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Snow Sports to Meet One's Need for Self-Actualization

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ABSTRACT

The present qualitative, phenomenological study investigated why persons with disabilities turn to specifically snow sports and the role that snow sports play in achieving self-actualization. A content analysis was performed on every available online Team USA Paralympic athlete biography (N = 69) gathering data on general information, prior involvement in sports, type/classification of impairment, year of injury, and rationale for choosing snow sports. Adaptive snow sport organizations across the United States of America were contacted (N = 30) and athletes of these organizations were surveyed regarding the impact that snow sports had on their psychological difficulties. Two narrative interviews were held with the survey questions to triangulate and to gain real life accounts in a more personal manner. Through researching the question "What role does self-actualization play in the motivation of the persons with physical disability in participating in snow sports?", it is still fair to say persons with physical disabilities view snow sports as a means of asserting competence and to focus on one's own ability rather than their disability. Snow sports are, therefore, a viable source of psychological rehabilitation for persons with physical disabilities, like popular sport alternatives such as wheelchair basketball. More research is needed to better observe a cause-and-effect relationship between psychological state of mind and participating in snow sports.

Literature Review

Rehabilitation after injury.

When someone faces a tragedy causing them to acquire a disability or is born with a disability, they lose a sense of self and often experience some form of emotional instability (Smith, 2014). Beyond physical and emotional struggle, coping with the idea of having a disability and transitioning to impaired living may present a mental challenge and may call for a re-established and reconstructed identity. Wendy Smith (2014), a therapist in Seattle, explains that a factor of successful adaptation is a reconstructed identity, which entails "psychological, existential, and/or spiritual shifts in perspective toward valuing innate qualities (as opposed to physical or comparative ones), authenticity, and taking life slowly and savoring it."

Human development / self-actualization.

Similar to a successful identity construction, one may establish a sense of self-actualization. Self-actualization, or self-fulfillment, is a concept introduced by Abraham Maslow in his Hierarchy of Needs. There are various levels in Maslow's Hierarchy of Needs, including basic needs (food, water, warmth, rest, security, safety), psychological needs (intimate relationships, friends, prestige and feeling of accomplishment), and self-fulfilling needs (achieving one's full potential, including creative activities). In other words, self-actualization refers "to the realization of a person's potential, self-fulfillment, seeking personal growth, and peak experiences (McLeod, 2007)." Maslow (1987) theorized that those who self-actualize are able to overcome adversity "because of the ability of healthy people (the self-actualized) to be detached from their surroundings, which is the same as saying that they live by their inner laws rather than

by outer pressures" (p. 121). For this reason, it is important for persons with disabilities to develop this ability to rely on oneself for contentedness.

Para-sports.

There are various mediums which persons with disabilities can turn to for physical and psychological rehabilitation and the fulfillment of Maslow's needs. One of these mediums is adaptive and para sports. Adaptive sports, which were once considered simple recreational activities, have developed into a means of rehabilitation and true competition (Asken, 1991). Adaptive and para sports are competitive and recreational sports for people with disabilities which run parallel to sport activities, but with some necessary modifications depending on the disability ("What is Adaptive Sports or Para Sports", n.d.).

Sports have been proven to provide physical and mental benefits for persons with physical disabilities. Some of these benefits include developed confidence, sense of accomplishment (Hopper & Santomier, 1984; Lundberg et al., 2011; Watson, 2017; Chawla, 1994), improved quality of life and health (Chawla, 1994), community integration of individuals with disabilities (Lundberg et al., 2011; Watson, 2017; Chawla, 1994), and even improved financial stability (Overman, 2015). Moreover, Jakub Niedbalski, an assistant professor in the Department of Sociology and Organization of Management of the University of Lodz, argues that physical activity supports and promotes the re-construction of self-perception and a redefinition of an individual's role, which is essential for adapting to new or different situations, such as impaired living (2015). However, multiple perspectives exist on this issue and there exists some studies that counter this claim, arguing that persons with physical disabilities may become discouraged by the amount of adversity one must overcome to be successful in a given sport (Brittain, 2004).

There are several layers of motivation that can lead to one's participation in adaptive sports. Michael J. Asken (1991), a member of the Committee of Athletes with Physical Disabilities of the American Psychological Association and the department of physical medicine and rehabilitation at the Polyclinic Medical Center, argues that the decision to participate in sports should have goals of rehabilitation in mind to return to a normalized lifestyle. Furthermore, individuals may turn to sports as a way of overcoming the emotional concomitants of their disability in an attempt to show how unencumbered they are.

Among para sports, adaptive snow sports provide a multitude of opportunities for the disabled to be successful. The visually impaired, hearing impaired, limb deficient, etc. can all participate in snow sports with numerous means of adaptation (Appendix E), whereas some other sports, such as archery, cycling, volleyball, soccer, wheelchair basketball, and many others, are limited to certain disabilities (Appendix C). However, there is a pervading cultural theory that sports and athletics are reserved for the physically superior (Hopper & Santomier, 1984). This theory that sports are reserved for the physically superior may negatively impact the disabled community in the sense that there is a lack of motivation for persons with disabilities to turn to sports because they may fear they are physically inferior. A possible cause of this problem is unintentional neglect for the disabled community. Contrary to this theory, however, there are still persons with physical disabilities who turn to athletics and go on to live better and improved lives. For example, Mike Shea, became addicted to drugs and alcohol after losing his limb in a wakeboarding accident. After rehabilitation, Shea gained a new perspective on his situation and tried out for the Paralympic team, where his life improved dramatically (Boland, 2016). Nikki Kamball also turned to running as rehabilitation for her depression. In doing so, Nikki Kamball, and many other persons with physical disabilities, underwent a pursuit of self-actualization (Quincy, 2017).

Gap in Research.

As previously stated, there are numerous studies which investigate the benefits of the disabled participating in adaptive sports, particularly wheelchair basketball (Henschen et al., 1984; Hopper & Santomier, 1984; Sherrill et al., 1990). Similarly, there are also a multitude of studies that focus on the importance of self-actualization (Altheide & Pfuhl, 1980; Goodley, 2005; Kenrick, 2017; Schunk, 1989). However, a gap exists where there are no studies that discuss why persons with disabilities turn to specifically snow sports and the role that snow sports play in achieving self-actualization. Through research and investigation, it is still fair to say persons with physical disabilities view snow sports as a means of asserting competence and as a way to focus on one's own ability rather than their disability, as similarly argued by Asken (1991).

Because it has not been determined why persons with disabilities turn to snow sports, I researched the extent that persons with physical disabilities turn to snow sports in order to meet one's need for self-actualization. It was hypothesized that the disabled turn to adaptive snow sports to meet their need of self-actualization, because it provides a plethora of opportunities for various disabilities to overcome adversity while re-establishing a sense of perseverance and accomplishment in one's self. However, there may have been other factors which influence this decision to turn to snow sports, such as the desire to re-construct one's identity, redefine physical expectations, have control over one's life, or to be viewed as "normal" (Neidbalski, 2015; Wall, 1987).

The importance of this research is to bring to the public's attention the physical and mental benefits that snow sports provide to persons with physical disabilities, with the hopes that more persons with physical disabilities will acknowledge this medium as a form of psychological rehabilitation and participation in these adaptive sports will increase. This study's findings may be used to aid persons with physical disabilities and rehabilitation counselors seeking methods of psychological rehabilitation. Furthermore, this research will contribute to the body of knowledge regarding sources of psychological rehabilitation for persons with physical disabilities.

Methods

Introduction.

The research question is "What role does self-actualization play in the motivation of the persons with physical disability in participating in snow sports?" The goal of this research project is to identify the effects that snow sports have on the lives of the disabled and ultimately determine if snow sports are a viable source of psychological rehabilitation for persons with physical disabilities.

The purpose of this qualitative, phenomenological study is to explore the lived experiences of physically disabled athletes who became involved in snow sports following their injury. The reason that a phenomenological study was chosen was to attempt to understand and describe, in-depth, a specific phenomenon and explore the lived experiences of participants of the phenomenon. Other research methods would not be appropriate in understanding this phenomenon. For instance, an ethnographic approach would require experiencing this phenomenon first hand as a disabled athlete. A grounded theory approach would aim to provide a theory behind events rather than identify a common theme between life events. Furthermore, a narrative approach would illustrate the life events of only one or two individuals, which would not be appropriate for identifying life events for a large population.

The data was collected through surveys, interviews, and content analysis, as that is what psychological phenomenological studies dictate. In qualitative and psychological research, interviews and surveys are essential to explore the views, experiences, beliefs and motivations of individual participants. Narrative interviews with disabled snow sport athletes were conducted to clarify how people understand and comprehend the phenomena that is the physically disabled getting involved in snow sports. Along with this, athletes of adaptive sport organizations (Appendix B) were surveyed to increase the sample size and therefore supplement and triangulate the data. To fill any inevitable gaps in the research, a content analysis was performed on all of the Team USA Paralympic snow sport athlete

biographies provided by https://www.Paralympic.org/athletes and https://www.teamusa.org/us-Paralympics/Paralympic-athletes.

Selection.

The participants were selected based on their sport and were from various adaptive sport organizations (Appendix B). Athletes involved in snow sports, including alpine skiing (downhill, slalom, giant slalom, and super-G), nordic skiing (cross-country and biathlon), and snowboarding (banked slalom and snowboardcross) were chosen. The alpine skiing events involve skiing between poles or gates in the fastest time possible. The nordic skiing events involve striding and skating through various terrains while simultaneously against other skiers. The snowboarding events involve racing against other snowboarders through courses with various course features. Both Paralympic alpine skiing and nordic skiing are open to athletes with physical disabilities such as amputation, blindness/visual impairment, spinal cord injury, wheelchair-use, cerebral palsy, brain injury, and stroke ("US Paralympics - Alpine Skiing," n.d.; "US Paralympics - Nordic Skiing," n.d.). Paralympic snowboarding is open to athletes that are lower-limb impaired and upper-limb impaired ("US Paralympics - Snowboarding," n.d.).

Furthermore, athlete biographies for the content analysis were selected based on the above criteria and the athlete's membership of the USA Paralympic Team. All the USA Paralympian biographies, which were made available online, were selected without consideration of name, sport, geographical location, gender, age, and race in order to obtain a random and full sample. Athletes were classified based on their disability, as defined by Team USA. To compete in the Paralympic Games, the athlete must undergo international classification. This process includes verification of the presence of an eligible impairment for that sport, physical and technical assessments to examine the degree of activity limitation, allocation of sport class(es), and observation in competition. The evaluators are primarily looking for whether the athlete has a primary impairment that makes him or her eligible to compete in that sport or a severe enough impairment to significantly limit the athlete's ability to fully participate in that sport ("Paralympics - Athlete Classification," n.d.).

Adaptive sport organizations were selected based on the offering of athletic programs in snow sports. Similar to the adaptive snow sports offered in the Paralympic Games, athletes of alpine skiing, nordic skiing, and snowboarding were surveyed. There were no regional restrictions (except for being in the United States of America) placed while searching and finding adaptive sport organizations in order to obtain a random sample. Instead, organizations which offer snow sports were found through search browsers on the internet (Appendix B). From here, athletes voluntarily completed the survey. The athletes who agreed to participate in the study were surveyed and were given the option to be interviewed.

Data analysis plan.

The primary data collection tool was a computer and voice calling software to gather survey responses, conduct narrative interviews, and analyze biographies. Surveys responses were gathered through a Google Form and were analyzed and filtered through a Google Spreadsheet. Athlete biographies were also analyzed and coded through a Google Spreadsheet. Furthermore, two Sony UX560 Digital Voice Recorders were used to create copies and recordings of the interviews to have for future reference throughout the research process.

The surveys and interviews included questions concerning how athletes became injured, how psychological difficulties evolved before and after getting involved in snow sports, and how participating in snow sports changed the athletes' lives. Through these questions (Appendix A), the motivations of the persons with physical disabilities and the effects of snow sports on said persons surfaced.

The participants' responses and biographies were analyzed, looking for keywords that relate to Maslow's Hierarchy of Needs. Specifically, words such as "fulfillment," "self-actualization," "self-esteem," "potential," "accomplishment," "strength," "freedom," "connection," "resilience," "grit," and "self-efficacy" were considered. These

words, among others, were looked for as they appeared in the interviews because they suggested the significance and role of self-actualization on the athletes. As trends appeared that were related to Maslow's Hierarchy of Needs, the motivations of the disabled athletes were interpreted and analyzed. Additionally, trends and emerging themes in the surveys and interviews separate from Maslow's Hierarchy of Needs were investigated.

Throughout this analysis process, specific variables, which may influence the athlete's decision to be involved in snow sports, were investigated. There are assumed variables, including the athlete's involvement in sports prior to their injury, psychological well-being before the injury, how the individual got injured, type of injury, year when injury occurred, and resources that were available following the injury. Other variables were explored as they emerged in the surveys, interviews, and athlete biographies.

After interviews were conducted, they were transcribed. To follow this, the interview transcriptions were physically annotated and highlighted, paying close attention and consideration to trends and variables, as mentioned above, as they appeared. After analyzing all of the data, connections between each interview, survey, and biography were investigated to identify the effects that snow sports have on the lives of the disabled and to determine if snow sports are a reasonable source of psychological rehabilitation for persons with physical disabilities, and if snow sports meet one's need of self-actualization.

Possible influence.

I currently reside in Sinking Spring, Pennsylvania and am a student at Wilson High School in West Lawn, Pennsylvania. I am a professional alpine snowboarder competing in the North American Cup (Nor-Am) under the Fédération Internationale de Ski (FIS). Fédération Internationale de Ski, or also known as the International Ski Federation, is the world's highest governing body for international winter sports. That being said, the data has the potential to be influenced depending on if I know the athletes that I am reaching out to and vice versa, as both the athletes and I compete under and correspond with FIS.

Results

Data collected.

A content analysis was performed on 69 Team USA Paralympic athletes, all of which participated in snow sports. In the content analysis, the following were collected: the athlete's 1) name, 2) snow sport, 3) date of birth, 4) origin of impairment, 5) involvement in sports prior to their injury and what sports, 6) classification of injury, 7) type of injury, 8) year of injury, 9) year of involvement in snow sports, and 10) rationale for choosing snow sports. Surveys were sent to 30 organizations from around the United States of America (Appendix B), and six responses were received. Furthermore, two narrative interviews were held with the same questions as the survey to triangulate and to gain real life accounts in a more personal manner (Appendix A). The respondents provided the information above, in addition to the following: 1) if participating in sports influenced their decision to participate in snow sports following their injury, 2) if the athlete experienced or formed any psychological difficulties, 3) how these difficulties developed over time before getting involved in snow sports, 4) what motivated them to get involved in snow sports after their injury, 5) how their psychological difficulties developed over time after getting involved in snow sports, 6) if snow sports for individuals with physical disabilities are rehabilitation/recreation/or true competition, 7) if participating in snows sports is a reasonable source of psychological rehabilitation, 8) any suggestions for integrating sport psychology and snow sports for persons with physical disabilities, and 9) what snow sports meant to them personally and what they are likely to mean to other individuals with physical disabilities (Appendix A).

Self-actualization as motivation for the physically disabled.

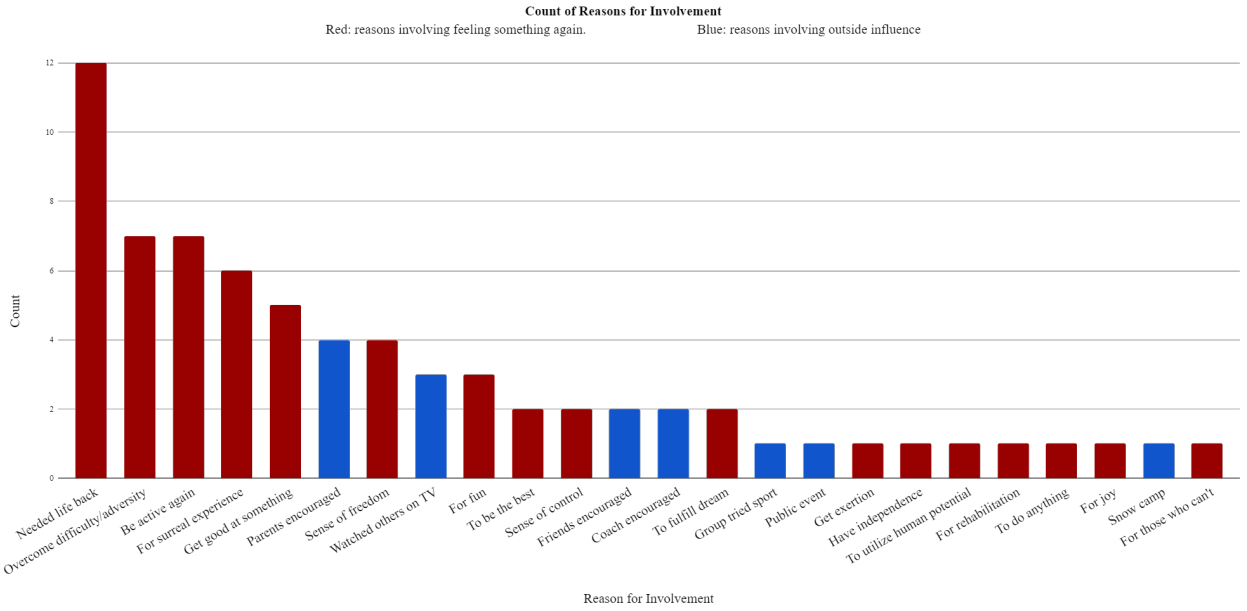


Figure 1. Count of Reasons for Involvement. Data collected from the Team USA Paralympic athlete biographies that provided information about "Why snow sports". Some athletes provided more than one reason for involvement.

Of the Paralympic athletes that had information regarding "Why snow sports?" in their athlete's biographies, athletes indicated that they were predominantly motivated to feel something again (57 of the 71 reasons for involvement; 80.28%), such as to have their life back, to have a sense of overcoming something, to have a surreal life experience, or to better themself in general. Other athletes noted being encouraged by outside forces, such as friends, parents, coaches, or watching other athletes at sporting events (i.e. the Olympics or World Championships) (14 of the 71 reasons for involvement; 19.72%). Although there could be other motivators not listed on their biographies, it is clear that the majority of the Team USA Paralympic athletes experienced a need and drive to fulfill one's talents and potentialities, an indicator of self-actualization at work.

Snow sports as a source of rehabilitation.

If persons with physical disabilities turn to snow sports to fulfill one's talents and potentialities, does this drive for self-actualization improve one's psychological state?

Table 1. Athlete Survey Responses. Data collected from survey responses given to athletes of adaptive sport organizations.

Athlete Survey Responses			
Respondent	**What were any psychological difficulties that you faced right after your injury?**	**Difficulties before getting involved with snow sports?**	**Difficulties after getting involved with snow sports?**
Respondent 1	Shame, guilt, survivor's guilt, depression.	Worsened lightly	Improved immensely
Respondent 2	Depression	Worsened immensely	Improved lightly
Respondent 3	I had to figure out how to walk, talk, eat, and everything that comes after that	Improved immensely	Improved immensely
Respondent 4	Depression. I felt devastated that I would never see the top of a mountain again. I felt I had all my independence taken away from me.	Improved immensely	Stayed the same
Respondent 5	None	Stayed the same	Stayed the same
Respondent 6	N/A	Improved immensely	Improved lightly

When the surveyed individuals were asked how their mentioned psychological difficulties developed over time prior to getting involved in snow sports, there were mixed responses, ranging from “worsened immensely” to “improved immensely”. However, when surveyed individuals were asked how these same difficulties developed over time after getting involved in snow sports, all surveyed individuals noted that their difficulties either improved if they originally said they worsened over time or stayed the same if they originally said they improved over time. All the individuals' difficulties, therefore, improved or did not grow in severity. When these same individuals were asked “Do you think participating in snow sports is a reasonable source of psychological rehabilitation? Why?”, all of the individuals responded with “Yes” and gave reasons such as “it will give you something else to focus on other than the negative things that can go through my mind,” “keeps me happy,” “it helped me feel like I could take on more in life,” “because of the way it can make you feel,” and “to be able to do and have fun like you did when you were whole.” These responses show that snow sports have allowed the respondents to separate themselves from their daily life. From looking at the progression of the athletes' difficulties and their reasoning for using snow sports as psychological rehabilitation, it can be concluded that participating in snow sports resulted in an improved psychological state, proving to be a reasonable source of psychological rehabilitation.

People who can use snow sports for rehabilitation.

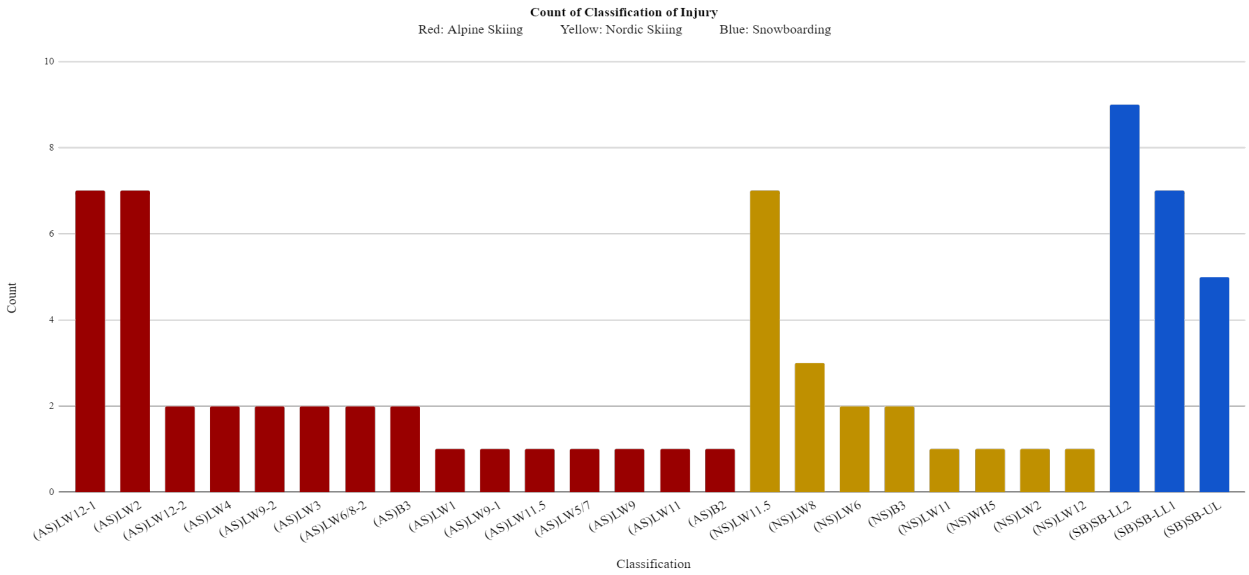
If participating in snow sports does improve the psychological state of persons with physical disabilities, who can use snow sports for psychological rehabilitation?

Table 2. General Athlete Information. Data collected from the Team USA Paralympic athlete biographies.

General Athlete Information										
	Involved in sports prior	%	Not involved in sports prior	%	Born with disability	%	Did not indicate	%	Count	%
Alpine Skiing	7	10.14%	6	8.70%	**16**	23.19%	3	4.35%	32	46.38%
Nordic Skiing	3	4.35%	0	0.00%	**9**	13.04%	5	7.25%	17	24.64%
Snowboarding	**14**	20.29%	1	1.45%	2	2.90%	3	4.35%	20	28.99%
Total	24	34.78%	7	10.14%	27	39.13%	11	15.94%	69	100.00%

When looking at the most popular sport based on the origin of injury, more athletes turn to snowboarding if their disability was acquired (14 of 24 athletes who were involved in sports prior; 1 of 7 athletes who were not involved in sports prior). Further, more athletes turn to alpine skiing (16 of 27 athletes who were born with a disability) and nordic skiing (9 of 27 athletes who were born with a disability) if their disability was congenital. This could possibly show that skiing may be easier to participate as a starting sport than ones such as snowboarding. Further, there are substantially more athletes involved in skiing (alpine skiing and nordic skiing combined) (49 of 69 athletes) than snowboarding (20 of 69 athletes). This could possibly show that a learning curve exists where snowboarding is more difficult to get involved with after an injury. Or, more skiing facilities may exist for persons with disability, making it a more viable source of rehabilitation and recreation.

Collecting the origin of injuries from the Team USA Paralympic athletes, there are more Paralympic athletes who had congenital disabilities (27 of 69 athletes) and no prior sports experience (7 of 69 athletes) than those who were involved in sports prior (24 of 69 athletes). This shows that prior experience is not necessary to use snow sports as a means for psychological rehabilitation. Therefore, people with disabilities should not shy away from using snow sports as an



opportunity to improve one's self psychologically as no prior experience is necessary.

Figure 2. Count of Classification of Injury. Data collected from the Team USA Paralympic athlete biographies that provided information about their injury.

Looking at the distributions of classifications, snow sports cover a wide variety of impairments. Although not all of the classifications are currently being used by the Team USA Paralympic athletes, alpine skiing currently covers over 13, nordic skiing currently covers over 15, and snowboarding currently covers three different variations of physical disabilities (Appendix E). The reason why there are substantially more types of classifications for alpine skiers and nordic skiers than snowboarders is because of the Paralympic classifications. Alpine and nordic skiing cover more specific disabilities, whereas snowboarding covers broad disabilities. Regardless, the data shows that snow sports cover an array of disabilities, showing that many individuals are capable of using snow sports as psychological rehabilitation (Appendix D). Furthermore, these classifications are only those of the Paralympics. If individuals wish to use snow sports as a means of psychological rehabilitation, they are more than capable of pursuing that sport if it does not have an official classification under the Paralympics.

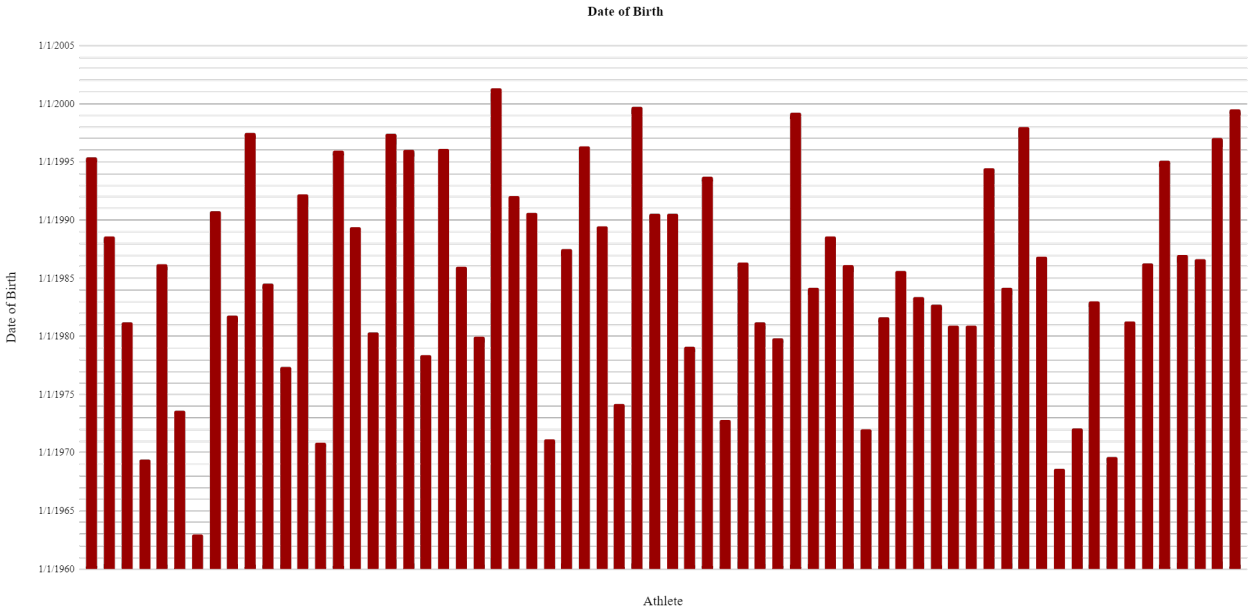


Figure 3. Date of Births. Date of birth collected from the Team USA Paralympic athlete biographies.

Looking at the column chart distributing the various dates of birth for the Team USA Paralympic athletes, there is no trend or commonality. All of the athletes are of scattered and random age. The lack of trend between ages suggests that the phenomenon of turning to snow sports after an injury is not reserved for any specific age group. It can be concluded that snow sports may be used as psychological rehabilitation for anybody regardless of their age when injured or the year they were born.

Discussion

The collected data suggests that persons with physical disabilities turn to snow sports to meet one's need of self-actualization. As Wendy Smith (2014) argued that a reconstructed identity through meeting one's need of self-actualization is essential for psychological rehabilitation, the data supports Smith and shows a positive correlation between participating in snow sports and one's psychological state of mind improving. With these two points considered, it can be concluded that snow sports may be used and are a reasonable source of psychological rehabilitation for individuals with physical disabilities, regardless of injury, origin of injury, prior sport involvement, and age.

This has not been concluded prior, possibly be due to snow sports not being very accessible to individuals, compared to other sports that may be found in recreation or fitness centers and do not require snow equipment, a mountain, and appropriate weather. Luckily, indoor facilities, such as Big Snow American Dream in New Jersey, are beginning to open around the United States of America, making it just as accessible as other recreational sports. With accessibility and availability comes an abundance of research, leaving unorthodox sports, such as snow sports, with little to no coverage. However, the conclusion of this paper may be made public to promote persons with physical disabilities to turn to snow sports as a means and source of psychological rehabilitation. If awareness is not raised, then individuals may continue to fear participating in snow sports as snow sports may be perceived as an outsider and unorthodox sport for rehabilitation.

The findings from this paper support existing research which argue that participating in adaptive sports provide psychological benefits (Henschen et al., 1984; Hopper & Santomier, 1984; Sherrill et al., 1990). Participating in snow sports have the same psychological benefits as other sports, including improved self worth, improved psychological state of mind, and a re-establishment of one's identity. With that being said, snow sports should be given the same consideration as other sports or activities when searching for a means of psychological rehabilitation.

Limitations

As this was a phenomenological study, only a small sample size was required, compared to other methods. Although the data reached saturation and met the sample size recommended by Morse (1994) and Creswell (1998), this small sample size could have influenced the data as the amount of interviews and surveys that were conducted on individuals could have been increased. Voluntary response bias may have also influenced surveys and the data from the study. Furthermore, Claudine Sherrill (1990), an associate of the Texas Women's University's Department of Kinesiology, argues that a person with a disability who becomes an elite athlete has an internal drive to achieve one's potential that is "not deterred by the disability, congenital or acquired, or by the attitudinal, aspirational, and environmental barriers that disabled individuals must overcome." Consequently, performing a content analysis of only professional Paralympic athletes may have created a sample of individuals who are observed to have an above average level of grit. Perhaps looking at both recreational para-athletes and Paralympic athletes instead of solely Paralympic athletes would have resulted in different data. The conclusions of this paper may only apply to individuals in the United States of America, but a similar study may be done in other regions for the same purpose.

Future suggestions.

As this research was not an experiment but rather a phenomenological study, correlations may only be hypothesized. Future studies should be done with a controlled experiment to have persons with physical disabilities participate in snow sports to observe a cause-and-effect relationship between psychological state of mind and participating in snow sports. Further, a study similar to the one in this paper may be conducted with other countries or regions to observe a similar conclusion. If a study like this were to be performed, then one may further the knowledge, understanding, and effectiveness of using snow sports as a source of psychological rehabilitation.

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Appendix A - Questions for Surveys and Interviews

Athletes Background Information

When is your birthday?
What snow sport do you participate in? (Snowboarding, Nordic Skiing, Alpine Skiing)
What organization are you affiliated with if any?
Were you involved in sports and athletics prior to your injury?

Participation in Sports Prior (if indicated by the preceding question)

What sports and athletics were you involved in prior?
How did you initially get involved in that sport? (Prior to injury)
For how many years were you involved in that sport prior to your injury?
How did this influence your decision to participate in snow sports following your injury?

Injury Related Questions

What year did you become injured?
What kind of injury did you sustain?
Is there a specific classification for this injury?
How did you become injured?
What were any psychological difficulties that you faced right after your injury?
How did these difficulties develop over time prior to snow sports?
Did you feel the need to reconstruct your identity or take control over your life?

After Injury Related Questions

How many years after your injury did you get involved in snow sports?
What was going on in between your time of injury and getting involved?
What motivated you to get involved in sports after your injury?
How did your mentioned difficulties develop over time after getting involved in snow sports?
Have you personally applied sport psychology techniques in your own life?

Snow sports Reflection Questions

What have snow sports meant to you personally and what they are likely to mean to other individuals with physical disabilities?
Would you consider snow sports for individuals with physical disabilities... rehabilitation, recreation, or true competition? Why?
Do you think participating in snow sports is a reasonable source of psychological rehabilitation for injured individuals? Why?
What other activities do you do that give you the same feeling of gratification?
Do you have any suggestions for integrating sport psychology and snow sport for persons with physical disabilities?

Is there any other information you would like to include concerning this research topic or offering opportunities for traumatically disabled individuals?
Do you have any references of individuals that would be willing to participate in my study?

Appendix B - Map of Organizations

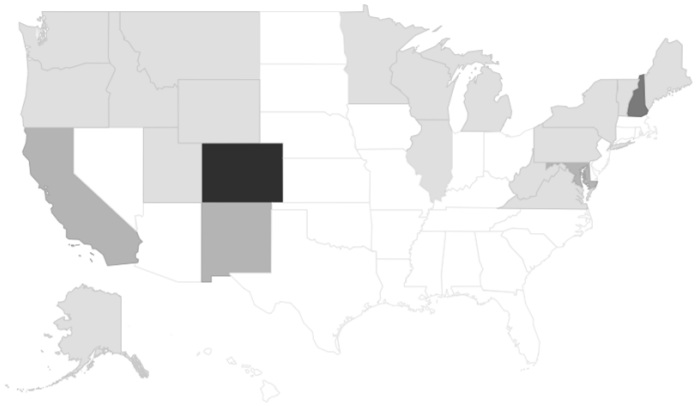

Figure 4. Map of adaptive sport organizations found through online search engines.

Organization	Website	State	Alpine Skiing	Nordic Skiing	Snow-board-ing
Pennsylvania Center for Adaptive Sports	https://www.centeronline.com/adapted-ski-ing	PA	X		
Adaptive Action Sports	http://adacs.org/our-mission	CO			X
Disabled Sports	https://www.disa-bledsportsusa.org/sports/adaptive-sports/	MD	X	X	X
Challenge Alaska	http://www.challengealaska.org/	AK	X		X
Adaptive Sports Foundation	http://www.adaptivesportsfoundation.org/	CO	X		X
Blue Ridge Adaptive Snow Sports	http://www.brasski.org	MD	X	X	X
National Ability Center	http://www.discovernac.org/	UT	X	X	X
Breckenridge Adaptive Ski & Ride School	http://www.boec.org	CO	X	X	X
Ability Plus	http://abilityplus.co/	NH	X		X
Adaptive Sports Program New Mexico	http://www.adaptiveski.org/	NM	X		X
Ski Apache Adaptive Sports	http://skiapacheadaptivesports.com/	NM	X		X
Unlimbited Ski Club	http://www.unlimbited.com	MT	X	X	X
Mountain High Adaptive	http://www.mthigh.com/site/lessons-and-	CA	X		

Organization	Website	State	Alpine Skiing	Nordic Skiing	Snow-boarding
Adaptive Adventures	http://adaptiveadventures.org/	IL	X	X	X
Oregon Adaptive Sports	http://www.oregonadaptivesports.org/	OR	X		
Outdoors for All	http://www.outdoorsforall.org	WA	X	X	X
Lounsbury Adaptive Ski Program	http://skilasp.wix.com/lounsburyadaptive	NY	X	X	X
Mount Snow Adaptive Sports	https://msadaptive.org/	VT	X		
Maine Adaptive Sports and Recreation	http://www.maineadaptive.org/	ME	X	X	X
Higher Ground Sun Valley	http://www.highergroundsv.org/	ID	X	X	X
Challenge Mountain	http://challengemtn.org/	MI	X	X	X
Wintergreen Adaptive Sports	http://wintergreenadaptivesports.org/	VA	X		X
Challenged Athletes of West Virginia	http://www.cawvsports.org/	WV	X		X
Colorado Discover Ability	http://coloradodiscoverability.com/	CO	X	X	X
Disabled Sports Eastern Sierra	http://www.disabledsportseasternsierra.org/	CA	X	X	X
Northeast Passage	http://nepassage.org/	NH	X	X	
New England Disabled Sports Program	http://www.nedisabledsports.org/rentals/specialty-programs/adaptive-lessons.html	NH	X	X	X
Teton Adaptive Sports	http://tetonadaptivesports.com/	WY	X		
Southeastern Wisconsin Adaptive Ski Program	http://www.sewasp.org	WI	X		X
Padraigs Place	http://www.padraigsplace.org/	MN	X		

Appendix C - Paralympic Sports by Impairment Group

The following sports are open to athletes with limb deficiency and/or leg length difference –
Summer Sports: Archery, Badminton, Boccia, Cycling, Equestrian, Paracanoe, Paratriathlon, Powerlifting, Rowing, Shooting, Sitting Volleyball, Swimming, Table Tennis, Taekwondo, Track and Field, Wheelchair Basketball, Wheelchair Fencing, Wheelchair Rugby, Wheelchair Tennis
Winter Sports: Alpine Skiing, Nordic Skiing (biathlon and cross country), Sled Hockey, Snowboarding, Wheelchair Curling

The following sports are open to short stature athletes –
Summer Sports: Badminton, Equestrian, Powerlifting, Swimming, Table Tennis, Track and Field
Winter Sports: Alpine Skiing, Nordic Skiing (biathlon and cross country)

The following sports are open to athletes with a visual impairment –
Summer Sports: Cycling, Equestrian, Goalball, Judo, Paratriathlon, Rowing, Soccer, Swimming, Track and Field
Winter Sports: Alpine Skiing, Nordic Skiing (biathlon and cross country)

The following sports are open to athletes with impaired muscle power and/or impaired passive range of movement –
Summer Sports: Archery, Badminton, Boccia, Cycling, Equestrian, Paracanoe, Paratriathlon, Powerlifting, Rowing, Shooting, Sitting Volleyball, Swimming, Table Tennis, Taekwondo, Track and Field, Wheelchair Basketball, Wheelchair Fencing, Wheelchair Rugby, Wheelchair Tennis
Winter Sports: Alpine Skiing, Nordic Skiing (biathlon and cross country), Sled Hockey, Snowboarding, Wheelchair Curling

The following sports are open to athletes with hypertonia, ataxia and/or athetosis –
Summer Sports: Archery, Badminton, Boccia, Cycling, Equestrian, Paratriathlon, Powerlifting, Rowing, Shooting, Sitting Volleyball, Swimming, Table Tennis, Track and Field, Wheelchair Basketball, Wheelchair Fencing, Wheelchair Rugby, Wheelchair Tennis
Winter Sports: Alpine Skiing, Nordic Skiing (biathlon and cross country), Sled Hockey, Snowboarding, Wheelchair Curling

The following sports are open to athletes with an intellectual impairment –
Summer Sports: Swimming, Table Tennis, Track and Field

Paralympic Sports by Impairment Group. (n.d). Retrieved from https://www.teamusa.org/Team-USA-Athlete-Services/Paralympic-Sport-Development/Eligibility-Information/Sports

Appendix D - Explanations of Impairments

Impairment	Explanation
Impaired muscle power	Reduced force generated by muscles or muscle groups, may occur in one limb or the lower half of the body, as caused, for example, by spinal cord injuries, spina bifida or poliomyelitis.
Impaired passive range of movement	Range of movement in one or more joints is reduced permanently. Joints that can move beyond the average range of motion, joint instability, and acute conditions, such as arthritis, are not considered eligible impairments.
Limb deficiency	Total or partial absence of bones or joints, from birth or as a consequence of trauma (for example, car accident or amputation) or illness (for example, bone cancer).
Leg length difference	Bone shortening in one leg from birth or trauma. Short stature Reduced standing height due to abnormal dimensions of bones of upper and lower limbs or trunk, for example, due to achondroplasia or growth hormone dysfunction.
Hypertonia	Abnormal increase in muscle tension and a reduced ability of a muscle to stretch, which can result from injury, illness or a health condition such as cerebral palsy, brain injury or multiple sclerosis.
Ataxia	Lack of coordination of muscle movements due to a health condition, such as cerebral palsy, brain injury or multiple sclerosis.
Athetosis	Generally characterized by unbalanced, uncontrolled movements and a difficulty in maintaining a symmetrical posture, due to health conditions such as cerebral palsy, brain injury or multiple sclerosis.
Visual impairment	Vision is impacted by either an impairment of the eye structure, optical nerve/pathways or the part of the brain controlling vision (visual cortex).
Intellectual impairment	A limitation in intellectual functioning and adaptive behavior as expressed in conceptual, social and practical adaptive skills, which originates before the age of 18.

Explanatory guide to Paralympic Classification (2016). Retrieved from https://www.Paralympic.org/sites/default/files/document/160211172359750_2016%2B02%2BWinter%2BExplanatory%2BGuide%2B.pdf

Appendix E - Impairment Classifications

Alpine skiing

Standing skiers

Skiers with leg impairments:

It is possible for skiers in sport classes LW1-4 to also compete as sit-skiers in sport class LW12. These athletes choose if they want to compete sitting or standing at the beginning of their career.

LW1: This sport class is allocated to athletes with an impairment that strongly affects both legs. Athletes may have a double above knee amputation or significant muscle weakness in both legs. These skiers use two skis and two poles/outriggers; they may have their skis tied together.

LW2: This sport class is allocated to athletes who have a significant impairment in one leg. These skiers use only one ski.

LW3: This sport class is for athletes who have a moderate impairment in both legs. They will use two skis, two poles/outriggers and prosthesis if they have amputations. Some skiers in the LW3 sport class have mild coordination problems or muscle weakness in both legs; others may have a below-knee amputation in both legs.

LW4: This sport class is for athletes who have an impairment in one leg, similar to the LW2 sport class, but with less activity limitation. A typical example of the LW4 sport class is an athlete with a single leg below-knee amputation. Athletes in this sport class will use two skis during the race.

Skiers with arm impairments:

LW5/7: Athletes in this sport class have an impairment in both arms. Some athletes have amputations and others have limited muscle power or co-ordination problems. They will race down the slopes without ski poles.

LW6/8: Athletes in this sport class have an impairment in one arm. Skiers will compete with only one ski pole.

Skiers with combined arm and leg impairments:

LW9: Athletes in this sport class have an impairment that affects their arms and legs. Some skiers in this class have coordination problems, such as spasticity or some loss of control over one side of their body. Depending on their abilities, they will use one or two skis with one or two poles or outriggers.

Sit-skiers

All sit-skiers have an impairment affecting their legs. They are allocated different sport classes based on impairment in their trunk. Trunk control is very important for acceleration and balance during racing.

LW10: Athletes in this sport class have no or minimal trunk stability, for example, due to spinal cord injury or spina bifida. Skiers in this sport class rely mainly on their arms to manoeuvre the sitski.

LW11: Athletes in this sport class have good stability in their upper trunk, but very limited control in their lower trunk and hips. The LW11 sport class includes those skiers with lower level spinal cord injuries.

LW12: Athletes in this sport class have no trunk impairment or slightly decreased trunk and leg impairments. Skiers with leg impairments in sport classes LW1-4 may also fit this sport class. Skiers are eligible to compete in standing or sitting and must choose to compete in which to compete at the beginning of their career.

Skiers with a visual impairment:

Athletes with visual impairment competing in IPC alpine skiing all have varying degrees of visual impairment, ranging from the B1-B3 sport classes as described in Section 4. Athletes in B1 sport class are required to use eye shades. In IPC alpine skiing, all athletes with a visual impairment (B1, B2 and B3) ski with a sighted guide. The guide skis in front of the athlete and gives verbal directions to the athlete.

Explanatory guide to Paralympic Classification (2016). Retrieved from https://www.Paralympic.org/sites/default /files/document/160211172359750_2016%2B02%2BWinter%2BExplanatory%2BGuide%2B.pdf

Nordic skiing

Sport Classes: IPC Nordic skiing includes the disciplines of cross-country skiing and biathlon. Skiers of both disciplines compete in several different sport classes, depending on the impact of the impairment on the sport specific activities of the discipline.

Standing skiers

Skiers with leg impairments:

LW2: Athletes in this sport class have an impairment affecting one leg, for example, an amputation above the knee. Skiers will use a prosthesis and two skis or an orthosis if they have loss of muscle power.

LW3: Athletes in this sport class have an impairment in both legs, which may be the result of muscle weakness. Skiers will use two skies and two ski poles.

LW4: Athletes in this sport class include those with impairments in the lower parts of one leg, but with less impact on skiing compared to the LW2 sport class. Typical examples are amputations above the ankle or loss of muscle control in one leg. Skiers will use a prosthesis and two skis or an orthosis if they have loss of muscle power.

Skiers with arm impairments:

LW5/7: Athletes in this sport class have impairments in both arms preventing the use of ski poles, for example, athletes with no hands, or athletes who cannot grip firmly. Skiers in this sport class ski without poles.

LW6: Athletes in this sport class have a significant impairment in one arm, for example arm amputation or limb deficiency above the elbow. The impaired arm is fixed to the body and may not be used during the races. The skier uses a ski pole in the other hand.

LW8: Athletes in this sport class have moderate impairments affecting one arm. For example, skiers in this sport class cannot flex their elbow or fingers on one side, or they have a below elbow amputation. Skiers will use only one ski pole. Skiers with combined impairments in arms and legs:

LW9: Athletes in this sport class have an impairment in their arms and legs. There are also skiers in the LW9 sport class who have mild coordination problems in all extremities. Other skiers have amputations affecting at least one arm and one leg. Depending on the severity of their impairments and the impact on skiing activities, they will ski with one or two ski poles.

Sit-skiers

All sit-skiers have an impairment affecting their legs. They are allocated different sport classes based on impairment in the trunk, trunk control is very important for acceleration and balancing during racing.

LW10: Athletes in this sport class have an impairment that impacts their legs and trunk, for example, a high level of paraplegia. Skiers in this sport class are unable to sit without using their arms for support. Explanatory guide to Paralympic classification in Paralympic winter sports 13

LW10.5: Athletes in this sport class also have impaired trunk control. However, skiers in this sport class can generally keep their sitting balance, except when moving sideways.

LW11: Athletes in this sport class have leg impairment and less impairment in trunk than sport class 10.5 skiers. Skiers in this sport class have less impaired trunk control, which enables them to keep their balance even when moving sideways.

LW11.5: Athletes in this sport class have less impairment and nearly complete trunk control.

LW12: Athletes with leg impairments in sport classes LW2-4 may also fit this sport class. Skiers are eligible to compete in standing or sitting and must choose how they will compete at the beginning of their career.

Skiers with a visual impairment:
These athletes competing in IPC Nordic skiing all have varying degrees of visual impairment ranging from the B1-B3 sport classes as described in Section 4. For skiers in the B1 sport class a guide is obligatory, skiers in the B2 and B3 sport classes may choose whether or not to ski with a guide. The guide skis immediately ahead of the athlete and verbally informs them of course specifics such as corners, inclines and declines. In biathlon, athletes with a visual impairment follow sound signals to shoot the target.

Explanatory guide to Paralympic Classification (2016). Retrieved from https://www.Paralympic.org/sites/default/files/document/160211172359750_2016%2B02%2BWinter%2BExplanatory%2BGuide%2B.pdf

Snowboarding

Sport Classes: IPC snowboard currently includes three sport classes, two for athletes with leg and one for athletes with arm impairments. This new sport continues to develop and the classification system will be refined to meet the needs of further growth in the sport.

SB-LL1: Snowboarders in the sport class SB-LL1 have a significant impairment in one leg, for example, an above knee amputation; or a significant combined impairment in two legs, for example significant muscle weakness or spasticity in both legs. These impairments will affect their ability to balance, control the snowboard and absorb the terrain. Athletes with amputations will use a prosthesis during the races.

SB-LL2: Snowboarders in the sport class SB-LL2 have an impairment in one or two legs with less activity limitation. A typical example is an athlete with below knee amputation or mild spasticity.

SBUL: Snowboarders in the SBUL class have impairments in one or two arms, which impacts on their ability to balance when racing down the slopes. A typical example is an athlete with an amputated hand.

Explanatory guide to Paralympic Classification (2016). Retrieved from https://www.Paralympic.org/sites/default/files/document/160211172359750_2016%2B02%2BWinter%2BExplanatory%2BGuide%2B.pdf