Bridge Brief

Improving Access to Physical Activity Through Adaptive Sports

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INTRODUCTION

The benefits of physical activity for individuals with intellectual, developmental, or physical disabilities are well established. In order to remove barriers to participation, great strides have been made in the field of adaptive sports, with significant results on quality of life. Diaz et al. (2019) reported that there are marked improvements in mood, life satisfaction, and community inclusion for participants in adaptive sports. Moreover, while Sahlin and Lexell (2015) found that a sedentary lifestyle can have significant negative impacts on overall well-being, particularly when it is due to a disability, their research indicated that participation in adaptive sports was associated with a broad range of positive enduring effects on quality of life, including "increased self-concept, self-esteem, life satisfaction, and opportunity for gainful employment, as well as decreased depression and anxiety" (p. 1087). Shapiro and Malone (2015) likewise noted that "[a]dapted sport is increasingly serving as a forum through which to develop and maintain physical and psychological functioning, promote a healthy lifestyle, and enhance [Health-Related Quality of Life] and life satisfaction of persons with disabilities" (p. 385). Additional studies (Lape et al., 2017) have shown the positive impact of adaptive sports on individuals with intellectual and developmental disabilities. The wealth of evidence generated by these studies suggests that a program to engage individuals with disabilities (whether physical, intellectual, developmental, or a combination of the three) in sporting activities could substantially enhance their quality of life.

However, Diaz et al. and others (Wright et al., 2019) have demonstrated that barriers such as transportation, awareness, and financial considerations often inhibit the participation of individuals with disabilities in adaptive sports. Addressing these barriers and thereby expanding the rehabilitative, therapeutic, and whole life health benefits of adaptive sports was the motivating factor in creating the Adaptive Ski and Snowboard Program in 2011.

THE ADAPTIVE SKI AND SNOWBOARD PROGRAM

In order to increase its scope and measure the effects of its programs on participants, in 2019 the Adaptive Ski and Snowboard Program entered into a collaborative project with the Institute for Human Development (IHD) and Northern Arizona Adaptive Sports Association (NAASA). With funding provided by a grant from the Arizona Developmental Disabilities Planning Council (ADDPC), the project budget allocated funds for lessons, lift tickets, equipment, and transportation stipends as direct measures to offset identified barriers that frequently hinder participation in adaptive sports programs. The program used the ADDPC funding in part to purchase the necessary adaptive ski equipment and provide scholarships to 100 individuals with I/DD during the 2019-2020 ski season in order to increase the availability of adaptive ski and snowboard lessons. The program scholarships were designed to fund a single lesson for each participant.

To support inclusion and address specific disability-related needs of the participants, equipment purchases included sit-down ski equipment such as bi-skis and mono-skis, as well as stand-up assistive ski equipment including ski walkers and handheld outriggers. All equipment purchased through ADDPC funding is available at no cost and at any time to any individual with I/DD. Additionally, the instructors modified their training strategies to accommodate differences in learning styles and needs among the participants. To accomplish this, four adaptive ski instructors successfully earned alpine and adaptive certifications from the Professional Ski Instructors of America, a nationally certifying organization. NAASA now has instructors qualified to teach both alpine and adaptive skiing, sometimes during inclusive group lessons. The supports described above reduced both the financial and access barriers to participation.

IMMEDIATE AND LASTING IMPACTS ON PARTICIPANTS

In addition to increasing access to outdoor recreation for individuals with disabilities, the collaboration between IHD and the Adaptive Ski and Snowboard Program presented an opportunity to measure – in a manner distinct from previous studies – the long-term effects of participation in such activities. The program's impact on the first group of participants (2019 to 2020) was tracked from the day of their lesson through the summer of 2020. This evaluation process was modeled in part on that used by Lape et al. (2017), which used focus groups to look at the effect of adaptive sports programs on participants. The primary difference between the present study as originally conceived and the Lape et al. study was in terms of the participants. Those who took part in the Lape et al. focus group had been participating in adaptive sports for at least two years before the focus groups took place. By contrast, the participants in our group were new to adaptive sports. Because the IHD researchers had not engaged in this type of recreational activity-based research before, they decided to do a tracking study consisting of surveys repeated at varying intervals: one before the lesson, another immediately following the lesson, and finally another four months after the lesson.

These surveys were comprised of a series of repeated questions designed to measure the impact of the program, focusing particularly on those aspects of quality of life and inclusion that could be measured in survey format. Researchers originally planned for the surveys to be followed by in-person focus groups, in order to delve into the five themes identified by Lape et al. (2017): "(1) physical well-being and health/safety; (2) interpersonal and social relationships; (3) intrapersonal and beliefs/attitudes; (4) physical environment; and (5) access" (p. 4). However, due to the challenges presented by the COVID-19 pandemic, the use of in-person focus groups was eliminated and the researchers shifted to individual interviews via Zoom. Thus, a replication of the Lape et al. method was confounded by the pandemic. However, when the pandemic is contained and it is safe to do so, the researchers plan to conduct a focus group with those who participated during the pilot year of the program as well as participants from the second year of the program, utilizing the Lape et al. protocol to guide that portion of the study.

While there were initially 57 participants, researchers were only able to follow 19 of these individuals through the entire data collection process. This was due to a series of drop-offs in responses. The first came on the day of the initial lesson, when only 50 of the 57 participants in the lesson completed the survey. When those 50 respondents were contacted for the four-month follow up survey, only 19 responded. This is not outside the norm for follow-up survey responses, which is typically under 50 percent. In fact, the Lape et al. study (2017) faced similar problems: from their initial pool of 134 participants, they were only able to interview 17.

The 19 individuals reported on in this section completed the pre- and post-lesson surveys, in addition to a follow-up survey four months after the lessons concluded. Initially, the researchers had planned a full panel of quality-of-life questions like those used by Diaz et al. (2019). However, due to questions raised by external reviewers about the complexity of the surveys and the potential for survey fatigue, a more streamlined approach was adopted to include broader measures of quality of life (happiness and confidence) and inclusion (feeling included in the community). These questions were informed by research in adaptive sports, where such themes frequently emerge. For example, Sahlin and Lexell (2015), whose meta-analysis looks at individuals with both ID/D and spinal cord injuries (SCI), found that "[p]ersons with an SCI who participate actively in sports display increased community integration, life satisfaction, employment, and extraversion, as well as decreased levels of anxiety and depression" (p. 1086). In our survey, the researchers asked one inclusion question and two quality-of-life questions:

- Do you agree with this statement? "I feel included in the community." (Inclusion)
- How confident are you in doing sporting activities? (Quality of Life)
- How often do you feel happy? (Quality of Life)

The researchers were able to look at longer-term impacts on the 19 responding participants by comparing pre-lesson responses to responses obtained from the four-month follow-up survey. While these questions were parsimoniously designed to be simple with few assumptions, they did yield interesting findings. The data from these three point-in-time surveys are reported in Table 1. The pre-lesson survey was administered shortly before the lesson began. The post-lesson survey was administered immediately following the lesson. These were both completed using paper forms. The four-month follow-up was an online Qualtrics survey sent via e-mail. These surveys were generally completed within five months of the initial lesson. The pre-lesson survey was used as a baseline for comparison of results in both the immediate post-lesson survey and the four-month follow-up survey. The greatest immediate effects of the lesson, as shown by comparing the pre-lesson and post-lesson surveys, were seen in the inclusion and confidence questions. In both cases, nearly two-thirds of the participants moved from the lowest response category to a higher level. This is consistent with Sahlin and Lexell's (2015) findings regarding the benefits of sports and physical activity for individuals with disabilities. Review of the change between the pre-lesson survey and the four-month follow-up survey shows that the immediate impacts in terms of inclusion and confidence were maintained. This comparison also shows that, while it took longer to develop, there was also a measurable change in terms of happiness, with more than two-thirds of respondents indicating they felt happy often and the rest indicating that they felt happy sometimes. In contrast to the pre-lesson survey, where four people responded that they almost never felt happy, by the four-month survey no respondents selected that option.

Table. 1

Comparing Pre-Lesson, Post-Lesson, and Four-Month Follow-Up Responses

Question	Responses	Pre-Lesson Responses	Post-Lesson Responses	Pre-to-Post-Lesson	Four Month Follow-Up	Pre-Lesson to Follow-Up
Do you agree with the statement? "I feel included in the community."	Not at all	12	0	-12	0	-12
	A little	7	18	+11	9	+2
	A lot	0	1	+1	10	+10
How confident are you in doing sporting activities?	Not at all	18	5	-13	3	-15
	A little	1	14	+13	11	+10
	A lot	0	0	0	5	+5
How often do you feel happy?	Not at all	4	2	-2	0	-4
	A little	11	8	-3	6	-5
	A lot	4	9	+5	13	+9

Though the planned focus groups could not be completed due to the pandemic, researchers were able to engage nine program participants in direct interviews. Because the sample size for these interviews was small (N=9), no clear themes emerged in terms of inclusion, confidence, and happiness. However, as the population grows and more interviews are conducted, the researchers plan to look for themes in open-ended questions and responses that can illuminate these findings.

UNEXPECTED CHALLENGES PRESENTED BY COVID-19 AND LESSONS LEARNED

The Adaptive Ski and Snowboard Program began before COVID-19 became a major public health crisis. As a result of the pandemic and state-mandated lockdowns, the host location – Arizona Snowbowl Ski Resort in Flagstaff – shut down on March 17, 2020. As a consequence, the program itself was suspended after having provided adaptive lessons to 57 of the targeted 100 individuals with I/DD. However, over the next several months, the pandemic proved to be a driving force behind innovative methods that would be used to communicate with the participants and plan for another year of the program.

The changes made in response to this unexpected program pause, such as moving planned follow-up surveys online utilizing Qualtrics and employing Zoom for board meetings and participant interviews, were found to be innovations that could be leveraged to improve the program in the second year. The changes necessitated by COVID-19 were incorporated into the second-year funding proposal. When the second year of the program began in December 2020, Zoom was utilized for the pre-lesson assessments. Additionally, all measurement tools were moved online, which had the unanticipated benefit of improving efficiency and streamlining data collection.

While some of the adaptations required by the pandemic will be retained, it is expected that the program will return to full operating status this year. In addition to a continuation of the adaptive ski and snowboard activities, the curriculum will be expanded to offer adaptive kayaking and adaptive hiking, with the lessons and adaptive equipment funded by ADDPC. It is expected that these activities will take place primarily in 2021. As of press time, approximately 60 individuals with I/DD have participated in the program, completing surveys that will allow the researchers to examine the continuing benefits of the IHD/NAASA Adaptive Sports Program. Despite the challenges posed by COVID-19, it is clear that this program has had a major positive impact on the lives of its participants.

IMPLICATIONS FOR PRACTICE

This study has found additional evidence that participation in physical activity can have a lasting positive effect on individuals with ID/D. Moreover, our research indicates that these positive effects can begin as early as the first adaptive sports lesson, and not only after prolonged participation in outdoor recreational activities (as in the Lape et al. study). However, people with disabilities who have limited economic resources and/or live in rural areas are less likely to have access to adaptive sports. Programs like the IHD/NAASA Adaptive Sports Programs, which provide access in rural areas and help individuals overcome financial barriers through scholarships and free equipment rentals, can extend this benefit to populations that would not otherwise be served. These programs are critical to improving both the quality of life and sense of community inclusion for individuals with disabilities.

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Alexander Davenport is the founder of Northern Arizona Adaptive Sports Association. His passion for skiing is matched only by his passion for making it accessible to all people. At his core he is an educator who loves making connections with people and sliding on snow. He is a graduate of Northern Arizona University and holds a Rocky Mountain Trainer Accreditation from Professional Ski Instructors of America. Mr. Davenport has played an integral role in creating accessible, therapeutic adaptive and inclusive experiences in northern Arizona and continues to dedicate himself to inclusive recreation expansion in his community. Before discovering his enthusiasm for adaptive recreation, Mr. Davenport was honorably discharged as an E-5 from the United States Marine Corps.