-reported alcohol, tobacco, or marijuana use.
Hypothesis 9.

H₀: There will be no statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use.

H₁: There will be a statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use.

Data Collection

In the current study, respondents were recruited and data were collected concurrently using a venue-based intercept design. This strategy involves sampling and collecting data in physical locations (skate parks) where members of a target population (skateboarders) are likely to congregate. When locations are correctly identified, doing so provides an efficient means of accessing hard to reach, or in this application, scattered populations. Relying on an approach that is dependent upon gathering data in situ, however, also imperils the process because environmental factors, including inclement weather, can interfere. One such factor against which the current data collection protocol was particularly vulnerable was rain. In skate parks, rain water pools in the hollows and wets the smooth concrete and metal surfaces making them too slippery and potentially dangerous on which to skate. Therefore, when it rains, skaters do not use the skate park. As is explained, rain plagued data collection efforts in the current investigation at nearly every turn. Consequently, sampling and the resulting data used in this study were collected in two rounds from skate parks located in two separate geographic regions of the
United States. For documentation of IRB approval to conduct research in Florida, see Appendices A through E.

In early March 2011, city officials responsible for the operation of four public skate parks in a metropolitan county of Florida were contacted by letter, then by telephone to gain access to the parks for use as sampling venues (see Appendix H). In the last week of March, the researcher travelled to Florida to recruit skateboarders and collect data for the study. The weather preceding the sampling timeframe in the target county had been ideal for skateboarding. It was warm, sunny, and dry. In fact, during the 25 days of March prior to the arrival of the research team on March 26, the city had received only 0.59 inches of rainfall (www.accuweather.com, 2011a). By contrast, during the sampling timeframe (March 27 through March 31), rain showers and thunderstorms occurred frequently, resulting in 1.85 inches of rainfall over the five-day period (www.accuweather.com, 2011a). In an effort to recruit as many skateboarders as possible in spite of the inclement weather, the researcher adopted a strategy intended to take advantage of the scattered and transient nature of the thunderstorms. Once a rain shower began, the researcher left the park and raced across town to another site and attempted to collect data there before the storm could arrive. Similarly, during periods of fair weather, after all eligible and willing skaters at a park were recruited, the researcher would bolt off to another park in search of new subjects. Despite the best efforts of the staff, however, data from only 23 subjects were collected, a figure well shy of the goal of 150.

Due to the poor results in Florida, a plan was devised to collect additional data from skateboarders using skate parks in Ohio. A modification request outlining the
change in location was submitted to and accepted by the university IRB (see Appendix F [Modification Request to Collect Data in Ohio] and Appendix G [IRB Approval of Modification Request]). To gain access to the Ohio skate parks, the same process used in Florida was initiated: City officials overseeing the operation of nine public skate parks in Northeastern Ohio were contacted by letter and then by phone to request permission to use the parks as sampling venues. Permission was granted by all nine of the cities contacted. Sampling and data collection began again in the Ohio parks on May 1, 2011, with the aim of reaching the original goal of 150 completed instruments.

Unfortunately, inclement weather continued to dog data collection efforts as rain fell in Northeastern Ohio throughout the month of May 2011. In fact, this particular month of May was the second wettest one on record for the region, during which at least a trace of rain fell on 25 of the 31 possible days (totaling 7.25 inches; Macek, 2011; www.accuweather.com, 2011b). The dour, rainy weather effectively drove the skaters away from the parks and quashed the data collection. Consequently, data collection efforts were discontinued on May 31, 2011.

Combining collection efforts undertaken in both Florida and Ohio, the sample totaled 126 skaters. To reach this final number, 21 actual days of sampling and data collection occurred over a 36-day period, during which 39 separate visits were made to 14 skate parks. During data collection, many skaters were approached for recruitment. By far the most common reason why skaters were intercepted but not recruited for the study was that they did not meet one important criterion for enrollment: They were not of high school age. Importantly, of the eligible skaters who were asked if they would participate
in the study, only six declined (three in Florida, three in Ohio). No data were gathered from these six potential subjects.

**Findings**

The sample for the current study consisted of male skateboarders who attended high schools in Northeastern Florida and Northeastern Ohio during the 2010-2011 academic year. Data from 23 respondents were collected from skate parks in Florida and from 103 respondents from skate parks in Ohio. All study respondents were in high school, defined as being enrolled in grades 9 through 12. Among the 126 instruments collected, two were excluded from the final analysis because the respondents were classified as non-skaters, meaning that they indicated they do not skate during a typical week.

**Demographic Characteristics**

Several pieces of demographic information were collected from each respondent. These included current age, number of years skating, parental guardianship, grade level, and academic performance. The demographic characteristics of the sample by grade level, academic performance, and parental monitoring are summarized below.

**Grade level.** The final sample consisted of 124 subjects, referred to herein as *skateboarders* or simply as *skaters*. While each of the four high school grade levels was well represented, skaters in the 9th grade represented the largest share of the sample (*n* = 40, 32.3%). There were 25 (20.2%) skaters in the 10th grade, 34 (27.4%) in the 11th grade (the second largest group), and 24 (19.4%) in the 12th grade. One skater did not report his grade level. Self-reported academic performance information was also collected.
Academic performance. Nearly two-thirds of the sample \((n = 82, 66.1\%)\) reported being “A” or “B” students. Among those remaining, 24.2% \((n = 30)\) reported earning “C” grades and 8.9% \((n = 11)\) earning “D or lower” grades. One skater did not report his academic performance. Table 3 provides a summary of the sample by grade level and academic performance.

Table 3

Demographic Characteristics of Skateboarders by Grade Level \((N = 124)\)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>(n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nine</td>
<td>40</td>
<td>32.3</td>
</tr>
<tr>
<td>Ten</td>
<td>25</td>
<td>20.2</td>
</tr>
<tr>
<td>Eleven</td>
<td>34</td>
<td>27.4</td>
</tr>
<tr>
<td>Twelve</td>
<td>24</td>
<td>19.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>123</td>
<td>99.2</td>
</tr>
<tr>
<td><strong>Academic Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A’s</td>
<td>32</td>
<td>25.8</td>
</tr>
<tr>
<td>B’s</td>
<td>50</td>
<td>40.3</td>
</tr>
<tr>
<td>C’s</td>
<td>30</td>
<td>24.2</td>
</tr>
<tr>
<td>D’s or below</td>
<td>11</td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>123</td>
<td>99.2</td>
</tr>
</tbody>
</table>

*Note.* As a result of missing data, some column totals do not equal 100%. 
**Parental monitoring.** Perceptions of parental monitoring, a measure of the level of supervision during time spent skating while away from home was measured with two items: (a) “When you are skateboarding, about how much of the time do your parents/guardians know exactly where you are?” (b) “When you are skateboarding, about how much of the time do your parents/guardians know exactly what you are doing?” Approximately 50% of skaters reported believing that, while skateboarding in locations other than at one’s home (and presumably beyond the reach of direct supervision), their parents or guardians knew where they were skating and/or what they were doing “most” or “all of the time” (where: $n = 69$, 55.6%; what: $n = 63$, 52.5%). Importantly, the data revealed that a perception existed among this pool of skaters that their parents/guardians were unaware of their whereabouts and/or their actions while they were out skating nearly half of the time. One skater did not record a response to the *where you are* item. Four skaters did not record a response to the *what you are doing* item. Table 4 contains the demographic characteristics of the sample by level of parental monitoring.

**Measures of Skateboarding Involvement**

**Time.** Five measures were used to capture and quantify skateboarding involvement in five different ways, each representing an independent variable under investigation in the current study. Table 5 displays the demographic information for skateboarders in the sample for each of these variables. The first and perhaps the simplest of these measures asked skateboarders to respond to the question, “During a typical week, on how many days do you participate in skateboarding?” Data revealed that the majority of skateboarders in this sample skated almost daily. Nearly half of the sample indicated
Table 4

*Demographic Characteristics of Skateboarders by Reported Parental Monitoring of Skateboarding While Away From Home (N = 124)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents know where</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>10</td>
<td>8.1</td>
</tr>
<tr>
<td>Some of the time</td>
<td>44</td>
<td>35.5</td>
</tr>
<tr>
<td>Most of the time</td>
<td>47</td>
<td>37.9</td>
</tr>
<tr>
<td>All of the time</td>
<td>22</td>
<td>17.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>123</td>
<td>99.2</td>
</tr>
<tr>
<td><strong>Parents know what</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>14</td>
<td>11.7</td>
</tr>
<tr>
<td>Some of the time</td>
<td>43</td>
<td>35.8</td>
</tr>
<tr>
<td>Most of the time</td>
<td>38</td>
<td>31.7</td>
</tr>
<tr>
<td>All of the time</td>
<td>25</td>
<td>20.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
<td>96.8</td>
</tr>
</tbody>
</table>

*Note.* As a result of missing data, some column totals do not equal 100%.

that they skate “6 or 7 days a week” \(n = 61, 49.2\%\) and over three-quarters of the sample indicated skating four or more days a week \(n = 98, 78.7\%\).

**Group skating.** The second variable depicted in Table 5 represents how much time spent skating typically takes place or occurs in groups with other skaters present. The data revealed that, although skateboarding is considered an individual pursuit, among the respondents in this sample, skateboarding is rarely engaged in solo. None of the
Table 5

*Demographic Characteristics of Skateboarders by Measures of Skateboarding Involvement (N = 124)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong># of days per week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>6.5</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>13.7</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>12.9</td>
</tr>
<tr>
<td>5</td>
<td>21</td>
<td>16.6</td>
</tr>
<tr>
<td>6 or 7</td>
<td>61</td>
<td>49.2</td>
</tr>
<tr>
<td><strong>Group skating</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Some of the time</td>
<td>16</td>
<td>12.9</td>
</tr>
<tr>
<td>Most of the time</td>
<td>60</td>
<td>48.4</td>
</tr>
<tr>
<td>All of the time</td>
<td>47</td>
<td>37.9</td>
</tr>
<tr>
<td><strong>Skating in skate parks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>4</td>
<td>3.2</td>
</tr>
<tr>
<td>Some of the time</td>
<td>43</td>
<td>34.7</td>
</tr>
<tr>
<td>Most of the time</td>
<td>68</td>
<td>54.8</td>
</tr>
<tr>
<td>All of the time</td>
<td>9</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>Leisure identity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Athlete</td>
<td>38</td>
<td>32.8</td>
</tr>
<tr>
<td>Skater</td>
<td>77</td>
<td>66.4</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 5 (continued)

**Demographic Characteristics of Skateboarders by Measures of Skateboarding Involvement (N = 124)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jock</td>
<td>1</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Enduring involvement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low involvement</td>
<td>48</td>
<td>42.9</td>
</tr>
<tr>
<td>High involvement</td>
<td>64</td>
<td>57.1</td>
</tr>
</tbody>
</table>

*Note. As a result of missing data, some column totals do not equal 100%.*

Skateboarders indicated that they typically skate alone, or outside the presence of at least one other skater. Conversely, 86.3% of the sample reported skating in a group with other skaters “most” or “all of the time” (*n* = 107).

**Location.** Table 5 also includes demographic information regarding how much time spent skating typically takes place in a skate park. Relatively few skateboarders indicated that they skated exclusively at skate parks (*n* = 9, 7.3%) or exclusively on the streets (*n* = 4, 3.2%). Over half of the sample indicated that they were park skaters, typically skating at skate parks “most of the time” (*n* = 6, 54.8%) while just over a third (*n* = 43, 34.7%) indicated they were street skaters, skating at skate parks only “some of the time.” The heavy representation of park skaters over street skaters may be due in part to the fact that most of the skateboarders in the study were recruited from inside skate parks.

**Leisure identity.** Frequency data for the leisure identity variable is also summarized in Table 5. On a measure consisting of a single forced-choice item,
respondents were asked to select which of three terms or labels best fit how they described themselves. Possible responses were limited to “athlete,” “skater,” or “jock.” The data revealed that the majority of the sample (66.4%, $n = 77$) chose the skater designation. Of the remainder of the sample, all but one respondent chose athlete ($n = 38, 32.8$%). Eight others (8.9%) did not record a response.

**Enduring involvement.** The final set of demographic information illustrated in Table 5 has been distilled from the 25-item Modified Involvement Scale (MIS; G. Kyle et al., 2007). The original analysis plan for this independent variable called for using the overall median MIS score (Mdn = 4.20 out of 5.0) on the subscale to parcel the sample into high and low enduring involvement groups. Frequency data revealed that six skaters had average MIS scores equal to the sample median score. To accommodate these six skaters, a moderate group would be needed. Doing so, however, would cause problems during chi square tests of the hypotheses because greater than 20% of the cells would have fewer than five cases per cell. Accordingly, to facilitate statistical analysis, the sample was split into low and high enduring groups based on the overall average MIS score of 4.08.

The low involvement group, skateboarders whose average score on the MIS was less than the group average, was the smaller of the two groups ($n = 48, 42.9$%). At the opposite end of the scale was the highly-involved group which consisted of 64 (57.1%) skaters whose average enduring involvement scores fell above the group median. Twelve skateboarders (9.7%) could not be placed into any enduring involvement group due to missing data.
**Frequency of Self-Reported Alcohol, Tobacco, and Marijuana Use**

In the present study, current use of alcohol, tobacco, and marijuana were the dependent variables of interest. Skateboarders were asked to report the frequency with which they used each substance during the 30 days preceding data collection. The frequency of use was measured using ordinal scales that ranged from 0 days or 0 times to all 30 days or 40 or more times, depending on the substance in question. The resulting data are depicted in Table 6 for alcohol use, Table 7 for tobacco use, and Table 8 for marijuana use. Please note that, unless stated otherwise, in these and all subsequent tables depicting substance use data, the statements made about substance use refer specifically to *current use*, defined as use occurring during the 30-day period preceding data collection.

**Data management and the dependent variables.** Examination of current alcohol, tobacco, and marijuana use frequency data as part of data management procedures revealed that the majority of cells across the ordinal scales contained fewer than 5 cases, with a number of cells having zero cases (see Tables 6, 7, and 8 for examples). Subsequently, due to inadequate cell size \((n_{ij} \geq 5)\) across greater than 20% of the crosstabulation tables (Portney & Watkins, 1999), all levels of use have been collapsed, creating dichotomous groups of users and non-users to represent use of each substance for analysis. The frequency distributions of substance use as dichotomous variables are depicted in Table 9. For ease of comparison, the percentage and number of users and non-users at each level of the independent variable are shown side-by-side for each substance.
Table 6

Percentages and Frequencies of Current Alcohol Use Reported by Skateboarders in Each Grade Level by Number of Days Used

<table>
<thead>
<tr>
<th>Number of days used</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>(n)</td>
<td>(n)</td>
<td>(n)</td>
<td>(n)</td>
</tr>
<tr>
<td>0</td>
<td>80.0 (32)</td>
<td>52.0 (13)</td>
<td>55.9 (19)</td>
<td>33.3 (8)</td>
</tr>
<tr>
<td>1 to 2</td>
<td>15.0 (6)</td>
<td>32.0 (8)</td>
<td>23.5 (8)</td>
<td>29.2 (7)</td>
</tr>
<tr>
<td>3 to 5</td>
<td>2.5 (1)</td>
<td>8.0 (2)</td>
<td>17.6 (6)</td>
<td>4.2 (1)</td>
</tr>
<tr>
<td>6 to 9</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>16.7 (4)</td>
</tr>
<tr>
<td>10 to 19</td>
<td>2.5 (1)</td>
<td>8.0 (2)</td>
<td>2.9 (1)</td>
<td>8.3 (2)</td>
</tr>
<tr>
<td>20 to 29</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>4.2 (1)</td>
</tr>
</tbody>
</table>
Table 7

*Percentages and Frequencies of Current Tobacco Use Reported by Skateboarders in Each Grade Level by Number of Days Used*

<table>
<thead>
<tr>
<th>Number of days used</th>
<th>Grade Level</th>
<th>9 % (n)</th>
<th>10 % (n)</th>
<th>11 % (n)</th>
<th>12 % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>72.5 (29)</td>
<td>64.0 (16)</td>
<td>58.8 (20)</td>
<td>20.8 (5)</td>
</tr>
<tr>
<td>1 to 2</td>
<td></td>
<td>12.5 (5)</td>
<td>12.0 (3)</td>
<td>2.9 (1)</td>
<td>8.3 (2)</td>
</tr>
<tr>
<td>3 to 5</td>
<td></td>
<td>2.5 (1)</td>
<td>4.0 (1)</td>
<td>5.9 (2)</td>
<td>0.0 (0)</td>
</tr>
<tr>
<td>6 to 9</td>
<td></td>
<td>10.0 (4)</td>
<td>0.0 (0)</td>
<td>5.9 (2)</td>
<td>8.3 (2)</td>
</tr>
<tr>
<td>10 to 19</td>
<td></td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>5.9 (2)</td>
<td>16.7 (4)</td>
</tr>
<tr>
<td>20 to 29</td>
<td></td>
<td>0.0 (0)</td>
<td>8.0 (2)</td>
<td>8.8 (3)</td>
<td>8.3 (2)</td>
</tr>
<tr>
<td>All 30</td>
<td></td>
<td>2.5 (1)</td>
<td>12.0 (3)</td>
<td>11.8 (4)</td>
<td>37.5 (9)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.0 (40)</td>
<td>100.0 (25)</td>
<td>100.0 (34)</td>
<td>100.0 (24)</td>
</tr>
</tbody>
</table>
Among the pool of 123 skateboarders, a total of 48 (38.7%) skaters (skater-abstainers) reported that they did not use any of the three substances under investigation (alcohol, tobacco, and marijuana) during the month preceding data collection. Conversely, 61.3% \((n = 76)\) skateboarders (users) reported using at least one of the three substances during the 30-day period preceding data collection. In regard to specific substances, 41.5% \((n = 51)\) skateboarders reported using alcohol, 43.1% \((n = 53)\) reported using tobacco, and 37.4% \((n = 46)\) reported using marijuana. Finally, within this group of users, 27.6% \((n = 21)\) reported using only one substance, 46.1% \((n = 35)\) reported using some combination of two substances, and 26.3% \((n = 20)\) reported using all three of the substances. Table 9 shows the demographic characteristics (grade level, academic
Table 9

Percentages and Frequencies of Skateboarders Reporting Current Substance Use by Grade, Academic Performance, and Parental Monitoring

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Alcohol</th>
<th>Tobacco</th>
<th>Marijuana</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-user % (n)</td>
<td>User % (n)</td>
<td>Non-user % (n)</td>
</tr>
<tr>
<td>Grade level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>80.0 (32)</td>
<td>20.0 (8)</td>
<td>72.5 (29)</td>
</tr>
<tr>
<td>10</td>
<td>52.0 (13)</td>
<td>48.0 (12)</td>
<td>64.0 (16)</td>
</tr>
<tr>
<td>11</td>
<td>55.9 (19)</td>
<td>44.1 (15)</td>
<td>58.8 (20)</td>
</tr>
<tr>
<td>12</td>
<td>33.3 (8)</td>
<td>66.7 (16)</td>
<td>20.8 (5)</td>
</tr>
<tr>
<td>Academic Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A’s</td>
<td>65.6 (20)</td>
<td>34.4 (11)</td>
<td>62.5 (20)</td>
</tr>
<tr>
<td>B’s</td>
<td>56.0 (28)</td>
<td>44.0 (22)</td>
<td>66.0 (33)</td>
</tr>
<tr>
<td>C’s</td>
<td>53.3 (16)</td>
<td>46.7 (14)</td>
<td>36.7 (11)</td>
</tr>
<tr>
<td>D’s or below</td>
<td>63.6 (7)</td>
<td>36.4 (4)</td>
<td>54.5 (6)</td>
</tr>
<tr>
<td>Parental Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>24.3 (17)</td>
<td>54.0 (27)</td>
<td>36.4 (16)</td>
</tr>
<tr>
<td>Median</td>
<td>71.4 (15)</td>
<td>28.6 (6)</td>
<td>69.9 (13)</td>
</tr>
<tr>
<td>High</td>
<td>69.1 (38)</td>
<td>30.9 (17)</td>
<td>70.9 (39)</td>
</tr>
<tr>
<td>All Respondents</td>
<td>58.5 (72)</td>
<td>41.5 (51)</td>
<td>56.9 (71)</td>
</tr>
</tbody>
</table>

Note. As a result of missing data, some row totals do not equal 100%. Numbers in the parentheses are the number of skateboarders in each demographic group. For example, among the study skateboarders in the 10th grade, 12 of them, or 48%, reported using alcohol at least once during the 30 days preceding data collection.
performance, and parental monitoring) of skateboarders in the study now grouped dichotomously as either alcohol, tobacco, and marijuana users or non-users.

**Grade level.** The self-reported substance use by skateboarders in the current study reflects a general trend toward more frequent substance use as youth advance in grade. For example, the data obtained from this sample of skateboarders showed that, in comparison to skaters in grades 9, 10, and 11, the highest percentage of users of all three substances was found among the skaters in the 12th grade. In specific, skaters in the 12th grade had the highest percentage of respondents who reported using at least one of any of the three substances within the preceding month (83.3%, n = 20) as well as the highest percentage of respondents who reported using all three substances during the same timeframe (55.0%, n = 11). With respect to the use of each substance specifically, the data revealed that skaters in the 12th grade had a higher ratio of users to non-users of alcohol, tobacco, and marijuana than did skaters in the three lower grades (see Table 9).

The highest percentage of abstainers (skateboarders indicating that they did not use any of the three substances) was found among skaters in the 9th grade (55.0%, n = 22), who also reported the lowest percentage of alcohol use (20.0%, n = 8) and tobacco use (27.0%, n = 11). The lowest percentage of marijuana users were in the 10th grade (28.0%, n = 7). Although the percentage of skaters reporting alcohol and marijuana use rose and fell between one grade and the next, tobacco use increased with each advancing grade level and topped off with 79.2% (n = 19) of skaters in the 12th grade reporting having used tobacco during the 30 days prior to data collection.
**Academic performance.** Demographic information about substance use according to academic performance is also depicted in Table 9. The data indicate that the group of skateboarders who characterized themselves as “A” students had the highest percentage of abstainers (50.0%, \( n = 16 \)) and 92.0% of all abstainers in the sample were either A or B students (\( n = 37 \)). Skateboarders in the “A students” group had the lowest percentage of alcohol users (34.4%, \( n = 11 \)) and marijuana users (25.0%, \( n = 8 \)). Skateboarders in the “B students” group reported the lowest percentage of tobacco users (34.0% \( n = 17 \)). Contrary to popular notion, perhaps, skaters in the “D’s or below” group were not most likely to report using alcohol, tobacco, or marijuana. That distinction fell instead to the group of “C students.” This group of skateboarders reported the lowest percentage of skater-abstainers (23.3%, \( n = 7 \)). Rather, “C students” had the highest percentage of alcohol users (46.7%, \( n = 14 \)), tobacco users (63.3%, \( n = 19 \)), and marijuana users (50.0%, \( n = 15 \)).

**Parental monitoring.** Using the raw scores from the two parental monitoring items on the instrument, skateboarders were partitioned around the median score into low (\( n = 44, 36.7\% \)), moderate (\( n = 21, 17.5\% \)), and high levels (\( n = 55, 45.8\% \)) of perceived parental monitoring for analysis. The resulting data (illustrated on Table 9) revealed differences in reported substance use across the three levels of parental monitoring. Not surprisingly, skateboarders who reported the lowest perception of parental monitoring also reported the most frequent substance use. For example, compared to the other monitoring groups, skaters in the low monitoring group had the highest percentage of users of each substance under investigation (alcohol: 54.0%, \( n = 27 \); tobacco: 63.6%, \( n = 28 \); marijuana: 50.0%, \( n = 15 \)).
Additionally, among the three monitoring groups, the low monitoring group had the highest percentage of skateboarders who reported using at least one substance (84.5%, \( n = 37 \)) as well as using all three substances (70.0%, \( n = 14 \)) during the 30-day period preceding data collection. Conversely, the highest percentage of skater-abstainers was found among the skateboarders who also reported the highest levels of parental monitoring (63.8%, \( n = 30 \)).

**Hypothesis Testing**

Prior to testing the research hypotheses, inspection of the substance use frequency data as part of data management procedures revealed that greater than 20% of the cells contained fewer than five cases (see Tables 6, 7, and 8). To facilitate statistical analysis using chi square tests, each of the ordinal scales measuring current substance use was collapsed (Portney & Watkins, 1999). In the place of the scales, dichotomous groups of *users* and *non-users* were created for each substance. Accordingly, membership in the user or non-user group was used as the dependent variable for hypothesis testing.

To test hypotheses 1 through 5, relationships between alcohol, tobacco, and marijuana use and the separate measures of skateboarding involvement, chi square tests were performed. The independent variables tested included time (hypothesis 1), group skating (hypothesis 2), primary skating location (hypothesis 3), leisure identity (hypothesis 4), and enduring involvement (hypothesis 5).

Testing of the interactions in hypotheses 6 through 9 was conducted using Generalized Logistical Modeling (GLM) in SPSS. The independent variables tested included time x location (hypothesis 6), time x group skating (hypothesis 7), time x leisure
identity (hypothesis 8), and time x enduring involvement (hypothesis 9). Significance level of \( p < .05 \) was used throughout.

**Results for Hypotheses 1 Through 5**

**Hypothesis 1.** Null Hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skate for more time than their counterparts who skate for less time. Table 10 contains the percentages and frequencies of skateboarders reporting substance use organized by the amount of time spent skating during a typical week.

Table 10

*Percentages and Frequencies of Skateboarders Reporting Current Alcohol, Tobacco, and Marijuana Use by Number of Days Spent Skating During a Typical Week (N = 124)*

<table>
<thead>
<tr>
<th>Number of days</th>
<th>Alcohol Non-user % (n)</th>
<th>Alcohol User % (n)</th>
<th>Tobacco Non-user % (n)</th>
<th>Tobacco User % (n)</th>
<th>Marijuana Non-user % (n)</th>
<th>Marijuana User % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.0 (0)</td>
<td>100.0 (1)</td>
<td>0.0 (0)</td>
<td>100.0 (1)</td>
<td>0.0 (0)</td>
<td>100.0 (1)</td>
</tr>
<tr>
<td>2</td>
<td>50.0 (4)</td>
<td>50.0 (4)</td>
<td>50.0 (4)</td>
<td>50.0 (4)</td>
<td>37.5 (3)</td>
<td>62.5 (5)</td>
</tr>
<tr>
<td>3</td>
<td>47.1 (8)</td>
<td>52.9 (9)</td>
<td>52.9 (9)</td>
<td>47.1 (8)</td>
<td>52.9 (9)</td>
<td>47.1 (8)</td>
</tr>
<tr>
<td>4</td>
<td>50.0 (8)</td>
<td>50.0 (8)</td>
<td>43.8 (7)</td>
<td>56.3 (9)</td>
<td>56.3 (9)</td>
<td>43.8 (7)</td>
</tr>
<tr>
<td>5</td>
<td>71.4 (15)</td>
<td>28.6 (16)</td>
<td>76.2 (16)</td>
<td>23.8 (5)</td>
<td>66.7 (14)</td>
<td>33.3 (7)</td>
</tr>
<tr>
<td>6 or 7</td>
<td>60.7 (37)</td>
<td>39.3 (24)</td>
<td>57.4 (35)</td>
<td>42.6 (26)</td>
<td>70.5 (43)</td>
<td>29.5 (18)</td>
</tr>
</tbody>
</table>

*Note.* Numbers in the parentheses are the number of skateboarders in each demographic group. For example, among the study skateboarders who typically skate five days per week, 15 of them, or 71.4%, reported using alcohol at least once during the 30 days preceding data collection.
The data confirmed that differences in self-reported current substance use existed between skateboarders with respect to the number of days during a typical week that they reported skating. Careful examination of Table 10 reveals a demarcation in the substance use data between four and five days of skating. Among the four-, three-, two-, and one-day-a-week skaters, the percentages of those who reported using alcohol and tobacco were higher than the percentages of non-users for the same number of days. At the five-days-per-week level, however, the ratio of users to non-users reverses such that the percentage of users became eclipsed by the percentage of non-users.

To explore this phenomenon further (and after chi square tests of the time variable in its original format), the sample was aggregated into two groups, one containing the skateboarders who reported skating four days or fewer per week and a second group for the remaining respondents who skated five days or more. When comparing the two new groups side-by-side, this demarcation becomes more pronounced. Among the skateboarders in the group that reported skating four days or fewer, the percentage of current users was equal to or higher than the percentage of non-users across all substances (alcohol: 52.4% vs. 47.6%; tobacco: 52.4% vs. 47.6%; marijuana: 50.0% vs. 50.0%). Conversely, amid the second group of skateboarders consisting of those who reported skating five days or more during a typical week, the percentage of current substance users was lower than that of non-users (alcohol: 36.6% vs. 63.4%; tobacco: 37.8% vs. 62.2%; marijuana: 30.5% vs. 69.5%). Interestingly, although not central to the current study, partitioning the sample in this manner did reach statistical significance with respect to marijuana use ($\chi^2 [1, 124] = 4.532, p < .05$).
Although data confirmed that differences in self-reported current substance use existed between skaters with respect to the number of days during a typical week they reported skateboarding, chi square analysis revealed that no statistically significant relationship existed between the number of days spent skateboarding and self-reported alcohol use, \( \chi^2 (5, 124) = 4.580, p = .469 \); tobacco use, \( \chi^2 (5, 124) = 5.910, p = .315 \); or marijuana use, \( \chi^2 (5, 124) = 6.567, p = .255 \). As a result of these findings, null hypothesis 1 was retained whereas alternative hypothesis 1 was rejected. A summary of the chi square values, number of cases in each category, and \( p \) values for the association between the use of each substance and number of days spent skating is depicted on Table 11.

Table 11

<table>
<thead>
<tr>
<th>Substance</th>
<th>( \chi^2 )</th>
<th>( n )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>3.045</td>
<td>124</td>
<td>0.385</td>
</tr>
<tr>
<td>Tobacco</td>
<td>5.910</td>
<td>124</td>
<td>0.315</td>
</tr>
<tr>
<td>Marijuana</td>
<td>6.567</td>
<td>124</td>
<td>0.255</td>
</tr>
</tbody>
</table>

Note. \( p \leq .05 \)

Hypothesis 2. Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skate in groups with other skaters present and their counterparts who skate alone. Table 12 depicts
the percentages and frequencies of skateboarders reporting substance use organized by the amount of time typically spent skating in a group with other skaters.

Table 12

Percentages and Frequencies of Skateboarders Reporting Current Substance Use by Amount of Time Spent Skating in Groups With Other Skaters (N = 124)

<table>
<thead>
<tr>
<th>Group skating</th>
<th>Alcohol</th>
<th></th>
<th></th>
<th>Tobacco</th>
<th></th>
<th></th>
<th>Marijuana</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-user% (n)</td>
<td>User% (n)</td>
<td>Non-user% (n)</td>
<td>User% (n)</td>
<td>Non-user% (n)</td>
<td>User% (n)</td>
<td>Non-user% (n)</td>
<td>User% (n)</td>
<td></td>
</tr>
<tr>
<td>None of the time</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td>0.0 (0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some of the time</td>
<td>31.3 (5)</td>
<td>68.8 (11)</td>
<td>56.3 (9)</td>
<td>43.8 (7)</td>
<td>62.5 (10)</td>
<td>37.5 (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the time</td>
<td>41.7 (25)</td>
<td>58.3 (35)</td>
<td>56.7 (34)</td>
<td>43.3 (20)</td>
<td>70.0 (42)</td>
<td>30.0 (18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of the time</td>
<td>55.3 (26)</td>
<td>44.7 (21)</td>
<td>59.6 (28)</td>
<td>40.4 (19)</td>
<td>53.2 (25)</td>
<td>46.8 (22)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Numbers in the parentheses are the number of skateboarders in each demographic group. For example, among the study skateboarders who skated in a group most of the time, 35 of them, or 58.3% reported using alcohol at least once during the 30 days preceding data collection.

The data revealed that differences in self-reported current substance use existed between skateboarders based upon whether they typically skated alone or in the company of other skaters. With respect to alcohol use, the percentage of skateboarders who reported using alcohol decreased as the amount of time they spent skating with others increased (some of the time: 68.8%; most of the time: 58.3%; all of the time: 44.7%). A similar pattern of declining usage was present among tobacco users except the decrease in percentage of users was not as sharp (some of the time: 43.8%; most of the time: 43.3%; all of the time: 40.4%). This pattern did not exist among the marijuana users in the
sample, however. In this case, an increase in the amount of time spent skating in a group from *most of the time* to *all of the time* was coupled with a jump in the percentage of marijuana users (from 30.0% to 46.8%, respectively).

Even though descriptive data revealed that differences in self-reported substance use existed between skateboarders in the current sample based upon whether they typically skated alone or in the company of other skaters, chi square tests did not detect any statistically significant relationships existing between skating in groups and alcohol use, $\chi^2 (2, 123) = .886, p = .641$; tobacco use, $\chi^2 (2, 123) = 4.580, p = .948$; or marijuana use, $\chi^2 (2, 123) = .3.181, p = .204$ (after the “None of the time” category was removed to meet chi square test requirement). As a result of these findings, null hypothesis 2 was retained whereas alternative hypothesis 2 was rejected. A summary of the chi square values, number of cases in each category, and $p$ values for the association between the use of each substance and group skating are depicted on Table 13.

Table 13

*Chi Square Values, Number of Cases in Each Category, and $p$ Values for the Association Between Substance Used and Group Skating*

<table>
<thead>
<tr>
<th>Substance</th>
<th>$\chi^2$</th>
<th>$n$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0.889</td>
<td>123</td>
<td>0.641</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.108</td>
<td>123</td>
<td>0.948</td>
</tr>
<tr>
<td>Marijuana</td>
<td>3.181</td>
<td>123</td>
<td>0.204</td>
</tr>
</tbody>
</table>

*Note. $p \leq .05$*
**Hypothesis 3.** Null hypothesis 3: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who street skate and their counterparts who park skate. The percentages and frequencies of skaters reporting current substance use by primary skateboarding location are shown on Table 14.

Table 14

*Percentages and Frequencies of Skateboarders Reporting Current Substance Use by Primary Skateboarding Location (N = 124)*

<table>
<thead>
<tr>
<th>Skating in skate parks</th>
<th>Alcohol Non-user % (n)</th>
<th>Alcohol User % (n)</th>
<th>Tobacco Non-user % (n)</th>
<th>Tobacco User % (n)</th>
<th>Marijuana Non-user % (n)</th>
<th>Marijuana User % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the time</td>
<td>100.0 (4)</td>
<td>0.0 (0)</td>
<td>50.0 (2)</td>
<td>50.0 (2)</td>
<td>75.0 (3)</td>
<td>25.0 (1)</td>
</tr>
<tr>
<td>Some of the time</td>
<td>58.1 (25)</td>
<td>41.9 (18)</td>
<td>60.5 (26)</td>
<td>39.5 (17)</td>
<td>62.8 (27)</td>
<td>37.2 (16)</td>
</tr>
<tr>
<td>Most of the time</td>
<td>55.9 (38)</td>
<td>44.1 (30)</td>
<td>55.9 (38)</td>
<td>44.1 (30)</td>
<td>58.8 (40)</td>
<td>41.2 (28)</td>
</tr>
<tr>
<td>All of the time</td>
<td>55.6 (5)</td>
<td>44.4 (4)</td>
<td>55.9 (5)</td>
<td>44.1 (4)</td>
<td>88.9 (8)</td>
<td>11.1 (1)</td>
</tr>
</tbody>
</table>

*Note.* Numbers in the parentheses are the number of skateboarders in each demographic group. For example, among the study skateboarders skate in parks *most of the time*, 38 of them, or 55.9% reported using alcohol at least once during the 30 days preceding data collection.

With respect to primary skating location, the data revealed that small differences in self-reported current substance use existed between respondents in the sample according to what share of their skateboarding was conducted in skate parks (versus street skating). When stratified by the proportion of skating time spent in skate parks, the percentage of skateboarders who reported that they had used alcohol, tobacco, or marijuana during the 30 days preceding data collection was consistently less than the percentage of
skateboarders who reported not using the substances (i.e., non-users). Interestingly, however, when the skateboarders who reported skating in skate parks either “most of the time” or “all of the time” were grouped together (park skaters), the data revealed that 61.7% of these respondents reported using at least one of the three substances during the period prior to the study. This percentage is slightly higher than the 56.3% of skateboarders who skated in parks either “none of” or “some of the time” (street skaters) who also reported using at least one of the three substances.

While the data showed that small differences in self-reported current substance use existed between skateboarders in this sample according to how much of their skating was conducted in skate parks, chi square analysis showed that no significant relationship existed between primary skating location and the use of alcohol $\chi^2 (3, 124) = 3.045, p = .385$; tobacco, $\chi^2 (3, 124) = .330, p = .954$; or marijuana, $\chi^2 (3, 124) = 3.340, p = .342$. As a result of these findings, null hypothesis 3 was retained whereas alternative hypothesis 3 was rejected. A summary of the chi square values, number of cases in each category, and $p$ values for the association between the use of each substance and primary skating location is depicted on Table 15.

**Hypothesis 4.** Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who self-identify as “skaters” than their counterparts who do not. Because only one respondent self-identified as a jock, the athlete identity group ($n = 38$) and the jock identity group ($n = 1$) were consolidated to form an other identities group ($n = 39$). By collapsing the groups in this manner, the cells with zero cases were eliminated and chi square tests could be
Table 15

Chi Square Values, Number of Cases in Each Category, and p Values for the Association Between Substance Used and Primary Skating Location

<table>
<thead>
<tr>
<th>Substance</th>
<th>$\chi^2$</th>
<th>n</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>3.045</td>
<td>124</td>
<td>0.385</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.330</td>
<td>124</td>
<td>0.954</td>
</tr>
<tr>
<td>Marijuana</td>
<td>3.340</td>
<td>124</td>
<td>0.342</td>
</tr>
</tbody>
</table>

Note. $p \leq .05$

Conducted. On Table 16, the percentages and frequencies of skateboarders reporting substance use by leisure identity are depicted.

The data confirmed that differences existed between the two leisure identity groups in self-reported current substance use. For alcohol and tobacco use, a lower percentage of respondents within the skater identity group reported current use than did respondents in the other group (alcohol: 37.7% vs. 46.2%; tobacco: 39.0% vs. 43.6%). With respect to marijuana use, however, the skater identity group within this sample had a higher percentage of users than did the other group (37.7% vs. 33.3%).

Despite the fact that frequency data seem to suggest that the two leisure identity groups (skaters vs. other identities) differed in self-reported current substance use, chi square tests revealed that no significant associations existed between leisure identity and the use of alcohol $\chi^2 (1, 116) = .775, p = .379$, tobacco, $\chi^2 (1, 116) = .230, p = .631$, or marijuana, $\chi^2 (1, 116) = .104, p = .747$. As a result of these findings, null hypothesis 4...
Table 16

**Percentages and Frequencies of Skateboarders Reporting Current Substance Use by Leisure Identity (N = 124)**

<table>
<thead>
<tr>
<th>Leisure Identity</th>
<th>Alcohol</th>
<th>Tobacco</th>
<th>Marijuana</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-user % (n)</td>
<td>User % (n)</td>
<td>Non-user % (n)</td>
</tr>
<tr>
<td>Skater</td>
<td>62.3 (48)</td>
<td>37.7 (29)</td>
<td>61.0 (47)</td>
</tr>
<tr>
<td>Other identities</td>
<td>53.8 (21)</td>
<td>46.2 (18)</td>
<td>56.4 (22)</td>
</tr>
</tbody>
</table>

*Note.* Numbers in the parentheses are the number of respondents in each demographic group. For example, among the respondents the skater group, 29 of them, or 37.7% reported using alcohol at least once during the 30 days preceding data collection.

was retained while alternative hypothesis 4 was rejected. A summary of the chi square values, number of cases in each category, and \( p \) values for the association between the use of each substance and leisure identity is depicted on Table 17.

Table 17

**Chi Square Values, Number of Cases in Each Category, and \( p \) Values for the Association Between Substance Used and Leisure Identity**

<table>
<thead>
<tr>
<th>Substance</th>
<th>( \chi^2 )</th>
<th>( n )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0.775</td>
<td>116</td>
<td>0.379</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.230</td>
<td>116</td>
<td>0.631</td>
</tr>
<tr>
<td>Marijuana</td>
<td>0.104</td>
<td>116</td>
<td>0.747</td>
</tr>
</tbody>
</table>

*Note.* \( p \leq .05 \)
**Hypothesis 5.** Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders with high enduring involvement scores and their counterparts with low enduring involvement scores. Table 18 depicts the percentages and frequencies of skateboarders reporting substance use by enduring involvement group.

Table 18

*Percentages and Frequencies of Skateboarders Reporting Current Substance Use by Level of Enduring Involvement (N = 124)*

<table>
<thead>
<tr>
<th>Level of Involvement</th>
<th>Alcohol</th>
<th></th>
<th></th>
<th>Tobacco</th>
<th></th>
<th></th>
<th>Marijuana</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-user % (n)</td>
<td>User % (n)</td>
<td>Non-user % (n)</td>
<td>User % (n)</td>
<td>Non-user % (n)</td>
<td>User % (n)</td>
<td>Non-user % (n)</td>
</tr>
<tr>
<td>Low involvement</td>
<td>60.4 (29)</td>
<td>39.6 (19)</td>
<td>50.0 (24)</td>
<td>50.0 (24)</td>
<td>54.2 (26)</td>
<td>45.8 (22)</td>
<td></td>
</tr>
<tr>
<td>High involvement</td>
<td>59.4 (38)</td>
<td>40.6 (26)</td>
<td>60.9 (39)</td>
<td>39.1 (25)</td>
<td>67.2 (43)</td>
<td>32.8 (21)</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Numbers in the parentheses are the number of skateboarders in each demographic group. For example, among the study skateboarders the *high involvement* group, 22 of them, or 43.1% reported using tobacco at least once during the 30 days preceding data collection.

Among skaters in this sample, the data confirmed that differences existed in the self-reported current substance use in the context of level of enduring involvement. The low and high involvement groups were nearly equal with respect to the percentage of current alcohol users (low: 39.6% vs. high: 41.2%). With respect to current tobacco and marijuana use, the difference between the two levels was greater: The low involvement
group had a higher percentage of current users of tobacco (low: 50.0% vs. high: 39.1%) and of marijuana (low: 45.8% vs. high: 32.8%).

Although the data showed that differences in self-reported current substance use existed between skaters in this sample with respect to enduring involvement, chi square analysis showed that no significant relationship existed between level of involvement and the use of alcohol $\chi^2 (1, 112) = .012, p = .911$; tobacco, $\chi^2 (1, 112) = .1333, p = .248$; or marijuana, $\chi^2 (1, 112) = 1.966, p = .161$. As a result of these findings, null hypothesis 5 was retained while alternative hypothesis 5 was rejected. A summary of the chi square values, number of cases in each category, and $p$ values for the association between the use of each substance and enduring involvement is depicted on Table 19.

Table 19

<table>
<thead>
<tr>
<th>Substance</th>
<th>$\chi^2$</th>
<th>$n$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0.012</td>
<td>112</td>
<td>0.911</td>
</tr>
<tr>
<td>Tobacco</td>
<td>1.333</td>
<td>112</td>
<td>0.248</td>
</tr>
<tr>
<td>Marijuana</td>
<td>1.966</td>
<td>112</td>
<td>0.161</td>
</tr>
</tbody>
</table>

*Note. $p \leq .05$

**Results for Hypotheses 6 Through 9**

To test the interactions among selected variables as prescribed in hypotheses 6 through 9, the binary logistic form of GLM was used. Each of these four hypotheses tests
whether or not a statistically significant interaction existed between number of days spent skateboarding during a typical week and measures of skateboarding involvement on self-reported substance use. For the purpose of this analysis, the variable referred to as time, reported as the number of days spent skateboarding in a typical week, has been collapsed from its original six-point scale down to a three-point scale (skating one to three days, four or five days, and six or seven days). The dichotomous groups of users and non-users were used to represent the dependent variables (treating users as the reference category). Separate analyses were conducted for each substance. The interaction models tested in each hypothesis are illustrated on Table 20.

Table 20

Interaction Models Tested in Hypotheses 6 Through 9 Using Binomial Logistic GLM

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Time * Location</td>
</tr>
<tr>
<td>7</td>
<td>Time * Group skating</td>
</tr>
<tr>
<td>8</td>
<td>Time * Leisure identity</td>
</tr>
<tr>
<td>9</td>
<td>Time * Enduring involvement</td>
</tr>
</tbody>
</table>

Note. Dependent variable = use of or no use of alcohol, tobacco, marijuana

**Hypothesis 6.** Null hypothesis: There was no statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use. The categorical variables used as interaction terms in the binary logistic GLM were time * location. Substance use was the dependent variable (as the binary
categories of user versus non-user). The percentage and frequency data for the categorical variables used in the tests can be found on Table 5 (time, location) and Table 9 (substance use).

Generalized linear modeling indicated that time spent skateboarding had very little impact on the relationship between skating location (skating in a skate park some, most, or all of the time) and use of alcohol, tobacco, or marijuana reported by the skaters in this sample. The statistical results of these models are presented on Table 21. In view of these findings, null hypothesis 6 was retained whereas alternative hypothesis 6 was rejected.

Table 21

*Wald Chi Square Values, Number of Cases, and p Values for the Interaction Effect of Time * Location on Substance Use*

<table>
<thead>
<tr>
<th>Substance</th>
<th>Wald $\chi^2$</th>
<th>$n$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>4.251</td>
<td>124</td>
<td>0.373</td>
</tr>
<tr>
<td>Tobacco</td>
<td>4.137</td>
<td>124</td>
<td>0.388</td>
</tr>
<tr>
<td>Marijuana</td>
<td>1.531</td>
<td>124</td>
<td>0.821</td>
</tr>
</tbody>
</table>

*Note. $p \leq .05$*

**Hypothesis 7.** Null hypothesis: There was no statistically significant interaction between time spent skateboarding and skating in groups with other skaters on self-reported alcohol, tobacco, or marijuana use. The categorical variables used as interaction terms in the binary logistic GLM were time * group skating. Substance use was the dependent variable (as the binary categories of user and non-user). The
percentage and frequency data for the categorical variables used in the tests can be found on Table 5 (time, group skating) and Table 9 (substance use).

Testing of the generalized linear models revealed that no significant interaction occurred between the number of days spent skateboarding and skating in groups with other skaters (some, most, or all of the time) on self-reported use of alcohol, tobacco, or marijuana. The results of these tests are presented on Table 22. As a result of these findings, null hypothesis 7 was retained while alternative hypothesis 7 was rejected.

Table 22

*Wald Chi Square Values, Number of Cases, and p Values for the Interaction Effect of Time * Group Skating on Substance Use*

<table>
<thead>
<tr>
<th>Substance</th>
<th>Wald $\chi^2$</th>
<th>$n$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>2.442</td>
<td>123</td>
<td>0.655</td>
</tr>
<tr>
<td>Tobacco</td>
<td>5.294</td>
<td>123</td>
<td>0.258</td>
</tr>
<tr>
<td>Marijuana</td>
<td>2.217</td>
<td>123</td>
<td>0.696</td>
</tr>
</tbody>
</table>

*Note. $p \leq .05$*

**Hypothesis 8.** There was no statistically significant interaction between time spent skateboarding and leisure identity on self-reported alcohol, tobacco, or marijuana use. The categorical variables used as interaction terms in the binary logistic GLM were time * leisure identity. Substance use was the dependent variable (as the binary categories of user versus non-user). The percentage and frequency data for the categorical variables
Tests of the generalized linear modeling found no significant interactions to exist between the number of days spent skateboarding and leisure identity (as either skater or other) on self-reported alcohol, tobacco, or marijuana use. The results of these tests are presented on Table 23. As a result of these findings, null hypothesis 8 was retained whereas alternative hypothesis 8 was rejected.

Table 23

<table>
<thead>
<tr>
<th>Substance</th>
<th>Wald $\chi^2$</th>
<th>n</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0.847</td>
<td>116</td>
<td>0.655</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.664</td>
<td>116</td>
<td>0.718</td>
</tr>
<tr>
<td>Marijuana</td>
<td>2.662</td>
<td>116</td>
<td>0.264</td>
</tr>
</tbody>
</table>

*Note. p $\leq .05$

**Hypothesis 9.** Null hypothesis: There was no statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use. The categorical variables used as interaction terms in the binary logistic GLM were time * enduring involvement. Substance use was the dependent variable (as the binary categories of user versus non-user). The percentage and frequency
data for the categorical variables used in the tests can be found on Table 5 (time, enduring involvement) and Table 9 (substance use).

Tests of the generalized linear models found no significant interactions to exist between the number of days spent skateboarding and enduring involvement (as either low, moderate, and high involvement) on self-reported alcohol, tobacco, or marijuana use. The results of these tests are presented on Table 24. As a result of these findings, null hypothesis 9 was accepted whereas alternative hypothesis 9 was rejected.

Table 24

*Wald Chi Square Values, Number of Cases, and p Values for the Interaction Effect of Time * Enduring Involvement on Substance Use*

<table>
<thead>
<tr>
<th>Substance</th>
<th>Wald $\chi^2$</th>
<th>$n$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>1.679</td>
<td>112</td>
<td>0.795</td>
</tr>
<tr>
<td>Tobacco</td>
<td>0.377</td>
<td>112</td>
<td>0.984</td>
</tr>
<tr>
<td>Marijuana</td>
<td>1.647</td>
<td>112</td>
<td>0.800</td>
</tr>
</tbody>
</table>

*Note. $p \leq .05$*

**Summary**

This chapter first presented the results of the descriptive analysis of demographic data. The second part of the chapter presented the results of the statistical analysis of the nine hypotheses tested. Chi square tests were conducted to examine the main effects in hypotheses 1 through 5. The binary logistic form of generalized linear modeling was used
to test interactions in hypotheses 6 through 9. The results of these analyses and tests are summarized below.

**Demographic Data**

The demographic information collected included current age, number of years skating, parental guardianship, parental monitoring, grade level, and academic performance. In regard to current substance use, analysis of the data revealed that alcohol, tobacco, and marijuana use varied by demographic characteristic. For example, the use of each of the three substances became more prevalent as skaters advanced in grade level. Also, current substance use was higher among skaters reporting low levels of perceived parental monitoring.

**Hypothesis 1**

Null Hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skate for more time than their counterparts who skate for less time. No statistically significant findings were revealed. In specific, among the skateboarders in this sample, no statistically significant difference was found to exist in self-reported alcohol, tobacco, or marijuana use based solely upon the number days they skated during a typical week. The null hypothesis was retained.

**Hypothesis 2**

Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skate in groups with other skaters present and their counterparts who skate alone. No statistically significant findings
were revealed. Among the skateboarders in this sample, the proportion of skating time spent skating in a group with other skaters (versus skating alone) made no statistical difference in self-reported alcohol, tobacco, or marijuana use. Skateboarders who skated in a group were equally as likely to report using alcohol, tobacco, and/or marijuana as skateboarders who skated alone. The null hypothesis was retained.

**Hypothesis 3**

Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who street skate and their counterparts who park skate. No significant findings were revealed. To explain, among the skateboarders in this sample, the amount of skating time devoted to street skating (versus park skating) made no statistically significant difference in self-reported alcohol, tobacco, or marijuana use. Skateboarders who skated in skate parks were equally as likely to report using alcohol, tobacco, and/or marijuana as skateboarders who skated in the streets and other public and private spaces. The null hypothesis was retained.

**Hypothesis 4**

Null Hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who self-identify as “skaters” than their counterparts who do not. No significant findings were revealed. Among the skateboarders in this sample, ascribing to the “skater” identity (rather than athlete/jock) seemed to make no statistically significant difference in self-reported alcohol, tobacco, or marijuana use. Respondents who identified themselves as skaters were equally as likely to
report using alcohol, tobacco, and/or marijuana as respondents who did not identify as skaters. The null hypothesis was retained.

**Hypothesis 5**

Null hypothesis: There was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders with high enduring involvement scores and their counterparts with low enduring involvement scores. No significant findings were revealed. No statistically significant difference existed among the skateboarders in self-reported substance use based upon level of enduring involvement (low or high). Skateboarders with a low level of enduring involvement were equally as likely to report using alcohol, tobacco, and/or marijuana use as skaters with a high level of enduring involvement. The null hypothesis was retained.

**Hypothesis 6**

Null hypothesis: There was no statistically significant interaction between time spent skateboarding and skating location on self-reported alcohol, tobacco, or marijuana use. No significant findings were revealed. In other words, the relationship between where the skateboarding took place and substance use was not statistically significantly affected by the amount of time spent skateboarding (measured in number of days per typical week). The null hypothesis was retained.

**Hypothesis 7**

Null hypothesis: There was no statistically significant interaction between time spent skateboarding and skating in groups with other skaters on self-reported alcohol, tobacco, or marijuana use. No significant findings were revealed. To clarify, the amount
of time spent skateboarding (measured in number of days per typical week) had no statistically significant influence on the frequency of substance use reported by skaters across the three levels of group skating. The null hypothesis was retained.

**Hypothesis 8**

Null hypothesis: There was no statistically significant interaction between time spent skateboarding and leisure identity on self-reported alcohol, tobacco, or marijuana use. No significant findings were revealed. In explanation, among the skateboarders in this sample, the frequency of substance use reported by respondents in the two identity groups did not statistically significantly vary by the amount of time spent skateboarding (measured in number of days per typical week). The null hypothesis was retained.

**Hypothesis 9**

Null hypothesis: There was no statistically significant interaction between time spent skateboarding and enduring involvement on self-reported alcohol, tobacco, or marijuana use. No significant findings were revealed. In specific, GLM revealed that the relationship between self-reported substance use and level of enduring involvement was not statistically significantly affected by the amount of time spent skateboarding (measured in number of days per typical week). The null hypothesis was retained.
CHAPTER V

DISCUSSION

Purpose of the Study

The purpose of this study was to analyze the relationship between skateboarding and current substance use among a cohort of adolescent male skateboarders residing in two metropolitan regions of the Eastern United States. In specific, the relationship between selected measures of skateboarding involvement and self-reported use of alcohol, tobacco, and marijuana were investigated.

Discussion

By the time the first commercial skateboards hit the department store shelves in the late 1950s, youth had already been riding build-it-yourself prototypes for some time. Today, nearly 8 million Americans participate in skateboarding (SGMA, 2009). Despite the popularity of the activity among youth, skateboarding is regarded by many people to be more an act of transgression and defiance than a legitimate sport. The individual level routine activities theory, posited by Osgood et al. (1996), provides an important clue as to why skateboarding might be worthy of its insalubrious distinction (Bradley, 2010). This theory suggests that activities combine: (a) socializing with peers, (b) freedom from adult supervision, and (c) a lack of structure provide an environment particularly ripe for spawning problem behavior such as substance use. In addition, a direct or dose-response relationship has been found to exist between the amount of time spent in environments in which these conditions merge and the likelihood of engaging in problem behavior (Haynie & Osgood, 2005; Svensson & Oberwittler, 2010).
A group of inferences form the basis for the argument that skateboarding, as an activity context, is conducive to problem behavior. These inferences are grounded in the routine activities theory and are informed by evidence extracted from studies that focused on youth sports programs and other organized out-of-school programs. They include:

- Time spent skateboarding leaves less time to spend participating in organized activities believed to be of greater developmental value.
- The lack of structure (i.e., time schedules, practice routines, pre-determined skill progressions) in skateboarding leaves more free time for engaging in problem behavior.
- Skateboarding in the presence of peers, and particularly among males, makes participating in problem behavior easier and more rewarding by providing willing accomplices, capable role-models, and an appreciative audience.
- Skaters who hold antisocial attitudes and engage in problem behaviors may transfer their attitudes and behaviors on to others skateboarding with them.
- Due to the spontaneous and highly mobile nature of street skating (skateboarding in public spaces such as public fountains, pedestrian walkways, plazas), the activity is more likely to take place in the absence of a custodial adult responsible for maintaining social control and curtailing problem behavior.
- Due to the prohibition of street skating on public property in many cities and municipalities, skaters may seek out remote locations in which to skate to
avoid social control and where engaging in problem behavior is less likely to be deterred.

- Skateboarders who embracing the skater identity are exposed to a unique risk profile that includes substance use.

The first five hypotheses in this study were generated from these assumptions. The hypotheses were tested using cross-sectional data collected from a purposive sample of 124 adolescent male skateboarders in the spring of 2011 and analyzed using chi square tests.

**Summary of Reported Substance Use**

Among the pool of 124 skateboarders, a total of 48 (38.7%) skaters (*abstainers*) reported that they did not use any of the three substances under investigation (alcohol, tobacco, and marijuana) during the 30 days preceding data collection. Conversely, 61.3% (*n* = 76) skateboarders (*users*) reported using at least one of the three substances during the 30-day period. The self-reported (current) substance use by skateboarders in this study reflects a general trend toward broader and more frequent substance use as youth advance in grade. This trend appears to mirror national YRBS substance use data reported by the CDC (2010) and cited earlier in this document. For example, the data collected from this sample of skateboarders revealed that, in comparison to skaters in grades 9, 10, and 11, their counterparts in grade 12 had the highest percentage of alcohol users, tobacco users, and marijuana users. In addition, the highest percentage of skaters reporting that they had used all three substances sometime during the preceding 30 days was reported by the 12th grade group of skaters.
With regard to use of specific substances overall, 41.5% \((n = 51)\) skateboarders in the sample reported using alcohol, 43.1% \((n = 53)\) reported using tobacco, and 37.4% \((n = 46)\) reported using marijuana at least once during the 30 days preceding data collection. While no data was collected in this study from non-skaters for making comparisons, national YRBS data collected from males of high school age can serve as a proxy for analogous teens. To be able to compare the frequency of substance use reported by skaters to that of non-skaters would be very useful here but this study did not collect data from a reference group of non-skaters. As a proxy, national YRBS data collected from male high school students were used for making informal comparisons. Figure 1 depicts the percentage of skaters in the sample who reported current alcohol, tobacco, and marijuana use compared to the percentage of high school males nationwide who reported current alcohol, tobacco, and marijuana use on the 2009 YRBS conducted by the CDC (2010).

**Time Spent Skateboarding and Substance Use**

In the current study, hypothesis 1 was tested to determine if there was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skate for more time than their counterparts who skate for less time. The amount of time spent skateboarding, represented by the number of days respondents reported skateboarding during a typical week, was the most basic measure of skateboarding involvement applied in the study. The majority of the skateboarders in this sample skated almost daily. Nearly half of the sample (49%) indicated that they skate “6
Figure 1. Comparison of current substance use by all skaters versus 2009 YRBS males or 7 days a week” and over three-quarters (78%) of the sample indicated skating four or more days a week.

Analysis of these data revealed that among the skaters sampled, there was no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between those who skated for more time than their counterparts who skated for less time and therefore the null hypothesis was retained. To clarify, skaters who invested more time in skateboarding, skating on most or all of the days in a typical week, were no more likely to report alcohol, tobacco, or marijuana use than skaters who were skateboarding on only two or three days per week. These results are consistent with research conducted by Moore and Werch (2005) who published one of the only studies on substance use to
include a cohort of skateboarders among a sample (n = 891) of individual sport and physical activity participants and non-participant controls. Using logistic regression to analyze the data obtained from male subjects in the sample, no significant association was found between skateboarding and 30-day use of alcohol, tobacco, or marijuana.

Another concern to be addressed regarding the relationship between the variable of time and substance use was whether or not the frequency of reported substance use was sensitive to skating time: Would the frequency of substance use increase as the number of days spent skating increases or vice versa? Analysis did not detect a statistically significant dose-response relationship between the number of days skating (the dose) and current substance use (the response) indicating that the number of users did vary by number of days skating. Subsequently, for the skaters in the current sample, increases in the number of days of skating did not equate to more substance use and decreases in the number of days skating did not equate to less substance use.

Interestingly, although not reaching the level of statistical significance, an inverse relationship was detected between number of days spent skating and the frequency of reported substance use. The data gathered from the skaters in this sample confirmed that rather than increasing the frequency of substance use, the frequency of alcohol, tobacco, and marijuana use declined as the number of days spent skating increased. Data revealed that the percentage of current substance users who reported skating four days or fewer was equal to or higher than the percentage of non-users across all substances (alcohol: 52.4% vs. 47.6%; tobacco: 52.4% vs. 47.6%; marijuana: 50.0% vs. 50.0%). Conversely, among the skateboarders who skated five days or more during a typical week, the percentage of
current substance users was lower than that of non-users (alcohol: 36.6% vs. 63.4%; tobacco: 37.8% vs. 62.2%; marijuana: 30.5% vs. 69.5%). Figure 2 provides a visual depiction of substance use reported by four-days-or-less skaters and five-days-or-more skaters in relation to national YRBS data collected from high school males in 2009 (CDC, 2010).

![Comparison of Current Substance Users by Number of Days of Skating in a Typical Week](image)

**Figure 2.** Comparison of current substance users by number of days of skating in a typical week

The final issue with respect to the relationship between skating time and current substance use centers around how some adults believe youth should spend their free time. In the United States, traditional organized youth sports programs, especially those that focus on team sports, have historically been viewed by parents, community adults, and city officials as a means to an end; as a vehicle for teaching youth the skills and social
values they will need to be able to take their place in society as responsible and contributing adults (Hills & Vassil, 2008). Previous research suggests that participation in organized sports programs correlates with reduced involvement in alcohol, tobacco, and marijuana use (e.g., Darling, 2005; Eccles & Barber, 1999; Harrison & Narayan, 2003; Lisha & Sussman, 2010; Moore & Werch, 2005).

Central to the distinctions drawn between skateboarding and more traditional youth sports is the supposition that skateboarding, because it lacks custodial adults to provide structure, formal instruction, and mentorship, cannot impart the same protection against problem behavior enjoyed by participants in organized youth sports programs and other out-of-school programs. In addition, youth who spend a significant proportion of their free time skateboarding are presumed to have less time to devote to other activities deemed more beneficial or protective (Larson & Seepersad, 2003). The results of the current investigation did not support the assumption that more time spent skateboarding will result in more frequent substance use because doing so leaves less time to participate in traditional activities judged by critics to be more constructive. This conclusion supports previous research conducted by Gottfredson et al. (2004) in which increasing the amount of time youth were engaged in organized, out-of-school activities for youth did not reduce problem behavior.

**Group Skating and Substance Use**

The second and third hypotheses are based strongly on the three situational factors that, when combined, can create the perfect storm for delinquency as foreshadowed by the routine activity theory. The hypotheses were derived from the assumption that when teens
converge at a skate park or a popular skate spot to skate and socialize (a routine, unstructured context) without an authority figure present, trouble is sure to follow. In addition, some parents might fear that spending time with other skaters, especially the boorish young men some people associate with skateboarding, might serve as a contagion, corrupting their otherwise well-behaved children (Bradley, 2010).

In the second hypothesis, the relationship between skating in a group with other skaters and substance use was tested. Data from the current study indicated that, although skateboarding is considered an individual pursuit, a great majority (86%) of the respondents reported that they skateboarded in groups with other skaters most of, or all of the time. Findings from this study, however, revealed that the proportion of time spent skating in a group with other skaters versus skating alone made no statistically significant difference in self-reported alcohol, tobacco, or marijuana use. The null hypothesis, therefore, was retained. Importantly, the assumption that skating in the presence of peers would increase substance use did not hold true. Skateboarders in this sample, who spent the majority of their skating in the presence of other skaters where they were exposed to and could have been influenced by the behavior of those around them, did not report more frequent substance use than the skateboarders who skated by themselves, isolated from the influence of other skaters.

**Primary Skating Location and Substance Use**

The third hypothesis tested the relationship between primary skating location and substance use. The argument invoked suggesting that such a link should exist is rooted in the long standing battle over where youth are permitted to skate. Lorr (2005) explained
that “skateboarding developed as a subculture to solve the problem of urban/suburban boredom and the youth’s inability to have their own public space like adults” (p. 142). Throughout the history of skateboarding, skaters have resisted repeated attempts by adults to assert governance over the sport, its participants, and its place among the repertoire of American youth sport (Nemeth, 2006). As such, parents, community adults, and city officials, kindled by frustration borne from the inability to fully control skateboarding and skaters, frequently have targeted the sport for censure. This is evidenced by the numerous strategies employed by communities to curb skateboarding in public spaces such as the installation of skate deterrents and skate-proof surfaces and the criminalization of street skating. Authors including Borden (1998), Nemeth (2006), and Chiu (2009), among others, suggested that such actions have had the effect of marginalizing skating youth and pushing street skating to locations where supervision by custodial adults is either insufficient or absent.

In an effort to assuage youth dissatisfaction over skating bans and losing their best skate spots, to move skaters out of city plazas, and to provide youth with a sanctioned place to skate, many communities have built public skate parks and permitted the construction of private parks. Additionally, another possible benefit to corralling skaters in to skate parks is the opportunity to increase the level of adult supervision available. Observations made during data collection for the current study, however, revealed that the degree to which skate parks were supervised by park staff or other custodial adults varied greatly from park to park and by the time of day. At the very least, all of the skate parks at
which data were collected had signs posted that listed rules governing the use of the skate park.

Mahoney and Stattin (2000) as well as Osgood et al. (1996) and Gottfredson et al. (2004) have argued that youth are less likely to engage in problem behavior in settings where adults charged with intervening if and when youth engaged in problem behavior were present. Accordingly, hypothesis 3 was based on the assumption that, because skate parks could potentially offer at least a modicum of supervision, park skaters would report less substance use than street skaters. Conversely, street skaters were assumed to engage in more problem behavior because the clandestine nature of street skating is not conducive to adult supervision. Subsequently, this study sought to determine if there was a statistically significant difference in self-reported alcohol, tobacco, or marijuana use between skateboarders who skated primarily in skate parks versus skateboarders who street skate. Possibly overrepresented because most of the study data was collected in skate parks, 62% of the skaters sampled in the current study indicated that they were park skaters, typically skating at skate parks most of or all of the time. Conversely, just over a third of the sample (38%) were street skaters, reporting that they skate at skate parks some or none of the time.

Hypothesis testing, however, revealed no statistically significant difference in self-reported alcohol, tobacco, or marijuana use between street skaters and park skaters. The null hypothesis was retained. Contrary to the above assumption, among the skateboarders in this sample, street skating, where the level direct adult supervision is
likely less than what might be expected in skate parks, did not translate to more frequent alcohol, tobacco, or marijuana use.

**Leisure Identity and Substance Use**

Hypothesis 4 examined the relationship between leisure identity and substance use. A leisure identity is an identity that is strongly influenced by or founded upon participation in leisure or sport. Leisure identities grow in salience in step with the degree to which they validate and express one’s values, attitudes, skills, and talents and to which they afford social recognition of one’s commitment to the activity (Shamir, 1992). Hypothesis 4 was based on research conducted by Eccles and Barber (1999) and more recently by Miller and colleagues (Miller, 2009; Miller et al., 2007) who found that youth who adopted the jock identity reported greater involvement in substance use (in both frequency and amount) than their peers who identified as athletes or neither. Distinguishing between the skater identity and athlete or jock identities is facilitated by the nature of skateboarding as lifestyle sport with its own unique, durable, and recognizable culture (i.e., clothes, music, lingo, social values, and behaviors) shared among the devoted (Beal & Weidman, 2003; Woolley & Johns, 2001). The current investigation, then, sought to determine if there was any merit to the assumption that espousing the skater identity would be linked to more frequent substance use than the use reported by other identity groups.

Respondents in this study who identified themselves as skaters outnumbered the athletes/jock identity group by a ratio of 2:1. There was no statistically significant difference, however, in self-reported alcohol, tobacco, or marijuana use between
skateboarders who self-identified as “skaters” than their counterparts who did not. The null hypothesis was retained. In other words, respondents who identified themselves as skaters were equally as likely to report using alcohol, tobacco, and/or marijuana as respondents who did not identify as skaters. Among the skateboarders in this sample, the assumption that ascribing to the “skater” identity was associated with a higher frequency of substance use (compared to athlete/jock group) did not hold up.

**Enduring Involvement in Skateboarding and Substance Use**

In recent literature, scholars have suggested that in order to gain a better understanding of the relationship between athletic involvement and substance use, future research should include more nuanced measures to capture involvement than simply relying on objective measures such as time or number of activities (see Caldwell & Smith, 2006; Gottfredson et al., 2004; Miller, 2009; Miller et al., 2007). In light of this suggestion, hypothesis 5 tested the relationship between enduring involvement in skateboarding and the use of alcohol, tobacco, and marijuana.

Enduring involvement (Havitz & Dimache, 1997) is a multidimensional construct developed to conceptualize and assess the degree to which personal meaning and salience is attached to participation and association with an activity. Laurent and Kapferer (1985) suggested that enduring involvement in an activity “derives from the perception that the [activity] is related to centrally held values, those defining one’s singularity, and identity, one’s ego” (p. 42). In this sense, enduring involvement can be expected to be highly correlated with leisure identity, which was proven to be the case in this study \( \chi^2 (1, 104) = 11.235, p = .001 \). As taking part in skateboarding becomes more personally salient, so
should the importance of adopting the social norms and behaviors associated with the sport (Haggard & Williams, 1992). Consequently, higher levels of enduring involvement in skateboarding might be assumed to be associated with substance use if substance use is believed to be an integral part of skateboarding. Enduring involvement was measured in the current study using an adaptation of the Modified Involvement Scale created by G. Kyle et al. (2007).

The data revealed that differences in self-reported substance use existed between skaters in this sample with respect to level of enduring involvement. No statistically significant relationship, however, existed between level of enduring involvement in skateboarding and reported alcohol, tobacco, and marijuana use. The null hypothesis was retained. To clarify, skaters in this sample with a low level of enduring involvement in skateboarding were equally as likely to report current alcohol, tobacco, and/or marijuana use as skaters with a high level of enduring involvement. Consequently, the assumption that having a high level of personal investment in skateboarding would equate to more frequent substance use held no merit with this sample of skaters.

**Interaction of Time on Selected Measures of Skateboarding Involvement**

The final four hypotheses tested in this study to determine if time (represented by the number of days spent skating in a typical week) would interact with the relationships between the measures of skateboarding involvement and alcohol, tobacco, and marijuana use. Adding the element of time into the original pairings tested in hypotheses 2 through 5 provided the opportunity to determine if the relationship between the measures of skating involvement and substance use would vary by the number of days spent skating. If the
relationship between a predictor variable and substance use is found to be sensitive to
time, a dose-response relationship can be said to exist, as suggested in previous research
(Haynie & Osgood, 2005; Svensson & Oberwittler, 2010). This can be interpreted to
mean that the frequency of alcohol, tobacco, and marijuana use associated with
skateboarding in a specific environment (i.e., at a skate park) or with a particular mindset
(i.e., as a self-identified skater) would differ according to the number of days spent skating
in a typical week. Generalized linear modeling was used to test these interactions.

**Interaction of Time and Group Skating on Substance Use**

Hypothesis 6 tested the interaction between the amount of time spent
skateboarding and skating in groups with other skaters on self-reported alcohol, tobacco,
or marijuana use. No significant findings were revealed, however. There was no
statistically significant interaction between time spent skateboarding and skating in groups
with other skaters on self-reported alcohol, tobacco, or marijuana use. Therefore, among
this pool of skaters, the frequency of substance use across the four levels of group skating
(none, some, most, or all of the time) did not vary in context of the amount of time they
spent skating. This can be interpreted to mean that the skaters who spent the majority of
their skateboarding while surrounded by other skaters were no more likely to report using
alcohol, tobacco, or marijuana than the skaters who skated alone, regardless of how many
days per week they typically skated. This result contradicts work by researchers applying
the routine activity theory (Haynie & Osgood, 2005; Svensson & Oberwittler, 2010) in
which a dose-response relationship was discovered to exist between the amount of time
spent in the company of peers and problem behavior including substance use.
**Interaction of Time and Skating Location on Substance Use**

Hypothesis 7 tested the interaction between the amount of time spent skateboarding and primary skating location on self-reported alcohol, tobacco, or marijuana use. If such an interaction occurs, the frequency of alcohol, tobacco, and marijuana use reported by skaters across the three levels of park skating (some, most, or all of the time) would vary according to the number of days they skate in a typical week. Testing revealed, however, that there was no statistically significant interaction between time spent skateboarding and primary skating location on self-reported alcohol, tobacco, or marijuana use. Similar to the findings in hypothesis 6, the frequency of substance use across the three levels of park skating did not rise or fall according to the number of days spent skating. Considering the results of hypotheses 6 and 7 jointly, these findings suggest that although skate parks and skate spots are popular, minimally supervised locations where skaters of all ages and backgrounds intermingle, spending more or less time in these settings does not appear to have an impact on the frequency of alcohol, tobacco, or marijuana use.

**Interactions of Time and Leisure Identity, Enduring Involvement on Substance Use**

The last two hypotheses tested the interactions between the amount of time spent skateboarding of time and two related constructs on substance use. Leisure identity and enduring involvement are subjective measures used to assess how central and salient skateboarding is to the respondent. Hypothesis 8 tested whether or not the relationship between leisure identity and substance use varied by time. Hypothesis 9 tested whether or not the relationship between enduring involvement and substance use varied by time. In
both instances, no statistically significant results were found and the null hypotheses were retained. Within this group of skaters, the reported frequency of alcohol, tobacco, and marijuana use by respondents in each identity group (skater and other) did not vary by time spent skating. The same result was true for skaters at each level of enduring involvement (low, moderate, and high). Consequently, the skaters who strongly identified with skateboarding and placed a great deal of personal significance on their involvement in the activity, more days of skating per week did not equate to more substance use.

**Conclusions**

The current investigation examined the relationship between selected measures of skateboarding involvement and current alcohol, tobacco, and marijuana use in a purposive sample of skateboarders. Chi square analysis of data obtained from this group of skaters revealed no statistically significant relationship to exist between any of the five measures of skateboarding involvement and any of the three substances investigated. In addition, generalized linear modeling of interactions revealed that no significant interaction occurred between any of the four measures of skateboarding involvement and time on the use of alcohol, tobacco, or marijuana. In specific, the following conclusions about the current sample of skateboarders are supported by the findings of this study:

1. There was no statistically significant difference in reported alcohol, tobacco, or marijuana use between skateboarders based upon how many days per week they typically skated.
2. There was no statistically significant difference in reported alcohol, tobacco, or marijuana use between skateboarders based upon what proportion of their skating typically takes place in a group with other skaters.

3. There was no statistically significant difference in reported alcohol, tobacco, or marijuana use between skateboarders based upon what proportion of their skating typically takes place in a skate park.

4. There was no statistically significant difference in reported alcohol, tobacco, or marijuana use between respondents who self-identified as skaters and the respondents who did not.

5. There was no statistically significant difference in reported alcohol, tobacco, or marijuana use between skaters based on their level of enduring involvement in skateboarding.

6. There was no statistically significant interaction between time (as the number of days spent skateboarding in a typical week) and measures of skateboarding involvement (group skating, primary location, leisure identity, and enduring involvement) on reported alcohol, tobacco, or marijuana use.

7. The relationships between the measures of skateboarding involvement and current substance were not amplified by the variable time.

In reference to the inferences and assumptions raised earlier in the chapter, the null effects obtained in the current study support the following observations about the current substance use (including alcohol, tobacco, and marijuana) reported by this sample of skateboarders:
1. Skateboarding on one or more days during a typical week was not associated with current substance use.

2. Although skating every day of the week might leave less time available for engaging in traditional activities judged by some people to be more constructive, more time spent skateboarding did not translate to more frequent substance use.

3. Although skaters who skateboard in groups are likely to be exposed to and possibly influenced by the attitudes and behaviors of those around them, skateboarding in groups did not translate to more frequent substance use than doing so alone.

4. Although the level of supervision is likely less in street skating settings than what might be expected in skate parks, street skating did not translate to more frequent substance use than did park skating.

5. Although the literature suggests that some individuals might regard skateboarding and skaters as transgressive and antisocial, adopting the skater identity and having a high level of personal investment in skateboarding did not translate to more frequent substance use than did adopting the athlete identity.

6. Although skate parks and skate spots are popular meeting places where skaters of all ages and backgrounds intermingle, spending more time in these settings did not increase the frequency of substance use.
In short, no relationship was found between skateboarding and substance use. Most importantly, the assumptions about the perniciousness of skateboarding and of skaters were not supported the findings of this study. This outcome, although unexpected, was welcomed as this study was never intended to be an indictment of skateboarding or of skaters. In the interest of fairness, however, to fully disclose the connotations of the null results obtained, the converse of the statements made above must also be expressed. To clarify, although skateboarding every day of the week, or in groups, or on city sidewalks, or as a self-identified skater, or with a high level of enduring involvement did not increase the likelihood of substance use, these variables did not decrease the likelihood of substance use in this cohort of skaters either. In this light, perhaps the benefit of skateboarding bestowed on skaters lies not in having the capacity to influence substance use but instead to influence positive youth development as several researchers have suggested (see Bradley, 2010; Seifert & Hedderson, 2009; Shannon & Werner, 2008).

Given the strong theoretical and evidentiary support for the predictor variables chosen for this study, to have obtained null results on all of the hypotheses tested was unexpected. A possible explanation for these results might originate with the predictor variables selected to represent skateboarding involvement. The current study used subjective and objective measures of involvement. The decision to use both types of measures was based on observations made by Miller and colleagues (Miller et al., 2003; Miller et al., 2007; also see Caldwell & Smith, 2006) that relying solely on objective measures of athletic involvement such as time and number of sports played was inadequate in predicting an association between athletic activity and substance use. The
subjective measures of leisure identity and enduring involvement were used in conjunction with the objective measures of time, physical location, and group skating to assess involvement in skateboarding. Worth noting is the observation that the research supporting the specific variables chosen for use in this study was conducted primarily on samples of public school students participating in traditional team sports and mainstream individual sports (i.e., tennis, swimming, track and field). Therefore, there is no direct evidence in the literature that suggests these variables can adequately assess involvement in unstructured, unsupervised alternative sports such as skateboarding. Consequently, the lack of significant results obtained in this study might be more indicative of a poor fit between skateboarding and the predictor variables selected to characterize and quantify involvement in it rather than the relationship between involvement in skateboarding and substance use.

An alternative explanation for the null results obtained in this study is that the relationship between time spent skateboarding and substance use is mediated by another variable. A number of authors have described the systematic exclusion and marginalization of skateboarding youth from public spaces noting that such practices have served to strengthen the suspicion, fear, and perceptions of difference existing between skaters and the non-skating public (see Borden, 1998; Chiu, 2009; Nemeth, 2006; Stratford, 2002). Furthermore, authors have noted that skaters are well aware of the contemptuous views held toward them by adults in the community, interpreting and internalizing the No Skateboarding signs that ban street skating to mean that they as people (and not just the act of skateboarding) are unwelcomed and unworthy (Blyth &
Leffert, 1995; Stratford, 2002). Understandably, a skater who believes that his community does not consider supporting skateboarding to be important, and by extension, does not consider supporting him to be important, might lack a sense of connectedness to his community.

The concept of community connectedness was defined by Whitlock (2007) as “a psychological state in which individual youth perceive that they and other youth are cared for, trusted, and respected by adults, individually and collectively” (p. 501). Whitlock has studied the impact of such self-perceptions among youth, asserting that possessing a sense of community connectedness can have far-reaching implications for physical and emotional health. In her work on community and school connectedness, Whitlock referenced research conducted by Resnick, Harris, and Blum (1993) in which Resnick and colleagues concluded that “belonging to a community of others” was the strongest protective factor for health outcomes such as poor body image, emotional stress, poly-drug use, school absenteeism, and risk of injury or pregnancy. Consequently, the relationship between the measures of skateboarding involvement and substance use might be mediated by the level of community connectedness held by skaters.

**Recommendations**

The scarcity of published empirical research examining the link between skateboarding and problem behavior suggests that this study is one of the few, if not the one to focus solely on the relationship between skateboarding and substance use. Also, the application of a location-based intercept design to recruit respondents and collect data rather than a school-based protocol was a relatively novel approach to collecting data from
school-aged youth. The results of this study and the methodological processes through which those results were obtained support several implications for practice and future research.

**Practical Implications**

The results of this study have implications for community-based substance use prevention programming. In light of the extant literature and in keeping with the situational motivation concept integral to the routine activity theory (Osgood et al., 1996), whether skateboarding in any particular location and moment in time is either risky or protective with respect to substance use is likely a product of at least four factors:

1. the presence or absence of custodial adults (i.e., parents/guardians, sympathetic property owners, skate park staff or city park staff);
2. the degree to which the architectural design or physical lay-out facilitates the indirect or informal monitoring of skaters by passers-by;
3. the capacity of the location to adequately challenge and consistently engage skaters by accommodating a broad range of skill levels and style preferences; and
4. the attitudes, behaviors, and social norms of the skaters present at any given time.

City officials and health promotion professionals who wish to use skateboarding in their communities as a way to influence substance use by youth should incorporate each of these four factors as *leverage points* (Stokols, 1996) in their program planning.
Methodological Implications

This study recruited study respondents using a location-based intercept design. In the current application, survey staff traveled to skate parks and skate spots to recruit a purposive sample of skateboarders as they entered the park. Although several challenges were encountered before and during the sampling timeframe, this strategy proved to be an effective approach for reaching this small and mobile population. Observations made during the data collection phase of this study provided the foundation for several key recommendations for future research using location-based intercept sampling and data collection protocols:

1. Researchers are advised to carefully surveil potential locations prior to selecting sites and setting out to collect data. Locations should allow survey staff safe and easy access to members of the target population without making potential respondents feel cornered or trapped between the researcher and a physical feature of the location such as by perimeter fencing or other architectural structures.

2. Locations and work spaces must be designed in such a way as to provide respondents with adequate privacy in which to work.

3. When estimating the total number of respondents that each visit to an intercept location can yield, researchers must take into account the carrying capacity of the location, or maximum number of individuals that can use or occupy the space at any given time. In addition, researchers are advised to keep in mind that not all of the occupants in the location will meet study eligibility criteria.
which can be difficult to ascertain from a distance when screening potential locations.

4. Contingency plans should be devised if intercept locations are vulnerable to environmental factors such as inclement weather or nightfall that can hamper sampling and data collection efforts or make doing so unsafe for survey staff and/or respondents.

5. All survey staff should be prepared to explain the purpose of the study, steps taken to ensure the safety and confidentiality of respondents, and how results of the study will be disseminated. This point is particularly important when conducting research with minors, where survey staff is likely to be approached by concerned or curious parents and guardians.

6. Prior authorization to provide incentives, such as a bottled drink or food items, should be obtained from the property owners/city officials if doing so might compete with concession sales.

7. Sampling and collecting data only once at each location, when possible, will help reduce the likelihood of duplication, such as obtaining more than one completed instrument from the same respondent.

8. Collecting data from attendees at special events (i.e., skateboarding competitions) can often provide access to high numbers of potential respondents in a condensed timeframe as well as facilitate a system of random selection.
Additional recommendations for the application of location-based intercept designs in health research can be found in the article by Voas et al. (2006).

**Implications for Future Research**

The null results of this study leave many questions about the relationship between skateboarding and substance use unanswered. The following recommendations for additional research are made in context of the results from this study and the existing body of literature:

1. This study on skateboarding was conducted in response to the call for further research to determine when, under what conditions, and for whom are unstructured activities linked with protective or risk factors (Caldwell & Smith, 2006; Kleiber, 1999). This study should be replicated with a larger, random sample of skaters to confirm if a relationship exists between skateboarding and substance use, for whom, and under what circumstances.

2. As comparisons with YRBS data revealed, the frequency of substance use reported by skaters in this study appears to differ from the national average among high school males reported by the CDC (2010). For this reason, future research should include a control group of non-skaters to allow the determination of whether involvement in skateboarding diminishes or amplifies the odds of alcohol, tobacco, and marijuana use.

3. The level of connectedness skaters feel toward their communities may be threatened by how skateboarding and skateboarders are perceived and treated by adults in the community. Additional research is needed to determine if
skateboarders differ in level of community connectedness (Whitlock, 2007) and whether or not the relationship between skateboarding and substance use is mediated by level of community connectedness.

4. In an effort to collect quantitative but multidimensional and highly nuanced data on skateboarding involvement, this study incorporated the use of subjective measures in addition to objective measures as suggested by Miller and colleagues (Miller et al., 2007) as well as by Caldwell and Smith (2006). The null results obtained in this study, however, indicate that additional research is needed to develop and test measures that will effectively and reliably assess youth involvement in skateboarding as well as other alternative sports so that accurate predictions of the relationship between alternative sport involvement and substance use can be made.

5. Additional research is needed to examine why and under what circumstances some youth choose to participate in alternative sports rather than in mainstream sports, how these alternative sport athletes might differ from their peers, and in what ways such selective participation might influence the relationship between alternative sports and substance use (see Barber et al., 2005; Darling, 2005; Feldman & Matjasko, 2005; Moore & Werch, 2005).

6. Future research must continue to explore the unique contributions that involvement in skateboarding and other alternative sports can make to positive youth development (see Bradley, 2010; Seifert & Hedderson, 2009; Shannon & Werner, 2008).
Limitations

As with all studies, this study has several limitations. Although skaters were recruited from 14 locations in two geographically distinct regions of the Eastern United States, they represent a purposive sample specific to the current study. Subsequently, because no randomization was used in recruiting these skaters, the results of this study cannot be presumed to represent the current substance use of all adolescent male skaters or of skaters in general.

In addition to lacking generalizability, having an insufficient number of respondents was another limitation. The small size of the sample \( n = 124 \) resulted in inadequate representation of cases \( n_{ij} \geq 5 \) across the multiple levels of the dependent and independent variable (Portney & Watkins, 1999). To facilitate analysis, current substance use data, which was originally collected on a six and seven point interval scales, were collapsed down to two levels (has used at least once versus has not used at all). By creating dichotomous groups of users and non-users to represent use of each substance (the dependent variable), a great deal of data representing how often each substance was used was sacrificed. For example, a skater who smoked cigarettes on only one day of the preceding 30 days was placed in the same user group as a skater who smoked cigarettes on every day of the preceding 30 days. Collapsing the substance use data in this way precluded the determination of whether or not differences existed between skateboarders in how often they used alcohol, tobacco, and marijuana in the previous month. Using a larger sample in future research with skateboarders will help avoid the necessity to collapse data in order to meet minimum cell size requirements for chi square testing.
A second source of limitations stems from the instrument used to collect data. Given the theoretical and evidentiary support for the predictor variables used in this study, poor construct validity of the instrument might be partially to blame for the lack of significant findings. If this is the case, the null results obtained might be illustrative of the ineffectiveness of the various subscales in the instrument to accurately characterize and quantify the predictor variables (time, primary skating location, group skating, leisure identity, and enduring involvement) rather than the relationship between involvement in skateboarding and substance use.

Another limitation of the instrument comes from the reliance on self-reporting. Brener et al. (2003) described a number of factors that may influence the reliability and validity of self-reported substance use data. With respect to the current study, skaters might exaggerate or minimize their substance use based upon their observations of how other skaters behave and perceptions of peer norms (social desirability bias). Second, skaters might answer items disingenuously if they fear their responses will result in peers treating them negatively or perceiving them as unauthentic. To limit the impact of these threats to validity, conspicuous efforts were taken in the current study to protect the privacy and confidentiality of each skater during data collection.

In the final limitation, self-reported data from skaters could be inaccurate due to recall bias, or difficulty remembering actual substance use (skaters do hit their heads frequently). This limitation appears to have been amplified by the interval scales used in this study to measure substance use. The scales for alcohol and tobacco use included seven levels (0 days, 1–2 days, 3–5 days, 6–9 days, 10–19 days, 20–29 days, and all 30
days). The scale for marijuana use had six levels (0 times, 1–2 times, 3–9 times, 10–19 times, 20–39 times, and 40 times or more). The substance use data obtained from the sample using these scales tended to be bi-modal, with responses gravitating toward the two extremes of the scales. Although this data could be an accurate representation of the substance use by these skaters, the paucity of cases falling in the middle of the ranges might instead suggest that respondents had difficulty recalling the exact day-to-day use of substances over the course of a month’s time (Brener et al., 2003).

This study examined the relationship between involvement in skateboarding, a popular but unstructured and unsupervised form of leisure, and substance use in a cohort of adolescent male skateboarders. No statistically significant relationship was found between skateboarding and substance use. Most importantly, the findings of this study did not support the supposition that involvement in skateboarding was associated with substance use, as the theoretical and evidentiary literature suggests.
APPENDICES
APPENDIX A

INITIAL IRB APPLICATION
Appendix A

Initial IRB Application

IRB NUMBER: __________

KENT STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD
APPLICATION FOR APPROVAL TO USE HUMAN RESEARCH SUBJECTS

Move through this document using TAB or mouse. DO NOT USE THE ENTER KEY. Please type all information.
HANDWRITTEN FORMS WILL NOT BE ACCEPTED. To check a box, double-click in the box.
Submit completed form with signatures and all required attachments to the IRB REVIEWER associated with your
Department or College, or to: Office of Research Safety and Compliance, Research and Graduate Studies, 137 Cartwright
Hall, Phone: 330-672-2704.

Project Title: Drug and Alcohol Use in Skateboarding Study

Principal Investigator
Name: Judith A. Johnson
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Email:jjohnson58@kent.edu

Status: [ ] Faculty [ ] Project: [ ] Faculty Research
[ ] Doctoral Student [ ] Student Dissertation
[ ] Graduate Student [ ] Student Thesis
[ ] Undergraduate Student [ ] Course Requirement: (Course #:
[ ] Other: (Specify: ) [ ] Other: (Specify: )

KSU Faculty Co-Investigator(s) (Use additional sheets if necessary)
Name: Department:
Address: Email:
Phone:
Status: [ ] Faculty
[ ] Doctoral Student
[ ] Graduate Student
[ ] Undergraduate Student
[ ] Other (Specify: )

Faculty Advisor (If FPI is a student)
Name: Kele Ding
Phone: 330-672-6688
Email: kding@kent.edu

Protocol Funding: [ ] Not Applicable [ ] Pending
[ ] Awarded [ ] Federal [ ] Yes [ ] No
Funding Agency: If funded or pending attach detailed information regarding proposal (including title)

Estimated Project Duration: Starting Date: 2/01/2010 (But not before approval is obtained)
Ending Date: 3/30/2010

KSU IRB USE ONLY

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<td>Level II – Expedited, Category</td>
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Primary Reviewer: Date
Secondary Reviewer: Date

Full Board Review Action
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[ ] Disapproved [ ] Contingencies Met Date:

AGENDA Date

Correspondence:
E-mail approval
Date
E-mail notice of internal review

Meeting Date:

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Form Version 07/29/10

224
Part I: Please answer the following questions by checking the correct response.

1. Will participants be identifiable to anyone other than the researchers through records, responses, or identifiers linked to the participants?
   - Yes ☐  No ☐

2. Could participants be at risk of criminal or civil liability, damage to employability or to financial standing, or undue embarrassment, if responses became known outside this research project?
   - Yes ☒  No ☐

3. Does research deal with sensitive aspects of participants' behavior, such as illegal conduct, drug use, sexual behavior, use of alcohol, or potential harm to self or others?
   - Yes ☒  No ☐

4. Does research involve the study of existing data? (If yes, please specify.)
   - Documents, archives, and/or records ☐
   - Biological specimens ☐

   4.a. Is the database, archive, or record collection publicly available?
   - Yes ☒  No ☐

   4.b. Are the subjects who provided the data individually identifiable?
   - Yes ☒  No ☐

   4.c. Will any identifying information that may link your data to individuals be included in your research records?
   - Yes ☐  No ☒

5. Does the research involve audio, video, digital, or image recordings of participants? (If yes, please specify.)
   - Video-taped ☐
   - Audio-taped ☐
   - Photographed ☐
   - Other: (Specify:)

6. Are participants free to withdraw at any time without penalty?
   - Yes ☒  No ☐

7. Is there deception of participants? (If so, answer questions in Part VII, #31-44)
   - Yes ☐  No ☒

8. Does the research deal with participants under the age of 18?
   - Yes ☐  No ☒

9. Will identifiable medical information be collected?
   - Yes ☐  No ☒

10. Does the research deal with any of the following vulnerable populations:
    - Legally incompetent adults ☐
    - Traumatized or Coma/dise ☐
    - Physically challenged ☐
    - Terminally ill ☒
    - Pregnant women ☐
    - Economically Disadvantaged ☐
    - Prisoners ☐

11. Does the project involve: (If yes, also answer question #20 on page 4.)
    - Administering drugs ☐
    - Administering alcohol ☐
    - Administering nutritional supplements ☐
    - Taking tissue samples ☐
    - Medical devices ☒
    - Invasive procedures ☐
    - Drawing blood ☒
    - Giving injections ☒

12. Are you collecting any portion of your data online? ☐ Yes ☒ No

13. Are you requesting a waiver of any elements of the consent process? ☐ Yes ☒ No
    (If yes, answer questions in Part VIII, #43-44.)

Part II: Summary of Research

Describe the purpose and significance of the proposed research; include sufficient background information and the specific objectives of the study. Summarize the major hypotheses. (Use non-technical language that can be understood by someone outside the discipline.)

The benefits associated with participation in traditional youth sports programs (i.e., baseball, football, and basketball) are facilitated, at least in part, by the highly structured, and adult-controlled format (McAteer, Larson, Eccles, & Leventhal, 2005). Conversely, according to the routine activity theory (Rigby, Wilson, O’Malley, Bachman, & Johnston, 1996).
IRB NUMBER: ________________________________

Participation in unstructured, unsupervised leisure activities in the company of peers is uniquely conducive to problem behavior including substance use. Scholars in the fields of youth development and leisure sciences have maintained that additional research is needed to clarify for whom and under what conditions unstructured, unsupervised leisure activities are linked with problem behavior (Caldwell & Smith, 2006; Feldman & Matjasko, 2005; Kleiber, 1999). Accordingly, the present study seeks to determine if involvement in skateboarding, a popular but unstructured and unsupervised form of leisure, is associated with substance use in a cohort of adolescent male skateboarders. This research will also explore whether or not a number of specific contextual factors influence the relationship between skateboarding and substance use. The specific goal of this study is to examine the relationship between self-reported tobacco, alcohol, and marijuana use and involvement in skateboarding.

The current investigation will address the following questions:
1) Do skaters participate in different amounts of self-reported TAM (tobacco, alcohol, marijuana) use than their age-cohort counterparts?
2) To what extent does the amount of time spent skating influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?
3) To what extent does primary skating location influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?
4) To what extent does skater identity influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?
5) To what extent does enduring involvement in skateboarding influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?
6) To what extent does skateboarding with a group of friends (rather than skating alone) influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?
7) How does the interaction among individual and contextual factors (i.e., time spent skating, skating location, skater identity, and skating with peers) influence the amount of self-reported TAM use among ninth through twelfth grade male skaters?

15.) Describe the study design, research methods and procedures. (Please append copies of the consent form and all measures, including interview questions and self-report questionnaires, to this form.) What are the qualifications of the individual(s) who will be collecting the data?

This research study will utilize venue-based intercept sampling to gather data from a purposive sample of adolescent male skateboarders. Data collection sites include public and private skate parks and other areas frequented by skateboarders. Data will be collected using an anonymous questionnaire (see Appendix A). The data to be collected from study participants will include:
- Self-reported use of tobacco, alcohol, marijuana and prescription drugs in the 30 days preceding the survey;
- Various measures of involvement in skateboarding (i.e., total time spent, location, personal significance, etc.); and
- Demographic data (i.e., age, grade level, academic performance, etc.)

A verbal consent script will be used to obtain informed consent from study participants (see Appendix B).

As the principal investigator, Judith Johns will be responsible for recruitment of study participants and data collection. Judith Johns has completed the required CITI Training (see Appendix C). Any additional survey staff will also complete the CITI training prior to assisting in data collection.

Part III: Research Participants

16.) Briefly describe the characteristics of your population(s). Describe the ethnic background, sex, age, state of health, and the criteria for inclusion or exclusion of participants. (Include rationale for use of special classes of participants such as pregnant women, children, institutionalized mentally disabled, prisoners, or those whose ability to give voluntary informed consent may be in question.) If your population is all one gender or ethnic group, please explain.

Adolescent male skateboarders are the target population for this study. According to data based upon a national sample compiled by the Sporting Goods Manufacturers Association in 2009 (SGMA, 2009), there were 7.8 million skateboarders in the United States. Most of these skateboarders are male (77.1%, n=6,022,000). In fact, among all males in the United States between 13 and 17 years of age, the participation rate in skateboarding is 15.7%.

The study population for the current investigation will consist of male skateboarders attending high schools in Duval County, Florida. Selecting Duval County as a data collection site serves two purposes. First, the county is one of 23 school systems in the country in which local youth risk behavior data was collected and reported as part of the Youth Risk Behavior Surveillance System (YRBS) conducted by the Centers for Disease Control and Prevention. Collecting substance use data from skateboarders who reside in Duval county will allow for comparisons against county-wide YRBS data.
IRB NUMBER: 

Second, the relatively mild weather in Duval county during the sampling time frame (February-March) is conducive to skateboarding year-round.

The Duval County School System from which the study sample will be drawn is one of the 100 largest school systems in the county and one of only 26 systems that serve more than 100,000 students (National Center for Education Statistics, 04 August 2010). Unless otherwise cited, the following school enrollment and demographic data were obtained from the school system’s public website accessed in December, 2010. During the 2009-2010 school year, 122,649 students in kindergarten through the twelfth grades attended public schools across the county-wide system. The ratio of male students to female student was nearly equal (50.3% to 49.7%). The racial makeup of the student membership was primarily African American (44.6%) and White (40.3%).

According to the U. S. Census, the 2008 median income for the county was $50,660 (U. S. Census Bureau, 16 August 2010). Just over half of the student membership (52.5%) qualified for free or reduced school lunch (Donna Toole, personal communication December 2, 2010) through the federal National School Lunch Program, a proxy measure for socioeconomic status. The school system’s website listed 23 public high schools with a total enrollment of approximately 34,700 students in grades nine through 12. The overall graduation rate for the 2008-2009 school year was 66.6%, 12 points lower than the state graduation rate of 78.6%.

17.) Indicate the anticipated sample size.

Purposive sample of 150-175 participants.

18.) Explain the recruitment process. State how potential participants will be identified and who will make the initial contact. Explain how you will ensure that recruitment and selection of participants is equitable. (Please include all recruitment materials, including scripts, flyers, and advertisements as attachments to this form.)

A series of steps will be used to identify, recruit, and recruit study participants. Initial screening and recruitment:

First pass screening of potential study participants will involve a visual determination of the age and sex of skate park patrons as they enter the intercept area.

1) All male patrons who appear to be between 13 and 19 years of age will be approached for recruitment.
2) Any male patron who appears to be much younger than 13 or much older than 19 years of age will not be approached for recruitment.
3) Patrons who clearly appear to be female will not be approached for recruitment.
4) Patrons for whom age and/or sex cannot be clearly determined will be approached for recruitment.

Secondary screening and participant enrollment:

Once potential study participants have been identified through visual screening, they will be approached or intercepted by survey staff for recruitment into the study and the second screening phase will take place.

1) The survey staff member will briefly introduce himself/herself and the study. Survey staff will then ask the patron if he is currently enrolled in a high school in the selected school system (staff members will be given a list of all of the high schools housed within the school system).
2) The survey staff member will briefly explain the purpose of the study, the nature of the information being sought and what volunteering for the study would entail.
3) After reading script, the individual(s) will be asked to participate.

a. Those giving their consent (study participant) be asked to sign a form documenting informed consent to participate and then directed to an area where they can sit down to complete the questionnaire.

b. Those who do not wish to participate will be thanked for their time and dismissed. (A record of the number of potential participants who declined to participate will maintain for later analysis).

4) After participants finish the questionnaire, they will be asked to place the completed survey in a sealed envelope and give it to a member of the survey staff.

5) After completing the questionnaire, study participants will be given a copy of the verbal consent script which will include a brief description of the study and its purpose and contact information for the investigator and the Kent State Institutional Review Board.

Part IV: Risks/Benefits

19.) Identify any expected or potential risks or discomforts (including physical, psychological, social, or legal) to which participants may be exposed as a result of participation in the research project (beyond those encountered in everyday life).
IRB NUMBER:

There are no anticipated risks to participating in this study beyond those encountered in everyday life. However, some of the questions asked are of a personal nature and participants may not be comfortable answering them.

a.) What safeguards will you use to protect the participants from these risks, as well as to protect their rights, welfare, and privacy? (Must provide a response; never answer "N/A")

Although there is very little potential risk for our participants, everyone will be informed that participation is voluntary and they will be instructed that they can stop at any time they feel uncomfortable. Participants will also be informed that they do not have to answer every question. All data will remain confidential. Only group data will be reported. No names or identifying information will be kept once participants are selected to participate. Once the information collected is entered into our database surveys will be destroyed.

20.) Describe the anticipated benefits to individual subjects and to society expected to be gained from this project.

(This should include any direct benefits to the participants as well as any generalized gain in knowledge. If there are no direct benefits to individual subjects, state that.)

This research will not benefit individual subjects directly. The insights gleaned from this study will help us to better understand what circumstances involvement in skateboarding is and is not linked to drug use.

21.) Describe the qualifications of the person administering drugs, alcohol, or nutritional supplements, or drawing blood, taking tissue samples, or giving injections.

Please note:

i. Persons doing venipuncture must provide a copy of their certification to draw blood and proof that they completed a blood-borne pathogens training course.

ii. Indwelling venous catheters and lines can only be inserted and accessed by licensed/registered/certified medical personnel such as physicians, RNs, and EMTs. Proof of certification is required.

iii. Arterial blood sampling can only be carried out in an appropriate medical facility such as a hospital, clinic, or the KSU Health Center. The procedure can only be carried out by qualified personnel under the direct supervision of a licensed physician.

NOT APPLICABLE

22.) Describe any form of compensation to participants. (i.e., money, extra credit, etc. If money, extra credit, or grade is given to students who participate in the project, what opportunity for extra credit or grade is provided to students who choose not to participate?)

Please note:

a. If the research participation affects the course grade (e.g., extra credit), then alternative opportunity for course credit is needed.

b. For multi-phase projects, compensation should not be contingent upon completion of the whole project. Rather, some compensation should be given for each phase of the project. The nature of the compensation should be stated in the consent form.

NONE

23.) Research participants will be informed of the risks and benefits through:

☐ Consent form (Include with application)
☐ Verbal Script (Include with application)
☐ Parental Consent form for parents/guardians (required for children 18 of age and younger)
☐ Assent form (in addition to Parental Consent for children 12 years of age and younger)

Part V: Informed Consent (You must include a copy of the informed consent document with application materials. Visit the IRB website for more information about informed consent documents.)

24.) Describe the consent process. Explain when and where consent will be obtained and identify who will be obtaining informed consent.

Adolescent males will be intercepted by survey staff as they enter the intercept area near the entrance to the skate park. The survey staff member will quickly introduce him/herself, explaining the purpose of the study and why the potential subject has been selected for recruitment. Eligibility for participation requires that the subject be male and currently enrolled in a Duval County high school. Survey staff will proceed by reading the verbal consent script (see Appendix B) to the eligible subject.

25.) If you will be using children under 18, explain in detail how you will obtain parental consent and assent (for children under 12) or consent (for children 12 to 18). If assent/consent will be obtained orally, supply a script of what you will say and how you will give the children the opportunity to agree to participate or decline.
26.) **IRB NUMBER:**

I am seeking waivers of the documentation of active parental consent as well as documentation of assent to participate in this study. Verbal assent will be obtained from all subjects (adolescent males) prior to participation. Subjects will be given a copy of the consent script (see Appendix B).

No incentive will be given for participation.

---

### Part VI: Privacy and Confidentiality of Records

27.) **Will this study use or disclose protected health information from a covered entity (a covered entity is a Doctor, Clinic, Dentist, Pharmacy, Health Clinic etc... that sends transactions electronically) as defined in the Health Insurance Portability and Accountability Act (HIPAA)?**

☐ Not Applicable  
☐ Applicant will use a HIPAA Authorization (specify type below)  
☐ Applicant requests IRB waiver of Authorization  
☐ Form provided by covered entity  
☐ Form created by applicant

28.) **Where will the signed consent forms be kept?** (Consent forms must be kept in a secure location on campus, not in a private home or office. If the study does not involve consent forms, answer "N/A".)

N/A

29.) **Describe specifically how you will maintain the confidentiality of the data.**

Data will be collected via an anonymous questionnaire. All data will remain confidential. Only group data will be reported. No names or identifying information will be kept once participants are selected to participate. Once the information collected is and entered into our database, the surveys will be destroyed.

---

30.) **How will the data/results of the research be disseminated?**

☐ Thesis  
☐ Dissertation  
☐ Public presentation  
☐ Publication  
☐ Course Requirement: Course #:

31.) **How will the data be stored after study completion?** Please be specific as to the retention or destruction of data.

Data will be aggregated and stored in an SPSS database.

---

32.) a). If the participants' personal files (school, medical, etc.) will be read, where are the files kept (name the place, e.g. doctor's office, hospital, clinic, etc.) and who will gather the information?

NOT APPLICABLE

b). Has permission been obtained to gather this information? (Attach documentation)

NOT APPLICABLE

c). Do the participants (and/or their parents or guardians) know that these files will be read? If no, explain.

NOT APPLICABLE

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33.) a). Will individual results or other data be disseminated to the participants (and/or their parents or guardians)?

NOT APPLICABLE

b). If so, explain the qualifications of the person(s) interpreting the results.

NOT APPLICABLE

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34.) **Does the proposed study involve deception?** ☐ No ☐ Yes (Please complete Part VII)

---

### Part VII: Projects Involving Deception

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IRB NUMBER: 

35.) Describe the type of deception being used. Consider in your answer both deception by omission (an important aspect of the research is withheld from the subject) and deception by commission (the subject is misled about the true purpose of the research).
   NOT APPLICABLE

36.) Why is deception a necessary and unavoidable component of the experimental design? (Does the deception improve the internal or external validity of the study?)
   NOT APPLICABLE

37.) Has this research protocol (involving deception) been previously used? If "Yes," please provide information on any actual harms to the participants and reactions of the participants to the use of deception in this research.
   NOT APPLICABLE

38.) What alternative procedures were considered that did not involve deception and why were these alternatives rejected?
   NOT APPLICABLE

39.) Since deception precludes informed consent by the subject prior to participation:
   a.) How will participants be debriefed?
      NOT APPLICABLE
   b.) Who will debrief them?
      NOT APPLICABLE
   c.) Will the debriefing of participants be:
      - Immediate (immediately following the experimental session in which deception occurs)
      - Delayed
      - Full (all deceptive aspects of the study will be revealed)
      - Partial (some deceptive aspects of the study will remain unexplained)

40.) If debriefing is delayed, why is delayed debriefing necessary and when will debriefing occur?
   NOT APPLICABLE

41.) If debriefing is partial, why is the partial debriefing necessary? Why is unexplained deception necessary? Would the subject be harmed in any way by full debriefing?
   NOT APPLICABLE

42.) Even if the subject is partially debriefed during the study, will full debriefing occur later?
   NOT APPLICABLE

43.) Does the presence of deception increase the risk of harm to the subject?
   NOT APPLICABLE

43.) Is the respondent free to withdraw his/her data after being fully debriefed? (e.g., form like audio/video taping)
   NOT APPLICABLE
Part VIII: Request for Waiver of Elements of Informed Consent

43.) Are you requesting a waiver of the documented informed consent form for each participant? ☑ Yes ☐ No

Please indicate the justification for requesting this waiver:

☐ The only record linking the subject to the research would be the signed consent document and the principal risk of the research would be breach of confidentiality.

☒ The research involves only minimal risk to the subjects and involves no procedures for which written consent is normally required outside of the research context (e.g., anonymous surveys of adults).

Note: Participants must still be provided with a written statement regarding the research that contains the required elements of informed consent. Refer to the Informed Consent Template on our website for more information.

44.) Are you requesting a waiver or alteration of any of the other required elements of informed consent?
   ☑ Yes ☐ No (An IRB may, on occasion, approve a consent process that alters some or all of the required elements of informed consent or waive the requirement for informed consent. The following criteria must be met: 1) the research involves no more than minimal risk, 2) waiver or alteration will not adversely affect the rights and welfare of subjects, 3) the research could not practically be carried out without waiver or alteration, and 4) when appropriate, the subjects will be provided with additional pertinent information after participation.)

a.) Provide justification for the waiver:

I am seeking waivers of the documentation of active parental consent as well as documentation of informed consent to participate in this study. Requiring active parental consent could potentially place participants at greater risk because personal identifiers would be necessary to facilitate the matching of each study participant with his signed parental consent form. The safety and privacy of study participants will be further protected through the use of verbal informed consent rather than written informed consent in which documentation of the participant’s name is retained.

b.) Indicate why the proposed research presents no more than minimal risk to participants.

The current study will use an anonymous questionnaire to collect self-reported data about alcohol, tobacco, and other drug use. No identifying information, such as name or address, will be collected. The Society for Adolescent Medicine’s 1995 Guidelines for Adolescent Health Research has deemed research conducted in this manner to pose no greater than minimal risk to participants.

c.) Explain whether or not a waiver of written informed consent would adversely affect the rights and welfare of participants.

A waiver of parental consent will not affect the rights or welfare of participants. Verbal informed consent will be obtained from each participant. The confidentiality and privacy of participants will be protected by virtue of the fact that no identifying information will be collected that can later be linked back to any specific individual.

d.) Explain why it would be impracticable to carry out the research without a waiver or alteration of informed consent.

To reach this relatively small target population of adolescent male skateboarders, the current study utilizes venue-based intercept sampling at skate parks and other skate spots. Skate parks typically function as informal drop-in centers. Parental supervision is not required of participants so youth frequently skate at the facility without a parent or guardian present who could be approached by survey staff to obtain parental consent to participate. Patrons visit skate parks at their own discretion so any consent protocol that relies on repeated contact with study participants is not feasible. Unlike research conducted through public school systems, no effective system is in place through which to distribute and collect parental consent forms prior to contact with study participants at the parks. Although many skate parks maintain mailing lists of skateboarders in the area, soliciting study participants through mailings would be costly and inefficient. Mailing questionnaires to be completed at home may pose a risk to the safety of respondents if their parents were to read their responses and discover that they were using drugs.

e.) How will pertinent information be provided to participants, if appropriate, at a later date?

Study participants will be given a copy of the verbal consent script which will include full contact information of the primary investigator, her dissertation advisor, and the Kent State University Institutional Review Board.
Part IX: Conflict of Interest

45.) Do the researchers conducting this protocol have any potential conflicts of interest? Conflicts of interest may include financial or personal interest, or any condition in which the investigator’s judgment regarding a primary interest may be biased by a secondary interest. Examples include speaking and consultation fees, travel expenses, stock options, royalties, company ownership or equity, etc.

☐ No  ☐ Yes (If yes, conflict of interest must be disclosed)
45.] Do the researchers conducting this protocol have any potential conflicts of interest? Conflicts of interest may include financial or personal interest, or any condition in which the investigator's judgment regarding a primary interest may be biased by a secondary interest. Examples include speaking and consultation fees, travel expenses, stock options, royalties, company ownership or equity, etc.

☐ No    ☐ Yes (If yes, conflict of interest must be disclosed)
APPENDIX B

CONDITIONAL IRB APPROVAL LETTER WITH CONTINGENCIES
Appendix B

Conditional IRB Approval Letter With Contingencies
APPENDIX C

MODIFICATION REQUEST ADDRESSING CONTINGENCIES
Appendix C

Modification Request Addressing Contingencies

IRB NUMBER: __________

KENT STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
Modification Request Form

All modifications to currently approved research must be approved by the IRB. This form must be completed and submitted for review and approval prior to the implementation of project changes. Please type all information. HANDWRITTEN FORMS WILL NOT BE ACCEPTED. Submit the completed form with signatures and all required attachments to an IRB reviewer associated with your department or college or to: Office of Research Safety and Compliance, Research and Graduate Studies, 137 Cartwright Hall, Phone: 330-672-2704.

IRB Number: 11-007 Level: 3

Project Title: ________________________________

Principal Investigator
Name: Judith A. Johns
Phone: 330-606-9321
Email: jjohns54@kent.edu

Status: □ Faculty □ Undergraduate Student
       □ Doctoral Student □ Other: (Specify: )
       □ Graduate Student

Co-Investigator(s) (Use additional sheets if necessary)
Name: ________________________________
Phone: ________________________________
Email: ________________________________

Status: □ Faculty □ Undergraduate Student
       □ Doctoral Student □ Other: (Specify: )
       □ Graduate Student

Faculty Advisor (If PI is a student)
Name: Kele Ding
Phone: 330-672-0688
Email: kding@kent.edu

1. Does the requested modification increase risk to subjects?  □ Yes  □ No

2. Are you requesting a modification in your subject population (numbers, age, gender, race, etc.) or recruitment methods? If yes, provide a detailed explanation of your requested change. Attach copies of any corresponding flyers, verbal scripts, etc.

       □ Yes  □ No

   A) Prior to initiating contact with the subject population, this investigator will obtain written permission to collect data from city authorities charged with overseeing the operation of the public skate parks and the surveillance of public spaces (i.e. city plazas) in the respective cities. These cities
IRB NUMBER: __________

include Atlantic Beach, Jacksonville, Lake Mary, and Orange Park. Written permission to collect data will also be sought from the owners of Kona Skate Park, a privately-operated skate facility.

To facilitate piloting of the instrument, verbal cooperation and written consent to collect data on a small sample (n=15) of high school-aged males will be sought from Evolution Skate Park in Canton, OH.

B) Prior to initiating contact with the subject population but after obtaining written permission from city officials to proceed with the study, this investigator will send a letter of introduction to the police department in each city. This letter will briefly state the purpose of the study, that written permission to conduct the study has been obtained from the city, and the dates and times during which data collection is expected to take place.

C) Addition of an incentive: Each participant will be offered one 12 oz. bottle of Gatorade as ‘reimbursement’ for their participation in the study. The verbal consent script (attached) has been modified to reflect the addition of this incentive.

D) A printed list of substance abuse information and treatment resources will be made available to participants as suggested (see attached).

3. Are you requesting a modification in the research procedures, methods, instruments, or measures? If yes, discuss the originally approved procedure and provide a detailed description of the requested change or modification. Attach copies of any modified instruments or measures.

☐ Yes  ☐ No

All items on the instrument (attached) that required respondents to hand-write their responses have been revised (i.e. # 13) or removed (i.e. #43).

Item number #39 which asked respondents to report their race has been removed.

4. Does your modification require changes to the informed consent document? If yes, provide a copy of the revised informed consent form.

☐ Yes, revised consent form is attached  ☐ No

5. Are you changing research personnel associated with the study?

☐ Yes  ☐ No

Please provide the names of any study personnel you wish to add or delete.

☐ Addition of personnel  ☐ Remove the following personnel from study:
IRB NUMBER: _________

Signature of Responsible Investigator  Date  

Signature of Faculty Advisor  Date  

KSU IRB USE ONLY

Minor Changes (adding non-vulnerable subjects, adding or deleting personnel, etc.)

Major Changes (changes in procedures, methods, informed consent, adding vulnerable populations, etc.)

Reviewer  Date  

Reviewer  Date  

IRB ACTION:

☐ Approved  ☐ Approved, contingent  ☐ Disapproved

Administrator, IRB  Date  

Chair, IRB  Date  

Reviewer Comments:
APPENDIX D

IRB APPROVAL LETTER
Appendix D

IRB Approval Letter

Kent State University Mail - IRB approval for protocol #11-007 - ret... https://mail.google.com/mail/u/1?ik=2d41ec1364&view=pt&ca...

KENT STATE

IRB approval for protocol #11-007 - retain this email for your records

To: Judith Johns <jjohns54@kent.edu>
CC: "JING, KEKE" <jling@kent.edu>

Mon, Feb 7, 2011 8:45 AM

Please replace the approval email sent on 2/5/11 with the attached approval.
(Needed to correct the end date.) Thank you – J

RE: IRB # 11-007 entitled “Drug and Alcohol Use in Skateboarding Study”

Hello,

The contingencies requested by the Kent State University Institutional Review Board at the January 19, 2011 convened meeting have been met. I am pleased to inform you that the IRB fully approved your Application for Approval to Use Human Research Participants. Approval is effective for a twelve-month period:

February 5, 2011 through February 4, 2012

A copy of the IRB approved consent form is attached to this email. This “stamped” copy is the consent form that you must use for your research participants. It is important for you to also keep an un stamped text copy (i.e., Microsoft Word version) of your consent form for subsequent submissions.

Federal regulations and Kent State University IRB policy require that research be reviewed at intervals appropriate to the degree of risk, but not less than once per year. The IRB has determined that this protocol requires an annual review and progress report. The IRB has also requested that you submit a final report to IRB at the close of the study. The IRB must also be informed of any adverse events associated with the study.

Kent State University has a Federal WAEC Assurance on file with the Office for Human Research Protection (OHRAP) OHRP Number 0000186.

If you have any questions or concerns, please contact me at 330-672-2764 or jjohns54@kent.edu.

Respectfully,

Kent State University Office of Research Compliance
137 Cartwright Hall | phone 330.672.2764 | fax 330.672.2658

Pamela Washko, Manager Research Compliance, Communications, and Intiatives
Kevin McCready, Research Compliance Coordinator
Laurie Nishi, Research Compliance Assistant

Laurie

8/2/2011 3:39 PM

1 of 2

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APPENDIX E

IRB APPROVAL OF MODIFICATION REQUEST TO ADD A SECOND RESEARCHER
Appendix E

IRB Approval of Modification Request to Add a Second Researcher

Kent State University Mail - IRB approval for MODIFICATION(S) ... https://mail.google.com/mail/u/0?ik=2&ik=5d41ce1364&view=p&q=...
APPENDIX F

MODIFICATION REQUEST TO COLLECT DATA IN OHIO
Appendix F
Modification Request to Collect Data in Ohio

IRB Number: __________

KENT STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
Modification Request Form

All modifications to currently approved research must be approved by the IRB. This form must be completed and submitted for review and approval prior to the implementation of project changes. Please type all information. HANDWRITTEN FORMS WILL NOT BE ACCEPTED. Submit the completed form with signatures and all required attachments to an IRB reviewer associated with your department or college or to: Office of Research Safety and Compliance, Research and Graduate Studies, 117 Cartwright Hall, Phone: 330-672-2764.

IRB Number: 11-007      Level: 3
Project Title: Drug and Alcohol Use in Skateboarding Study

Principal Investigator
Name: Judith A. Johns          Department: Health Education & Promotion
Phone: 330-466-9321          Email: johns54@kent.edu

Status: [ ] Faculty          [ ] Undergraduate Student
[ ] Doctoral Student         [ ] Other: (Specify: )
[ ] Graduate Student

Co-Investigator(s) (Use additional sheets if necessary)
Name:                      Department:
Phone:                     Email:
Status: [ ] Faculty          [ ] Undergraduate Student
[ ] Doctoral Student         [ ] Other: (Specify: )
[ ] Graduate Student

Faculty Advisor (If PI is a student)
Name: Kele Ding
Phone: 330-672-0681
Email: kding@kent.edu

1. Does the requested modification increase risk to subjects? [ ] Yes  [ ] No

2. Are you requesting a modification in your subject population (numbers, age, gender, race, etc.) or recruitment methods? If yes provide a detailed explanation of your requested change. Attach copies of any corresponding flyers, verbal scripts, etc.
   [ ] Yes  [ ] No

The purpose of this modification to the original research protocol is to expand the study population beyond subjects recruited from Duval County, Florida to include subjects recruited from public skate parks in Ohio. Foul weather in Duval County during the sampling timeframe and the subsequent inadequate sample size has necessitated this change in the study population. Male skateboarders in
grades nine through twelve will remain the target population. The participant recruitment process, verbal consent script, and instrument will also remain unchanged. The proposed sample size for the current investigation remains at \( n \geq 150 \).

The same process used to gain access to the skate parks in Florida will be employed with the parks in Ohio. Letters of introduction will be sent to the directors of parks and recreation departments operating public skate parks in Northeast and Central Ohio. Each letter will be followed by a telephone call to confirm that permission to recruit study participants and collect data at the site has been granted.

Upon receiving approval on this modification request from the Kent State IRB, data collection will begin as soon as possible and will continue through May, 2011.

3. Are you requesting a modification in the research procedures, methods, instruments, or measures? If yes, discuss the originally approved procedure and provide a detailed description of the requested change or modification. Attach copies of any modified instruments or measures.

☐ Yes ☐ No

4. Does your modification require changes to the informed consent document? If yes, provide a copy of the revised informed consent form.

☐ Yes, revised consent form is attached. ☐ No

5. Are you changing research personnel associated with the study?

☐ Yes ☐ No

Please provide the names of any study personnel you wish to add or delete.

☐ Addtional personnel ☐ Remove the following personnel from study:

Laurie Wagner
Holly Kressover-Moysenko

Signature of Responsible Investigator: [Signature] Date: 4/2/11
Signature of Faculty Advisor: [Signature] Date: 4/7/11

KSU IRB USE ONLY

Minor Changes (adding non-vulnerable subjects, adding or deleting personnel, etc.)

Major Changes (changes in procedures, methods, informed consent, adding vulnerable populations, etc.)
IRB NUMBER: __________

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Date</th>
<th>Reviewer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRB ACTION:</td>
<td></td>
<td>IRB ACTION:</td>
<td></td>
</tr>
<tr>
<td>☐ Approved</td>
<td>☐ Approved, contingent</td>
<td>☐ Disapproved</td>
<td></td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Administrator, IRB</th>
<th>Date</th>
<th>Chair, IRB</th>
<th>Date</th>
</tr>
</thead>
</table>

Reviewer Comments:
APPENDIX G

IRB APPROVAL OF MODIFICATION REQUEST TO COLLECT DATA IN OHIO
Appendix G

IRB Approval of Modification Request to Collect Data in Ohio

Kent State UniversityMail - IRB approval for MODIFICATION(S)...

IRB approval for MODIFICATION(S) (protocol #11-007) - retain this email for your records

Fri, Apr 22, 2011 at 11:45 AM

RE: IRB #11-007 entitled “Drug and Alcohol Use in Skateboarding Study”

Hello,

The Kent State University Institutional Review Board (IRB) has reviewed and approved your protocol modification request. It is understood that the research is continuing with modifications including expansion of study population and addition of personnel.

The modification to this protocol was approved on:

April 20, 2011

Federal regulations and Kent State University IRB policy require that researchers be reimbursed at rates appropriate to the degree of risk, but not less than start per year.

HHS regulations and Kent State University Institutional Review Board guidelines require that any changes in research methodologies, protocols, duties, or principal investigator have the prior approval of the IRB before implementation and continuation of the protocol. The IRB must also be informed of any adverse events associated with the study. The IRB further requires a final report at the conclusion of the study.

Kent State University has a Federalwide Assurance on file with the Office for Human Research Protections (OHRP). FWA number: 00002032

If you have any questions or concerns, please contact me at 330.672.2704 or passhko@kent.edu.

Respectfully,
Kent State University Office of Research Compliance
137 Cartwright Hall | fax 330.672.2658

Kevin McCreary | Research Compliance Coordinator | 330.672.8058 | mccreary.1@kent.edu
Laurie Kohli | Research Compliance Assistant | 330.672.0631 | kohli@kent.edu
Paula Tesk | Manager, Research Compliance (330.672.0221) | ptesk@kent.edu

For links to obtain general information, access forms, and complete required training, visit our website at research.kent.edu.
APPENDIX H

SAMPLE LETTER OF INTRODUCTION TO CITY PARK OFFICIALS
Appendix H

Sample Letter of Introduction to City Park Officials

April 10, 2011

Sam Sleeveless, Director
Parks and Recreation Department
City Office
Street Name
Town City, OH 44240

Dear Mr. Sleeveless:

I am a doctoral candidate at the Kent State University in the department of Health Education. I am conducting research study to identify the circumstances under which involvement in skateboarding might protect against or discourage the use of alcohol, tobacco, and other drugs. This letter is being sent to you to request authorization to recruit volunteers at the Skate Park to participate in the study by completing an anonymous questionnaire. This research study has been approved by the Kent State University Institutional Review Board. So that you can see how skaters will be involved in this project, I have provided a brief summary of the participant recruitment and data collection process below.

This study uses a venue-based intercept design, a data collection strategy often employed by marketing firms in shopping malls and other areas where people congregate. To recruit study participants, survey staff members will approach male skateboarders of high school age, introduce themselves, and explain that they are at the park to conduct a research project about skateboarding and substance use. Skaters who indicate that they are open to hearing more about the study are read the verbal consent script (attached for your review) and then formally asked for their consent to participate in the study. This recruitment process has been designed to protect the right of individuals to decline to participate and the ease with which they can do so.

Once consent to participate is obtained from each volunteer, study data will be collected using a four-page questionnaire (attached for your review). To protect the confidentiality of the participants, no personally identifying information will be collected at any time. Study participants will be offered a 12 oz. bottle of Gatorade as compensation for their time.

During analysis, the data obtained from skaters at this park will be aggregated with data collected from parks all over Ohio. Importantly, the name or location of this skate park will not be identified or linked to the data collected in any way.
I will be contacting you by telephone in the next week or two to confirm that authorization to recruit study participants and collect data at the Skate Park has been granted. Once permission has been obtained, I would like to visit the park in mid to late April to collect data.

Thank you for your time and cooperation with this important study. I would be happy to speak with you to answer any questions and can be reached by phone at 330-696-9321 or by e-mail at jjohns54@kent.edu.

With appreciation,

Judith A. Johns, M.Ed.
Research Fellow
Department of Health Education and Promotion
Kent State University

Attachments:
Verbal Consent Script
Study Questionnaire
APPENDIX I

VERBAL CONSENT SCRIPT
Appendix I

Verbal-Consent Script

Study Title: Alcohol and Drug Use in Skateboarding

Primary Investigator: Judith A. Johns

Introduction:
“Hi. My name is Judy Johns and I am a graduate student at Kent State University [in Ohio]. I am here at [name of skate park] to conduct a research project about skateboarding.”

Purpose of the study:
“I am studying the connection between involvement in skateboarding and the use of alcohol, tobacco, and other drugs by skaters.”

Procedures:
“I am inviting all the guys who skate here and who are currently enrolled in a Duval County high school to take part in the study. Before we begin, I would like to take a minute to explain what volunteering to participate in the study involves and what I will be doing with the information you provide to me.”

“Please feel free to stop me at any time if you have any questions.”

“Your participation is entirely voluntary. Participation will take about 25 minutes and involves answering an anonymous survey. The survey has questions that cover two main topics. One section will ask you about your involvement in skateboarding and how important you feel skateboarding is to you. A second section will ask you about whether or not you have used alcohol, tobacco, or other drugs.”

Privacy and Confidentiality:
“The information you share with me will remain confidential. No identifying information, like your name or address, will be collected in the data that you provide. Your privacy is further protected by not requiring that you have a parent or guardian sign a parental consent form to allow you to participate in the study.”

Risk and Discomforts:
“There are no anticipated risks to participating in this study beyond those encountered in everyday life. However, some of the questions you will be asked are of a personal nature, like the alcohol and drug use questions, and you may not be comfortable answering them. If you do not wish to answer a question, you may skip it and go on to the next question. You may also choose to stop participating in the study at any time and without penalty.”
Benefits:
"This research will not benefit you directly. Your participation in this study, however, will help us to better understand under what circumstances involvement in skateboarding is and is not linked to drug use. In return for your time and effort, we are offering you and all participants a 12 oz. bottle of Gatorade."

Voluntary Participation:
"Taking part in this research study is entirely up to you. You may choose not to participate in this research. You may also choose to discontinue your participation in the survey at any time, without penalty of any kind."

"Do you have any questions you would like to ask me about this research or your participation in it?"

"Just in case you have questions later, I have provided all of my contact information for you on the bottom of this form."

"Your completion and return of the survey will be used to indicate your consent to participate in this study. You will also be given a copy of this consent form, which I have just read to you."

"Do you agree to participate in this study?"

Verbal Consent Statement:
"I understand that my completion and return of this survey will be indicative of my consent to participate in this research study. I have been given a copy of this consent form."

Contact Information
If you have any questions concerning this research or your participation in it, you may contact:
Judith A. Johns (Principal Investigator) <OR> Dr. Kele Ding (Advisor)
Kent State University
100 Nixon Hall
Kent OH, 44422
Email: jjohns54@kent.edu
Kent State University
142 Nixon Hall
Kent OH, 44422
Email: kding@kent.edu

This project has been approved by the Kent State University Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may contact the IRB at (330) 672-2704.
APPENDIX J

INTERCEPT LOG
Appendix J

Intercept Log

<table>
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<th>Time</th>
<th># in Party</th>
<th>Accepts</th>
<th>Declines</th>
<th>&quot;Age(s)&quot;</th>
<th>Comment</th>
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Appendix K

Local Drug Resources Hand-Out

Think you or someone you know might need help for drug or alcohol abuse?
Call 1-800-662-help or
Visit findtreatment.samhsa.gov

The following are a list of local substance abuse information and treatment resources:

- **Gateway Community Services, Inc.**
  555 Stockton Street
  Jacksonville, FL 32204
  Phone: (904) 387-4661
  www.kids4drugfree.com

- **EPIC Community Services, Inc.**
  1400 Old Dixie Hwy.
  St. Augustine, FL 32084
  Phone: (904) 829-2273
  E-Mail: epic@epiccommunityservices.org
  Homepage: www.epiccommunityservices.org

- **Breakthroughs**
  3810-3 Williamsburg Park Blvd.
  Jacksonville, FL 32257
  Phone: (904) 354-7799

Think you or someone you know might need help for drug or alcohol abuse?
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Visit findtreatment.samhsa.gov

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  www.kids4drugfree.com

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  1400 Old Dixie Hwy.
  St. Augustine, FL 32084
  Phone: (904) 829-2273
  E-Mail: epic@epiccommunityservices.org
  Homepage: www.epiccommunityservices.org

- **Breakthroughs**
  3810-3 Williamsburg Park Blvd.
  Jacksonville, FL 32257
  Phone: (904) 354-7799
APPENDIX L

ALCOHOL AND DRUG USE IN SKATEBOARDING INSTRUMENT
Appendix L

Alcohol and Drug Use in Skateboarding Instrument

ALCOHOL AND DRUG USE IN SKATEBOARDING QUESTIONNAIRE

This survey is about skateboarding and health behaviors. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to develop a better understanding of the link between skateboarding and substance use.

DO NOT write your name on this survey. The answers you give will be kept private. No one will know what you write.

Completing the survey is voluntary. If you are not comfortable answering a question, just leave it blank.

The questions that ask about your background will be used only to describe the types of skaters completing this survey. The information will not be used to find out your name. No names will ever be reported.

Make sure to read every question carefully. Answer the questions based on what you really do.

### Section 1: Substance Use

This section is designed to gather information about your tobacco, alcohol, and other drug use. Please indicate your response by placing an X on the line provided. **(Mark only one response for each statement)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
<th>Days</th>
<th>How long have you been drinking in this way?</th>
<th>How long have you been smoking in this way?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. During the past 30 days, on how many days did you have at least one drink of alcohol (for example, beer, wine, or hard liquor)?</td>
<td>A. ___ 8 days</td>
<td>B. ___ 1 to 2 days</td>
<td>___ years and ___ months</td>
<td>___ years and ___ months</td>
</tr>
<tr>
<td></td>
<td>C. ___ 3 to 5 days</td>
<td>D. ___ 6 to 9 days</td>
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<td></td>
<td>E. ___ 10 to 19 days</td>
<td>F. ___ 20 to 29 days</td>
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<td></td>
<td>G. ___ all 30 days</td>
<td>G. ___ all 30 days</td>
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</tr>
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</table>

2. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

<table>
<thead>
<tr>
<th>Options</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. ___ 0 days</td>
<td></td>
</tr>
<tr>
<td>B. ___ 1 day</td>
<td></td>
</tr>
<tr>
<td>C. ___ 2 days</td>
<td></td>
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<tr>
<td>D. ___ 3 to 5 days</td>
<td></td>
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<tr>
<td>E. ___ 6 to 9 days</td>
<td></td>
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<tr>
<td>F. ___ 10 to 19 days</td>
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<tr>
<td>G. ___ 20 or more</td>
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</tbody>
</table>

3. During the past 30 days, on how many days did you smoke cigarettes?

<table>
<thead>
<tr>
<th>Options</th>
<th>Days</th>
<th>How long have you been smoking in this way?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. ___ 8 days</td>
<td></td>
<td>___ years and ___ months</td>
</tr>
<tr>
<td>B. ___ 1 to 2 days</td>
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<td>C. ___ 3 to 5 days</td>
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<td>D. ___ 6 to 9 days</td>
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<td>E. ___ 10 to 19 days</td>
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<td>F. ___ 20 to 29 days</td>
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<tr>
<td>G. ___ all 30 days</td>
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</table>

4. During the past 30 days, how many times did you use marijuana?

<table>
<thead>
<tr>
<th>Options</th>
<th>Times</th>
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<tbody>
<tr>
<td>A. ___ 0 times</td>
<td></td>
</tr>
<tr>
<td>B. ___ 1 to 2 times</td>
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<tr>
<td>C. ___ 3 to 9 times</td>
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<tr>
<td>D. ___ 10 to 19 times</td>
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<tr>
<td>E. ___ 20 to 39 times</td>
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<tr>
<td>F. ___ 40 or more</td>
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</tbody>
</table>

5. During your life, how many times have you taken a prescription drug (such as OxyContin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription?

<table>
<thead>
<tr>
<th>Options</th>
<th>Times</th>
<th>How long have you been using drugs in this way?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. ___ 6 times</td>
<td></td>
<td>___ years and ___ months</td>
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<tr>
<td>B. ___ 1 to 2 times</td>
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<td>C. ___ 3 to 9 times</td>
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<td>D. ___ 10 to 19 times</td>
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<td>E. ___ 20 to 39 times</td>
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<tr>
<td>F. ___ 40 or more</td>
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</table>
### Section 2: Skateboarding Participation

This section is designed to gather information about your skateboarding habits. Please describe your skateboarding by placing an X on the line provided. **(Mark only one response for each statement)**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| 6. During a typical week, on how many days do you participate in skateboarding? | A. ___ 0 days a week.  
B. ___ 1 day a week.  
C. ___ 2 days a week.  
D. ___ 3 days a week.  
E. ___ 4 days a week.  
F. ___ 5 days a week.  
G. ___ 6 or 7 days a week. |
| 7. During a typical week, how many total minutes or hours do you spend skateboarding? | A. ___ 60 minutes or less a week.  
B. ___ 1 to 2 hours a week.  
C. ___ 2 to 3 hours a week.  
D. ___ 3 to 5 hours a week.  
E. ___ 5 to 7 hours a week.  
F. ___ 7 to 14 hours a week.  
G. ___ 14 hours or more a week. |
| 8. When you are not skateboarding, or how many days do you just hang out with friends with no adults present? | A. ___ 0 days a week.  
B. ___ 1 day a week.  
C. ___ 2 days a week.  
D. ___ 3 days a week.  
E. ___ 4 days a week.  
F. ___ 5 days a week.  
G. ___ 6 or 7 days a week. |
B. ___ Some of the time. I typically skate alone.  
C. ___ Most of the time. I typically skate in a group with other skaters.  
D. ___ All of the time. I always skate in a group with other skaters. |
| 10. During a typical week of skateboarding, how much of the time is spent skateboarding in a skate park? | A. ___ None of the time. I street-skate only.  
B. ___ Some of the time. I typically street-skate.  
C. ___ Most of the time. I typically skate in skate parks.  
D. ___ All of the time. I skate in skate parks only. |
| 11. When you are skateboarding, about how much of the time do your parents/guardians know exactly where you are? | A. ___ None of the time  
B. ___ Some of the time  
C. ___ Most of the time  
D. ___ All of the time |
| 12. When you are skateboarding, about how much of the time do your parents/guardians know exactly what you are doing? | A. ___ None of the time  
B. ___ Some of the time  
C. ___ Most of the time  
D. ___ All of the time |
| 13. Which term best fits how you would describe yourself? **(Mark only one response)** | A. ___ Athlete  
B. ___ Skater  
C. ___ Jock |
<table>
<thead>
<tr>
<th>Identity Expression</th>
<th>Strongly</th>
<th>Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>34. You can tell a lot about a person by seeing them skateboarding</td>
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<td>35. To a large extent, skateboarding provides one of the few outlets where I can be myself</td>
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<td>5</td>
<td>5</td>
</tr>
<tr>
<td>36. Participating in skateboarding says a lot about who I am</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>37. Participating in skateboarding allows me to express myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>38. When I am skateboarding, other people see me the way I want them to see me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**Section 4: Demographics**

Please supply the following demographic information by placing an X on the line provided.

39. What is your sex?
   a. [ ] Male
   b. [ ] Female

40. Who do you live with? (mark no more than 2 selections)
   a. [ ] Mother
   b. [ ] Father
   c. [ ] Stepmother
   d. [ ] Stepmother
   e. [ ] Grandparent(s) or other relative(s)
   f. [ ] Foster parent(s)
   g. [ ] Other

41. How old are you now? _____ years and _____ months

42. How old were you when you started skateboarding? _____ years

43. In what grade are you currently enrolled?
   A. [ ] 9
   B. [ ] 10
   C. [ ] 11
   D. [ ] 12
   E. [ ] Other

44. Which letter grade best describes your academic performance? (mark only one response)
   __ A  __ A-  __ B+  __ B  __ B-  __ C+  __ C  __ C-  __ D+  __ D or lower

FINISHED?

PLACE YOUR COMPLETED SURVEY INTO THE ENVELOPE AND SEAL IT CLOSED

THANK YOU FOR YOUR HELP WITH THIS IMPORTANT STUDY
### Section 3: Skateboarding Involvement Scale

This section is designed to gather information about your personal involvement in skateboarding. Please indicate how you feel about skateboarding by responding to EACH of the statements below. (Circle only one response for each statement)

<table>
<thead>
<tr>
<th>Attraction</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I have little or no interest in skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Skateboarding is one of the most enjoyable things I do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Skateboarding is one of the most satisfying things I do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Skateboarding is very important to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I find skateboarding engrossing (i.e., very interesting, captivating)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Centrality</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. I find a lot of my life is organized around skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Skateboarding occupies a central role in my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. To change my preference for skateboarding to another sport or activity would require major rethinking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. I invest most of my energy and resources in skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. I try to structure my daily (or weekly) routine around skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Bonding</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. I enjoy discussing skateboarding with my friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. Most of my friends are in some way connected with skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. Participating in skateboarding provides me with opportunities to be with friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. Special people in my life are associated with skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. I prefer to be around others who share my interest in skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identity Affirmation</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>29. When I'm skateboarding, I can really be myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. I identify with the images associated with skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. When I am skateboarding, I don't have to be concerned with the way I look and behave</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. My true self emerges when I am skateboarding</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Skateboarding has enhanced my self-image</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
APPENDIX M

ORIGINAL AUTHOR APPROVAL TO USE THE
MODIFIED INVOLVEMENT SCALE
Appendix M

Original Author Approval to Use the Modified Involvement Scale
REFERENCES

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