PERCEIVED BENEFITS, CONSTRAINTS, AND NEGOTIATION STRATEGIES OF SKIERS AND SNOWBOARDERS WITH DISABILITIES

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL
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The purpose of this study was to examine the benefits to recreation participation, the reasons that constrain people with disabilities from participating in outdoor recreation activities (i.e., skiing and snowboarding), and the strategies they employ to allow desired participation levels. The hierarchical model of constraints proposed by Crawford and Godbey was used as the theoretical framework for this study. Adaptive recreation participants' opinions and beliefs were obtained through a mail-back survey. Findings of the study suggest that the benefits of recreation and leisure that effect one's self concept were most important to these adaptive skiers and snowboarders. In addition, the study revealed that people with disabilities experienced similar constraints to recreation participation to those people without disabilities. Also, constraint negotiation strategies were used frequently by people with disabilities in order to maintain or increase their level of participation.

Specifically, the benefits that increase self-efficacy were found as more important reasons to engage in recreation activities. Structural constraints such as time and financial concerns were found to be the major reasons people with disabilities could not participate as often as they desired. Lastly, skill acquisition strategies were the constraint negotiation strategies most frequently used to maintain or increase levels of participation. Understanding the preferences and strategies of varied recreationists especially people with disabilities can assist those in the recreation and leisure service industries in developing more effective management strategies to create positive leisure experiences for all.

CHAPTER 1
INTRODUCTION

Outdoor recreation and winter sports have long been a part of society's leisure involvement. However, individuals with disabilities frequently have less opportunity to participate in outdoor recreation and consequently, do not fully reap the benefits of involvement (Henderson, Bedini, Hecht, & Schuler 1995; Schleien, Germ, & McAvoy 1996).

Disability touches many lives. It affects the lives of people who have a disability, and also the lives of their families, friends, and coworkers. It encompasses people of all ages and backgrounds. As of 2002, the US Census Bureau estimated that the U.S. population of 288 million includes over 63 million persons with a disability, or about 22% of the total population (US Bureau of the Census 2002). Logically, it is important that we know more about the people that comprise such a large percentage of the population. It is equally important that recreation/land managers facilitate opportunities for persons with disabilities.

Recreation has been an important component of human existence for thousands of years. Participation in outdoor recreation activities by the US population is surprisingly high, with nearly all Americans (94%) reporting that they participate in some form of outdoor activity (Cordell, McDonald, Teasley, Bergstrom, Martin, Bason & Leeworthy 1999). Only within the last several years have recreation opportunities been formally available to people with disabilities. In 1990, Public Law 101-336, also known as the Americans with Disabilities Act of 1990, enlightened land managers about the special

needs of persons with disabilities. This law caused recreation managers and leisure service providers to assess whether people with disabilities are as involved in outdoor recreation as people without disabilities (Smith, Austin & Kennedy 2001; Wachter & McGowan 2002).

McAvoy (2000) identified several prevailing myths about outdoor recreation and people with disabilities. These myths include the ideas that people with disabilities do not prefer the same kinds of outdoor environments, do not participate in outdoor recreation/adventure activities, and cannot attain a full range of benefits from outdoor recreation programs and activities. Contrary to these myths, previous research shows that people with disabilities tend to participate in outdoor recreation at rates equal to or greater than people without disabilities (McCormick 2001).

Persons with disabilities are generally presented with more challenges than those without disabilities regarding to recreational pursuits and facilities. These challenges include access to facilities and equipment, the need for individualized services, and the availability of leisure education. (Bedini 1991; Coyle & Kinney 1990; Farbman & Ellis 1987; West 1984; Zoerink 1989). This situation points to the need for more recreation and parks programs designed to facilitate participation in physical activity for people with disabilities.

Benefits of Leisure and Recreation Participation

Almost anyone would agree that recreation and leisure have countless intrinsic and extrinsic benefits. The examination of recreation benefits is founded in the study of recreation and leisure. A body of literature concerning recreation benefits has recently begun to emerge (Driver, Brown & Peterson 1991), but this literature has been largely

theoretical and conceptual in orientation. Little published work exists that verifies empirically that benefits do indeed accrue from recreation participation, what these benefits might be, and how they vary among recreational pursuits. Here we discuss the nature of recreation benefits.

The concept that leisure and recreation are beneficial goes back to Aristotle, who viewed leisure as promoting contemplation, improved thinking, and excellence of the mind (Driver, Brown & Peterson 1991). More recently, there has been a resurgence of interest and research in the benefits of leisure and recreation. According to the Surgeon General's report (1996), physical activity has important positive effects on musculoskeletal, cardiovascular, respiratory, and endocrine systems. Other health benefits reported include a reduced risk of premature mortality and reduced risks of coronary heart disease, hypertension, colon cancer, and diabetes mellitus. Regular participation in physical activity also appears to reduce depression and anxiety, improve mood, and enhance ability to perform daily tasks throughout the life span.

Benefits are perceived and often analyzed as economic and not economic. The early work of researchers focused primarily on economic benefits. For the purposes of the study, benefits focus on the impacts of recreation on humans and society (psychological, physiological, and social) as opposed to the economic benefits that are oft cited.

Driver, Brown & Peterson (1991) developed and discussed a benefits based concept for evaluating, measuring, and promoting park and recreation services. As a result of this approach to the provision of recreation and leisure services a philosophical paradigm was adopted by several of the governing agencies such as NRPA and NTRS.

This benefits movement was a significant factor in therapeutic recreation services as well as park and recreation services. This movement was adopted to positively impact the quality and quantity of services the consumers. The benefits approach contributed to the notion that it is time for therapeutic recreation services to be valued as a significant and necessary service that contributes the well being of the participants and society as a whole. Benefits have been defined as "recreation behaviors that are engaged in voluntarily for their intrinsic rewards during times when one is not committed to meeting basic survival and comfort needs, attaining material possessions, or on-going social obligations"(Driver, Brown & Peterson1991).

Benefits to Outdoor Recreation for People with Disabilities

A small but growing field of research reveals the usefulness of sport and recreation in promoting community integration, physiological benefits, and psychological benefits among people with disabilities. Numerous benefits are reported from therapeutic recreation services and are often categorized in various domains. Some research has shown that people with disabilities usually desire the same outcomes as anyone else, when participating in physical activities such as outdoor recreation activities. According to the Surgeon General's report (1996), regular physical activity can help people with disabilities (including those disabling conditions) improve muscle strength, stamina, psychological well-being, and quality of life. Regular participation in physical activity can help lower blood pressure, improve mood, relieve depression, and increase feelings of well-being. It was reported that physical activity can also help control joint swelling and pain. Perhaps most importantly, participation in regular physical activity can help prevent secondary illnesses that can result in people not taking care of themselves.

McAvoy (2001) found that people with disabilities realize a full range of benefits as a result of participation in outdoor recreation and adventure activities and programs. A number of studies focused on outdoor recreation (including people with disabilities) documented the psychological, social and mental health benefits that people with disabilities gain from participation. These benefits include enhanced self-esteem, increased leisure skills, increased social adjustment, enhanced body image, and positive changes in behavior (Robb and Ewert 1987; McAvoy et. al. 1989).

Outdoor recreation activities have been used in general with persons with disabilities including those with long-term illness (Banka & Young 1985; Berman &Anton 1988; McClung 1984; Stich and Senior 1984); mental retardation (Dillenschneider 1983); substance abuse (Gass & McPhee 1990; Stich & Gaylord 1983); and hearing impairments (Luckner 1989). In these experiments, which used outdoor recreation activities as a means of creating change, much empirical support resulted. Positive changes occurred in self-concept, self-esteem, trust, group cohesion, skill development, improved health, and more (Anderson, Schleien, McAvoy, Lais, & Seligmann 1997).

Examining Leisure Constraints and Negotiation Strategies

Since the 1980s, recreation and leisure researchers have examined the reasons why some people did not participate in desired activities. Constraints research has been identified and conceptualized in a variety of ways. McCarville and Smale (1991) discussed the idea of less participation due to constraints. Numerous differences were found across the sociodemographic variables, although no clear pattern emerged across this set of variables.

In another early study, Jackson (1988) suggested that the most common internal constraints include personal skills, abilities, health-related problems, and knowledge; whereas external constraints include lack of time, lack of facilities, transportation issues, and financial cost. These constraints were also called perceived and real constraints.

Until recently, most leisure-constraint research examined constraints as insurmountable obstacles to leisure participation. Early work by Crawford and Godbey (1987) described three discrete categories of constraints: intrapersonal, interpersonal, and structural.

Crawford, Godbey, & Jackson (1991) introduced an alternative perspective proposing the hierarchical model of constraints and the theory of constraint negotiation. This model suggests that leisure constraints are aligned in a sequential manner such that leisure participation is dependent on the successful confrontation of each constraint level. (Crawford et al. 1991). The process begins with intrapersonal constraints in the development of leisure preferences. Once leisure preferences are formed and constraints have been negotiated, the process then progresses through the sequential negotiation of interpersonal and structural constraints.

Demographic Issues

Income and education have been shown to exhibit strong relationships with constraints, but is often dependent on the type of constraint. Respondents with higher education and income have the tendency to report the effects of structural constraints. Jackson (1989) proposed that individuals with higher education and higher incomes are subject to fewer intrapersonal and interpersonal constraints on participation than their less privileged counter parts because they have more power due to their social position.

In addition to the influence of social class and income, Henderson (1991) and Shaw (1994) introduced gender as an important factor as it relates to constraints. Both authors suggest that there are differences between men and women in the way they experience leisure constraints. Henderson stated that while individual constraints may not be too different between men and women, the context of women's lives could be seen as cumulative.

Age has been an important tool in the investigation of the perception of constraints across the life span. Intrapersonal constraints have been reported to significantly increase with age (Alexandris & Carroll 1997; Jackson 1993; Searle & Jackson 1985). It has also been suggested that older individuals experience more interpersonal constraints more than middle-aged individuals (Jackson 1993). Finance related constraints have also been reported to decline with advancing age (Jackson 1993). Time-related constraints have shown to exhibit a cyclical relationship. Its importance increased from the youngest to middle-aged groups and decreases among older individuals (McGuire, Dottavio, & O' Leary 1986; Searle & Jackson 1985). In conclusion, research has shown that there are significant differences in the perceptions of constraints among different demographic groups.

Related Skiing Literature

Skiing, a popular winter recreation activity attracts millions of people to the slopes and countryside every year. For people with disabilities, the use of gravity and accumulated speed to maneuver and traverse the mountains while skiing are the same for people with or without disabilities. It is the equipment and techniques used by people with disabilities that differ. This classification of equipment and skills are often referred to adaptive skiing.

Adaptive sports such as skiing were introduced in the mid twentieth century as a tool for rehabilitation of injuries in war veterans (Malanga 2002). Over time adaptive skiing has grown in popularity. People with disabilities are able to participate in a diversity of recreation al activities on the recreation al level as well as the competitive level.

Snowboarding is another winter recreation activity available at many ski areas. Although snowboarding has only been around for about twenty-five years, it has gained widespread interest and popularity. Today, adaptive skiing and snowboarding instruction is available at many ski areas across the country.

Statement of the Problem

Recreation and leisure have been recognized as a quality that is important to individuals as well as communities for some time. The goal of many leisure service professionals is to facilitate leisure experiences for their participants, regardless of their abilities. Many people with disabilities are limited from participation in various activities. However, research has shown that people with disabilities usually desire the same outcomes as anyone else when participating in physical activities. Typically, people with disabilities report that negative attitudes represent the most devastating constraint they experience. Leisure service professionals have both a legal and moral obligation to make reasonable adaptations to include people with disabilities in recreation and leisure programs.

Purpose of the Study

The focus of this study is to examine the influence of a disability on outdoor recreation interests, participation patterns, benefits to recreation participation, perceived constraints, and negotiation strategies among residents and skiers nationwide.

Specifically, this study examined opinions of skiers and snowboarders who have disabilities. Further, it looked at factors distinguishing those who are impacted by the presence of a disability within their recreation pursuits. Finally, the purpose of this study was to investigate the perceived constraints faced by people with disabilities when participating in winter sport activities such as skiing. This study has its theoretical basis in previous research on leisure constraints and constraint negotiation.

Research Questions

R_1: What does the sample of recreationists look like?

R_2: What possible benefits do people with disabilities receive when participating in winter sport activities such as skiing and snowboarding?

- $R_{2A:}$ What are the differences in the perceived benefits of people with disabilities when participating in winter sport activities such as skiing & snowboarding between people who show a high level of interest and those who show a low level of interest?
- $R_{2B:}$ What are the differences in the possible benefits to participation of people with disabilities when participating in adaptive winter sport activities such as skiing/snowboarding across the education variable?
- $R_{2C:}$ What are the differences in the possible benefits of people with disabilities when participating in winter sport activities such as skiing/snowboarding across the income variable?

R_3: What constraints do people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding?

- $R_{3A:}$ What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding between people who participate as often as desired and those who do not?
- $R_{3B:}$ What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding between people with children in their household under the ages of six and those who do not?
- $R_{3C:}$ What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding between people with children in their household between the ages of six and 18 and those who do not?
- $R_{3D:}$What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding across the income variable?

R_4: What constraints do people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding?

- $R_{4A:}$ What are the differences in the constraint negotiation strategies used by people with disabilities who are interested in skiing & snowboarding and those who are not interested?
- $R_{4B:}$ What are the differences in the constraint negotiation strategies used by people with disabilities who are living in different living environments?

- $R_{4C:}$ What are the differences in the constraint negotiation strategies used by people with disabilities who have different levels of education?
- $R_{4D:}$ What are the differences in the constraint negotiation strategies used by people with disabilities who were hampered by their disability compared to those who reported they were not hampered by their disability?

Delimitations/Limitations

The original methodology of this study was to include face to face interviews with adaptive skiers and snowboarders. The research was going to be collected at a week long winter clinic. The organization sponsoring this winter clinic was to have their own research efforts on-site during the same time period and gracefully declined participation in this study. Other delimitations placed on this study were that the respondents were contacted through cooperative adaptive recreation providers that agreed to participate in this study. Many adaptive recreation providers declined this opportunity to participate in the study due to issues related to client confidentiality. Also respondents had to be over the age of eighteen years old. Another delimitation to this study was that respondents of the survey were only skiers and snowboarders with disabilities. The limitations to this study include that the findings of this study may not be generalized to the entire population of adaptive recreation participants, as only those who were already in contact with an adaptive recreation provider. Many people venture out on their own when recreating in the outdoors and forego services provided by adaptive recreation agencies.

Definitions

Accessible: Approachable, functional, and usable by persons with disabilities, independently, safely, and with dignity. The same definition encompasses (physical) accessibility and program accessibility.

Constraints: Factors that are assumed by researchers and perceived or experienced by individuals to inhibit or prohibit participation and full enjoyment of leisure and recreation pursuits.

Disability: Best defined by the Americans with Disabilities Act; (A) A physical or mental impairment that substantially limits one or more of the major life activities of such individual, (B) a record of such an impairment, or (C) being regarded as having an impairment (SEC. 3[2], 1990).

Negotiation: Modifications to behavior such as scheduling, levels of specialization, and frequency of participation to overcome constraints and that positively influence or enhance level of participation.

Outdoor recreation: A major category of leisure pursuit that directly involves the outdoors and can be related to environmental activities. These activities are closely linked to or dependent on the natural environment. Examples include: skiing, snowboarding, hiking, backpacking.

CHAPTER 2
REVIEW OF LITERATURE

Outdoor recreation pursued during leisure time and by free choice often provides its own satisfaction and has continued to play an increasing role in people's lives. Recreation and nature-based tourism have been around in this country since its beginnings. After the Great Depression and World War II, recreation became a major component of the American way of life. It has demanded recognition and attention. Today, outdoor recreation still contributes to people's overall well-being and good health. Regardless of age, recreation provides a wide array of opportunities for physical fitness, stress reduction, learning new skills and raising self-esteem. Involvement in outdoor recreation is a fundamental step in promoting an active, healthy population. The following section describes a general overview of outdoor recreation participation and the possible benefits of recreation to those who participate.

Outdoor Recreation Participation Patterns of People with Disabilities

The National Survey on Recreation and Environment (NSRE) is the most recent comprehensive study of outdoor recreation including individuals with disabilities. The US Forest Service conducted this study in 1995. A total 1,252 people with disabilities were included in the NSRE, which represented 7.7% of the total study sample. The most frequent reported disability type overall was physical disabilities. The second largest category was identified as "illness" and included impairments such as heart conditions, diabetes, and cancer. Lastly, the other category included impairments and conditions such as arthritis, asthma, and epilepsy. These three categories accounted for more than

80% of the responses of disabling conditions. When questioned about overall outdoor recreation participation rates, a smaller proportion of people with disabilities participated than those respondents without disabilities. Also, in the snow and ice activity category, people with disabilities reported lower participation rates than those without disabilities.

Another aspect of recreation participation examined by the NSRE study was the number of days spent participating in select activities in the previous twelve months. The findings suggest that in general, people with disabilities reported levels of participation in outdoor recreation activities equaled to, or greater than, people without disabilities.

McCormick (2000) examined the recreation participation rates of both people with and without disabilities. The study identified that people with disabilities under the age of 25 and over the age of 75 participated more in outdoor swimming than their peers without disabilities. This study also reported that when participation rates in outdoor recreation were examined, it was reported that people with disabilities reported a higher level of participation than those respondents without disabilities.

Leisure and Recreation Benefits Literature

First, we will consider and discuss the benefits of all types of leisure activities and then attempt to relate those benefits to outdoor recreation. Prior to that, some concepts and definitions must be established to promote an understanding. Among recreation research, there has been considerable confusion about what is meant by a benefit of leisure. To attempt to prevent that confusion, the developers of the BBM system defined the three types of leisure benefits.

- A change in the condition of individuals, groups of individuals (a family, a community, society at large, or the natural environment) that is viewed as more desirable than the previously existing condition. Examples include improved health, a more economically stable local community, and improved habitatfor a species of wildlife.

- The maintenance of a desired condition and therefore the prevention of an unwanted condition. Examples include maintenance of health, pride in local community, and an erosion-free trail.

- The realization of a satisfying psychological recreation experience, such as mental relaxation, closer family bonds, learning of many types, tranquility, enjoying natural scenery, and testing, applying, and/or developing one's skills. (Driver, Douglass, & Loomis 1999)

According to Driver, Douglas, and Loomis (1999), benefits can be psychological, physiological, social, economic, or environmental. They may be immediate (learning new things about a particular culture or subculture at a particular heritage site) or delayed (greater pride in one's locale, region, or nation because of accumulated increased historical cultural understanding and personal reflection about that knowledge). One type of benefit (relaxation from a demanding job) can lead to another benefit (increased quality or quantity of work performance), which in turn can lead to other benefits (increased job satisfaction and maybe increased income).

Participation in leisure and recreation activities is viewed as a means for optimizing personal beneficial outcomes (Driver 1996). For outdoor recreation, beneficial outcomes of participation includes the following: nature-based spiritual renewal (Rolston 1996), wellness (Montes 1996), psychological attachment to special places (Roberts 1996; Greene 1996), appreciation of early American landscapes (Bruns & Stokowski 1996), use of heritage and historic resources not only for better understanding of the evolution of a culture or subculture, but also for maintenance of particular ethnic identities (Lee & Tainter 1996), leisure services as a social intervention to prevent or help ameliorate particular social problems or to capture a targeted type of benefit; e.g., help at-risk youth, promote physical health, promote environmental awareness, including that of natural

ecological processes, and through tourism help stabilize the economy of a local community (Witt & Crompton 1996).

As mentioned above, the physiological approach to the measurements of benefits of recreation provides a readily documented and accepted research approach that identifies measurable outcomes. Initial research efforts focused on benefits such as cardiovascular improvements, reduction of body fat, and rate of premature death (McLean and Neal 2004). Current recreation research suggests the following physiological benefits:

- Habitual physical activity leads to a reduction of heart rate and lower blood pressure. Regular physical activity increases muscle strength and improved function of connective tissues (Paffenbarger, et. al.,1991).
- Sustained physical activity leads to decreased body fat mass and an increase lean body, an increase in basal metabolism, and a lower risk of obesity (Bray, 1989; Siscovick,et.al.,1985).
- Physical activity can prevent the complex condition leading to chronic back pain syndrome and the extensive debility associated with it (Tipton,et. al.,1986).

Leisure Benefits for People with Disabilities

Fullerton, Brandon, & Adrick (2000) conducted a study of residential summer camp programs that had specialized programs for children with disabilities. The disability types in their study included learning disabilities, autism, sensory disabilities, moderate and sever cognitive disabilities, physical disabilities, and traumatic brain disabilities. The results reported were that children with disabilities benefit from an outdoor camp program by demonstrating a greater initiative and self directed independence. The children showed this improvement at camp and transferred in various ways back at home and in school, following the camp experience.

Another study examined the effects of an outdoor adventure program on self-efficacy, depression and anxiety. Adults with mental illness were involved in a weekly

day-long adventure outings for the duration of nine weeks. The findings suggested that significant increases in self-efficacy were seen in the experimental group compared to the control. Also, significant reductions in symptoms of depression and anxiety were reported (Kelly, Coursey, & Selby 1997).

Witman and Munson (1992) investigated the outcomes of adventure programming for adolescents in psychiatric treatment. Findings indicated that the majority of participants gained the following: personal skills, attitudes relevant to treatment in regard to self-concept and interpersonal relatedness.

Other studies examined integrated outdoor programs that included people with and without disabilities. These studies reported the following results: improved attitudes and lifestyle changes in recreation skills and leisure patterns, interpersonal relationships, and social patterns; increased willingness to take risks; increased feelings of self-efficacy; and a number of spiritual benefits (McAvoy, et. al. 1989;). The research conducted by Anderson, Schleien, McAvoy, Lais & Seligman (1997) confirmed many of the benefits listed above, and also reported that integrated programs resulted in outdoor recreation skills, improved sensitivity to the needs of the other group members, and an increased respect for nature.

Constraints Literature

Within the constraints literature, there have been several theoretical concepts proposed by various researchers. Some of these frameworks have focused on activity-specific constraints (McCarville & Smale 1991); including such activities as hiking (Bialeschki & Henderson 1986); card playing (Scott 1991); camping, and golfing (Backman & Crompton 1990). Other investigations of constraints have looked at the various leisure market segments such as the elderly (McGuire 1984); persons with

disabilities (Farbman & Ellis, 1987); as well as females (Bialeschki & Henderson, 1986). A more recent examination of constraints suggests the concept of constraint negotiation (Crawford & Godbey 1987; Crawford, Jackson, & Godbey 1991). Discussed below are the attempts of prior research leading to the idea of negotiation.

The theme of constraints in leisure emerged in the 1980s. The focus of research, from this time, examined why some people did not participate in leisure activities in which they might have the desire. Participation was thought to be the only aspect of leisure truly affected by constraints. Another assumption from the literature of this time was that there was only one type of constraint, which prevented participation. These theories did not examine decreased participation due to constraints, but instead examined only the idea of no participation due to constraints.

Jackson (1994) conducted research on barriers to non-participation by focusing on factors related to recreation preferences, barriers to participation, and participation. This work extended previous research (Boothby et al. 1981; Franken & Van Raaj 1981; Rosma & Hoffman 1980; and Witt & Goodale 1981).

In 1991, McCarville and Smale discussed perceived constraints to leisure participation within five activity domains across activity groups and sociodemographics. In this study, the idea of less participation due to constraints emerged. The five activity groups were physical activity and exercise, arts and entertainment, hobbies, social activities, and home-based entertainment. These five domains included a battery of different recreation activities related to solitary and group pursuits, as well as home/community recreation pursuits. In this study, the participants were asked to respond (yes/no) whether they felt they were participating less in their chosen activities

for a list of 10 possible reasons. The second research question dealt with the specific constraints and sociodemographic variables. The ten reasons included items such as time, nobody to go with, limited access, information, financial constraints, etc. (McCarville & Smale 1991).

The findings in this research show that the social activities domain was the most important domain for this sample, followed by the hobbies domain. Much of the present gender research supports this notion of social opportunity as a primary motivator for women's leisure. The authors found a great deal of uniformity in the responses across the five activity domains, although some significant differences were noted for the lack of time constraint. Respondents did vary regarding the number of constraints reported between the home-based domain, arts and entertainment, and the hobbies domains. Also, numerous differences were found across the sociodemographic variables, although no clear pattern emerged across this set of variables (McCarville & Smale 1991).

With this initial examination on the problematic nature of constraints, the focus was on the factors that prevent or impede participation (Jackson & Scott 1999). In this early research, two types of intervening constraints were identified: internal and external. Jackson (1988) suggests that the most common internal constraints include personal skills, abilities, health-related problems, and knowledge, whereas external constraints include lack of time, lack of facilities, transportation issues and financial cost. These constraints were also referred to as perceived and real constraints. These early empirical studies have been criticized for being atheoretical and for making a number of untested assumptions (Jackson 1988; Shaw, Bonen, & McCabe 1991). Several attempts have been

made by various researchers to clarify this conceptual framework, as outlined in the following paragraphs.

The hierarchal model of constraints has been the focus of much recreation research. As proposed by Crawford, Jackson, and Godbey (1991), the hierarchal model of leisure constraints states that constraints may be perceived and experienced sequentially rather than simultaneously. A variety of studies have provided evidence for the multidimensionality of the concept of leisure constraints and many of them have reported similar patterns of constraint dimensions (Jackson 1993; Jackson & Henderson 1995). The following is a more indepth look at the theoretical foundations of which the concept of constraints stands.

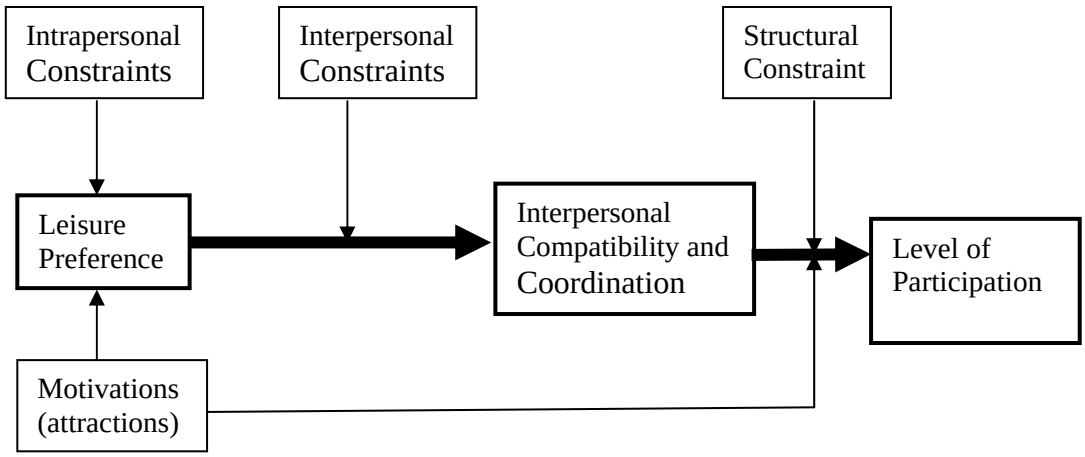

Figure 1. Hierarchical Model of Constraint Negotiation

As seen in Figure 1, a clearly defined hierarchy of constraints was a major contribution of this theory (Crawford, Godbey, & Jackson 1991). The first level of constraints was deemed as intrapersonal. These constraints involve psychological states and attributes that interplay with leisure preferences. Examples include stress, depression, anxiety, and perceived self-skill. Following the negotiation or absence of intrapersonal constraints, leisure preferences are formed. Crawford et al. (1991) suggest that intrapersonal constraints are the most difficult to overcome and are the most likely to block participation in physical activities (Carroll & Alexandris 1997).

The next stage of the model involved interpersonl constraints. This type of constraint involves relationships between or interaction of individuals' characteristics (Crawford & Godbey 1987). For example, a potential participant may be unable to find a partner or a friend to participate with. Interpersonal constraints interact with both preference and participation in leisure activities that require partners or companions.

Finally, once interpersonal constraints have been overcome, an individual may face structural constraints. Structural constraints are those intervening factors that come between personal leisure preferences and actual participation. Examples of this type of constraint are economic barriers, availability of access, family life-cycle stage, season, climate, availability of opportunity, availability of time, and reference group attitudes to the appropriateness of certain activities. This type of constraint has received the most attention in previous constraint research (Hudson 2000). It has also been suggested to be the type of constraint least difficult to overcome (Jackson & Scott 1999).

This theory as a whole represents a great step towards better understanding the phenomenon of constraints, as it exists in the fields of recreation and sport. This concept

and theoretical framework work together to create a cohesive nature to the constraints research.

Constraint Negotiation

In today's leisure research, the theory of "constraint negotiation" has been the focus of several constraint studies. This development represents a shift in the constraints literature to a deeper understanding of the constraints concept. Proposed by Jackson and others (1993) the theory of negotiation states that the individual who participated in any given leisure activity might have successfully negotiated a hierarchical series of constraints. Such negotiations may modify participation rather than foreclose it. The individuals who did not participate may not have been able to accomplish successful negotiation of perceived or experienced constraints.

Scott (1991) conducted qualitative research to understand the role of constraints for bridge players. According to Scott (1991), constraints are forces with people's leisure pursuits that must be successfully negotiated if desired level of involvement is to occur. Nonparticipation represents only one possible outcome of constraints; it may instead modify the desired level of participation but maintain some sort of involvement within the activity. Scott identified types of group-related constraints with naturalistic inquiry (participant-as-observer & formal interviewing techniques). The data disclosed three levels of leisure constraints. Intrapersonal- a diminishing interest for bridge participation among younger generations. Interpersonal- linked to the group participation (other players required). Lastly, individual differences among players (structural). A major conclusion from this study is that constraints at the different levels are inter-related. Another major conclusion is that constraints are not "insurmountable" obstacles of participation. Instead, players may develop strategies to overcome constraints. Scott

suggests that future constraint investigations should attempt to uncover how activities within a social realm both encourage and constrain participation.

In 1993, Jackson, Crawford, and Godbey examined the concept of "negotiation," suggesting that participation in leisure activities is dependent on how people negotiate through constraints. Thus, it is not the absence of constraints that enables people to participate in recreational activities, but their negotiation through those constraints. Categorized into cognitive (reducing cognitive dissonance) or behavioral (change in behavior), these authors postulated that the negotiation strategy would depend on the situation that was encountered.

Jackson and Rucks (1995) validated the earlier work by Jackson et al. (1993) by specifically examining the patterns of constraint negotiation. This study, focusing on high-school children, found that people often negotiate through a specific constraint by adopting negotiation strategies related to that particular constraint (e.g., changing the use of time for a time-related constraint). The negotiation strategies were classified as cognitive strategies (e.g., push themselves harder, ignore parents) and behavioral strategies (e.g., better organization of their time, take lessons). The behavioral strategies were further subdivided into time management, skill acquisition, changing interpersonal relations, improving finances, physical therapy, changing leisure aspirations, and a miscellaneous group. The findings suggest that the behavioral strategies were far more widespread than cognitive strategies, being adopted by almost 80% of the subjects who participated in this study. The authors postulated that this information was valuable in understanding that people rearrange things in their lives so that they can participate in leisure opportunities.

Henderson, Bedini, Hecht, and Schuler (1995) investigated the strategies used by women with disabilities to negotiate through constraints. In general, the participants of the study felt that they were successful at becoming or staying involved in leisure activities based on the use of negotiation strategies that allowed them to respond actively rather than passively to constraints. They identified three groups based on the strategies they adopt when coping with constraints. These groups include passive responders (no participation), achievers (no change in participation levels despite constraints), and attempters (did participate, but altered participation in leisure activities). Their findings indicated that other environmental factors (lack of energy, time, safety, etc.) accounted for some degree of non-participation, while the disability itself was also a contributing factor.

More recently, Hubbard and Mannell (2001) examined the negotiation strategies of employees in a corporate setting. These authors examined negotiation models using the three-constraint model (intrapersonal, interpersonal, and structural), and four scales to measure negotiation (time, skills, interpersonal, and financial). This study also involved studying respondents' motivation and participation levels. The results of this study showed that the original negotiation process identified by Jackson et al. (1993) was the best fit, indicating that the constraints trigger negotiation efforts, which can then negate the effects of the constraint (Hubbard & Mannell 2001).

Understanding of constraints has many important implications. It could allow for insight into other leisure aspects and research areas such as participation, satisfaction, involvement, and motivation. Other avenues of future research among the constraints

literature have been to look at the temporal nature of constraints, group related constraints, as well as methodological changes.

Constraints Literature Related to People with Disabilities

Although the literature on leisure constraints has been growing, there is still little known about constraints experienced by those individuals with disabilities. In general, this research suggests that constraints to involvement and participation in outdoor recreation and community life activities for people with disabilities tend to involve resources and attitudes. Resources include transportation, money, leisure partners, knowledge, skills, and functioning. Attitudinal barriers for individuals with disabilities are often their own attitudes as well as others (the community, society at larger, or even recreation providers).

According to Jackson (1988) reasons for non-participation were similar to the general public, but individuals with disabilities have some additional problems in overcoming constraints. Problems including perceived lack of ability, social stigma, poor socialization, and lack of information of opportunities were just some reasons why people with disabilities did not participate in physical activity programs.

Germ and Schleien (1997) examined constraints to leisure participation for persons with the context of community leisure agencies. The subjects of the study and the consumers (i.e. persons with disabilities) reported that transportation and programming issues were major constraining factor to their participation. Program barriers included a lack of a variety of program times, a lack of skill development opportunities at the appropriate levels, and a lack of programs designed for teenagers and adult males with disabilities.

In an examination of outdoor recreation opportunities, Ross (1993) found that young adults with recent spinal cord injuries reported several constraints to outdoor recreation pursuits. Lack of leisure partners, transportation issues, mobility issues, self-consciousness, and attitudes of significant others were found to be constraining factors of outdoor recreation pursuits.

The research efforts of Wilhite and Keller (1992) focused on the examination of leisure involvement of older adults with developmental disabilities. Leisure constraints reported in this study were transportation, money, physical accessibility, concerns about their behavior, and discomfort in large public groups. Some respondents reported constraining factors such as they were not integrated, felt members of the community were not sensitive to their needs, and not willing to allow them to be included in community life and activities.

While analyzing the results of the National Survey on Recreation and the Environment, McCormick (2000) found that people with disabilities reported more constraints to involvement and participation in outdoor recreation on US Forest lands than persons with out disabilities. The primary barriers to outdoor recreation participation involved health and physical functioning. Another interesting finding of this study was that people with disabilities under 25 years old and over 75 years old reported more participation in outdoor recreation activities than their peers with out disabilities.

People with disabilities have been hindered from participating in outdoor recreation activities for quite some time. With the aging US population and medical and technological advances, the number of persons with disabilities is expected to increase. Understanding the recreation and leisure needs of persons with disabilities is increasingly

important. The information address below examines the constraints related to the winter sport industry.

Related Skiing and Literature

Skiing has been a popular winter recreation activity in the US for numerous decades. The ski industry, specifically that of North America, has researched and reported a significant decline in participation rates and profitability since the early 1990s (Williams & Fidgeon 2000). Throughout the present research, studies have examined this phenomenon in a many different ways, in hopes of uncovering the true reasons for the change in participation rates. The focus most relevant to this discussion investigates the real and perceived constraints that might pose as barriers to current and potential skiers, specifically people with disabilities. An understanding of these "barriers" or constraints must happen before the industry can expect incremental changes. This is vital to the skiing industry as it relates to sustainable tourism development (Williams & Fidgeon 2000).

In the attempt to create this further understanding, researchers have addressed constraints found amongst skiers. This has often been operationalized in a qualitative method; however, Williams & Fidgeon (2000) used a methodology that included both qualitative and quantitative methods. This type of study design seems to provide a more inclusive and exhaustive research method for the complex nature of this investigation. The data included specific items related to constraints, and these items were analyzed using cluster analysis. Overall, the two most important items were that skiing is very physically demanding, and ski hills are very steep. Respondents in this study also perceived that cost was too high, including proper equipment, transportation, and time constraints.

Gilbert & Hudson (2000) conducted a second recent examination of skiing participation, also taking place in Canada. This article was particularly pertinent to this research, as one of the objectives of the study was to operationalize the negotiation model proposed by Crawford et al. (1991). Gilbert & Hudson's work included not only an examination of what constrains people from participating, but also what facilitates peoples' desire to ski. Another objective of this study was to examine the differences between existing skiers and interested non-skiers, similar to the effort by Williams & Fidgeon (2000).

Another similarity to the Williams & Fidgeon (2000) research is that Gilbert & Hudson (2000) used both qualitative and qualitative research methodologies. These authors used focus groups and structured interviewers to assist in the development of their quantitative instrument. The quantitative instrument included likert scales asking respondents to rate their agreement-disagreement with their perceptions of intrapersonal, interpersonal and structural constraints, similar to previous research (Henderson et al. 1991; Jackson 1993; Raymore et al. 1993). Overall, the most agreement within all three of the domains (intrapersonal, interpersonal, and structural) was seen for the cost associated with skiing.

The findings of this research effort indicated that skiers were typically younger, male, active sport enthusiasts, who are more affluent than the general population (Greer 1990). Major differences in the images and perceptions of skiing were found. Skiers reported that skiing was an opportunity for fun physical activity. It was also stated that participants felt that skiing offered the opportunity for improvement of technique,

interactions with others in a pristine environment, escape from daily life, as well as many others.

CHAPTER 3
METHODS

This chapter discusses the research methods used in this study. It begins by discussing how the study sample was selected. Survey design and instrumentation for this study were discussed in the second section. The following section described the collection of the data. Lastly, a section on the treatment of data was included.

Sampling Procedures

The study sample was derived from a bank of names provided to the University of Florida's Center for Tourism Research and Development. Nearly 60 adaptive recreation providers nationwide were contacted for this study. These adaptive recreation providers were identified through the Internet. Personal contacts were then made with staff members at each of the agencies to see if they would be interested in participating in the study. The study was introduced to the staff member, and the purpose and methods were discussed were discussed with the staff members.

Two options for data collection were presented to the staff members: the use of a mail-back survey, and the possibility of face to face interviews taking place at the ski/snowboarding area. If the staff members demonstrated any degree of interest in participating in the study, they were queried as to which data collection method would best suit the needs of their agency. Disappointingly, very few of the adaptive recreation organizations showed an interest in participating in this study. The most common reasons given for not participating were that the staff was too busy or the skiers/snowboarders were considered clients whose information could not be shared.

Three adaptive recreation organizations agreed to participate in the study. Research information including goals of the study and the survey instrument was sent to the adaptive recreation providers. All three of these organizations opted for the mail-back survey instead of the personal interview method of collection data. Staff members at these three organizations provided their clients' names and contact information.

Survey Design

The design employed in this study was a quantitative, mail-back survey method. The activity-specific survey measured various user characteristics (Appendix A). The survey instrument also measured users' interests, possible benefits to outdoor recreation, perceptions & beliefs of constraints, as well as the overall negotiation strategies employed that may have lead to participation. Respondents were asked a battery of 15 items representing possible benefits of outdoor recreation such as skiing and snowboarding. The items were measured on a five-point Likert scale from 'Not at all important ' (1) to 'Extremely important' (5).

Perceived leisure constraints were measured using a battery of 27 items patterned closely after ones developed by Hudson (2000) for the use of skiing research. Respondents were asked to rate reasons a three-point Likert scale ranging from "Major Reason" to "Not a Reason," with a neutral "Not sure/Don't know" category as well.

Constraint negotiation strategies were examined using a battery of 19 items modeled closely after scales used by Hubbard & Mannell (2001). Respondents were asked to rate things they do to start, continue, or increase recreation participation on a five-point Likert scale ranging from "Never" to "Very Often".

Data Collection

The data collection approach for this study was a mail-back survey/questionnaire. Survey research is an excellent method of collecting this type of data because surveys are good tools for measuring attitudes, orientations, and preferences (Dillman 2000). The initial plan of data collect was to be face to face interviews with adaptive recreation participants on site. The interviews were to be collected during a week-long winter clinic for people with disabilities to receive instruction in several recreation al activities. Due to organizational issues of client confidentiality, this plan was altered to include a mail-back survey instead. The survey was a self-administered question, distributed by mail to the clients of several adaptive recreation agencies. The survey instrument included a note indicating that a caretaker of family member was welcome to fill out the survey for any person who desired that assistance. The sample was a convenience sample, however, there is no known systematic bias involved in selecting the respondents.

Utilizing the Dillman Total Research Method (Dillman 2000), the research participants received an initial postcard mailing containing a request for participation (Appendix B) with a brief explanation of the study. About 5-7 days later, the questionnaire along with a cover letter (Appendix C) and postage paid, pre-addressed envelope was sent to the participants. After two weeks, a follow up letter on a postcard (Appendix D) was mailed to the entire sample thanking those who had already returned their survey questionnaire and reminding those who had not to return theirs. If clients misplaced their original packet, a number was provided to be able to request another. After two additional weeks, a complete packet containing a new cover letter and the same questionnaire was mailed to everyone who had not responded. The time frame for data collection was February 2004 through July 2004.

Treatment of Data

A complete descriptive profile of respondents was conducted (e.g., frequency distribution, mean, median, mode, standard deviation, etc.). The next step in the analysis was to determine if the scales used in the survey instrument were valid. Reliability statistics were carried out on the scales related to constraints and negotiation strategies for the overall sample. A series of cross tabulations and one-way analysis of variance analyses were conducted to examine the differences between the respondents' perceptions regarding constraints and the socio-economic status variables (disability type, gender, income, education, family status).

The next step in the process was to regress the constraints items and the negotiation items on the respondent's level of participation to determine the strength of any relationship that was found. Multiple regressions are the statistical method of examining the way a number of independent variables related to one single dependent variable. The Statistical Package for the Social Sciences (SPSS Version 11) was used in the data analysis. All analysis was tested for significance at the .05 levels.

CHAPTER 4
RESULTS

The results of the data analysis are presented in five main sections of this chapter. First, a description of the adaptive recreation participants' basic demographic profile is provided. The frequency distributions are of particular importance in this thesis because the entire sample consisted of persons with disabilities. Accordingly, the frequencies are an accurate description of the constraints perceived by persons with disabilities, and the negotiation strategies used by persons with disabilities.

The second section discusses what possible recreation benefits are sought by people with disabilities when participating in adaptive recreation pursuits. The next section answers the question, "What constraints do people with disabilities perceive when participating in winter sport activities such as skiing or snowboarding?" The following section answers the research question, "What types of constraints do people with disabilities perceive to have the most impact on winter sport activities such as skiing and snowboarding?" The next section discusses what constraint negotiation strategies are used by people with disabilities when participating in adaptive recreation pursuits. The final section of this chapter focuses on several socio-demographic variables, including, gender, age, residence, and income, and tests whether there are differences in the perceptions of constraints for different socio-demographic groups.

The data collected through the use of a mail-back survey incorporating the modified Dillman technique (Dillman 2000). The survey provided many insights into the perceived constraints and negotiation strategies that the recreationists in this sample have

experienced while engaging in adaptive recreation. Again, although 161 total surveys were collected, the number of recreationists varies within the data analysis due to missing responses.

R_1: What does the sample of adaptive recreation participants look like?

A total of 161 adaptive recreation participants were surveyed during the period of May to July 2004. The sample group consisted of various types of participants with different beliefs and opinions of adaptive recreation opportunities. The respondents in this sample were asked several socio-demographic questions, such as the number of people in the household, number of children living in household, occupation, ethnicity, gender, income, education, etc. This thesis focuses on the following demographic questions; gender, age, income, disability, education, children in the household, and residence

A majority of the adaptive recreation participants were males (59.0%), while approximately (49.0%) was female. Residence type, such as urban, suburban, and rural was another socio-demographic question asked in this thesis. Approximately half of the respondents (47.1%), reported living in a "suburban" area type. The remaining respondents were about evenly proportionate in their responses, with about one-quarter reporting an "rural" residence type (29.0%) and the other quarter reporting a "suburban" residence type (23.9%).

When respondents' were asked to report their total household income for 2003, the numbers ranged from under $10,000 to over $170,000. More specifically, the majority of the respondents (50.0%) reported an income of $50,000 or greater in the year 2003. Approximately one-fifth of the respondents (20.6%), indicated their household income to

be $30,001 to 50,000, while less than one-fifth (18.4%) reported less than $10,000 household income in 2003. The remaining respondents (11.0%) reported a total household income for the year 2003.

Table 1. Socio-demographic profile of Adaptive Recreation Participants

	Frequency	**Valid Percent**
Gender		
Male	90	59.0
Female	64	41.0
Total	156	100.0
Residence		
Urban	37	23.9
Suburban	73	47.1
Rural	45	29.0
Total	155	100.0
Income		
Less than 10,000	25	18.4
$10,001 to 30,000	15	11.0
$30,001 to 50,000	28	20.6
$50,001 or more	68	50.0
Total	136	100.0
Education (recoded)		
Associate's degree or below	112	74.7
Bachelor's degree	18	12.0
Graduate or professional degree	20	13.3
Total	150	100.0
Children under 6 in household?		
Yes	18	11.6
No	137	88.4
Total	155	100.0
Children between 6 –18 years in household?		
Yes	63	40.9
No	91	59.1
Total	154	100.0

Education level was examined by asking respondents to report the highest level of schooling completed. Approximately three-quarters (74.7%) of respondents reported having an Associates degree or less, while over a one-tenth (13.3%) had completed a graduate or professional degree. Also, over one-tenth (12.0%)indicated having completed a Bachelor's degree.

The last two socio-demographic variables examined were whether or not respondents' had children under 6 years old in the household and whether or not respondents' had children between the ages of 6-18 years in the household. The vast majority of respondents' (88.4%) indicated no children under six in the household, while the remaining respondents (11.6%) reported that were children under six in the household. When questioned about children 6 to 18 years old living in the household, less than half of the respondents' (40.9%) reported having children 6 to 18 years old in the household.

A series of additional survey questions were used to further profile adaptive recreation participants (Table 2). The respondents were asked to indicate their level of interest in skiing or snowboarding. The survey instrument allowed the respondent to report their interest in either or both categories (skiing or snowboarding). The results showed that the respondents to this study have an overwhelming level of interest in skiing. Nearly three-quarters of the respondents (73.6%) said that they were very interested in skiing, and nearly one-quarter (22.0%) stated that they were somewhat interested. A small minority (6%) reported that they were not at all interested in skiing.

There was significantly less interest in snowboarding than skiing. Less than one-fifth of the respondents (16.4%) reported that they were very interested in snowboarding,

while just under one-quarter of the respondents (23.9%) said that they were somewhat interested. Just over half of the participants in the study (50.9%) said that they were not interested, and 8.8% of the respondents said that they did not know.

The respondents had quite a bit of experience in skiing/snowboarding. Nearly one-half of the subjects (45.7%) reported that they had been skiing/snowboarding for more than five years, while about one-quarter of the respondents (23.6%) had been skiing/snowboarding between 3-4 years. About one-quarter of the respondents (24.2%) had been skiing/snowboarding between 1-2 years, and a small minority (6.5%) reported that they had participated in skiing/snowboarding for less than one year.

The subjects in this study also reported the number of times that they participated in skiing/snowboarding in the past year. The greatest proportion (37.0%) spent between 4-7 days skiing/snowboarding in the past 12 months. One-fifth of the respondents (20.4%) skied/snowboarded between 8-14 days, while 13.8% of the subjects skied/snowboarded more than 14 times. Nearly one-fifth of the respondents (18.6%) spent 2-3 days participating, and 10.0% of the subjects spent one day or less.

Lastly, the respondents were asked if they skied competitively or not. Less than one-fifth of the respondents (15.2%) said that the skied/snowboarded competitively, while the majority (84.8%) did not compete.

The respondents were asked to report the formal/medical name of their disability through the use of an open-ended question. As shown in Table 3, the responses were then coded and categorized into five general types of disabilities: physical, sensory, cognitive, multiple disabilities, and other. About half of the respondents (48.3%)

Table 2. Recreation Profile of Adaptive Recreation Participants

Adaptive Recreation Participation Information	**Frequency**	**Valid Percent**
Interest in Skiing		
Very Interested	117	73.6
Somewhat Interested	35	22.0
Not at all	6	3.8
Don't know	1	0.6
Total	159	100.0
Interest in Snowboarding		
Very Interested	26	16.4
Somewhat Interested	38	23.9
Not at all	81	50.9
Don't know	14	8.8
Total	159	100.0
Ski/Snowboard Competitively		
Yes	24	15.2
No	134	84.8
Total	158	100.0
Total years of skiing/snowboarding		
Less than 1	10	6.5
1-2	27	24.2
3-4	26	23.6
5-6	16	10.5
7 or more	54	35.2
Total	153	100.0
Days spent skiing/snowboarding within the last 12 months		
1 day or less	15	10.0
2-3 days	28	18.6
4-7 days	56	37.0
8-14 days	31	20.4
15 or more	21	13.8
Total	151	100.0

reported having a physical impairment, while a slightly smaller proportion of the respondents (44.1%) reported having a cognitive impairment. A small minority of the respondents (3.5%) reported having multiple disabilities. Only a few participants (2.1%) reported having sensory impairments and the remaining (2.1%) indicated some other type of disability.

Respondents were asked to report in years and/or months how long they had their disability. Over one-third (38.6%) of the respondents indicated they had their disability between one to 10 years, and about one-third (31.4%) reported having their disability between 11 and 20 years. Less than one-fifth (16.8%) of respondents had their disability for 21 to 30 years. Lastly, 11.8% of the respondents reported having had their disability for 31 years or more.

Table 3. Self-reported Disability Information of Adaptive Recreation Participants

Disability Information	**Frequency**	**Valid Percent**
Disability Type		
Physical Impairments	69	48.3
Sensory Impairments	3	2.1
Cognitive Impairments	63	44.1
Multiple disabilities	5	3.5
Other	3	2.1
Total	143	100.0
Disability Occurrence		
1 to 10 years	54	38.6
11 to 20 years	44	31.4
21 to 30 years	23	16.4
31 + years	19	11.8
Total	140	100.0

The self reported disabilities information was categorized under four domains. These domains were physical disabilities, cognitive disabilities, sensory impairments and

multiple disabilities. Table 4 displays the four domains of disabilities and several of the disabilities under each of the four domains. Interestingly, the disabilities under the physical disabilities domains were represented the largest proportion, almost half of the sample (48.3%). The disabilities most frequently reported under the physical disabilities domain were the following: paraplegia/quadriplegia/spinal cord injury (14.2%), cerebral palsy (7.1), amputation/limb deficiency (4.3), Multiple sclerosis (2.1) Muscular Dystrophy (2.1), Spina Bifida (2.1).

Cognitive disabilities were rated the second most prevalent disability type with nearly half (44.1%) of the survey participants reporting a cognitive disorder. The disabilities found under the cognitive domain were the following: Downs Syndrome (11.3%), Autism (9.9%), learning disabilities (6.4%) mental retardation (5.7%), developmentally delayed (5.7%) and other cognitive disabilities (2.1%).

The multiple disabilities or impairments domain represented only a small proportion of the population (3.5%). This domain accounted for those participants who reported more than one disability in more than one domain. Lastly, sensory impairments were only report by a small fraction (2.1%) of the study sample. This domain represented the smallest sector of this sample of adaptive recreation participants. Visual impairments and disabilities were the type of only sensory impairment reported.

Table 4. Results of the Frequency Analysis of Disability Types of Adaptive Skiers &Snowboarders

DISABILITIES OF ADVAPTIVE SKIERS & SNOWBOARDERS	Frequency	Percent
PHYSICAL		
Paraplegia / Quadriplegia/ Spinal Cord Injury	20	14.2
Cerebral Palsy	10	7.1
Other	9	6.3
Amputation/Limb deficiency	6	4.3
Spina Bifida	3	2.1
MD	3	2.1
Multiple Sclerosis	3	2.1
Traumatic Brain Injury	2	1.4
Polio	2	1.4
Spasticity	2	1.4
Neurological Impairments	2	1.4
Stroke seizure	2	1.2
Burn	1	.7
Heart disease	1	.7
SENORY		
Visual Impairments	3	2.1
COGNITIVE		
Downs Syndrome	16	11.3
Autism	14	9.9
Learning Disabilities	9	6.4
Mental Retardation	8	5.7
Developmentally Delayed	8	5.7
Other	3	2.1
MULITIPLE	5	3.5
TOTAL	142	100.0

Measures of Possible Benefits of Skiing and Snowboarding

Respondents were asked a battery of 15 items representing possible benefit of outdoor recreation such as skiing and snowboarding. The items were measured on a five-point Likert scale from 'Not at all important ' (1) to 'Extremely important' (5). Table 5 depicts the mean responses of the participants.

R_2: What benefits do people with disabilities perceive when participating in winter sport activities such as skiing?

The benefits items were categorized under four domains. These domains were health, social, efficacy, and nature. Interestingly, the four items under the efficacy domains were some of the highest rated benefits items. These included increased self-confidence (3.85), increased sense of competence (3.77), opportunity for lifelong learning (3.76), and provides a challenge that tests my abilities (3.70).

The item with the overall highest mean response was increased self-confidence, which fell under the health domain (3.85). This indicated that respondents felt that "increased self-confidence" was an important benefit of skiing and snowboarding. The item provides a sense of adventure also rated high (3.81), also under the health domain. The remaining items all fell below the mean of 3.50, indicating that these items were of less importance to the respondents. The next several important benefits to participation in skiing and snowboarding are as follows: improved physical health (3.58), improved mental health (3.48), and to enhance family relationships (3.36). The item with the lowest mean score (2.52) was "provides opportunity for solitude, falling under the nature domain."

Table 5. Results of Frequency Analysis of Possible Benefits of Adaptive Recreation Participation

Possible benefits to skiing & snowboarding	Not at all important	Somewhat important	Moderately important	Very important	Extremely important	Mean
HEALTH						
Improved physical health	4.6	12.5	26.3	33.6	23.0	3.58
Reduced stress	13.2	15.8	21.7	31.6	17.8	3.25
Improved mental health	9.9	7.9	28.5	31.8	21.9	3.48
Provides a sense of adventure	5.3	7.3	21.3	32.7	33.3	3.81
SOCIAL						
Strengthened relationships with my companions	13.7	13.1	24.8	30.1	18.3	3.26
Enhanced family relationships	15.6	11.0	18.2	32.5	22.7	3.36
Provides opportunities to meet people	8.7	17.3	23.3	31.3	19.3	3.35
EFFICACY						
Increased self-confidence	7.1	7.1	15.6	33.8	36.4	3.85
Provides a challenge that tests my abilities	7.9	11.9	14.6	33.8	31.8	3.70
Increased sense of competence	6.0	9.3	20.5	30.5	33.8	3.77
Opportunity for lifelong learning	6.6	9.9	14.5	38.8	30.3	3.76
NATURE						
Greater connection with nature	12.5	17.8	27.6	31.6	10.5	3.10
Provides opportunity for solitude	36.8	13.2	21.1	19.1	9.9	2.52
Greater connection with wilderness	20.4	17.1	23.7	23.7	15.1	2.96
Provides opportunities to view wildlife	21.2	26.5	23.8	14.6	13.9	2.74

Response scale is 1=Not at all important, 2=Somewhat important, 3=Moderately important, 4=Very Important, 5=Extremely Important

R_{2A}: What are the differences in the perceived benefits of people with disabilities when participating in winter sport activities such as skiing & snowboarding between people who show a high level of interest and those who show a low level of interest?

An independent sample t-test was used to determine the differences in the mean differences in the benefit items based desired participation level. The test illustrated three items having a significant difference at the .05 level between respondents who have

participated as often as desired and those who have not. An interesting finding is that all three of these items fall under the health domain. Table 6 depicts the findings that respondents who were more interested in skiing and snowboarding rated the possible benefit of improved physical fitness higher than respondents that were less interested (t=2.165*). Another significant difference found was participants not interested in skiing

Table 6. Results of independent sample t-test examining the benefits by interest

Possible Benefits To Skiing & Snowboarding	**YES**	**NO**	**df**	**T**
HEALTH				
Improved physical health	3.67	3.15	150	2.165*
Reduced stress	3.35	3.77	150	2.114*
Improved mental health	3.51	3.31	149	.786
Provides a sense of adventure	3.90	3.42	148	1.942*
SOCIAL				
Strengthened relationships with my companions	3.34	2.88	151	1.649
Enhanced family relationships	3.40	3.15	152	.878
Provides opportunities to meet people	3.39	3.19	148	.738
EFFICACY				
Increased self-confidence	3.92	3.52	152	1.594
Provides a challenge that tests my abilities	3.78	3.31	149	1.744
Increased sense of competence	3.79	3.68	149	.406
Opportunity for lifelong learning	3.80	3.58	150	.885
NATURE				
Greater connection with nature	3.13	2.96	150	.645
Provides opportunity for solitude	2.52	2.50	150	.078
Greater connection with wilderness	2.98	2.85	150	.471
Provides opportunities to view wildlife	2.74	2.69	149	.180

Response scale is 1=Not at all important, 2=Somewhat important, 3=Moderately important, 4=Very Important, 5=Extremely Important

and snowboarding, rated the possible benefit “reduced stress” as a more important benefit to outdoor recreation participation (t=2.114*. Lastly, interested respondents rated

"provided sense of adventure" as a more important benefit to skiing and snowboarding participation (t=1.942*)**.**

R_{2B}: What are the differences in the possible benefits to participation of people with disabilities when participating in adaptive winter sport activities such as skiing/snowboarding across the education variable?

Analysis of variance was utilized to investigate the relationship between the participants' education level and their perception of possible benefits to participation. Table 6 depicts the relationships found between education level and perceptions of benefits. A total of five significant differences were noted across the four benefits domains.

Three of these significant differences were noted within the health domain. Respondents with a Baccalaureate degree were less likely to seek the benefit item provides a sense of adventure (F=11.454***) and the item improved mental health(F=3.520*) than people with an Associates degree or less and people with graduate/professional degrees. Respondents in the lowest education category were less likely to state that reducing stress was important to them than the respondents with either less than an Associates degree or those with graduate/professional degrees (F=7.693***).

One significant difference was noted within the social domain. As education increased, so did the importance of the benefit item provides opportunities to meet people (F=7.610***). Lastly, one significant item was seen in the nature domain. Respondents with a Baccalaureate degree were more likely to express importance for the item greater connection with wilderness than people in either the lowest or highest education categories (F=3.280).

Respondents who reported having less than an Associate's degree rated the benefit of reduced stress less important than those respondents with higher levels of education (F=7.693***). The participants with the highest level of education (

Table 7. Results of Analysis of Variance Examining Possible Benefits by Education Level

Possible benefits to skiing & snowboarding	YES	NO	df	T
HEALTH				
Improved physical health	3.49	2.61	4.05	2.064
Reduced stress	3.06	4.00	3.95	7.693***
Improved mental health	3.34	2.89	4.00	3.520*
Provides a sense of adventure	3.57	2.56	4.53	11.454***
SOCIAL				
Strengthened relationships with my companions	3.23	3.56	3.26	.474
Enhanced family relationships	3.34	3.72	3.26	.675
Provides opportunities to meet people	3.47	4.22	4.47	7.610***
EFFICACY				
Increased self-confidence	3.85	3.83	4.11	3.79
Provides a challenge that tests my abilities	3.47	4.22	4.47	1.984
Increased sense of competence	3.72	3.72	4.32	2.092
Opportunity for lifelong learning	3.73	3.61	4.00	.554
NATURE				
Greater connection with nature	2.98	3.39	3.47	1.984
Provides opportunity for solitude	2.35	3.17	2.84	3.280*
Greater connection with wilderness	2.80	3.44	3.37	2.846
Provides opportunities to view wildlife	2.71	2.50	3.00	.662

Response scale is 1=Not at all important, 2=Somewhat important, 3=Moderately important, 4=Very Important, 5=Extremely Important

graduate/professional degree) rated the item benefit provides an opportunity to test my abilities as significantly more important (F=7.693***) than those respondents with the lowest education level (AA or less). Also, respondents with a graduate or professional

degree rated the benefit of provides a sense of adventure as more important than the rest of the respondents in other income levels. The benefit of improved mental health was rated the more important by those respondents in the highest income level than the other respondents. Lastly, providing an opportunity for solitude was reported as more important to those respondents who had received a Bachelor's degree than respondents in any other income level.

R_{2C}: What are the differences in the possible benefits of people with disabilities when participating in winter sport activities such as skiing/snowboarding across the income variable?

To examine the differences in respondents' perceptions about benefits sought across the income groupings, analysis of variance was once again used. Table 8 depicts the relationships found between income level and perceptions of benefits. Four significant differences were noted across three of the benefits domains (health, social, and efficacy). The findings with regards to income were more complex than those seen previously.

As depicted in Table 8, two of the four differences were found within the efficacy domain. In both cases, the respondents in the $10,001 - 30,000 and respondents whose income was $50,000 or more reported similar levels of importance for the self efficacy items. The respondents in the lowest income bracket ($10,000 or less) and those in the $30,000 – group reported different importance levels. Respondents in the lowest income bracket were least likely to report that improving their self -confidence was important (F=2.606*). Subjects in the $10,000 -$30,000 and $50,000 or more income groupings

were more likely to associate a high level of importance with an increased sense of competence (F=4.979***).

Within the social domain, only one item showed a significant difference. Similar to the findings in the efficacy domain, respondents in the $10,000 -$30,000 and $50,000

Table 8. Results of Analysis of Variance Examining Possible Benefits by Income Level

Possible benefits to skiing & snowboarding	**Less than 10,000**	**10,000-30,000**	**30,000-50,000**	**50,000 +**	**F**
HEALTH					
Improved physical health	3.35	3.62	3.71	3.58	.457
Reduced stress	2.96	3.69	3.25	3.34	1.016
Improved mental health	3.13	3.77	3.57	3.56	1.016
Provides a sense of adventure	3.30	4.46	3.71	3.86	2.994*
SOCIAL					
Strengthened relationships with my companions	3.71	3.54	3.21	3.45	2.203
Enhanced family relationships	2.88	3.62	2.89	3.65	3.460*
Provides opportunities to meet people	3.52	3.69	3.36	3.30	.481
EFFICACY					
Increased self-confidence	3.25	4.15	3.86	4.00	2.606*
Provides a challenge that tests my abilities	3.65	3.54	3.61	3.73	.114
Increased sense of competence	3.09	4.08	3.48	4.06	4.979*
Opportunity for lifelong learning	3.52	4.42	3.54	3.79	1.948
NATURE					
Greater connection with nature	3.04	3.00	3.18	3.09	.090
Provides opportunity for solitude	2.61	2.85	2.50	2.45	.319
Greater connection with wilderness	3.00	3.08	2.93	2.93	.054
Provides opportunities to view wildlife	2.77	3.23	2.82	2.57	1.000

Response scale is 1=Not at all important, 2=Somewhat important, 3=Moderately important, 4=Very Important, 5=Extremely Important

or more income groupings showed a higher importance level with enhanced family relationships (F=3.460*). One item within the health domain showed significant differences. The item provides a sense of adventure was significantly more important to respondents in the $10,000 -$30,000 category No significant differences were seen for the nature domain.

Measures of Constraints

Respondents' perceived leisure constraints were measured using a battery of 27 items patterned closely after ones developed by Hudson (2000) for the use of skiing research. Respondents were asked to rate reasons they did not participate as much as desired using a three-point Likert scale ranging from "Major Reason" to "Not a Reason." A neutral "Not sure/Don't know" category was included as well. Table 9 illustrates the simple frequency distributions and means run to determine the perception of constraints within the sample.

R_3: What constraints do people with disabilities perceive when participating in winter sport activities such as skiing?

For ease in understanding and properly interpreting the data, the constraints items were placed under their respective categories. Seven of the items fell under the category of "Intrapersonal Constraints," four items were in the "Intrapersonal Constraints" category, and fourteen fell under the "Structural Constraints" domain.

Table 9 shows the item with the lowest mean score (1.99) was don't have enough time. This indicated that the respondents tend to believe a reason they were constrained from skiing and snowboarding was because they didn't have enough time. The next item with the lowest mean score (2.03) was slopes are too far. This revealed that most

Table 9. Results of Frequency Analysis of Perceived Constraints to Adaptive Recreation Participation

Constraints	Major Reason	Minor Reason	Not A Reason	Mean
Intrapersonal Constraints				
Fear of the outdoors	2.0	3.4	94.6	2.93
Fear of injury	9.5	19.6	70.9	2.61
Poor health	6.0	10.7	83.3	2.77
Like to do other things for recreation more	10.7	16.8	72.5	2.62
Fear of heights/ scared of lifts	5.3	9.3	85.3	2.80
Skiing is harder to learn than other sports	3.3	19.9	76.8	2.74
Skiing is too physically challenging	8.6	13.2	78.1	2.70
Interpersonal Constraints				
Don't have anyone to go with	13.3	26.7	60.0	2.47
Others can't afford to go	18.0	24.7	57.3	2.39
Do not have a partner of the same ability	11.3	20.0	68.7	2.57
Negative attitudes from other recreation participants	2.0	5.3	92.7	2.91
Structural Constraints				
Don't have enough time	30.5	40.4	29.1	1.99
Have no way to get to the slopes	17.3	24.0	58.7	2.41
Lack of information about skiing or other winter sports	8.0	12.0	80.0	2.72
Too busy with other recreation activities	10.7	28.0	61.3	2.51
Slopes are too far away	31.0	34.8	34.2	2.03
Slopes are too crowded	6.6	28.5	64.9	2.58
Skiing facilities are inaccessible to me due to my disability	8.8	14.2	77.0	2.68
Can't afford to go skiing	30.1	26.8	43.1	2.13
Appropriate clothing/ adaptive equipment too expensive	13.3	19.3	67.3	2.54
Not aware of adaptive ski programs in the area	10.0	14.0	76.0	2.66
Not aware of skiing opportunities	12.1	12.1	75.8	2.64
Adaptive programs not available in this area	16.9	8.1	75.0	2.58
Negative attitudes from ski area employees or FS employees	2.1	3.4	94.5	2.92
Areas are closed when I want to visit	6.3	0.7	93.0	2.87

Response scale is 1=Major reason, 2= Minor reason, 3=Not a reason

*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

respondents also felt this to be a significant reason they were constrained from skiing or snowboarding. The next three most important items were can't afford to go skiing (2.13), others can't afford to go skiing (2.39), and have no way to get to the slopes (2.41). The item that scored the highest mean score (2.93) was fear of the outdoors. This indicated that respondents reported that the fear of the outdoor was not a major constraining factor on skiing and snowboarding participation.

R_{3A}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding between people who participate as often as desired and those who do not?

To examine how different respondents of this study perceived constraints to recreation participation, several socio-demographic variables were examined (Table 10).

An independent sample t-test was used to determine whether there were any differences in the mean scores of constraint items based desired participation level. The test illustrated six items having a significant difference of constraint levels between respondents who have participated as often as desired and those who have not. Five items showing significant differences were under the structural domain and one under the intrapersonal domain. There were no significant differences found in the interpersonal domain.

The strongest relationship was found for three of the items in the structural constraint domain. The strongest item was not aware of skiing opportunities (t=4.048***), followed by slopes are too far away (t=3.671***), and adaptive programs not available in this area (3.499***). The fourth constraints item within the structural domain have no way to get to the slopes (t=2.468*), followed by not aware of adaptive

ski programs in this area (t=2.079*). The single constraint item falling under the intrapersonal constraint domain was like to other thing for recreation (t=-3.244**).

Table 10. Perceived constraints of people with disabilities when participating in skiing & snowboarding between people who participate as often as desired and those who do not

Constraint Items	Yes	No	Df	t-statstic
Intrapersonal Constraints				
Fear of the outdoors	2.88	2.94	145	-.964
Fear of injury	2.44	2.67	47.359	-1.605
Poor health	2.56	2.84	40.469	-2.058
Like to do other things for recreation more	2.21	2.74	39.809	-3.244**
Fear of heights/ scared of lifts	2.68	2.84	44.225	-1.354
Skiing is harder to learn than other sports	2.74	2.74	149	.003
Skiing is too physically challenging	2.53	2.74	43.123	-1.481
Interpersonal Constraints				
Don't have anyone to go with	2.64	2.42	148	1.539
Others can't afford to go	2.26	2.43	148	-1.099
Do not have a partner of the same ability	2.61	2.56	148	.308
Negative attitudes from other recreation participants	2.82	2.93	39.038	-1.154
Structural Constraints				
Don't have enough time	2.18	1.93	149	1.646
Have no way to get to the slopes	2.68	2.34	60.396	2.468*
Lack of information about skiing or other winter sports	2.71	2.72	148	-1.55
Too busy with other recreation activities	2.35	2.55	148	-1.499
Slopes are too far away	2.46	1.91	153	3.671***
Slopes are too crowded	2.62	2.57	149	.375
Skiing facilities are inaccessible to me due to my disability	2.74	2.67	146	.557
Can't afford to go to skiing	2.29	2.08	151	1.276
Appropriate clothing/ adaptive equipment too expensive	2.35	2.59	45.808	-1.528
Not aware of adaptive ski programs in the area	2.82	2.61	81.743	2.079*
Not aware of skiing opportunities	2.91	2.56	133.690	4.048***
Adaptive programs not available in this area	2.88	2.49	93.993	3.499***
Negative attitudes from ski area employees or FS employees	2.88	2.94	143	-.830
Areas are closed when I want to visit	2.88	2.86	140	.166

Response scale is 1=Major reason, 2= Minor reason, 3=Not a reason
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

R_{3B}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding between people with children in their household under the ages of six and those who do not?

In order to understand the impact of having the presence of small children in the household, an analysis of the differences in perceived constraints by respondents with and without children below the age of six years was conducted. An independent sample t-test was used to determine whether there were any differences in the mean scores of constraint items based on households the presence of children under six years old or not. The analysis illustrated eight items having significant differences of constraint levels (Table 11). Five of the eight items showing significant differences fell under the intrapersonal domain, two items were under the interpersonal domain, and one item fell under the structural domain.

The intrapersonal domain included not only the most constraints items, but these items were the strongest reported constraints in this analysis. The results illustrated the finding that respondents with children under six years living in the household were less likely to report that they were constrained from skiing/snowboarding than people without young children in the household. The two most important constraining factors to participating in skiing/snowboarding were fear of heights/scared of lifts (t=4.648***) and like to do other things for recreation more (t=4.275***). Also, respondents who had children under six in the household were less likely to say that skiing was too physically challenging than those who did not children under six in the household (t=3.276**). Lastly, this analysis of the intrapersonal constraints showed that respondents living in a

household with children under six years perceived that poor health (t=2.337*) and fear of the outdoors (t=.928*) were less likely to be constraining items than those who did not.

Under the interpersonal domain, two significant differences were noted. In both cases, people with young children reported that they were less constrained than those without young children. The items not having anyone to go with (t=3.500**) and negative attitudes from other participants (t=3.077**) were more likely to be reported as a reasons by those respondents who did not live with children under six.

Lastly, only one significant difference at the .05 level was reported under the structural domain. Respondents that did not report living with children under six years were more likely to report that they felt constrained by skiing facilities that are inaccessible due to their disability (t=2.171*).

Table 11. Differences in perceived constraints of people with disabilities when skiing & snowboarding between people with children in their household under the ages of six and those who do not

Constraint items x Kids under 6	**Yes**	**No**	**df**	**t**
Intrapersonal Constraints				
Fear of the outdoors	3.00	2.92	143	.928*
Fear of injury	2.65	2.63	144	-.115
Poor health	2.94	2.76	42.423	2.337*
Like to do other things for recreation more	2.94	2.58	61.277	4.275***
Fear of heights/ scared of lifts	3.00	2.79	130	4.648***
Skiing is harder to learn than other sports	2.88	2.72	27.792	1.753
Skiing is too physically challenging	2.94	2.67	53.415	3.276**
Interpersonal Constraints				
Don’t have anyone to go with	2.82	2.42	34.444	3.500**
Others can’t afford to go	2.41	2.40	146	.074
Do not have a partner of the same ability	2.76	2.54	23.065	1.489
Negative attitudes from other recreation participants	3.00	2.90	130	3.077**

Continued Table 11.

Constraint items x Kids under 6	Yes	No	df	t
Structural Constraints				
Don't have enough time	1.76	2.02	146	-1.290
Have no way to get to the slopes	2.53	2.40	146	-.663
Lack of information about skiing or other winter sports	2.59	2.76	146	-1.107
Too busy with other recreation activities	2.41	2.52	146	-.686
Slopes are too far away	2.12	2.04	150	.386
Slopes are too crowded	2.59	2.58	147	.078
Skiing facilities are inaccessible to me due to my disability	2.88	2.67	34.286	2.171*
Can't afford to go to skiing	1.88	2.18	149	-1.370
Appropriate clothing/ adaptive equipment too expensive	2.47	2.56	146	-.470
Not aware of adaptive ski programs in the area	2.53	2.69	147	-.968
Not aware of skiing opportunities	2.59	2.66	146	-.389
Adaptive programs not available in this area	2.53	2.60	145	-.361
Negative attitudes from ski area employees or FS employees	3.00	2.93	141	.902
Areas are closed when I want to visit	2.94	2.89	138	.477

Response scale is 1=Major reason, 2= Minor reason, 3=Not a reason
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

R_{3C}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding between people with children in their household between the ages of six and 18 and those who do not?

To determine whether there were any differences in the mean scores of constraint items based on households having children six to eighteen years old, an independent samples t-test was conducted. Table 12 shows that three items showing significant differences were found. There were two items under the structural domain, and one item fell under the intrapersonal domain. The analysis showed that people with children

Table 12. Differences in perceived constraints of people with disabilities when skiing & snowboarding between people with children in their household between the ages of six and 18 and those who do not

Constraint items x Kids 6-18	**Yes**	**No**	**df**	**t**
Intrapersonal Constraints				
Fear of the outdoors	2.87	2.98	142	-1.959
Fear of injury	2.57	2.68	143	-.968
Poor health	2.82	2.76	145	.651
Like to do other things for recreation more	2.63	2.60	144	.251
Fear of heights/ scared of lifts	2.80	2.81	145	-.127
Skiing is harder to learn than other sports	2.61	2.83	96.774	-2.457*
Skiing is too physically challenging	2.66	2.74	146	-.768
Interpersonal Constraints				
Don’t have anyone to go with	2.57	2.39	145	1.453
Others can’t afford to go	2.35	2.44	145	-.667
Do not have a partner of the same ability	2.52	2.60	145	-.695
Negative attitudes from other recreation participants	2.89	2.93	145	-.768
Structural Constraints				
Don’t have enough time	1.82	2.11	145	-2.310*
Have no way to get to the slopes	2.41	2.41	145	.022
Lack of information about skiing or other winter sports	2.78	2.72	145	.616
Too busy with other recreation activities	2.38	2.60	109.429	-1.808
Slopes are too far away	2.06	2.03	149	-.229
Slopes are too crowded	2.48	2.64	146	-1.639
Skiing facilities are inaccessible to me due to my disability	2.64	2.73	144	-.870
Can’t afford to go to skiing	2.07	2.20	148	-.971
Appropriate clothing/ adaptive equipment too expensive	2.43	2.63	145	-1.670
Not aware of adaptive ski programs in the area	2.58	2.73	108.637	-1.288
Not aware of skiing opportunities	2.62	2.67	145	-.437
Adaptive programs not available in this area	2.73	2.49	142.499	2.029*
Negative attitudes from ski area employees or FS employees	2.91	2.95	140	-.760
Areas are closed when I want to visit	2.95	2.85	131.865	.1343

Response scale is 1=Major reason, 2= Minor reason, 3=Not a reason

*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

between the ages of six and 18 were more constrained for two of the items, while one of the analysis showed that respondents with older children in the household were less constrained for one item.

Under the structural domain, respondents with children ages six to eighteen living in the household were more likely to report not having enough time (t= -2.310). Respondents who indicated having no children between the ages six to 18 present in their household were more likely consider adaptive programs not available in this area (t=2.029) a constraint than those respondent that did not.

The lone significant difference found under the intrapersonal domain was that participants who reported not living with children ages six to eighteen were more likely to report that skiing is harder to learn than other sports (t= -2.457).

R_{3D}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding across the income variable?

Another analysis of the impacts of the socio-demographic characteristics was the examination of the income variable. An analysis of variance was utilized to investigate the relationship between the participants' income level and their perception of constraints. Table 13 depicts the relationships found between total household income levels and perceptions of constraints.

The strongest finding was that of not having enough time, falling under the structural domain. The results show that respondents with the lowest level of income (less than $10,000) were most likely to report lack of time (f=8.534) as a constraint to participation, followed by respondents in the 30,001-$50,000 category. Subjects in the

highest income bracket showed the least impact of the time constraint, followed by the participants in the $10,001- $30,000 category.

Under the intrapersonal domain, there were two significant relationships noted. Respondents in the lowest income level (less than $10,000) were the least likely to report poor health (f=2.749) as a constraint, where as the respondents in next income level ($10,001- $30,000) were the most likely. The next constraint item in the intrapersonal domain was skiing is harder to learn than other sports (f=2.653). The respondents' income level that reported this constraint the highest was $30,001-$50,000 and the lowest income group (less than $10,000) were the least likely to it as a constraint.

Table 13. Results of Analysis of Variance Examining the Perceived Constraints by income level.

Constraint Items	**Less than 10,000**	**10,000-30,000**	**30,000-50,000**	**50,000 +**	**F**
Intrapersonal Constraints					
Fear of the outdoors	3.00	2.86	2.88	2.94	.677
Fear of injury	2.52	2.50	2.48	2.77	1.119
Poor health	2.71	2.86	2.57	2.89	2.749*
Like to do other things for recreation more	2.55	2.46	2.48	2.73	2.262
Fear of heights/ scared of lifts	2.90	2.64	2.68	2.85	1.418
Skiing is harder to learn than other sports	2.90	2.86	2.54	2.76	2.653*
Skiing is too physically challenging	2.57	2.93	2.46	2.77	2.545
Interpersonal Constraints					
Don't have anyone to go with	2.41	2.21	2.25	2.62	2.401
Others can't afford to go	2.18	2.43	2.14	2.55	2.422
Do not have a partner of the same ability	2.43	2.64	2.32	2.62	1.452

Continued Table 13.

Constraint Items	**Less than 10,000**	**10,000-30,000**	**30,000-50,000**	**50,000 +**	**F**
Negative attitudes from other recreation participants	2.86	2.86	2.85	2.94	.550
Structural Constraints					
Don't have enough time	2.50	2.00	2.26	1.70	8.534***
Have no way to get to the slopes	2.64	2.21	2.30	2.46	1.275
Lack of information about skiing or other winter sports	2.73	2.92	2.61	2.72	.860
Too busy with other recreation activities	2.64	2.54	2.59	2.51	2.52
Slopes are too far away	2.30	2.36	2.11	1.96	1.690
Slopes are too crowded	2.71	2.43	2.43	2.61	1.173
Skiing facilities are inaccessible to me due to my disability	2.50	2.69	2.64	2.71	.544
Can't afford to go to skiing	2.00	1.93	1.86	2.30	2.390
Appropriate clothing/ adaptive equipment too expensive	2.36	2.46	2.39	2.69	1.889
Not aware of adaptive ski programs in the area	2.68	2.79	2.54	2.61	.484
Not aware of skiing opportunities	2.59	2.79	2.56	2.68	.439
Adaptive programs not available in this area	2.43	2.79	2.67	2.56	.755
Negative attitudes from ski area employees or FS employees	2.95	2.77	2.88	2.97	1.696
Areas are closed when I want to visit	2.80	3.00	2.76	2.94	1.330

Response scale is 1=Major reason, 2= Minor reason, 3=Not a reason
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

Measures of Constraint Negotiation

Respondents' constraint negotiation strategies were examined using a battery of 19 items modeled closely after scales used by Hubbard & Mannell (2001). Respondents were asked to rate things they do to start, continue, or increase recreation participation on a five-point Likert scale ranging from "Never" to "Very Often."

R_4: What constraint negotiation strategies do people with disabilities perceive when participating in winter sport activities such as skiing/snowboarding?

As seen in Table 14, the highest mean score was for the negotiation item "I try to improve my skills" (3.89), followed by the item I ask for help with the required skills (3.70). Other important negotiation strategies were as follows: I do more fitness and recreation activities close to home (3.65), I just swallow my pride and try my best (3.60), I set aside time for fitness and recreation activities (6.59), and I just try to work my fitness and recreation in around my other commitments (3.58). The item with the lowest mean score (2.33) was I arrange rides with friends.

Table 14. Results of Frequency Analysis of Constraint Negotiation Strategies People with Disabilities Use to Start, Continue, or Increase Participation in Skiing & Snowboarding

Negotiation Strategies	Never	Rarely	Sometimes	Regularly	Very Often	Mean
Time Management Strategies						
I try to plan ahead for things	10.7	10.7	15.4	36.2	26.8	3.58
I set aside time for fitness and recreation activity	4.8	6.8	32.0	37.4	19.0	3.59
I just try to work my fitness and recreation in around my other commitments	6.8	8.8	35.4	31.3	17.0	3.47
I sometimes substitute another more convenient activity for a preferred one	16.6	20.7	42.8	13.1	6.9	2.73
I try to participate in off-peak times when facilities are less busy	10.9	17.7	34.0	25.9	10.9	3.15
Skill Acquisition Strategies						
I try to improve my skills	5.4	4.0	20.1	37.6	32.9	3.89
I participate in skiing/snowboarding activities despite an injury or physical/health condition	18.8	9.7	27.1	23.6	20.8	3.18
I take skiing/snowboarding lessons	13.1	10.3	29.7	26.9	20.0	3.30
I just swallow my pride and try my best	9.9	7.0	21.8	35.9	25.4	3.60
I ask for help with the required skills	4.8	5.5	27.4	39.7	22.6	3.70
Interpersonal Coordination Strategies						
I try to find people to do fitness and recreation activities with	18.8	10.1	36.9	20.8	13.4	3.00

Continued Table 14.

Negotiation Strategies	Never	Rarely	Sometimes	Regularly	Very Often	Mean
I arrange rides with friends	36.1	19.4	26.4	11.1	6.9	2.33
I participate in activities with people in my age group	8.1	14.2	27.7	33.8	16.2	3.36
I participate in activities with people of the same gender	10.7	18.1	49.0	14.1	8.1	2.91
I try to meet people with similar interests	8.2	15.0	36.1	28.6	12.2	3.22
Financial Resource and Strategies						
I try to budget my money	21.6	10.1	19.6	33.1	15.5	3.11
I save up money to do fitness and recreation activities	20.5	13.0	24.7	32.2	9.6	2.97
I do more fitness and recreation activities close to home	6.9	7.6	21.5	41.7	22.2	3.65
I improvise with the equipment and/or clothes I have	16.3	17.7	32.7	24.5	8.8	2.92

Response scale is 1=Never, 2= Rarely, 3=Sometimes, 4=Regularly, 5=Very Often

R_{4A}: What are the differences in the constraint negotiation strategies used by people with disabilities who are interested in skiing & snowboarding and those who are not interested?

An independent samples t-test was used to understand the negotiation strategies that the respondents with regards to their interest in participating in skiing and snowboarding. Overall, six of the 19 negotiation strategies showed significant differences based on the respondents' interest levels. For all but one of the items showing significant differences, the respondent who reported a higher level of interest reported a higher mean score.

Two significant differences were noted under the skill acquisition strategy domain. I try to improve my skills showed a significant difference ($t = 2.80^*$) was higher for those interested than those not. However, respondents who were less interested reported a higher mean score for the item I participate in skiing/snowboarding activities despite an

injury or physical/health condition (t = 2.020*). Regarding the financial resource strategies domain, two significant differences were noted between those interested and those not interested. I try to budget my money (t = 2.659**) and I do more fitness and recreation activities closer to home (t = 2.334*) showed significantly higher mean scores for those with higher interest levels.

Two additional items were significantly different between those interested and those not. I set time for fitness and recreation activity (t = 2.574*), under the time management strategy domain, and I try to find people to do fitness and recreation activities with (t = 2.831*), under the interpersonal coordination strategy domain.

Table 15. Results of Analysis of Variance Examining Constraint Negotiation Strategies People with Disabilities by Level of Interest in Skiing & Snowboarding

Negotiation Strategies X Interest	Yes	No	df	t
Time Management Strategies				
I try to plan ahead for things	3.65	3.20	147	1.618
I set aside time for fitness and recreation activity	3.69	3.12	145	2.574*
I just try to work my fitness and recreation in around my other commitments	3.50	3.12	144	1.580
I sometimes substitute another more convenient activity for a preferred one	2.74	2.68	143	.254
I try to participate in off-peak times when facilities are less busy	3.21	2.84	145	1.211
Skill Acquisition Strategies				
I try to improve my skills	3.97	3.48	147	2.80*
I participate in skiing/snowboarding activities despite an injury or physical/health condition	3.29	2.68	142	2.020*
I take skiing/snowboarding lessons	3.36	3.04	143	1.140
I just swallow my pride and try my best	3.65	3.36	140	1.077
I ask for help with the required skills	3.74	3.48	144	1.164
Interpersonal Coordination Strategies				
I try to find people to do fitness and recreation activities with	3.13	2.36	147	2.831**

Continued Table 15.

Negotiation Strategies X Interest	Yes	No	df	t
I arrange rides with friends	2.34	2.28	142	.232
I participate in activities with people in my age group	3.41	3.08	146	1.324
I participate in activities with people of the same gender	2.93	2.80	147	.560
I try to meet people with similar interests	3.29	2.88	145	1.694
Financial Resource and Strategies				
I try to budget my money	3.20	2.64	146	1.868
I save up money to do fitness and recreation activities	3.10	2.36	144	2.659**
I do more fitness and recreation activities close to home	3.74	3.17	142	2.334*
I improvise with the equipment and/or clothes I have	2.89	3.08	145	-.740

Response scale is 1=Never, 2= Rarely, 3=Sometimes, 4=Regularly, 5=Very Often
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

R_{4B}: What are the differences in the constraint negotiation strategies used by people with disabilities who are living in different living environments?

A one-way ANOVA was used to investigate the relationships between a respondents' living environment (urban, suburban, or rural) and the perceptions of constraint negotiation strategies. Table 16 illustrated that three significant relationships were discovered were noted across two domains. Under the skill acquisition strategy domain, suburban respondents were most likely to select the item I take skiing/snowboarding lessons, while rural respondents were least likely (F = 7.412***). Suburban respondents were also most likely to agree that they ask for help with the required skills than either urban or rural respondents (t = 3.358*). Under the time management strategy domain, urban respondents were less likely to place high importance on the item I just try to work my fitness and recreation in around my other commitments (t = 3.444**).

R_{4C}: What are the differences in the constraint negotiation strategies used by people with disabilities who have different levels of education?

To further investigate the constraints negotiation strategies used, a one-way ANOVA was ran between the respondents' income level and the individual negotiation items. Table 17 shows the three significant relationships were found; two in the time management strategy domain and one in the skill acquisition strategy domain. In all three cases, as education increased, so did the propensity for selecting that particular item.

Table 16. Results of Analysis of Variance Examining Constraint Negotiation Strategies People with Disabilities by Living Environment

Negotiation Strategies X living environment	**urban**	**suburban**	**rural**	**F**
Time Management Strategies				
I try to plan ahead for things	3.64	3.61	3.57	.107
I set aside time for fitness and recreation activity	3.56	3.65	2.54	.188
I just try to work my fitness and recreation in around my other commitments	3.06	3.64	3.42	3.444**
I sometimes substitute another more convenient activity for a preferred one	2.63	2.81	2.68	.361
I try to participate in off-peak times when facilities are less busy	2.92	3.30	3.11	.899
Skill Acquisition Strategies				
I try to improve my skills	4.14	3.87	3.74	1.363
I participate in skiing/snowboarding activities despite an injury or physical/health condition	3.46	3.10	3.18	.785
I take skiing/snowboarding lessons	3.37	3.64	2.70	7.412***
I just swallow my pride and try my best	3.48	3.70	3.62	.332
I ask for help with the required skills	3.44	3.93	3.54	3.358*
Interpersonal Coordination Strategies				
I try to find people to do fitness and recreation activities with	2.75	3.03	3.20	1.209

Continued Table 16.

I arrange rides with friends	.241	2.32	2.37	.057
I participate in activities with people in my age group	3.06	3.58	3.28	2.644
I participate in activities with people of the same gender	2.86	3.01	2.75	.862
I try to meet people with similar interests	3.14	3.37	3.05	1.178
Financial Resource and Strategies				
I try to budget my money	3.06	3.06	3.28	.359
I save up money to do fitness and recreation activities	2.86	3.00	3.05	.224
I do more fitness and recreation activities close to home	3.34	3.85	3.61	2.510
I improvise with the equipment and/or clothes I have	3.17	2.79	2.95	1.147

Response scale is 1=Never, 2= Rarely, 3=Sometimes, 4=Regularly, 5=Very Often
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

Under the time management strategy domain, the items I try to plan ahead for things (F = 5.353**) and I just try to work my fitness and recreation in around my other

Table 17. Results of Analysis of Variance Examining Constraint Negotiation Strategies People with Disabilities by Level of Interest in Skiing & Snowboarding

Negotiation Strategies X Interest	AA or less	BA/BS	Grad./ prof	F
Time Management Strategies				
I try to plan ahead for things	3.40	3.67	4.42	5.353**
I set aside time for fitness and recreation activity	3.52	3.53	4.00	1.769
I just try to work my fitness and recreation in around my other commitments	3.27	3.47	4.11	4.627*
I sometimes substitute another more convenient activity for a preferred one	2.69	2.56	3.17	1.725
I try to participate in off-peak times when facilities are less busy	3.10	3.00	3.42	.482
Skill Acquisition Strategies				
I try to improve my skills	3.77	4.00	4.37	2.573
I participate in skiing/snowboarding activities despite an injury or physical/health condition	3.03	3.44	3.95	4.021*
I take skiing/snowboarding lessons	3.22	3.75	3.39	1.263

Continued Table 17.

Negotiation Strategies X Interest	AA or less	BA/BS	Grad./ prof	F
I just swallow my pride and try my best	3.58	3.06	4.06	2.745
I ask for help with the required skills	3.63	3.56	4.05	1.465
Interpersonal Coordination Strategies				
I try to find people to do fitness and recreation activities with	2.98	2.78	3.42	1.2191
I arrange rides with friends	2.26	2.61	2.58	.955
I participate in activities with people in my age group	3.41	3.12	3.50	.550
I participate in activities with people of the same gender	2.97	2.88	2.68	.628
I try to meet people with similar interests	3.26	3.35	2.89	1.000
Financial Resource and Strategies				
I try to budget my money	3.04	3.50	3.16	.856
I save up money to do fitness and recreation activities	2.92	3.35	3.00	.815
I do more fitness and recreation activities close to home	3.59	3.47	3.95	.967
I improvise with the equipment and/or clothes I have	3.00	2.53	2.71	1.454

Response scale is 1=Never, 2= Rarely, 3=Sometimes, 4=Regularly, 5=Very Often
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

commitments (F = 4.627*) showed significant differences. Under the skill acquisition strategy domain, the item I participate in skiing/snowboarding activities despite an injury or physical/health condition (F = 4.021*) showed a significant difference. As stated above, respondents with a graduate/professional degree agreed more with the statements showing significant differences than respondents with a baccalaureate degree, or those respondents with an Associate's degree or less.

R_{4D}: What are the differences in the constraint negotiation strategies used by people with disabilities who were hampered by their disability compared to those who reported they were not hampered by their disability?

An independent sample t-test was used to determine the differences in the mean scores of constraint negotiation items based whether or not the respondents felt that their

disability hampered their abilities to ski or snowboard. Results show six significant mean differences across three of the negotiation strategy domains. Three of the significant items were found in the sill acquisition strategy domain, two in the interpersonal strategy domain, and one in the financial resources and strategy domain.

The single item that showed the greatest difference was I participate in activities with people in my own age group (t = -2.644***), in the interpersonal strategy domain. The other item within this domain was the item I try to find people to do fitness and recreation activities with (t = -2.133*). The skill acquisition domain included three significant items, including I just swallow my pride and try my best (t = -2.540*), I try to

Table 18. Results of Independent Sample t-test Examining Differences of Constraint Negotiation Strategies People with Disabilities Who Reported their Disabilities Hampered Their Abilities to Ski or Snowboard

Negotiation Strategies X Does your disability hamper ability to ski/snowboard	**Yes**	**No**	**df**	**t**
Time Management Strategies				
I try to plan ahead for things	3.49	3.69	140	-.926
I set aside time for fitness and recreation activity	3.46	3.77	138	-1.769
I just try to work my fitness and recreation in around my other commitments	3.37	3.53	137	-.886
I sometimes substitute another more convenient activity for a preferred one	2.74	2.75	136	-.038
I try to participate in off-peak times when facilities are less busy	3.10	3.22	108.638	-.490
Skill Acquisition Strategies				
I try to improve my skills	3.68	4.10	140	-2.368*
I participate in skiing/snowboarding activities despite an injury or physical/health condition	3.34	3.08	135	1.126
I take skiing/snowboarding lessons	3.57	3.14	136	1.980*
I just swallow my pride and try my best	3.35	3.87	133	-2.540*

Continued Table 18.

Negotiation Strategies X Does your disability hamper ability to ski/snowboard	Yes	No	df	t
I ask for help with the required skills	3.68	3.79	137	.729
Interpersonal Coordination Strategies				
I try to find people to do fitness and recreation activities with	2.81	3.26	140	-2.133*
I arrange rides with friends	2.16	2.49	135	-1.523
I participate in activities with people in my age group	3.14	3.64	139	-2.644**
I participate in activities with people of the same gender	3.74	3.13	140	-2.307
I try to meet people with similar interests	3.00	3.42	138	-2.303
Financial Resource and Strategies				
I try to budget my money	2.92	3.26	139	-1.464
I save up money to do fitness and recreation activities	2.73	3.26	137	-2.470*
I do more fitness and recreation activities close to home	3.66	3.69	135	-.154
I improvise with the equipment and/or clothes I have	2.85	3.00	138	-.759

Response scale is 1=Never, 2= Rarely, 3=Sometimes, 4=Regularly, 5=Very Often
*** significant at .001 level, ** significant at the .01 level, * significant at the .05 level

improve my skills (t = -2.368*), I take skiing/snowboarding lessons (t = 1.980*). Within the financial resources strategy domain, only the item I save up money to do fitness and recreation activities (t = -2.470*) showed a significant difference.

CHAPTER 5
DISCUSSION

The purpose of this study was to investigate the nature of the constraints and negotiation strategies that winter sport recreationists with disabilities experience and utilize in order to participate in recreation activities. In addition, this study sought to understand the benefits sought by persons with disabilities who participate in winter sports activities, particularly skiing and snowboarding.

It should be noted that this study focused only on recreationists who reported that they have a disability. This study does not compare the two distinctly different populations of able-bodied persons and persons with disabilities. Accordingly, the frequency distributions of the responses are the primary result of this study. However, to better understand the specific constraints that persons with disabilities incur, the negotiation strategies that they use to overcome those constraints and the benefits that they seek, additional analyses were conducted.

This study contributes to the current literature regarding the recreation patterns and perceptions of persons with disabilities. This chapter reviews and discusses the four research questions. At the end of the chapter, recommendations for future research are discussed.

Summary of Procedures

The primary purpose of this study was to understand the perceptions of skiers/snowboarders with disabilities with regards to benefits sought, constraints and the negotiation strategies that they utilize in overcoming their constraints. A mail-back

survey instrument was used to collect the data from the respondents. The survey instruments were mailed out in the month of May, 2004, and the data were analyzed during the month of July, 2004. A total of 161 completed surveys were returned, from the 650 total households contacted. This thesis explored four proposed research questions, with the overall purpose of discovering the constraints, negotiation strategies, and benefits sought by persons with disabilities who participate in outdoor recreation activities of skiing and snowboarding in the US. The data analysis utilized SPSS v. 12 to uncover the results of the proposed research questions.

Discussion of Research Questions

R_1: What does the sample of recreationists look like?

The profile of the sample labeled as "recreationists" was found through running frequencies in SPSS v. 12. Again, it is paramount to recognize the importance of the frequency distribution of the responses from the persons who participated in this study, as the sample consists of all persons with disabilities who participate in the outdoor recreation activities of skiing and snowboarding.

Nearly two-thirds (59.0%) of the participants were males, while 41.0% were females. The respondents were asked which residence type (urban, suburban, or rural) best describes the area in which their permanent residence resides. The analysis showed that about half of the recreationists in the sample (47.0%), live in rural areas. Over one-quarter of the respondents (29.0%) live in urban areas and the remainder of the respondents (23.9%), live in suburban areas.

The respondents were also asked their total annual household income. Half of the respondents (50.0%) reported their household income to be $50,001 or more, while 20.6% reported between $30,001 and $50,000. A large proportion of the respondents

indicated that their household income was less than $10,000, and just 11% reported this amount to be between $10,001 and $30,000.

The education levels of the respondents were examined as well. Nearly three-quarters (74%) of the respondents said that they had less than a Bachelor's degree. Just 12.0% of the recreationists said that they had a Bachelor's degree, and 13.3% reported that their education level was that of a Graduate or professional degree.

The respondents were queried as to whether their household included children. The vast majority of the respondents (88.4%) indicated that they did not have children under the age of six years in their household, while a nearly two-thirds of the recreationists (59.1%)reported that they had children between the ages of six years and 18 years in the household.

Overall, the respondents in this sample have a very typical socio-demographic profile. Regarding the first research question, the greatest proportion of the respondents was male, lived in a suburban area and reported an annual household income of $50,001 or more. The respondents were most likely to have as Associate's degree or less, and were likely to have a child between the ages of six and 18 in their household.

When asked about their interest level in skiing or snowboarding, the results of the analysis showed that there were more people interested in skiing (93.0% very interested-somewhat interested) than in snowboarding (40.3% very interested-somewhat interested). The vast majority (84.8%) of the respondents did not ski or snowboard competitively. The level of skiing/snowboarding experience of the respondents ranged from a low degree of experience (6.5% with less than one year experience) to a great deal of experience (35.6% with seven or more years experience). The number of days spent

skiing/snowboarding in the past 12 months showed a very normal distribution, with 10% saying 1 day or less, 37% stating 4-7 days, and 13.8% reporting that they skied/snowboarded 15 or more days.

The respondents were asked to report the formal or medical name of their disability. The most common type of disabilities reported were physical impairments (48.3%). The most frequently reported physical disabilities were Paraplegia/Quadriplegia/Spinal Cord Injury (14.2%) and Cerebral Palsy (7.1%) This is noteworthy in the sense that these types of disabilities would require the most adaptations and equipment to enable participation. This highlights the notion that individuals with these types of physical disabilities are able to participate in winter recreation activities such as skiing and snowboarding with the assistance of adaptive recreation providers.

This finding also makes note that participants with these types of physical disabilities are able to negotiate through the barriers to participation. Much of the needed equipment (e.g., mono-skis and outriggers) is often available at adaptive recreation centers as well as instruction on the use of this equipment.

As mentioned in previous literature, people with physical disabilities such as spinal cord injuries reported several constraints to outdoor recreation pursuits. Lack of leisure partners, transportation issues, mobility issues, self-consciousness, and attitudes of significant others were found to be constraining factors of outdoor recreation pursuits Ross (1993). These constraints listed above were similar and consistent to those found important to this study except attitudes. Attitudes from significant others was not found to be highly constraining factor in this study. Overall, the use of recreation and

therapeutic recreation services can be utilized to treat and prevent primary and secondary disabilities related to disabilities.

A significant proportion of the sample reported having cognitive impairments (44.1%). The most frequently reported cognitive disorders were Downs Syndrome (11.3%), Autism (9.9%), and learning disabilities (6.4%). Previous research has also examined the constraints to recreation participation for people with cognitive impairments. The findings suggest that leisure involvement of older adults with cognitive disabilities is often constrained by factors such as transportation, money, physical accessibility, concerns about their behavior, and discomfort in large public groups. Another study states that people with cognitive disabilities including learning disabilities, autism, and moderate and sever cognitive disabilities, reported benefit from outdoor activities by demonstrating a greater initiative and self directed independence (Wilhite and Keller 1992).

In general, research suggests that constraints to involvement and participation in outdoor recreation and community life activities for people with disabilities tend to involve resources and attitudes. Resources include transportation, money, leisure partners, knowledge, skills, and functioning. Attitudinal barriers for individuals with disabilities are often their own attitudes as well as others (the community, society at larger, or even recreation providers). Although attitudinal barriers were not found to be a strong constraining factor in this study, this topic of research should not be overlooked in future recreation research.

People with disabilities have been hindered from participating in outdoor recreation activities for quite some time. With the aging US population and medical and

technological advances, the number of persons with disabilities is expected to increase. Understanding the recreation and leisure needs of persons with disabilities is increasingly important.

Most of the respondents reported that their disability had occurred relatively recently, with nearly three-quarters of the respondents (69.0%) saying that their disability had occurred within the past 10 years, and 31.4% stating between 11-20 years. A noteworthy proportion of the respondents (11.8%) said that their disability had occurred over 30 years ago.

$R_{2:}$ What benefits do people with disabilities seek when participating in winter sport activities such as skiing & snowboarding?

The 15 possible benefits items were categorized in four domains. These domains included health, social, efficacy, and nature. Table 4 lists the four domains, the percents for each item, and the mean for each item. The frequency distribution of the benefits items was analyzed for each individual item and each set of items with their respective domains for greater clarity.

Overall, the respondents showed that the items in the efficacy domain were the most sought after benefits. Each of the items in the efficacy domain was rated at a mean of 3.70 or higher (on a 5-point Likert scale). One of the items in the health domain was rated very high (3.81), while the remaining items in the health domain were rated in the middle. The lowest mean scores were seen for the nature domain, where each mean score fell between 2.52 and 3.10.

R_{2A}: What are the differences in the perceived benefits of people with disabilities when participating in winter sport activities such as skiing & snowboarding between people who show a high level of interest and those who show a low level of interest?

This examination made use of an independent samples t-test to determine the differences (if any) between the benefits sought and whether they showed a higher or lower level of interest in participating. The results showed that three of the items were significant, and that all three items were in the health domain. People who were more interested in participating felt that improved physical fitness and being provided with a sense of adventure were more important. Also, respondents who were less interested in participating felt that reducing stress was more important than those who were interested.

R_{2B}: What are the differences in the perceived benefits of people with disabilities when participating in winter sport activities such as skiing & snowboarding across education levels?

Five significant differences were noted across the education levels with respect to the benefits perceived by these recreationists. Similar to the finding in the previous research question, the majority of the significant differences (three of five) were found in the health domain. No real pattern was found that showed that people who had either higher or lower education levels were likely to perceive things differently.

However, some interesting findings were noted. People with Bachelor's degrees were less likely to seek a sense of adventure, improved mental health, and greater connection with nature than the other respondents. Respondents in the lowest education were least likely to seek the benefit item of reducing stress. Also, as income increased, so did the importance of the item opportunities to meet people.

R_{2C}: What are the differences in the perceived benefits of people with disabilities when participating in winter sport activities such as skiing & snowboarding across income levels?

Similar to what was noted in the previous research question, four significant differences were seen across the benefits by income analysis. Similar results were noted for respondents in the $10,000--$30,000 category across three of the items (enhanced family relationships, increases self-confidence, and increases sense of competence). As income increased, so did the propensity to seek a sense of adventure. The lowest income respondents reported the lowest level of importance for three of the four items (provides a sense of adventure, increased self-confidence, and increased sense of competence), and tied with respondents in the middle income group ($30,001--$50,000) for the fourth item (enhanced family relationships). Once again, the nature domain showed no significant difference across the income groupings.

R_3: What constraints do people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding?

The 25 constraints items were categorized into three domains; intrapersonal constraints (7 items), interpersonal constraints (4 items); and structural constraints (14 items). The frequency distribution of the constraints items was analyzed for the items, and each set of items within their respective domains for greater clarity.

Overall, the respondents showed that the structural constraints presented the greatest barrier to them. Nearly a third of the respondents said that three of the structural items were a major reason for not participating. These items were don’t have enough time, slopes are too far away, and can’t afford to go skiing. This finding corresponds to

the findings of Gilbert and Hudson (2000), Hudson (2000), and Williams and Fidgeon (2000). The items that the respondents were most likely to report as not being a reason or constraint were negative attitudes from ski area employees, areas are closed when I want to visit, and lack of information about skiing. This is a finding that shows a positive light on the management of the skiing/snowboarding facilities, as these possible structural constraints seem to be alleviated by management.

Few items within the intrapersonal and interpersonal domains showed that they were major reasons for not participating in skiing/snowboarding. Within the interpersonal category, the major reasons were others can't afford to go, don't have anyone to go with,, while in the intrapersonal domain, I like to do other things for recreation and fear of injury were the major reasons. Within the interpersonal domain, the least important constraint item was negative attitudes from other recreation participants, and within the intrapersonal category the least important items were fear of the outdoors, fear of heights/scared of lifts, and poor health.

These findings are similar to the findings of a great deal of other constraints literature (Gilbert & Hudson 2000; Hudson 2000; Jackson & Rucks 1995;and Williams & Fidgeon 2000;), showing that the lack of time or being too busy is an important reason for not participating as often as desired. Interestingly, this is true of persons with disabilities as well as able-bodied persons.

R_{3A}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding between people who participate as often as desired and those who do not?

In order to understand the impact of the constraints on recreation participation, or the constraints perceived by recreation participants, the respondents were asked if they ski/snowboard as often as they desired. A series of t-tests were used to determine if the respondents in the "yes" category recorded a different response than those in the "no" category. In order to analyze the data, the three-point scale was transformed into a dichotomous "yes/no" variable. This variable was created by selecting the respondents who said that the item was a major or minor reason for not participating. These respondents fell into the "yes" category. The respondents who said that the constraint was not at all a reason fell into the "no" category.

The results of the analysis showed that five of the constraint items were significantly different for those saying yes or no. Interestingly, four of the five significant variables fell into the structural constraints domain. Respondents who said that they did not participate as often as they liked were more likely to report that they were constrained in each case. These items were, in order of strength, not aware of skiing opportunities, slopes are too far away, adaptive programs not available in this area, and have no way to get to the slopes. This finding clearly shows that not being able to get to the slopes, for whatever reason, is a major reason for a lack of participation by the people in this sample. This finding is in concert with the research done by Alexandris & Carrol (1997), Jackson &Rucks (1995), and Simon & Fidgeon (2000).

One of the intrapersonal constraints items was significant. Respondents who said that they did not participate as often as they desired were significantly more likely to report that they liked to do other things for recreation. This was an expected finding, as those people who like to do other things for recreation would most likely participate in

those activities rather than an activity that they enjoy less. No significant findings were noted within the interpersonal constraints domain.

R_{3B}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding between people with children in their household under the ages of six and those who do not?

An analysis was conducted to understand the difference in the perceptions about constraints on perceived by recreation participants with regards to whether a child under the age of six resided in the household. A series of t-tests were used to determine if the respondents in the "yes" category recorded a different response than those in the "no" category. A total of eight significant differences were noted, showing the impact of this socio-demographic variable on perceived constraints by persons with disabilities.

Unlike the previous test of significance, the intrapersonal constraints domain showed the most significant differences, and the structural constraints domain showed the least. Within the intrapersonal domain, five constraints items showed significant differences. For each of these items, the person without young children in the household reported a higher degree of constraints. The significant items were, in order of strength, fear of heights/scared of lifts, like to do other things for recreation, skiing is too physically challenging, poor health, and fear of the outdoors.

Two of the interpersonal constraints items were found to be significant; don't have anyone to go with and negative attitudes from other participants. Interestingly, the structural constraints domain included only one significant difference with regards to having small children in the household; skiing facilities are inaccessible to me due to my

disability. This finding may be related to the positive impact of having young children in the household.

The issue of recreation and families with disabilities has received little attention in the recreation and leisure literature until very recently. However, in the past few years there have been some exceptional efforts to add to this lacking body of knowledge (Ashton-Shaffer, Shelton, & Johnson (1995), Bullock & Johnson (1997), and Mactavish, Schleien, & Tabourne (1997).

From this research it was strongly suggested that family involvement in the leisure process has been a key concern for family members. Ashton-Schaffer et. al (1995) reported that families and parents of people with disabilities indicated that they have always had to facilitate recreation experiences and in some ways this could be more work for them. These findings suggest that this in itself may present additional perceived constraints for families that have to be negotiated in various ways.

Mactavish (1997) studied the nature of family recreation of people with developmental disabilities. Families in this study identified a number of benefits to family recreation including the opportunity suggested that past experience and in particular – past benefits, tended to influence the degree to which families and negotiated from constraints.

Another possibility for this finding could be the amount of child care facilities available at these recreation areas. Child care areas are typically inspected by state agencies, and child care facilities are often a relatively new development at ski areas. The simple fact that the child care areas are newer than the ski areas may bode well for persons with disabilities, as they would have more likely to have been built within the

parameters set forth by ADA. This is an interesting finding because it highlights the need for managers to focus not just on providing outdoor recreation opportunities for persons with disabilities, but also the peripheral issues such as childcare.

R_{3C}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding between people with children in their household between the ages of six and 18 and those who do not?

Respondents in this sample who had children between the ages of six and 18 showed three significant differences with regards to recreation constraints. Two of the three differences were in the structural domain, and just one was found in the intrapersonal domain. No significant differences were noted for the interpersonal constraints domain.

Respondents who said that they did have children in the household between the ages of six and eighteen reported a higher degree of constraint than those without for two of the three items. These items were skiing is harder to learn than other sports, and don't have enough time. Only one item, adaptive programs not available in this area, showed a higher degree of constraint for persons with disabilities without a child in their household.

It is interesting to examine the findings of this sub-research question in concert with the findings of the previous sub-research question regarding small children in the household. Whereas the presence of small children (younger than six years) resulted in the participant reporting fewer constraints, the presence of an older child (six-18) in the household had little effect on the perception of constraints. The lack of differences noted

for this sub-research question may have to do more with the social bonding of children with other children, and the loosening of the parents' "apron strings."

R_{3D}: What are the differences in the perceived constraints of people with disabilities perceive when participating in winter sport activities such as skiing & snowboarding across the income variable?

An examination of the constraints variable across the income groupings was conducted to see if there was a relationship between income and the perception of constraints by persons with disabilities who participated in skiing/snowboarding. Three significant differences were found across the constraints variables; two within the intrapersonal constraints domain and one within the structural constraints domain. No significant differences were found for the interpersonal domain.

Within the intrapersonal constraints domain, poor health and skiing is harder to learn were listed as the major constraining factors for people in the $30,001-$50,000 category. For the poor health item, the lowest income group reported the second highest level of constraint, while the respondents in the highest income group reported the lowest level of constraint. The item skiing is harder to learn than other sports was shown as a greater constraint for higher income respondents than lower income respondents. This is a similar finding to that of the item don't have enough time, where respondents in the highest income group reported that this was more of a constraint than respondents in the lowest income group.

R_4: What constraint negotiation strategies do people with disabilities use when they start, continue, or increase participation in winter sport activities such as skiing & snowboarding?

The 19 constraint negotiation items were categorized into four domains; time management strategies (5 items), skill acquisition strategies (5 items), interpersonal coordination (5 items), and financial resources and strategies (4 items). The frequency distribution was analyzed for the individual items and each set of items are within their respective domain for greater clarity.

Overall, the respondents showed that the skill acquisition strategies were employed the most often to start, continue, or increase, participation of their winter recreation pursuits. Nearly two thirds of respondents said that three skill acquisition strategies were used “regularly” or “very often” when trying to start, continue, or increase participation in winter sport activities. These items were I try to improve my skills, I ask for help with the required skills, and I just swallow my pride and try my best.

Another domain of constraint negotiation strategy that was frequently used to start, continue, or increase participation of their winter recreation pursuits was the time management domain. Approximately half of the respondents or more reported that three time management strategies were used “regularly” or very often” in winter recreation participation. These items were I set aside time for fitness and recreation activities, I try to plan ahead for things, and I just try to work my fitness and recreation in around my other commitments.

The negotiation strategies items that were used the least to start, continue, or increase participation of skiing and snowboarding were I arrange rides with friends, I sometimes substitute another more convenient activity for a preferred one, and I participate in activities with people of the same gender.

R_{4A}: What are the differences in the constraint negotiation strategies used by people with disabilities who are interested in skiing & snowboarding and those who are not interested?

To fully understand the impact of constraints and the strategies used to negotiated through these constraints, the respondents were first asked how interested in skiing and snowboarding they were. The four points scale was transformed into a dichotomous variable. The variable was created by selected all the respondents that indicated to be very or somewhat interested in skiing and snowboarding. These respondents fell into the "yes" category. The respondents that indicated not at all interested or don't know fell under the category of "no." In order to examine the effect of the respondents' interest in skiing and snowboarding on the use of constraint negotiation strategies, an independent sample t-test was conducted.

The results of this analysis show that six negotiation strategies were significantly different for those saying yes or no to whether they were interested in skiing & snowboarding or not. Interestingly, the respondents who indicated that they were interested in skiing and snowboarding reported more frequent use of all the negotiation items than those who were not interested. Another noteworthy finding was that the domains of financial resource strategies and the skill acquisition strategies had the most significant differences. However, each domain had at least one significant difference. Respondents who said that they were interested in skiing and snowboarding were more likely to report they frequently used the constraint negotiation strategy in each case. The items within each domain are presented in order of strength.

Surprisingly, only one of the time management domain items was found to be significant. Despite the fact that not having enough time was perceived as the strongest perceived constraint, respondents' who were interested in skiing and snowboarding only reported setting aside time for fitness and recreation activities more frequently than those respondents who were not interested.

Within the financial resource strategies, the items were I save up money to do fitness and recreation activities and I do more fitness and recreation activities close to home. These findings may relate to the fact that a large portion of the respondents of this study reported that their household income was less than $10,000. It may also demonstrate that fact that about half of the respondents of this study live in a suburban area. Also, most environments suitable for winter recreation activities do not occur in this type of area.

Two skill acquisition domain items were found significant; I try to improve my skills and I participant in skiing and snowboarding activities despite an injury or physical or health condition. Interestingly, the respondents' from this study as earlier discussed felt that poor health was a constraining to their participation in winter recreation. This finding illustrates the notion of participation despite constraints through the process of negotiation.

Although only one significant difference was found in the interpersonal coordination domain, the item I try to find people to do recreation activities with was worth mentioning.

R_{4B}: What are the differences in the constraint negotiation strategies used by people with disabilities who are living in different living environments?

To better understand the impact of a respondents' living area on how they negotiate perceived constraints, respondents' were ask to indicate whether they lived in an urban, suburban, or rural environment. A series of analysis of variances were used to determine the differences of responses. The results showed that only items in the time management skill acquisition domains were found to have significant differences.

Two significant differences were found in the skill acquisition domain; I take skiing/snowboarding lessons and I ask for help with required skills. Within the time management domain, one negotiation strategy item was significant. Respondents' who said they lived in a suburban area reported most frequently that they try to work fitness and recreation in around my other commitments.

R_{4C}: What are the differences in the constraint negotiation strategies used by people with disabilities who have different levels of education?

In order to examine the impact of education on the uses of constraint negotiation strategies, respondents were asked to report the highest level of schooling that had completed. A seven-point scale was transformed into a three-point scale. The three categories were AA degree or less, BA/BS, or graduate or professional degree. The results of this analysis illustrated significant differences within two of the domains.

Two items were found to be significant in the time management domain; I try to plan ahead for things and I just try to work my fitness and recreation in around my other commitments. Those respondents with a graduate or professional degree reported more frequently that they employed these strategies to negotiate through their perceived constraints.

One of the skill acquisition strategy items was significant. Those respondents with higher education reported more frequently that they participate in skiing & snowboarding activities despite an injury or physical/health condition. This finding clearly showed that respondents who had a graduate or professional degree indicated that more frequent use of this negotiation strategy than respondents with lower levels of education

Conclusions

Findings showed that more than half of the sample was males, living in a suburban residence, and making total household annual income of $50,000 or more. The majority of the sample had an Associates' degree or less. Also the majority of respondents did not live in a household with children under six or children between 6 to 18 years old. The results of the study suggest that the majority of the adaptive recreation participants surveyed were more interested in skiing than in snowboarding. Most of the respondents reported that they did not ski or snowboard competitively.

The respondents of this study were more likely to report having a physical disability than other types of disabilities. The most prevalent type of physical impairment report was spinal cord injuries resulting in paraplegia or quadriplegia. The second most prevalent type of disability was cognitive impairments. Respondents reported having Downs syndrome more than other types of cognitive disabilities. The frequency distributions revealed this sample was really composed of two subgroups: respondents with physical disabilities and respondents with cognitive disorders. A small percentage of the sample reported other types of disabilities including sensory impairments. Many adaptive winter sports programs have programming specially designed for individuals with disabilities. There are disability specific programs such as skiing for people with visual impairments and there are inclusive programs for people of all abilities. If more

data was able to be collected from several different organizations, the distinction of the programs may be more obvious.

As previously mentioned, recreation pursuits have many different meanings to many different people. The respondents in this study sought benefits from recreation that improved one's self-concept. This sample found that improving self-confidence was a major reason to engage in recreation and leisure activities. Therapeutic recreation services and recreation activities reinforce positive self-image. Enhancing self-concepts, promoting a healthy, positive sense of self-esteem, and enhancing confidence have all been documented as benefits of therapeutic recreation services. It is a response to achievements of personal goals and positive feedback from others. It can be characterized as feelings of mastery, achievements, exhilaration, acceptance, success, and personal worth. This clearly defines the therapeutic value of a recreation experience.

Other benefits rated as important reasons to engage in recreation and leisure were related to improving of physical condition or health. Much literature and anecdotal evidence points to the importance of therapeutic recreation in helping the participants improve, maintain, and gain physical strength and endurance. More recently, society has begun to take a more holistic approach of understanding health and physical well-being. With this change in thinking, one can only hope that society truly comprehends the connection of healthy leisure and recreation to overall quality of life.

Constraints to leisure and recreation pursuits are constant threats to peoples' interest levels and participation rates in any given activity. Previous literature suggests that the nature of skiing and snowboarding provides for more than normal barriers (Simon 2000). Also, previous literature suggests that people with disabilities may

experience additional constraints due to conditions related to their disabilities. In this study, many interesting findings surfaced with the examination of perceived constraints. Time constraints were reported most frequently as a major reason affecting participation and interest in skiing and snowboarding. Other major reasons or constraints reported were transportation issues, financial concerns, and accessibility. Recreation participants, regardless of abilities or experiences, will encounter many of these barriers. Understanding these constraints can only help recreation and leisure service providers to provide more attainable and enjoyable opportunities for all.

Constraint negotiation was examined in four domains. Respondents rated the negotiation items on terms of frequency of use to start, continue, or increase level of participation. Overall, skill acquisition strategies were most frequently used. The negotiation strategy item rated as most frequently used was I try to improve my skills. Other strategy items that were frequently used were I ask for help with the required skills and I swallow my pride and try my best. These findings suggest that skiers and snowboarders with disabilities are quite interested in improving their abilities to participate winter recreation activities in order to participate at desired levels. As reported, respondents feel improving their skills will allow them to overcome barriers impeding participation.

Another interesting finding under the financial resources and strategies domain was respondents report more frequently doing fitness and recreation activities close to home. Keeping in mind most of the respondents reported feeling constrained by lack of money and transportation issues, many respondents chose to participate in skiing and

snowboarding closer to home. This limits their ability to go on a typical skiing vacation unless participants live relatively close to a ski area.

In general, this study contributes valuable knowledge and confirms the notion that therapeutic recreation, or the use of recreation to help heal the mind and body, is important to persons with disabilities. Therapeutic recreation seems to be part of a growing trend that will surge with the aging of the baby-boomer generation.

This study can also contribute to the advocacy of adaptive recreation program establishment in winter sport environments. The results support the position that recreation participation is beneficial for all. As previously mentioned, many myths suggest that people with disabilities do not prefer the same kinds of outdoor environments, do not participate in outdoor recreation/adventure activities, and cannot attain a full range of benefits from outdoor recreation programs and activities. This study is a great example to see the true contrast in the above statement and the reality that people with disabilities do tend to participate in outdoor recreation opportunities.

This study has provided data that furthers the work of Jackson et. al (1993) indicating that participation is dependent not on the absence of constraints, but rather upon the negotiation through them. The data showed how participants with disabilities often modified their leisure experiences related to time management and skill acquisition. The data also suggested that the ability and frequency of constraint negotiation was tied to other aspects of life circumstances (e.g., income levels and living environment). Still further, the findings illustrated that participants with different education levels employed different negotiation strategies.

Several conclusions can be drawn from our knowledge of recreation and exercise for people with disabilities. The potential benefit of recreation participation has been documented. However, many recreation benefits are difficult to objectively measure. First, based on the benefits research in this study, the meanings of recreation and leisure vary among individuals with disabilities. This is particularly true of this sample of respondents, given the range of disabilities from physical to cognitive to social. Also, the needs and interests of people with disabilities may vary depending on other socio-demographic variables besides disability.

Objective measurements are needed to examine not only the effect of participation on the individual, but also on the family members or others involved. Family studies have identified a number of benefits to family recreation, including the notion that past experience and in particular, past benefits, tended to influence the degree to which families and negotiated from constraints. In general, family involvement in the leisure process for people with disabilities needs further examination.

The data for this study were collected from a group of people with primarily physical and cognitive disabilities. Accordingly, the results cannot be generalized directly to all people with disabilities (e.g. sensory impairments) or to people without disabilities. We cannot universalize constraints or the negotiation of constraints. Just as there is no universally accepted definition of disability because of the various biological and social components present, we recognize that the experience of leisure constraints is unique and highly variable. The values of the data lie in how they can provide additional avenues for the investigation of constraints for individuals in varying life circumstances. The study also raised a number of questions unanswerable in this study, such as how

differences in constraints and negotiation strategies might exist between groups of people with and without disabilities.

This study has provided a further explanation of the influence of constraints on leisure behavior and recreation patterns. It illuminates some of the issues of how people with disabilities address their leisure choices and constraints. Perhaps this study will help to better understand constraints as well as make visible the lives of people with disabilities. A further investigation between the opportunities for physical recreation and individual's interest and benefits sought by participation should be considered. Addressing values, attitudes, and conditions may be a way to increase positive meanings associated with leisure and outdoor recreation.

Also, specific attention needs to be given to the way in which people with disabilities can be active in their leisure pursuits. Although many individuals may know what they need in order to maintain increase participation, they often don't know how to meet those needs. The ADA is a tool for social change, and has the ability to improve settings and conditions in which people with disabilities recreate. It is a mandate to create equal opportunity and access for people with disabilities in all facets of work and play. While guidelines and principles are essential for action, the study also speaks to the importance of inclusion itself. Hopefully, this "work in progress" offers a further step of the on-going process and analysis of leisure studies and therapeutic recreation services.

Implications for Professional Practice

It was stated in previous chapters, that many recreation and leisure service professions strive to create equal access for all and to enhance the quality of life of individuals who utilize their services regardless of ability. As such, this study has several implications for the practice of recreation and therapeutic recreation. First, this study

once again suggests that individuals are unique but also similar; therefore, it is important to assess the unique needs, interests and preferences of each individual within recreation and leisure programming. In this study, it was evident that the participants had preferences regarding specific activity involvement and social interaction. Many participants enjoy recreation programs that offered opportunities to improve aspects of their self concept. Adaptive ski programs therefore could greatly benefits by having certified therapeutic recreation specialists on staff. These professionals having the appropriate education and training, are able to assess, design and implement programs targeting these types of goals

Secondly, this study purposes that individuals with disabilities may prefer activities that involve opportunities for social interaction. Therefore, when programming, it is suggested that recreation professionals provide opportunities for this population to meet other people of all abilities. When considering adaptive programming options, recreation planners should accommodate inclusive recreation opportunities as well as segregated programs.

Also, this study helps to define a clear picture of the factors that constrain individuals with disabilities for skiing and snowboarding as often as they desire. As mentioned above, financial constraints and transportation issues were major constraining factors. A discount lift pass or discount season pass for individuals with disabilities and their accompanying partner may be a wise decision for ski area operators. This may increase the interest of those that already participate and those who may have interest and feel that skiing may be too expensive. Addressing the transportation issue may be a more difficult challenge for recreation and leisure service providers. Many ski towns offer a

bus or van system that picks up at various locations. Making sure these already existent transportation options are truly accessible to people with disabilities would be a great starting point.

Recommendations for Future Research

The scope of this study can be expanded in various ways. Additional studies could enhance our understanding of the leisure and recreation experiences and quality of adaptive recreation services from the perspectives of individuals with disabilities.

Within the adaptive recreation sector, further exploration of these ideas from the perspectives of other individuals (e.g. staff, instructors, family members) could provide further insight into the unique nature of this community. By examining similarities and differences from the different perspectives we would have a better understanding of how these individuals are perceived by their community.

The scales and instrument that emerged from this study could be tested with other populations. For example, are these tools reflective of the leisure experiences of individuals without disabilities? When examining these phenomena further, it is suggested that other types of recreation interests be studied. Also, the impact of different types of disabilities should be examined in order to determine the generalizability of the study and to determine whether these factors influence the perceptions of the leisure and recreation experiences.

Another suggestion would be to attempt this study with a more accommodating methodology. Much of the information requested was of a personal nature. Face to face interviews with individuals with disabilities may break down any false perceptions and inhibitions about participation in the study. Attending a winter clinic or a seasonal event where attendance numbers would be higher than normal is an important consideration.

Also, family members and others from the respondent's community may be available to participate in a similar study.

In conclusion, leisure and recreation experiences are complex phenomenons worthwhile of further study. There are still endless aspects of these experiences that remain unclear or unknown. The population of persons with disabilities in the recreation research realm deserves further consideration.

APPENDIX A
SURVEY INSTRUMENT

The following survey instrument was developed specifically for this study the author and the thesis advisor to examine the leisure constraints and negotiation strategies of people with disabilities who participate in skiing or snowboarding. For the purpose of this study, the following variables are outlined. First the recreation profile information on page one of the survey instrument. Second, the 27 constraints items on page two of the survey instrument. Next, the recreation benefits items and the 19 negotiation strategy items on page three of the survey instrument. The socio-demographic variables and respondents' disability information on the last two pages of the survey instrument.

2004 Winter Recreation: Skiing and Snowboarding Study
University of Florida
Department of Recreation, Parks & Tourism

Thank you taking the time to complete this survey! A small sample of skier and snowboarders will be used, so your input is very important. Your responses will be completely anonymous and confidential. The findings of this study will never discuss individual responses. This survey will take about 10 minutes to complete. Your responses will help leisure and recreation service managers meet your future recreation and skiing/snowboarding needs. There are no anticipated risks, compensation or other benefits to you as being part of this study. You do not have to answer any questions that you do not want to. You are free to discontinue your participation at anytime without consequence.

If you have any questions about his survey, you may contact Dr. Robert Burns at the University of Florida at 352-392-4042 or at PO Box 118208, University of Florida, Gainesville, Florida 32611

Thank you for participating in this study

1. How interested are you in skiing? Are you very interested, somewhat interested, or not at all interested in skiing?

_____ Very Interested

_____ Somewhat Interested

_____ Not at all Interested

_____ Don't Know

2. How interested are you in snowboarding? Are you very interested, somewhat interested, or not at all interested in snowboarding?

_____ Very Interested

_____ Somewhat Interested

_____ Not at all Interested

_____ Don't Know

3. <u>During the last twelve months</u>, how many days have you spent skiing/snowboarding?
_____

4. How many years have you been skiing/snowboarding? _____ (total years)

5. Do you ski/snowboard competitively? ____ Yes ____ No

6. Do you ski/ snowboard as often as you like? ____ Yes ____ No

7. Please rate your level of skiing/snowboarding experience on the following scale (circle one)

Novice Intermediate Expert

1 2 3 4 5

8. Listed below are some reasons why people may not ski/snowboard as often as they would like. Please look at this list and tell us if each item is a major reason, a minor reason, or not a reason why you ski or snowboard as often as you would like to? **(Please respond to each of these items)**

Reason	Major Reason	Minor Reason	Not a Reason	Not Sure/ Don't Know
Fear of the outdoors	1	2	3	N/S
Don't have enough time	1	2	3	N/S
Have no way to get to the slopes	1	2	3	N/S
Lack of information about skiing or other winter sports	1	2	3	N/S
Fear of injury	1	2	3	N/S
Too busy with other recreation activities	1	2	3	N/S
Poor health	1	2	3	N/S
Don't have anyone to go with	1	2	3	N/S
Slopes are too far away	1	2	3	N/S
Slopes are too crowded	1	2	3	N/S
Like to do other things for recreation more	1	2	3	N/S
Fear of heights/ scared of lifts	1	2	3	N/S
Skiing is harder to learn than other sports	1	2	3	N/S
Skiing facilities are inaccessible to me due to my disability	1	2	3	N/S
Can't afford to go to skiing	1	2	3	N/S
Skiing is too physically challenging	1	2	3	N/S
Appropriate clothing/ adaptive equipment too expensive	1	2	3	N/S
Others can't afford to go	1	2	3	N/S
Do not have a partner of the same ability	1	2	3	N/S
Not aware of adaptive ski programs in the area	1	2	3	N/S
Not aware of skiing opportunities	1	2	3	N/S
Adaptive programs not available in this area	1	2	3	N/S
Negative attitudes from ski area employees or FS employees	1	2	3	N/S
Negative attitudes from other recreation participants	1	2	3	N/S
Areas are closed when I want to visit	1	2	3	N/S
Are there any other reasons you haven't gone skiing/snowboarding this past year?				

9. Here is a list of some benefits people have told us they seek through outdoor recreation. Please tell me how important each of the following benefits is to you when you participate in skiing or snowboarding. [One is not at all important and five is extremely important] **(Please respond to each of these items)**

Possible Benefits of Skiing/Snowboarding	Not at all important	Somewhat important	Moderately important	Very important	Extremely important
Improved physical health	1	2	3	4	5
Strengthened relationships with my companions	1	2	3	4	5
Increased self-confidence	1	2	3	4	5
Reduced stress	1	2	3	4	5
Enhanced family relationships	1	2	3	4	5
Improved mental health	1	2	3	4	5
Greater connection with nature	1	2	3	4	5
Provides opportunity for solitude	1	2	3	4	5
Provides a challenge that tests my abilities	1	2	3	4	5
Provides a sense of adventure	1	2	3	4	5
Provides opportunities to meet people	1	2	3	4	5
Greater connection with wilderness	1	2	3	4	5
Increased sense of competence	1	2	3	4	5
Provides opportunities to view wildlife	1	2	3	4	5
Opportunity for lifelong learning	1	2	3	4	5

10. The following are some of the things people have told us they do to get around the obstacles that they face in starting, continuing, or increasing their involvement in *skiing activities*. Please tell us how frequently you do the following things to try to start, continue, or increase your participation in *skiing activities*.

(Please respond to each of these items)

Negotiation Strategies	Never	Rarely	Sometimes	Regularly	Very Often
I try to find people to do fitness and recreation activities with	1	2	3	4	5
I try to budget my money	1	2	3	4	5
I arrange rides with friends	1	2	3	4	5
I try to plan ahead for things	1	2	3	4	5
I try to improve my skills	1	2	3	4	5
I set aside time for fitness and recreation activity	1	2	3	4	5
I save up money to do fitness and recreation activities	1	2	3	4	5
I do more fitness and recreation activities close to home	1	2	3	4	5
I participate in skiing/snowboarding activities despite an injury or physical/health condition	1	2	3	4	5
I take skiing/snowboarding lessons	1	2	3	4	5

I just try to work my fitness and recreation in around my other commitments	1	2	3	4	5
I just swallow my pride and try my best	1	2	3	4	5
I ask for help with the required skills	1	2	3	4	5
I participate in activities with people in my age group	1	2	3	4	5
I sometimes substitute another more convenient activity for a preferred one	1	2	3	4	5
I improvise with the equipment and/or clothes I have	1	2	3	4	5
I try to meet people with similar interests	1	2	3	4	5
I participate in activities with people of the same gender	1	2	3	4	5
I try to participate in off-peak times when facilities are less busy	1	2	3	4	5

FINALLY, PLEASE TELL US A LITTLE ABOUT YOURSELF.

11. What is your age? _____

12. Including yourself and your dependents, how many people live in your household?
Number of people: _____

12a. Do you have children under six years old living with you? _____ No _____ Yes

12b. Do you have children between 6 and 18 years old living with you? _____ No _____ Yes

13. Which of the following best describes your occupation in the past year?

___Full time student ___Part time student
___Employed full time ___Employed part time
___Unemployed ___Retired
___Homemaker/Caregiver ___Other_____

14. Which racial group(s) do you identify with? Check all that apply.

a. African American/Black
b. Asian American
c. Native Hawaiian or other Pacific Islander
d. American Indian/ Alaska Native
e. White
f. Other (please specify): _____

15. Are you Hispanic or Latino(a)? _____ No ____ Yes

16. Which of the following reflects your total household income before taxes, for the last year?

___Under $10,000
___$10,001-30,000
___$30,001-50,000
___$50,001-70,000
___$70,001-90,000
___$90,001-110,000
___$110,001-130,000
___$130,001-150,000
___$150,001-170,000
___Over $170,000

17. What is the highest level of schooling you have completed?

a. Less than 9th grade
b. 9th grade to 12th grade, no diploma
c. High school graduate
d. Some college, no degree
e. Associates degree
f. Bachelor's degree
g. Graduate or professional degree

Disability Questions:

18a. How long have you (or the person in household w/ the disability) had the disability?

_____ number of years
_____ number of months

18b. What is the formal/medical name of the disability?

_____

18c. Please provide a general description of the disability:

_____

19. Do you feel that your disability hampers your ability to ski?
____ Yes ____ No

19a**. IF YES**, what types of barriers have you experienced as a skier/snowboarder that are related to the disability?

Barrier	Check all that apply
a. Facility accessibility	___ Please describe:
b. Trail accessibility	___ Please describe:
c. Program accessibility	___ Please describe:
d. Equipment accessibility	___ Please describe:
e. Attitudinal- from employees	___ Please describe:
f. Attitudinal- from other visitors	___ Please describe:
g. Other	___ Please describe:

19b. Is there a person or something internal that motivates you to ski as a person with a disability?

____ Yes ____ No

19c. If yes, please tell us who/what this is and describe how you are motivated to participate:
_____

19d. Are there accommodations or is there assistance we could offer that would be helpful to you or anyone in your household to improve your skiing/snowboarding experience as a person with a disability? ____ Yes ____ No

19e. If yes, please provide your suggestions:
_____

20. What is your zip code? _____

21. Do you consider yourself to be currently living in an urban, suburban or rural area?
____ Urban
____ Suburban
____ Rural

22. Please tell us your gender. ____ Male ____ Female

23. Please tell us who filled out this survey

_____ You
_____ Your parent/guardian
_____ Other: Please specify _____

Thank You for Your Participation in This Study!

APPENDIX B
INTRODUCTION POST CARD

This document was printed on postcards and sent to the survey participants prior to the delivery of the survey instrument. This research technique suggested by Dillman (2000) allows the survey participant be introduced to the concept of the study and anticipate the arrival of the actual survey instrument. This technique has been used in the past ot increase the response rate of mail back survey research.

SKIING & SNOWBOARDING STUDY!!!

In a few days from now you will receive in the mail a request to fill out a brief questionnaire for an important research project being conducted by the University of Florida. This study is important because it will help adaptive recreation agencies and providers understand the needs and expectations of skiers and snowboarders with disabilities.

Thanks you for your time and consideration. It's only with the generous help of people like you that our research can be successful!

Sincerely,

Robert Burns, Ph.D.

Department of Recreation, Parks and Tourism

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BIOGRAPHICAL SKETCH

Lauren M. Bright was born in Las Vegas, Nevada. She was raised in Tampa, Florida, by her parents, Don and Alison, and with her brothers, Mark and Todd. She graduated high school with honors in 1998 and attended the University of Florida in Gainesville, Florida. She graduated from the University of Florida, in December 2001 with a Bachelor of Science in psychology from the Department of Psychology, within the College of Liberal Arts and Sciences. She continued her education and pursued a master's degree in the Department of Tourism, Recreation, and Sport Management within the College of Human Health and Performance. Lauren worked with Dr. Robert C. Burns on numerous projects in Florida, Oregon, and Washington for over two years. These projects included various research studies conducted for the USDA Forest Service with regard to visitor use, customer satisfaction, and impacts of a disability of recreation service satisfaction, as well as ADA facility accessibility compliance for the National Forests in Oregon and Washington.

Lauren is currently working the field of therapeutic recreation and continues to develop and research her academic interests in adventure therapy interventions.