8-2023

Accessible Outdoors: Preparing Volunteers and Staff to Work with Diverse Populations

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Capstone Project completed in partial fulfillment of the Doctor of Occupational Therapy Degree

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Abstract

Despite recent advances in outdoor recreation accessibility, many people still face barriers to spending time in nature. This doctoral capstone project was completed in partnership with outdoors equity organization Wilderness Inquiry to address outdoor accessibility through an occupational therapy lens. This project aimed to enhance knowledge and confidence of Wilderness Inquiry staff and volunteers on topics related to working with individuals with physical or neurodivergent abilities during Wilderness Inquiry activities. Needs for training topics were ascertained through survey, interview, and observation of organizational activities. The quality improvement project included the development, dissemination, and evaluation of educational modules on the topics of transferring participants on the trail, working with neurodiverse populations, and when/how to use adaptive gear. The outcomes of dissemination of the educational modules showed statistically significant differences in comfort with transfers when comparing pre-training and post-training responses. A self-reported increase in knowledge and comfort with neurodiversity was also noted and no change in knowledge was noted related to the topic of adaptive gear. Despite limited sample size for evaluation, positive feedback from those who completed the module indicate potential for usefulness in future training. Through this project, access and inclusion in Wilderness Inquiry trips was enhanced through providing leader/volunteer education that will make them more aware, skilled facilitators when working with diverse populations. Because of the alignment of OT scope with the Wilderness Inquiry mission, there are many more opportunities for partnership for further education and process development.

Introduction

Despite a recent increase of interest in making opportunities for outdoor recreation more readily available for all people, significant social and environmental barriers that affect accessibility to these activities for many populations remain (Fallahpour et al., 2015; Groulx et al., 2022). Accessibility to the outdoors is multi-faceted and in order to make experiences in nature universally available, there must be an integrated effort to reduce barriers in social norms, physical facilities and trails, group outdoor activities, and information sharing (See Appendix A) (Groulx et al., 2022; Hennig et al., 2015; Howie et al., 2012). Ensuring volunteers and staff are able to provide the safest and most fulfilling experience possible requires effective training on how to appropriately support participants of differing abilities.

Background Literature

Awareness and interest in promoting accessibility in the outdoors has grown in recent years, but there continues to be a lack of evidence on the barriers and facilitators to outdoor recreation access for many populations. Current knowledge on accessibility in outdoor recreation emphasizes the therapeutic benefits of these activities and how people with physical disabilities are able to participate (McAvoy et al., 2006; Minnesota Department of Natural Resources (MN DNR), 2022; Zeller et al., 2012). Benefits of outdoor recreation and therapy include improved self-concept and self-esteem, personal growth, increased willingness to take risks, development of new independent skills, spiritual benefits, social adjustment, and a sense of community (McAvoy et al., 2006). While there is a rich body of research about the benefits of nature-based programming and components of physical accessibility (e.g. USDA federal accessibility guidelines on

trail terrain), there are few research articles related to other aspects of programming (Groulx et al., 2022; Zeller et al., 2012). Similarly, there is a lack of parks that have been adapted for neurodivergent individuals or people with intellectual disabilities such as audiovisual elements and trail guidance/park information (Hennig et al., 2015; Zeller et al., 2012). Currently, guidelines on accessibility are primarily national rather than local or statewide resulting in a wide variety in the extent and types of barriers to accessing outdoor recreation across the country (Zeller et al., 2012). Within the state of Minnesota and nationally across a broad spectrum of standardization, the focus of accessibility is on differing mobility needs rather than consideration of universal design, which is defined as “the design and composition of an environment so that it can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability or disability” (Centre for Excellence in Universal Design, n.d., para.1). Within this framework, there are many more elements involved in outdoors accessibility than are currently addressed in many outdoor spaces nationwide.

Beyond environmental design accessibility, the literature identifies the importance of the following for the improvement of accessibility: 1) providing appropriate training for support staff and volunteers, 2) considering technology in activity adaptations, 3) reducing barriers such as lack of equipment, transportation, information, or financial means, 4) enhancing information sharing related to outdoor activities, spaces, and accommodations, and 5) changing stigma around participation in outdoor activities for typically excluded populations (Fallahpour et al., 2015; Groulx et al., 2022; Hajjar et al., 2022; Hennig et al., 2015; Howie et al., 2012; Jacinto et al., 2021; McAvoy et al., 2006; van Schjindel-Speet et al., 2014; Zeller et al., 2012). Literature also identified technology

(e.g. augmentive communication devices) as an important factor to reducing barriers for outdoor activity participation (Fallahpour et al., 2015; Hajjar et al., 2022). In all efforts to improve accessibility it is important to include a diverse population in decision-making. In order to improve understanding and awareness about nature accessibility and provide appropriate supports in outdoor spaces - physical, social, or otherwise - it is crucial that professionals working in outdoor recreation are trained to be effective facilitators of outdoor participation for all (Groulx et al., 2022).

Purpose

The partner for this project, Wilderness Inquiry (WI), is a nonprofit organization dedicated to connecting people of all ages, identities, backgrounds, and abilities to each other and the natural world through shared outdoor adventures (Wilderness Inquiry, n.d.-a, n.d.-b). In living out this mission, the organization requires the support of numerous volunteers and staff for all activities (Wilderness Inquiry, n.d.-b, Wilderness Inquiry, 2021a). This quality improvement project aimed to address a need identified at Wilderness Inquiry, the need for a comprehensive training to prepare volunteers and staff at Wilderness Inquiry to support people with differing physical abilities and ways of thinking/processing. This was deemed important to the organization because it has the potential to impact the experience of the program participants at Wilderness Inquiry, and therefore, what they are able to gain from the experience, whether it be increased confidence, a connection to a community, or the skills for greater outdoor independence in the future (McAvoy et al., 2006) (see Appendix B). While the individual experience will differ, making trips a learning experience for differing needs and strengths requires skilled facilitators.

Approach

Wilderness Inquiry is a nonprofit outdoor recreation accessibility organization. Since the mid-70's, Wilderness Inquiry has provided programs at the intersection of care for the environment and desire to share the outdoors with those who have limited access. With 22 full time staff, 17 board of directors' members, a multitude of volunteers, and dozens of community partners and funders, Wilderness Inquiry is well-established in the community (Wilderness Inquiry, 2021). A few of the numerous programs operated by Wilderness Inquiry include Canoemobile for youth and young adult environmental stewardship, Families Together for family outdoor adventures, Minnesota Freshwater Quest for student leadership and education on watersheds, and affinity group travels for Deaf, DeafBlind, and Hard of Hearing; LGBTQIA+; BIPOC; and neurodiverse populations (Wilderness Inquiry, n.d.-c).

Procedures/Deliverables

As part of the quality improvement project, materials were created for Wilderness inquiry including educational materials and recommendations for supporting trip accessibility. In order to develop these products, a combination of continued observation of organizational activities, staff/volunteer interview activities, and survey methods were utilized to identify needs. Surveys were distributed to volunteers and interviews were conducted with staff members to inform the development of the educational modules and supporting materials (See Appendices C and D for survey and interview questions). The volunteer surveys used scaled-rating items and open-ended questions to assess volunteer knowledge, feelings of satisfaction, and perceived preparedness for supporting participants on Wilderness Inquiry trips. 10 individuals responded to the

survey. Respondents generally indicated the organization of trips was well done and trip directors were identified as kind, talented, and positive staff who supported a good experience on Wilderness Inquiry trips. A 5-point scale from 1 (not at all comfortable) to 5 (very comfortable) was used to rate the items. In general participants indicated a high level of comfort in their preparedness for trips with a modal rating of 4 which describes feelings slightly below “very comfortable”. Some statements related to level of preparedness included 1) communication needs, 2) time required to prep prior to a Wilderness inquiry trip, 3) need for clear expectations, and 4) background knowledge and previous experience supported higher levels of feelings of preparedness. Challenges identified through the survey and staff interviews included 1) group dynamics and sizes, 2) lack of direction and welcome from staff at community events, 3) learning curve for working with individuals with disabilities, and 4) the personal, emotional, mental, and/or physical demands of the role. The need for additional knowledge and skills in the areas of 1) lifting/transferring participants, 2) communicating with people with disabilities, 3) adaptive gear usage, and 4) specifics for working with individuals with disabilities were identified. These challenges and common areas of need that were disclosed through surveys were also emphasized by the three volunteer interviews conducted on a neurodiverse affinity trip. Independent of the survey and interview results, Wilderness Inquiry office staff described the need for increased staff and volunteer knowledge on best practices for working with neurodivergent participants.

Based on this information, areas of focus included (1) recommendations and education for neurodiverse trips, (2) recommendations and education on use of available adaptive gear, and (3) transfer training with supporting materials for follow-up

education. St. Catherine University Institutional Review Board (IRB) team received and approved the project as a quality improvement project.

After identifying needs and primary focus areas, an evidence review of internal and external resources related to outdoors accessibility, neurodiversity, and virtual adult learning principles was completed in order to support creation of evidence-based educational modules addressing these needs. Learning principles utilized in the developed modules included stimulation of prior knowledge/background, self-pacing, explaining purpose of learning, and including applicable and interactive elements to solidify learning (Ibsen, 2022; Verville et al., 2021; Burke et al., 2016; Hajjar et al., 2020; Levac et al., 2015). Review of literature around outdoor accessibility and neurodiversity provided important background knowledge and information to include in educational modules. Multiple participants reviewed the deliverables via a formative feedback process and contributed to revisions, including Wilderness Inquiry staff and outdoor leaders, peers, and professors at St. Catherine University. See appendices E-J for project deliverables.

Participants

Participants involved in this project were staff (office personnel and outdoor trip leaders) and volunteers at Wilderness Inquiry. Participant demographics generally include people ages 18-75 who have a variety of backgrounds and an interest in outdoor recreation. Neurodiversity education was developed for the same audience as well as staff with similar demographics. Transfer training and adaptive gear education was created to fill a gap in information for approximately 45 outdoor trip leaders who have similar demographics to those of the volunteers.

Assessment/Evaluation Process

Surveys were integrated into the beginning and the end of the educational modules to measure changes in knowledge, attitudes, and confidence related to each topic (See Appendices K-L for survey questions. Survey results were analyzed using open and axial coding for open-ended responses and descriptive statistics for scaled-rating items. Modules were also assessed for health literacy standards using web accessibility standards (World Wide Web Consortium (W3C), 2008), the Centers for Disease Control and Prevention (CDC) Clear Communication Index (CDC, n.d.-b), and the Patient Education Materials Assessment Tool (PEMAT-P/AV) prior to dissemination (Shoemaker et al., 2020). For both tools a score of 90% or above is generally considered good for use with the intended audience. Upon initial review, general areas of strength and areas for improvement were noted. On all three modules across both tools the “actionability” and “behavioral” parts of the modules were strong and the “understandability” and “core” (main message is clear and draws the audience in with multiple modes) were areas for improvement. After revision, all three modules hit the 90% or above mark with both the Clear Communication Index and the PEMAT. Table 1 below provides a summary of the changes to each module with each tool.

Table 1.

Accessibility and Health Literacy Measures of the 3 Modules

Module	CCI	PEMAT
Neurodiversity		
Initial Review	76% (total)	58.3% Understandability (SR)

	64% (core) 100% (behavioral) 100% (numbers) N/A (risk)	100% Actionability (SR)
Post-Revision	94% (total) 91% (core) 100% (behavioral) 100% (numbers) N/A (risk)	91.6% Understandability (SR) 92% Understandability (PR) 100% Actionability (SR) 100% Actionability (PR)
Adaptive Gear		
Initial Review	79% (total) 73% (core) 100% (behavioral) N/A (numbers & risk)	75% Understandability (SR) 66% Actionability (SR)
Post-Revision	93% (total) 91% (core) 100% (behavioral) N/A (numbers & risk)	100% Understandability (SR) 100% Actionability (SR)
Transfer Training		

Initial Review	43% (total) 27% (core) 100% (behavioral) N/A (numbers & risk)	73.3% Understandability (SR) 100% Actionability (SR)
Post-Revision	93% (total) 91% (core) 100% (behavioral) N/A (numbers & risk)	86.7% Understandability (SR) 94% Understandability (PR) Actionability (SR) 100% Actionability (PR)

Note. This table shares the results of author self-review of the three educational modules using the CDC Clear Communication Index (noted CCI in the table heading) and the Patient Education Materials Assessment Tool for Printable Materials (noted PEMAT in the table heading) after initial completion of the modules and following revisions based on feedback and these tool scores. A peer review using the PEMAT was also utilized for two of the three modules (neurodiversity and adaptive gear) at the post-revision time period.

Results

Educational materials were assessed through staff and volunteer changes in comfort and understanding via surveys prior to completing and after completing each module. Outcomes from the surveys are described in the sections below.

Transfer Training

Participants rated themselves on a 10-point scale regarding their comfort level with transferring others with 1 being “never tried”/ “very uncomfortable” to 10 being “I could teach someone else” before and after completing the transfer training activities. A positive statistically significant change was noted when comparing the responses prior to the training to those after the training. In the pre-survey, the largest percentage of participants, 48.8% (*n*=21), rated themselves in the 0-3 range and the smallest percentage of participants, 14% (*n*=6), rated themselves in the 7-10 range. At the post-survey, the largest percentage of participants, 58.2% (*n*=25), rated themselves in the 4-6 range and the smallest percentage of participants, 2.3% (*n*=1), rated themselves in the 1-3 range. In addition, the change in percentage of participants rating themselves in the 7-10 range (14% pre-training and 39.5% post-training) was found to be statistically significant at p=.002. See Table 2 for full results of the survey data on this training.

Table 2

In-Person Transfer Training Evaluation

	Pre-Training	Post-Training
0-3	48.8% (*n* = 21)	2.3% (*n* = 1)
4-6	37.2% (*n* = 16)	58.2% (*n* = 25)
7-10	14% (*n* = 6)	39.5% (*n* = 17)

Note. Table depicts number of outdoor leaders with comfort levels in 0-3, 4-6, or 7-10 ranges for completing participants transfers safely before and after training was completed. *(n*=43*)*

Participants were also asked for any takeaways following the training. Common qualitative themes found through this question included learning to pay attention to the environment when completing transfers and to communicate clearly with all participants in the transfer.

Adaptive Gear

Survey questions to evaluate the adaptive gear education module focused on changes in outdoor leader comfort with how and when to use the adaptive equipment available in the Wilderness Inquiry warehouse. One participant filled out these surveys and the participant's level of understanding of how and when adaptive gear is used was maintained when comparing the pre and post module responses. Prior to education, the respondent rated their understanding of how and when to use the gear was as "5, I could teach someone else how to use it" and after rated their understanding of how and when to use the gear was as "5, I could teach someone else how to use it."

Neurodiversity

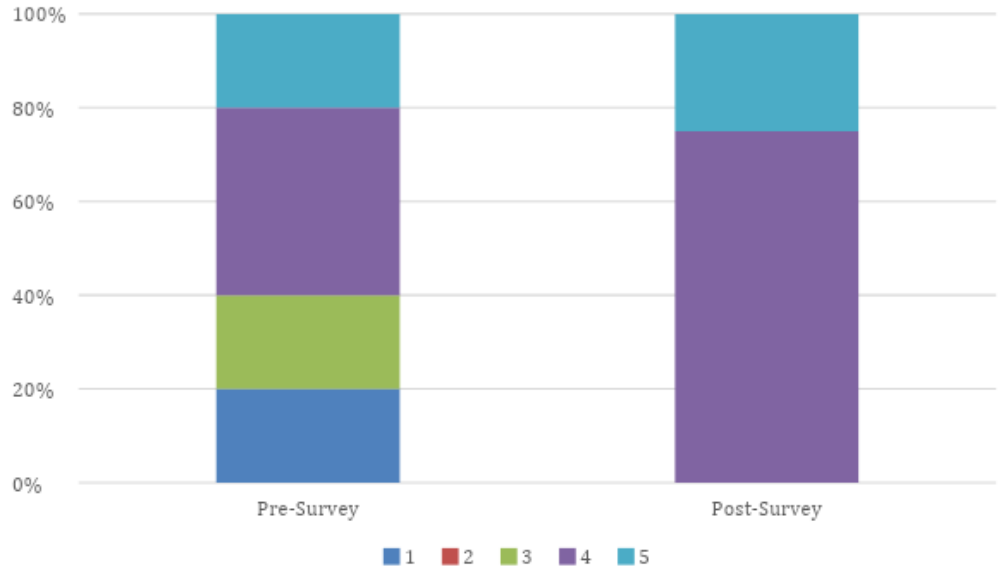
Survey questions related to the neurodiversity education module focused on changes in outdoor leader comfort with their understanding of the concept of neurodiversity, how to find resources around neurodiversity, and reported qualitative takeaways on content of neurodiversity module. There were six participants who completed the pre-survey and the neurodiversity education module; four of them completed the post-survey. There were two items in the pre-survey, the first being a yes

or no response and the second a scaled item from 1, “I wouldn’t know where to start” to 5, “I could easily describe neurodiversity and its implications in daily life.” The post-survey included 3 items, the first a yes-no-maybe response, the second a scaled item from 1, “I wouldn’t know where to start” to 5, “I could easily describe neurodiversity and its implications in daily life,” and the third an open-ended response.

In the pre-survey, five out of six (83.3%) of participants indicated they had heard of the term neurodiversity before. On the second item on the pre-survey, scaled ratings indicating comfort level describing the term neurodiversity ranged from 1 to 5, with a mode (most frequent response, 40%, *n* = 2) of 4. On the post-survey this item had a range of 4-5 with the majority of responses (75%, *n* = 3) of 4. See Figure 1 for full information on the pre- and post-survey responses on this item. For the other item on the post-survey, 100% of respondents indicated “yes” to feeling comfortable in seeking more resources related to neurodiversity.

Figure 1

Participants Ratings of Comfort with Transfers Pre- and Post-Training



Note. Graph depicts changes in comfort with transferring program participants before and after completing transfer training on a scale of 1-5; 1= I wouldn't know where to start and 5= I could easily describe neurodiversity and its implications in daily life.

Participants were given the opportunity to share major takeaways from the neurodiversity training. Their responses fell into three general categories: (1) feelings of increased confidence with being able to communicate and interact with neurodivergent and neurotypical individuals, for example "wonderfully thorough presentation that honestly is usefully for communication with everyone whether neurotypical or neurodiverse"; (2) more knowledge on sensation and how to identify/address sensory overload, for example "I now have a better understanding of what sensory overload means and how to identify when an individual may be struggling with this" and (3) greater understanding of neurodiversity and appreciation for unique minds, for example "we are all unique and we need to learn the best way to interact with each other based on our unique characteristics of perception, behavior, and communication".

Implications

Outcomes of education demonstrate the value of providing further education to volunteers and staff so that they are able to better promote comfort and independence for participants in Wilderness Inquiry experiences. While adaptive gear perceived understanding of usage showed no change and comfort with neurodiversity showed limited positive change, results of in-person transfer training indicate a statistically significant difference ($p=.002$) in comfort with transfers and perceived ability to complete safe transfers while leading Wilderness Inquiry activities. Both neurodiversity and adaptive gear education were designed in a virtual, asynchronous format for ease of

use during Wilderness Inquiry's busy season, as well as for sustainability of use in future training. Utilizing the health literacy and accessibility tools (CCI, PEMAT) to evaluate content prior to dissemination has ensured greater knowledge retention and actionability across education for targeted audiences. Project outcomes were shared with a broader audience to a capstone committee and public audience through poster presentations (See Appendix M).

The timing of educational implementation was during the busiest time of the year which led to limited dissemination. Because of this, reaching outdoor leaders and volunteers to complete education and corresponding surveys was challenging, resulting in limited sample size and limiting the generalizability of the findings to the organization at large. Based on findings from trainings and statistically significant in-person transfer training outcomes, it may be advisable to implement hands-on components in addition to maintaining virtual presence to support knowledge translation and application. However, positive feedback from limited survey responses and feedback from full-time staff indicate satisfaction and future continued usefulness of the quality improvement educational materials to the site to increase knowledge on topics presented. Implications of current education will include greater knowledge and skill of outdoor leaders and volunteers in facilitating more inclusive trips for participants.

Wilderness Inquiry programming fills an important gap in outdoor accessibility and continues to live out their mission with a growth mindset that is directly aligned with occupational therapy values. Because of this, there continues to be opportunity for partnership between St. Catherine University's graduate occupational therapy program and Wilderness Inquiry. Recommendations for future work with doctoral or masters

students could include continued development of education on a variety of accessibility topics. For example, enhancement of Wilderness Inquiry's Abilities and Accessibility manual with updated audiovisual adaptations of materials for dissemination to outdoor leaders and volunteers would be a great addition to the information already provided. Further development of a volunteer guide and participant interview protocols for outdoor leaders/volunteers before trips would help leaders understand individual needs in all aspects of the trip and its activities better prior to departure. Finally, an occupational therapy student and Wilderness Inquiry staff-person could co-lead an adaptive workshop series to promote DIY problem-solving skills for outdoor leaders on trail in relation to general adaptation and adapting for accessibility.

While the occupational therapy scope continues to expand into various community settings, it is important for practitioners to continue to be open-minded and creative in how they are able to promote participation and independence in a variety of settings as both advocate and educator. Being aware of nonprofit organizations in your community with missions that align with occupational therapy scope of practice and values, and advocating for how occupational therapy can be of use to them can increase the reach of the special skillset that occupational therapy practitioners bring to the table. As consultants and educators, occupational therapists can bring knowledge on accessibility to a broader audience for greater reach and impact on participation within an organization and beyond.

Occupational therapy practitioners have a role in promoting accessibility in outdoor recreation through our unique abilities of activity analysis and adaptation for individuals. Outdoor leisure recreation is a meaningful occupation central to the

occupational identities of many people, so occupational therapy practitioners have a significant opportunity to promote access to outdoor activities for all.

Despite limitations in scope, initial outcomes of educational modules demonstrate the value of providing additional evidence-based training for staff and volunteers to increase comfort with topics relevant to outdoor guides and volunteers such as transferring participants, adaptive gear usage, and how to work with neurodiverse populations. Inclusivity in outdoor activities can be further enhanced through education of individuals currently working in outdoor recreation. Future directions include conducting additional research to explore effects of educational modules on a broader scale followed by potential dissemination in outdoor recreation channels for greater impact on the outdoor accessibility movement.

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Appendices

Appendix A: Scoping Review

Accessible Outdoors: Facilitators and Barriers to Participation for Adults with Cognitive Disabilities

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Background

- Developed in collaboration with **Wilderness Inquiry, a nonprofit outdoor recreation accessibility organization** committed to connecting people of all ages, backgrounds, and abilities to each other and the natural world through outdoor adventures.[20]
- Organization identified need for updated training for volunteers in the Gateway to Adventure program, which is designed to provide outdoor activity opportunities to adults with a variety of cognitive disabilities and promote skill development.[21]
- **Benefits of outdoor activity:** improved self-concept and self-esteem, personal growth, increased willingness to take risks, development of new independent skills, spiritual benefits, social adjustment, and a sense of community.[5, 14]

Objective

The goals of this scoping review were to **(1) examine available evidence on what factors facilitate or reduce participation in outdoor recreation for adults with cognitive disabilities** and **(2) to understand the best methods for educating volunteers at a nonprofit in a virtual environment.**

Method

Research Question: What is the nature and extent of evidence on the barriers and supports to adults with cognitive disabilities accessing outdoor recreation?
Approach: Scoping review using Arksey & O'Malley method[24]

Key Search Terms:
"Outdoor recreation", "outdoors", "accessibility", "cognitive disabilities", "brain injury", "developmental disabilities", "access", "adults"

Databases/Search Engines:
CINAHL, Google Scholar, PubMed, Sage Journals, Cochrane Library, Google (.org and .gov)

Criteria for Inclusion:
Full text availability
English language
Peer-reviewed
2005-2022

Data charted using the following categories: type of disability, location, accessibility definition, objective, methods, outdoor activity type, barriers, supports, benefits of participation, recommendations

Findings

Supports and Barriers to Participation[4, 5, 7-9, 11, 14, 17, 23]

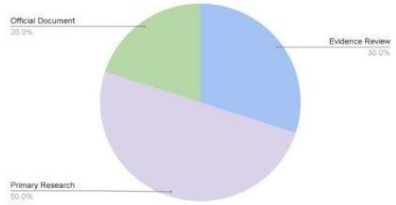
Supports

- Adequate social and physical support
- Adapted programs and spaces
- Awareness and education on resource availability
- Holistic staff/volunteer training

Barriers

- Belief in an inability to participate
- Lack of knowledge of activities or information
- Financial or transportation constraints
- Social or communication challenges
- Sensory sensitivity
- Adaptive equipment may not be user-friendly or designed for outdoor use
- Societal views

Types of Sources in Scoping Review



Implications for project

Volunteer training impacts participant experience → Address barriers at multiple levels → Utilize adult learning principles in education

- Creation of **volunteer training curriculum** that has the following evidence-based characteristics:[1-3, 6, 10, 12, 13, 18]
  - **Web-based,** asynchronous modules to supplement in-person training
  - Ongoing feedback and periodic comprehension checks
  - **Interactive**, situational learning
  - Accessible and user-friendly
  - Continuous evaluation of volunteer needs and skills for effectiveness and **dynamic approach** to education

Discussion

- Much of the available research focuses on the benefits of outdoor activities and accessibility related to physical disabilities rather than cognitive disabilities.[4, 5, 7-9, 11, 14, 17, 23]
- Guidelines on accessibility are primarily national rather than local or statewide, creating a wide range of accessibility in the United States.[23]
- Literature identifies a greater need for staff and volunteer training; considering technology in activity adaptations; reducing barriers of lack of equipment, transportation, information, or financial means; and changing stigma around participation in outdoor activities for this population.[4, 5, 7-9, 11, 14, 17, 23]

Conclusion

Aim: to assist Wilderness Inquiry in better **serving adventurers with cognitive disabilities** to promote participation and skill development.

- **Utilize knowledge translation methods** to evaluate and develop a holistic plan to meet the needs of Wilderness Inquiry
- Create **multi-modal opportunities to share information** with volunteers on conditions and appropriate adaptations to fit the social and emotional needs of adventurers
- Monitor the impact of the project on volunteers and adventurers with a focus on developing opportunities to **increase independence and social skills development.**

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Appendix B: Needs Assessment

Part 1: Description of the Organization or Community

Wilderness Inquiry is a nonprofit outdoor recreation accessibility organization. Since the mid-70's, Wilderness Inquiry has provided programs at the intersection of care for the environment and desire to share the outdoors with those who have limited access. Wilderness Inquiry is dedicated to connecting people of all ages, backgrounds, and abilities to each other and the natural world through shared outdoor adventures. Wilderness Inquiry inspires personal growth, enhanced awareness of the environment, and community integration.[19, 20, 21] With 33 staff, 17 board of directors members, a multitude of volunteers, and dozens of community partners and funders, Wilderness Inquiry is well-established in the community.[22] Among the shared leadership within the organization, Julie Edmiston is the Associative Executive Director. Stakeholders in the organization include staff, volunteers, and participants in organizational programming. In 2020 (an abnormal year for the organization's programs), 7,549 people were served via in-person adventures, virtual events, and online learning resources.[15] Most recent published estimates from 2021 indicate that 16,600 individuals and families participated in Wilderness Inquiry programs.[15] Some activities operated by Wilderness Inquiry include Canoemobile for youth and young adult environmental stewardship, Families Integrating Together for family outdoor adventures, Minnesota Freshwater Quest for student leadership and education on watersheds, and trips for various affinity groups (i.e. neurodiverse, LGBTQ+), and more.[21] Physical environments are varied, ranging from virtual and local to international outdoor experiences. In planning for the future, Wilderness Inquiry hopes to promote better trained and more diverse staff/volunteers, expand trips and virtual programs, and collaborate with more community partners for shared resources and funding.

Priorities/Needs/Issues

Priority/Need/Issue #1: Volunteers lack of training/education/knowledge on working with neurodiverse individuals

> Primary Goal: Provide volunteers with comprehensive, detailed training on neurodiversity and considerations for accessibility in the outdoors
>
> Strategy: Assess current training and perspectives of volunteers, staff, and participants on preparation for trips; create modules with requested information and other useful, applicable tips for promoting maximum participation in outdoor activities

Priority/Need/Issue #2: Lack of training/education/knowledge on best practices for transfers with individuals with physical disabilities in outdoor settings

> Primary Goal: Promote increased knowledge and skills on transfers when working with people with physical disabilities to increase both participant and staff safety
>
> Strategy: Create document and/or video (format based on evaluated needs) with recommended changes based on current staff trainings and observations of trips.

For the needs assessment, I will be focusing on priority #1.

Part 2: Preliminary Information and Resources for Learning about a Priority/Need/Issue

Internal Information and Resources		
Name of Information or Resource	Description of Information or Resource	Brief Summary of Key Learning
Abilities and Accessbility	Abilities and Accessibility is the primary presentation provided by Wilderness Inquiry to staff and volunteers upon training.	Presentation provides definition of disability, use of person-first language, concepts of universal design and social integration, considering the concepts of 'functional abilities', and learning to think creatively about adaptations
Informational Interviews	Informational interviews with volunteers, staff, and participants will be conducted in order to gain a deeper understanding of current training and to identify gaps.	Brief interview with site supervisor completed with needs identified related to volunteer training beyond basic understanding of what neurodiversity is, including considerations for how to best support individuals with varying needs in an outdoor setting. More interview needed to determine needs further and to gain demographic information on volunteers (average hours per year they serve, demographic information, average number of years they serve in a volunteer capacity for the organization).
2021 Year in Review	Resource provides important background, demographic, and vision information for foundational knowledge required to build my project	Wilderness Inquiry needs and directions continue to expand their reach with increased community partners, increased educational panel and virtual opportunities, and work towards the community-building initiative Thrive Outside.

External Information		
Name of Information or Resource	Description of Information or Resource	Brief Summary of Key Learning
Resources from Neurodiversity Celebration Week[26]	Website providing a wide variety of handouts and resources describing neurodiversity, specific types of neurodivergence, and recommendations for adaptations	There are a wide variety of resources available on the topic of neurodiversity that can help inform my trainings and provide a foundation for transfer to outdoor activities.
MN Accessible Recreation Organizations[24]	Page of organizations in Minnesota promoting accessible recreation to gain perspective on the scope of work in this area locally	There are numerous organizations working on this issue in Minnesota alone that will provide further resources and partners for the project
Developing training programs for volunteers[25]	Article from toolkit provided by the Center for Community Health and Development at the University of Kansas on how to train volunteers with principles of adult learning incorporated	Training development must be completed in consultation with organizational leaders and include lesson plans with time allotted, learning objectives, detailed activity explanation, ways to evaluate trainee understanding, and further resources

Gaps in Learning: Greater knowledge on current availability of resources for outdoor accessibility for neurodiverse individuals, in-depth informational interviews, specific considerations for the outdoors from neurodiverse individuals and people that work with this population, best platform for developing training

Part 3: Informational Interviews

Summary of Interview Guide

- Volunteer interview guide
    - Demographic information
        - Name, age, past experience working with neurodiverse populations
    - Trip experiences
        - What has gone well on trips? What has challenged you?
        - Do you feel you have built effective relationships with participants?
        - Have you felt supported by Wilderness Inquiry staff? How?
        - Do you feel that appropriate materials have been provided on trips?
    - Training experiences
        - Have you felt prepared for addressing challenges that arise on trips?
        - What do you feel are the strengths of training?
        - Do you see any gaps in volunteer training?
- Staff interview guide (1-2 outdoor leaders, site mentor, associate executive director, business operations director, program coordinator, and business operations senior manager)
    - Demographic information
        - Name, age, background

    - (specific to site mentor) What trends have you seen in volunteer evaluations of trips?
    - (specific to site mentor) What trends have you seen in participant evaluations of trips?
    - What do you consider to be your strengths in training?
        - Weaknesses?
    - What is your perception of volunteer knowledge on the populations you serve?
- Participant interview guide
    - Have you felt supported by trip leaders throughout the process?
    - What have you enjoyed most about WI trips?
    - What has been most challenging?
    - If you could make any changes to the trips, what would you change?

Anne Strootman, Customer Service Manager/Site Mentor, and Summary of Interview One

TBD, Wilderness Inquiry Volunteer, and Summary of Interview Two - participant dependent on obtaining names from site mentor in future

Interviews will be recorded and transcribed for maximum accuracy with interviewee consent, and fieldnotes without recording consent from participant. Interviewee personal data will be omitted. Preliminary, informal interviews were conducted with site mentor and customer service manager Anne Strootman with information gathered related to the following: volunteer demographics, current volunteer training practices, organizational activities and mission, associated staff, and preliminary areas of need to be addressed through training.

Part 4: Public Records and Organizational/Community Resources

Name: Abilities and Accessibility PPT

Description/Summary: This resource was chosen as it is the current volunteer training being used within Wilderness Inquiry to prepare volunteers to work with diverse populations. Understanding the education being used currently is important to determine what changes need to be made in creating my training modules. In the presentation, objectives and agenda are provided first, followed by definitions of disability, examples for use of person-first language, descriptions of universal design and social integration concepts, and scenarios for these concepts. The presentation also provides specific functional abilities and concepts for adapting activities to the individual. Broad takeaways and chance for reflection is also incorporated into the training.

Name: Volunteer demographic data

Description/Summary: Wilderness Inquiry site supervisor provided a snapshot of volunteer demographics. Characteristics of volunteers are varied but averages include: total volunteers (240), age (53 years), trips per volunteer (6), and years active (8.6). This information is important to understanding the organizational makeup of the volunteer population that will influence the educational modules being created.

Name*:* Developing training programs for volunteers[25]

Description/Summary: For a large portion of my capstone project, I will be in the process of developing volunteer training modules to utilize with adults from a wide variety of backgrounds/experiences. In order to create effective training, I will utilize the principles outlined in this toolkit along with those in other reputable resources to create accessible and inclusive opportunities for concrete learning that will be beneficial in real trip scenarios. Some principles outlined in this resource include active participation with application and opportunities for creativity integrated; developing lesson plans that have learning objectives, are time-bound, and provide opportunities for evaluation; and provide a variety of formats to accommodate the variety of learning types participating in training.

Name*:* 2022 Wilderness Inquiry Year in Review[32]

Description/Summary: This resource describes the programming enacted by Wilderness Inquiry and the populations being served, including 32 participants in affinity group trips that are a part of the Deaf, DeafBlind, and Hard of Hearing (DDBHH), BIPOC, neurodiverse, and LGBTQ+ communities. As a new program, these adventures continue to develop.

Part 5: Organization or Community Assets

Name: Wilderness Inquiry Partner Organizations

Description/Summary of Asset: Wilderness Inquiry has an extensive network of community partners locally, nationally, and internationally. Community partners exist with ecological/outdoor recreation organizations, educational foundations, schools, organizations dedicated to specific diagnoses, other well-established Twin Cities nonprofit organizations, and governmental agencies including those promoting outdoor recreation. These organizations provide support in the form of equipment, physical spaces, personnel, funding, and more. Wilderness Inquiry cannot exist or have as great of an impact without community partners working in parallel to make their communities better.

Name: Wilderness Inquiry Staff

Description/Summary of Asset: Wilderness Inquiry staff are passionate individuals with a wide variety of backgrounds and skills, which enable them to promote the organization from their individual skillsets. Working as a team, their small group of primary staff coordinate a wide net of programming on individual, community, and societal levels to promote access to the outdoors. The staff will be close partners throughout my project to provide insight and feedback that will increase relevance and sustainability of the education created.

Part 6: Proposed Methods to Collect Other Information During the Doctoral Capstone Experiences and Project

Internal Information and Resources		
Name of Information or Resource	Description of Information or Resource	Brief Summary or Focus of Learning
Wilderness Inquiry Abilities Manual	Wilderness Inquiry has a manual provided for staff and volunteers that	There are a variety of considerations for

Internal Information and Resources		
	includes information on disability awareness and social integration, specific functional abilities as related to activities of daily living and other activities relevant to outdoors programming, and facts about various disabilities. This manual goes beyond the powerpoint used for training and provides greater detail for staff and volunteers as they feel is relevant/necessary to review.	participating in outdoor activities relevant to people with physical, cognitive, and sensory disabilities; being prepared with the use of this manual while also talking to people knowledgeable on the subject and seeking information from participants themselves is important to enhancing participant experience.
Low Vision Supporting Participants	This document provides concrete suggestions on ways to interact with/support individuals participating in outdoor activities that experience low vision or blindness.	Suggestions provided in this document, while not fully comprehensive, describes communication tips including being natural, inclusive, considerate, descriptive, and respectful of the individual's autonomy.
No other internal resources available for review.		

External Information & Resources		
Name of Information or Resource	Description of Information or Resource	Brief Summary of Focus of Learning
CDC's E-learning essentials: A guide for creating quality electronic learning[2]	This guide provides important detailed guidelines for creating effective E-learning modules for education, adult learning, and instructional design.	Components addressed in this guide include analysis of learner audience/needs, interactivity of products for maximum carryover, learner-friendly interface/navigation, accurate and appropriate content, inclusion of formative and summative evaluations, and learning assessment impact with outcomes described.
Informational interviews	I will conduct interviews with experts in neurodiversity within my professional network to increase my knowledge on considerations for creating volunteer training.	Learning will be focused around considerations discovered in conversation with neurodiverse individuals/experts on neurodiversity.
Neurodiversity: How to support agency and self-determination[27]	Video training course describing important principles and considerations in promoting participation for neurodiverse individuals in occupational therapy	Learning will be focused on broad principles to be applied in volunteer training.

Volunteerism Data from Americorps[30]	Volunteerism data for the state of MN provided for more information on the potential population being trained	35.5% of Minnesotans formally volunteered in 2021
Prevalence of Autism Spectrum Disorder in Minnesota[31]	Data provided on prevalence of autism spectrum disorder (ASD) in Minnesota influences potential audience for Wilderness Inquiry neurodiversity affinity group programming	1 in 34 or 3% of 8-year-old children were identified with ASD

Part 7: SWOT Analysis: Strengths, Weaknesses, Opportunities, and Threats

Internal		External	
Strengths	Weaknesses	Opportunities	Threats
Value-driven, with programs clearly centered and marketed around those values	Cost for participation (need-based financial aid is available, unclear how much funding for this portion)	Positioned well to delve more into mental health and sensory aspects of nature with current literature supporting its benefits	Timing of training due to weather/seasons
Addresses inclusivity in many areas: low-income, POCI, people with disabilities and incorporates diversity into staffing and volunteer structure	Limited, informal training (particularly for volunteers)	Community partnerships/other community organizations enhance educational reach/awareness of programming	Variability in steady volunteers
Broad network of community partnerships and funding sources	Limited data available for self-evaluation of programs	Trends in literature around hybrid training for staff and volunteer education	Time available for training
Shows some data of impact (better integration, higher confidence, greater independence, stronger relationships)	No occupational therapist/healthcare professional consulting or on staff	Opportunity for collaboration with diverse group of staff/volunteers will enhance comprehensiveness and relevance of training	Funding for expanded programming
Adaptable (i.e. developing online programming and resources during COVID)	Staff bandwidth	Current interest in promoting accessible outdoor recreation	

Part 8: Preliminary Evidence Review on Populations, Interventions, and Programs of the Organization/Community

	Overview of Article (1)
Type of article	Overall Type: Secondary research Specific Type: Scoping review
APA Reference	Groulx, M., Freeman, S., Lemieux, C. (2022). Accessible nature beyond city limits - A scoping review. *Journal of Outdoor Recreation and Tourism, 37*(100490), 1-12. https://doi.org/10.1016/j.jort.2022.100490
Abstract	"The health and well-being benefits of nature contact are well known, but inequitably distributed across society. Focusing on the access needs of persons with a disability, the purpose of this study was to systematically examine research on the accessibility of nature-based tourism and recreation spaces outside of urban/community settings. Following a scoping review methodology, this study sought to examine policies, services, physical infrastructures, and regulatory standards intended to enable equitable use of nature-based settings by individuals of all ages and abilities, particularly persons with a disability. In total, 41 relevant studies were identified and analyzed. Findings indicate that there are considerable gaps in the provision of services and information that enable self-determination in the use and enjoyment of nature, and that accessibility in nature-based settings is conceptualized through three interrelated policy/design pathways: the adaptation pathway, the accommodation pathway, and the universal design pathway. As a whole, accessibility policy and standards research specific to natural settings outside of urban/community settings is highly limited"(p.1).
Author	Credentials: Ph.D. Position and Institution: Professor at the University of Northern British Columbia Publication History in Peer-Reviewed Journals: 29, cited by 708
Publication	Type of publication: Scholarly peer-reviewed journals Publisher: Elsevier
Date and Citation History	Date of publication: 2022 Cited By: 4
Stated Purpose or Research Question	"As the scoping review question presented in the following section illustrates, this study explores the policies, services, physical infrastructures, and regulatory standards that seek to enable equitable use of nature-based settings by persons with a disability, although it is well recognized that enable such use has broad benefits to persons of all ages and abilities" (p.2).
Author's Conclusion	"While limited in number, findings from these studies point to considerable gaps in the provision of services and information like inclusive interpretations…" (p.8). "Further transdisciplinary partnerships that involve health and environmental researchers and practitioners must be a priority if accessibility is to find a distinct place as a conceptual matter and applied movement if the vast networks of trails, forests,

	Overview of Article (1)
	conserved areas, and watersheds that sustain our fascination, health, and enjoyment." (p.9).
Overall Relevance to your Doctoral Capstone Project	Overall Relevance of Article: Poor-moderate Rationale: This article is relevant because it provides a foundation of knowledge around accessibility that is useful to consider all angles of accessibility in nature with my capstone project; however, this study addressed accessibility with a broader lens than will be integrated into my project and does not provide specific considerations for my project.
Overall Quality of Article	Overall Quality of Article: Good Rationale: While available author information is limited, references provided and the journal it is published in are reputable. Methodology is well-outlined and describes a evidence-based approach to the scoping review.
Your Focused Question and Clinical Bottom Line	*Question:* What are current trends in accessibility in nature for people with disabilities? *Clinical Bottom Line:* While significant efforts have been made in recent years to increase accessibility to nature for people with disabilities, there are still significant gaps in accessibility for people with a variety of disabilities. Recommendation: Work with participants and staff with integrated perspectives to ensure feasibility of training.
Your Lay Summary	This study looks at research on the how people can access nature outside of a city, focusing on needs of persons with disabilities. The study looks at gaps in services and information needed to use and enjoy nature. This article highlights a need for more nature experiences for all. The review also shows a need for making these changes at a broader level. Common problems faced by people with disabilities in accessing nature include transportation and a lack of understanding from people in the community. Providing support to make nature access easier for people is also important. More research is needed to grow peoples' ability to participate. Involving people with disabilities in planning is a key element. Forty-one articles were looked at to find themes for this article. Using only English articles limits the use of this information.
Your Professional Summary	This scoping review examines research on the accessibility of nature-based tourism and recreation spaces outside of urban/community settings, focusing on the access needs of persons with disabilities. The study identifies gaps in the provision of services and information that enable self-determination in the use and enjoyment of nature and highlights a need for growing calls to promote inclusive nature experiences in tourism and recreation spaces outside of community settings. The review also emphasizes the need for a critical, reflexive, and community-engaged approach to accessibility standards development and application. Common barriers faced by people with disabilities in accessing nature include transportation, as well as social and attitudinal barriers such as stigma and lack of understanding. Presence or lack of supporting services also affect accessibility of nature settings for people with disabilities. Overall, more research is needed to further these practices while simultaneously not relegating people with disabilities as 'other user'. Involving people with disabilities in planning to address barriers is a key element in ensuring greater accessibility. Methods for this study include the Arksey & O'Malley scoping review framework with a sample size of 41. Limitations of this study include potential missed articles due to search term lens and English language-only studies.

	Overview of Article (2)
Type of article	Overall Type: Secondary Research Study (qualitative, quantitative, etc.) Specific Type: Survey analysis
APA Reference	Ibsen, B. (2022). The significance of nonformal education for volunteers. *Journal of Nonprofit Education and Leadership, 12*(1), https://doi.org/10.18666/JNEL-2020-10760
Abstract	"Volunteering plays a significant role in many countries. In an effort to strengthen volunteering, courses and training are given great importance. In this paper, the significance of educational programmes and courses for volunteers is analysed. The analysis is based on data from a comprehensive survey of volunteers in Denmark. One in three of the volunteers have participated in courses or training programmes in conjunction with their voluntary work. The analysis shows that there is a slightly greater probability that volunteers will continue to do voluntary work if—within the past year—they have taken part in a course or training programme related to their voluntary work. The most widespread form of qualification for voluntary tasks is, however, informal learning, that takes place where the volunteer works. The analysis shows that the volunteers attribute less importance to qualifications from courses and programmes than to experiences from "voluntary life" and qualifications from "professional life." The analysis also shows that non-formal learning is more important for volunteers involved in "activity work" than for those involved in "organization work." The study gives rise to a discussion of how best to develop and train the voluntary workforce. It may be necessary to focus to a greater extent on informal learning, in other words on developing a culture for learning in the specific context in which the volunteer is involved" (p.1).
Author	Credentials: M.Sc., Ph.D. Position and Institution: University of South Denmark, Department of Sports and Biomechanics; Professor and Center Manager of the Center for Research in Sports, Health, and Civil Society Publication History in Peer-Reviewed Journals: Extensive, 318 publications
Publication	Type of publication: Scholarly peer-reviewed journal Publisher: Sagamore Publishing LLC
Date and Citation History	Date of publication: 2020 Cited By: 1 peer-reviewed publication

	Overview of Article (2)
Stated Purpose or Research Question	"The study examines the importance of 'the social context', 'the form of organization', and 'the nature of voluntary work' for the volunteers' participation in various forms of learning and its significance for their voluntary work"(p.6).
Author's Conclusion	"The analysis shows that it is particularly those volunteers who perform "activity work" who reply that learning from courses, training programmes, etc., related to their voluntary work is of great importance for the performance of their voluntary work" (p. 13). "Based on an understanding of learning known as 'situated learning', overcoming concrete challenges and problems that are specific to a situation is a better starting point for the learning and development of volunteers than taking part in some course that is removed from any concrete context" (p. 14).
Overall Relevance to your Doctoral Capstone Project	Overall Relevance of Article: Moderate Rationale: This article is moderately relevant to my doctoral capstone project because while not all points of analyses apply to my project and generalizability may be somewhat limited due to the study taking place in another location, the article discusses important considerations for most relevant and useful types of learning for volunteers that should be incorporated into the training modules being created.
Overall Quality of Article	Overall Quality of Article: Moderate Rationale: The overall quality of the article is moderate; the journal and author are reputable and there is an appropriately detailed list of references, but the article has been cited few times and is secondary research utilizing another researcher's data.
Your Focused Question and Clinical Bottom Line	*Question:* What are important considerations of volunteer training modules to ensure relevant skill development? *Clinical Bottom Line:* In order to create useful volunteer training, education must be specific to the situations experienced by volunteers in their volunteering context and draw on past experience for greater applicability. Mentors may also increase volunteer retention. Recommendation: Create learning modules specific to Wilderness Inquiry trips with situations that volunteers can apply concepts to; provide peer support throughout.
Your Lay Summary	This article talks about training for volunteers and how they can continue learning in a fast-paced work environment. This study was designed in order to talk about how to best train volunteers. It also discusses types of learning used. 2,809 people in Denmark took a survey about their education and volunteer work, as well as the training they had for that work. Findings show that why people volunteer affects people's engagement in learning. It also showed that having a community of people makes people volunteer for longer. Researchers also found that their work skills and time with an organization affect interest in more training. Technology can be useful for teaching volunteers. Learning must feel useful to volunteers to increase engagement. The learning environment is positive is also important. Finally, volunteer training should be based on organization values.
Your Professional Summary	This article discusses the significance of informal and non-formal learning in the workplace specific to volunteer work with emphasis on training to keep up with a fast-paced work environment. This study was designed in order to discuss volunteer work, best practices for training volunteers, and types of learning relevant to various

	Overview of Article (2)
	types of volunteers. Statistical analyses were conducted on a survey of voluntary work within Denmark that asked 2,809 respondents about their education, volunteer work, learning associated with this work, and significance associated with this learning. Findings show that context for volunteering impacts volunteer participation in relevant learning, mentors and peer-to-peer learning increase volunteer retention, the longer time spent volunteering is correlated with greater importance attributed to training programs, and the strong influence of professional life skills on volunteer commitment to further training. Emphasizing the creation of a supportive learning environment is also crucial to more effective education, while the article also discusses the importance of incorporating technology for learning. Additionally, utilizing learning relevant to the volunteer context is important. The article then goes on to discuss how education of volunteers relates to the values/mission of a given organization and how that influences who chooses to volunteer with that organization. Strengths of the article are its in-depth analysis and detailed reference list while limitations derive from lack of primary data.

	Overview of Article (3)
Type of article	Overall Type: Review of Research Study Specific Type: Systematic review
APA Reference	Verville, L., Côté, P., Grondin, D., Mior, S., Moodley, K., Kay, R., & Taylor-Vaisey, A. (2021). Using technology-based educational interventions to improve knowledge about clinical practice guidelines: A systematic review of the literature. *Journal of Chiropractic Education, 35*(1), 149-157. https://doi.org/10.7899/JCE-19-17
Abstract	“Objective: To describe the best evidence on the effectiveness of technology-based learning tools designed to improve knowledge of healthcare providers about clinical practice guidelines (CPGs). Methods: We conducted a systematic review, searching MEDLINE, Embase, and CINAHL from inception to July, 2018. Included studies investigated the effectiveness of any technology-based learning tools developed to improve knowledge of health care providers about CPGs. We used a 2-phase screening process to determine eligibility. Pairs of reviewers critically appraised relevant studies using the Scottish Intercollegiate Guidelines Network checklist for randomized controlled trials or the National Institutes of Health checklist for pre- and post-intervention trials. Evidence from internally valid studies was described using a best-evidence summary. We conducted a sensitivity analysis to determine whether results varied according to methodological quality. Results: Twenty-five of 8321 articles met our selection criteria. Six studies had a low risk of bias and were included in this review. Spaced education was associated with improvement in knowledge; however, its effectiveness relative to other interventions is unknown. Module-based online educational interventions were associated with improvement in knowledge of CPGs; however, they may not be more effective than paper-based self-learning or in-person workshops. The sensitivity analysis determined that the evidence was similar between the high and low risk of bias studies. Conclusion: Module-based- and spaced-education interventions may be beneficial for improving health care providers’ knowledge of CPGs; however, much of the evidence toward their use is preliminary.” (p. 149)
Author	Credentials: BHSc, MHSc

	Overview of Article (3)
	Position and Institution: Institute for Disability and Rehabilitation Research Project Manager at Ontario Tech University, Research Project Manager for knowledge translation with Canadian Chiropractic Guideline Initiative Publication History in Peer-Reviewed Journals: Moderate, 30 publications
Publication	Type of publication: Systematic review Publisher: Journal of Chiropractic Education (Allen Press Publishing Services Inc.)
Date and Citation History	Date of publication: 2021 Cited By: 6 peer-reviewed publications
Stated Purpose or Research Question	"To describe the best evidence on the effectiveness of technology-based learning tools designed to improve knowledge of health care providers about clinical practice guidelines" (p. 149)
Author's Conclusion	"Spaced education with associated with improvement in knowledge; however, its effectiveness relative to other interventions is unknown. Module-based online educational interventions were associated with improvement in knowledge of CPGs; however, they may not be more effective than paper-based self-learning or in-person workshops" (p.149).
Overall Relevance to your Doctoral Capstone Project	Overall Relevance of Article: Moderate Rationale: This article is moderately relevant to my capstone project because while I am not focusing on clinical practice guidelines, I will likely be completing technology-based education modules and this article provides insight into best practices for improving knowledge with use of technology for learning modules.
Overall Quality of Article	Overall Quality of Article: Good Rationale: This article demonstrates appropriate methodology and acknowledgement of strengths and limitations. The author's qualifications are appropriate for the article. Limitations include limited sample size and somewhat limited citation history of the article.
Your Focused Question and Clinical Bottom Line	*Question:* What are characteristics of effective technology-based educational interventions? *Clinical Bottom Line:* Characteristics include individualized, module-based, and spaced interventions. Recommendation: Wilderness Inquiry staff training will include module-based trainings that build off one another and are interactive. They will also include opportunities for further learning.
Your Lay Summary	This article looks at how to best train people who work in healthcare to care for patients better. The article looks at other articles to find the best methods for teaching people skills and knowledge. Using training that is spread out over time is useful so that knowledge and skills are maintained. Making education that has many parts that build on each other is also useful to improve understanding. Using technology is a good option for teaching and is easy for people to use with support, but is not better than in-person training. Education should also be different for each group. In order to create good education, you have to understand who you are teaching. There were not many

	Overview of Article (3)
	articles reviewed and only articles in the English language were used. More research is needed with lots of articles.
Your Professional Summary	The article discusses a systematic review conducted that focuses on the effectiveness of technology-based educational interventions for improving healthcare providers' knowledge of clinical practice guidelines (CPGs) and evidence-based practice (EBP). Findings show that module-based and spaced-education interventions may be beneficial for improving health care providers' knowledge of CPGs, but the evidence is preliminary; that e-learning interventions can improve healthcare professionals' knowledge and skills related to EBP, but the evidence on their impact on behavior change was mixed. Spaced education refers to education delivered over a long period of time, while module-based refers to modules delivered in a sequential order on a certain topic. The article describes the importance of understanding knowledge users for increased engagement and retention of material through individualization of education. The article also emphasizes the importance of conducting systematic reviews in healthcare research and outlines the steps involved in the process. Methods used included a 2-phase screening process of literature about effectiveness of technology-based learning tools for high quality articles, utilizing searches of Medline, Embase, and CINAHL. Strengths of the study include a detailed search strategy, while limitations of the study include sample size (n=25) and bias due to use of only English language articles.

	Overview of Article (4)
Type of article	Overall Type: Primary Research Study (qualitative) Specific Type: Experimental baseline design
APA Reference	Burke, M. M., Mello, M. P., & Goldman, S. E. (2016). Examining the Feasibility of a Special Education Advocacy Training Program. *Journal of Developmental and Physical Disabilities, 28*(4), 539-556. https://doi.org/10.1007/s10882-016-9491-3
Abstract	“In accordance with the Individuals with Disabilities Education Act (IDEA), parents of children with disabilities are expected to be equal partners in the special education process. However, many parents struggle to advocate for their children with disabilities. To this end, parents may learn their special education rights or hire an advocate to ensure their children receive services. Indeed, special education advocacy training programs have become increasingly common. One such advocacy training program is the Volunteer Advocacy Project (VAP). The VAP is a 36-h special education advocacy training program designed to educate and empower individuals, primarily parents of children with disabilities, to become special education advocates. This study examined the feasibility of the VAP. With respect to cost, attendance, attrition, participant satisfaction, and sustainability, the VAP was feasible among program graduates. Implications for research and practice are discussed.” (p. 539)
Author	Credentials: Ph.D., BCBA-D Position and Institution: Associate professor of special education at the University of Illinois Urbana-Champaign

	Overview of Article (4)
	Publication History in Peer-Reviewed Journals: Extensive, 131 publications
Publication	Type of publication: Scholarly peer-reviewed journal Publisher: Springer Publishing
Date and Citation History	Date of publication: 2016 Cited By: 18 peer-reviewed publications
Stated Purpose or Research Question	"The purpose of this study was to expand on previous research regarding the efficacy of the VAP (Burke et al. 2016) to understand its feasibility" (p. 540).
Author's Conclusion	"From the summative evaluation, participants reported wanting mentoring, ongoing training programs, communication networks, and information updates" (p. 553).
Overall Relevance to your Doctoral Capstone Project	Overall Relevance of Article: Moderate Rationale: This article is moderately relevant because while topics are not specific to the population I will be training, it provides an outline for effective training related to those caring for people with disabilities with principles that are transferable to my educational modules.
Overall Quality of Article	Overall Quality of Article: Moderate Rationale: The journal and author are reputable sources; however, there are limited detailed citations and the publication date is slightly old.
Your Focused Question and Clinical Bottom Line	*Question:* What are useful characteristics of a training program designed for laypersons? *Clinical Bottom Line:* Useful and reported desires of participants in training to improve outcomes include flexible, spaced structuring of programming, post-training learning opportunities, and ability to continue interacting with others with the same training experiences. Recommendation: Provide opportunities for further learning, make training available in a variety of formats and for use in the most convenient format/times for participants.
Your Lay Summary	The goal of this study was to show how a specific training program could be useful for people who work with people with disabilities. Two hundred and forty-four people were a part of the training and most were parents. Disability organizations sent e-mails to people who may be interested in training. There were two trainings each year for four years. Training included presentations, activities, and readings in-person. The people involved evaluated the education at the end. Program success was measured by how many people came, if people liked it, and if people reported using new skills. The study found that people involved thought the training was useful and continued to use learned skills. People reported wanting to continue talking with other trainees for support and wanted more information for continuing to learn. More research is needed on this subject. There were limited responses to the survey.
Your Professional Summary	The objective of this study was to show the effectiveness and feasibility of a training program meant to train caregivers/laypeople of persons with disabilities on advocacy for their child. Two hundred and forty-four participants were included in the training,

	Overview of Article (4)
	both professionals and parents of individuals with disabilities. Recruitment occurred via various disabilities support groups and organizations, as well as state and local agencies in Tennessee. The curriculum of the program included presentations, activities, and assigned readings conducted twice a year for four years. Summative and long-term evaluations were completed by participants at the conclusion of the last session. Measures of success were based on sustainability of the program and of advocacy skills based on participant response, participant satisfaction, program cost, and attendance/attrition. Findings of the study show high participant satisfaction, high reported advocacy rates post-training program, usefulness of the spaced, flexible structure of the program, and desire to continue peer-to-peer connection and mentorship after the program was completed. Implications include use of networks for ongoing learning post-training, use of mentoring opportunities, and need for further research on sustainability of training. Limitations of this study include low response rate, as well as lack of demographic diversity in survey respondents.

	Overview of Article (5)
Type of article	Overall Type: Primary Research Study (qualitative) Specific Type: Multiple baseline experimental research design
APA Reference	Hajjar, D. J., McCarthy, J. W., Benigno, J. P., Montgomery, J., & Chabot, J. (2020). Effect of online instruction on volunteers who support people with complex communication needs in active recreation. *Augmentative and Alternative Communication, 36*(4), 214-225. https://doi.org/10.1080/07434618.2020.1845235
Abstract	“This study was conducted to teach and evaluate the effectiveness of an online training called The CAPTURE & Share program. The program was taught using online instruction in an asynchronous manner with six volunteers who facilitate recreational participation for individuals with complex communication needs. The online training focused on teaching volunteers how to support opportunities for individuals to capture photos and videos from recreation and then share them across their social networks. The first aim of the study was to teach the volunteers about implementation and use of the 8-step CAPTURE & Share program while the second aim was to evaluate the programs’ overall effectiveness. Two multiple baselines designs across three participants each were used to evaluate the volunteers’ written responses to probes delivered during baseline, intervention, maintenance, and generalization phases. Additionally, social validation data were collected. Results indicated that volunteers were not only successful in learning the program, but were also highly satisfied with the online training methods. Implications for using online instruction are discussed for speech-language pathologists, caregivers, individuals with complex communication needs, and recreational professionals.” (p. 214)
Author	Credentials: Ph.D., CCC-SLP Position and Institution: Assistant professor of speech-language pathology and audiology at the University of Ithaca Publication History in Peer-Reviewed Journals: 11 peer-reviewed journals
Publication	Type of publication: Scholarly peer-reviewed journal Publisher: Taylor & Francis Group

	Overview of Article (5)
Date and Citation History	Date of publication: 2020 Cited By: 4 peer-reviewed publications
Stated Purpose or Research Question	“What was the effect of the online training program on the volunteers’ ability to successfully learn the components of the targeted strategy?” (p. 216)
Author’s Conclusion	“This study demonstrated the effectiveness of an online training program that was aimed at volunteers in recreation who support people with complex communication needs” (p. 224).
Overall Relevance to your Doctoral Capstone Project	Overall Relevance of Article: Good Rationale: This article is very relevant to my capstone project because it describes specifics of an online training program relevant to people working in active recreation and supporting people with disabilities in participating. The article has useful insights on training generalizable to my capstone project.
Overall Quality of Article	Overall Quality of Article: Good Rationale: This article is of good overall quality as the author and journal are reputable, an appropriately detailed reference list is cited, and there are no conflicts of interest to note.
Your Focused Question and Clinical Bottom Line	*Question:* What are effective principles of a training program meant to change behaviors of outdoor recreation volunteers? *Clinical Bottom Line:* Principles include utilizing combined in-person and virtual training that can be completed on a participant’s own time, in addition to use of education that builds upon itself. Recommendation: Modules will be created in a format that allows participants to complete virtual training on their own pace with in-person segments for application and further discussion. Education will be progressive.
Your Lay Summary	This study was done to look at the usefulness of a training program for volunteers. This program was meant for outdoor activity volunteers working with people with communication needs. Six volunteers were a part of this training program. They completed the program on their own time. At many points during the program, the researchers checked understanding. They looked for themes in the volunteers’ answers. It also looked at how volunteers continued to use this knowledge 4 weeks after completing the program. The goal was to make sure knowledge was understood and applied by volunteers long-term. All volunteers had improved knowledge throughout. The study showed that online teaching works when it is flexible and people still receive feedback. Applying skills in-person at the same time is also useful. Volunteers already had experience volunteering in outdoor activities which changes results. There were a limited number of volunteers were a part of this program.
Your Professional Summary	This study was conducted in order to analyze the effectiveness of a training program meant for volunteers to facilitate participation in recreation for people with various complex communication needs. In completing this study, researchers performed the use of an online training program called CAPTURE & Share with six volunteers. Participants were selected as current volunteers of an adaptive recreation program, and characteristics of the progarm included its flexibility for completion at the

	Overview of Article (5)
	participants' own pace. Measures of success were based on knowledge in questionnaires designed to measure knowledge during training modules, as well as maintenance of learning over the course of 4 weeks after completing the training course. Results indicate positive improvement in program knowledge and qualitative reports of usefulness for volunteers. Characteristics of online instruction success included building of content upon itself and asynchronous instruction with presence of ongoing feedback and supplemental in-person training. Limitations of the study include biased experience level of volunteer participants, small sample size, use of only one pre-training measure, and inability to effectively measure long-term maintenance. Strengths include measurement of maintenance of education and detailed analysis of participant responses to knowledge probes to gather themes in understanding. Overall, this article supports use of online training for volunteers in recreation with appropriate characteristics built-in.

	Overview of Article (6)
Type of article	*Overall Type:* Conceptual or Theoretical Article *Specific Type:* Best practice recommendations
APA Reference	Levac, D., Glegg, S. M. N., Camden, C., Rivard, L. M., & Missiuna, C. (2015). Best practice recommendations for the development, implementation, and evaluation of online knowledge translation resources in rehabilitation. *Physical Therapy, 95*(4), 648-662. https://doi.org/10.2522/ptj.20130500
Abstract	"The knowledge-to-practice gap in rehabilitation has spurred knowledge translation (KT) initiatives aimed at promoting clinician behavior change and improving patient care. Online KT resources for physical therapists and other rehabilitation clinicians are appealing because of their potential to reach large numbers of individuals through self-paced, self-directed learning. This article proposes best practice recommendations for developing online KT resources that are designed to translate evidence into practice. Four recommendations are proposed with specific steps in the development, implementation, and evaluation process: (1) develop evidence-based, usercentered content; (2) tailor content to online format; (3) evaluate impact; and (4) share results and disseminate knowledge. Based on KT evidence and instructional design principles, concrete examples are provided along with insights gained from experiences in creating and evaluating online KT resources for physical therapists. In proposing these recommendations, the next steps for research are suggested, and others are invited to contribute to the discussion." (p.648).
Author	*Credentials:* PT, MSc, Ph.D. *Position and Institution:* Associate Professor in the Department of Physical Therapy, Movement Sciences and Rehabilitation, Bouve College of Health Sciences, Northeastern University *Publication History in Peer-Reviewed Journals:* 71 publications
Publication	*Type of publication:* Scholarly peer-reviewed journal *Publisher*: American Physical Therapy Association

	Overview of Article (6)
Date and Citation History	*Date of publication:* 2015 *Cited By:* 68
Stated Purpose or Research Question	"The purpose of this article is to address these challenges by proposing best practice recommendations for the development, implementation, and evaluation of online KT resources designed to translate evidence into practice in rehabilitation" (p.650).
Author's Conclusion	"Knowledge translation science is advanced when knowledge from different domains is combined with relevant experience" (p.656).
Overall Relevance to your Doctoral Capstone Project	*Overall Relevance of Article:* Good *Rationale:* This article is very relevant to my project because it describes specific recommendations useful to creating modules for knowledge translation and the process involved in their development.
Overall Quality of Article	*Overall Quality of Article:* Good *Rationale:* While this article is slightly old, it provides useful information on the creation of knowledge translation resources that will promote understanding and encourage behavior change of those participating in the education. The associated journal and author are reputable and the article provides extensive resources for support and for further learning.
Your Focused Question and Clinical Bottom Line	*Question:* What are principles of knowledge translation that are important to ensure better online learning? *Clinical Bottom Line:* Use of evidence-based, individualized content with content appropriate for an online format and methods for interaction and evaluation are crucial. *Recommendation:* Create online modules for volunteer training that involve evidence-based content with knowledge checks and visual/audio format throughout.
Your Lay Summary	The goal of this study was to look at articles and find the best ways to teach people who work in healthcare to care for patients better. This article looks at online teaching and states the importance of making teaching with students in mind. It also describes the importance of using evidence, teaching things that can be explained well online, and evaluating the teaching. There should be different formats of teaching and students should be actively part of the learning. Knowledge from evaluation should be shared. The article also talks about best ways to create education. Making slides and testing them before using the education can be helpful. The process should include analysis, planning it, making it, putting it to use, and testing to see how effective it is. Training should be based on a theory as well. Implications include use of multimedia education with regular knowledge checks.
Your Professional Summary	This article was written to synthesize the evidence on best practices for promoting knowledge translation for clinicians to long-term improve patient care. Because of increasing popularity with online knowledge translation resources, this article describes best practices specific to develop training resources online. Recommendations made by the researchers show the necessity of individualizing content, developing evidence-based content, making content appropriate for the online format, evaluating the education that has occurred, and disseminating findings of education. The article describes the use of the action cycle for knowledge-to-action, as well as the use of the ADDIE model (analysis, design, development, implementation, evaluation) for creation

	Overview of Article (6)
	of materials. The article suggests utilizing a variety of formats to target different learning styles, develop learning objectives for instruction, use a theory/framework for development, using multimedia content, and ensuring interactive elements for greater application. Other practical considerations include use of a Web developer, creating drafts of navigational structure, considering long-term sustainability when placing links, and pilot testing with the audience. Despite extensive references provided, limitations of this article include lack of methodology on information gathering/synthesis for the article. Strengths of the article include detailed and concrete suggestions on how to develop and sustain effective online training resources with use of many supporting scholarly sources.

	Overview of Article (7)
Type of article	*Overall Type:* Conceptual or Theoretical Article
APA Reference	Dallman, A. R., Williams, K. L., & Villa, L. (2022). Neurodiversity-affirming practices are a moral imperative for occupational therapy. *The Open Journal of Occupational Therapy, 10*(2), 1-9. https://doi.org/ 10.15453/2168-6408.1937
Abstract	“The term neurodiversity encompasses neurological differences such as clinical labels of autism, learning disabilities, synesthesia, hyperactivity disorders, and more. Proponents of the neurodiversity movement argue that current therapeutic and medical practices often attempt to “normalize” behaviors and ways of participation that originate from these differences in neurology and contribute to an individual’s sense of identity. This paper argues that an ethical and morally just occupational therapy practice should affirm neurodivergent ways of being, and that occupational therapists must be active agents of change by listening to and collaborating with their neurodiverse clientele. We focus the discussion on our work with autistic individuals and consider past and current practice trends, including applied behavioral analysis, in light of various ethical mandates for occupational therapy. We conclude with suggestions for core tenets of neurodiversity-affirming occupational therapy practice with the hope that clinicians can apply these concepts to their clinical work and recognize how meaningful participation can be achieved by creating goals and interventions through a neurodiversity framework.” (n.p.).
Author	*Credentials:* Ph.D., OTR/L, MT-BC *Position and Institution:* Assistant Professor of occupational therapy *Publication History in Peer-Reviewed Journals:* 29, cited by 119
Publication	*Type of publication:* Scholarly peer-reviewed journal *Publisher:* Scholar Works at Western Michigan University
Date and Citation History	*Date of publication:* 2022 *Cited By:* 5
Stated Purpose or	“In this paper, we further argue that the shift to neurodiversity-affirming practice is, at its core, an ethical issue for our profession” (p.1).

	Overview of Article (7)
Research Question	
Author's Conclusion	"We must continually reflect on how we define potential for each individual. An ongoing conversation between neurodivergent people and their providers must occur to establish meaningful goals and interventions that promote quality of life in accordance with an ethical practice that reflects the core beliefs of our profession" (p.7).
Overall Relevance to your Doctoral Capstone Project	*Overall Relevance of Article:* Moderate *Rationale*: I chose this article as I think it is important to ground my project in ethical occupational therapy principles related to neurodiversity. While the large majority of content is not relevant to my capstone project, this article provides important concepts for the creation and delivery of education related to neurodiverse populations.
Overall Quality of Article	*Overall Quality of Article:* Good *Rationale:* The author, reference list, and journal cited in this article are well-developed, well-cited, and reputable.
Your Focused Question and Clinical Bottom Line	*Question:* What are guidelines that should be considered when working with neurodiverse adults? *Clinical Bottom Line:* Rethinking what we define as occupationally important and providing support for client-centered priorities is crucial to being a neurodiverse-affirming occupational therapist. *Recommendation:* Utilize these considerations within volunteer training as an approach to ensure a neurodiverse-affirming space, including time for self-reflection.
Your Lay Summary	The goal of this study was to tell the reader about how occupational therapists can help people who think different than typical. Knowledge on how these people think is growing. Giving people who think differently the opportunity to be heard is important. They must be given the chance to decide what works for them and is important to them. The authors state that it is important to find the cause of difficult behaviors, allow different amounts of physical engagement, and look at our own thinking first. Implications of this include time for self-reflection, making a respectful space of learning, and communicating about differing needs from one another. Overall, it is important to normalize these differences and not assume they are negative.
Your Professional Summary	The purpose of this article is to describe how occupational therapy practitioners can be greater agents of change for neurodiversity in practice. The article describes the history of the neurodiversity movement and describes neurodiversity itself, describes its alignment with occupational therapy, evaluates current occupational therapy practice trends and how these fit with the neurodiversity movement, and provides recommendations on embracing a neurodiversity approach from an occupational therapy perspective. Neurodiversity is the idea that people think and process things differently from one another, and those who are considered "neurodivergent" may think in ways that are not supported by a society designed for neurotypical individuals. Considering these societal constraints when considering what occupational prioritization is important to maintaining client-centeredness and inclusivity. The article also supports the need for more amplification of perspectives of people with autism in research and in occupational therapy education. Authors of this article affirm principles for improving approach to neurodiverse clients, including behaviors as valid responses to a situation, prioritization of emotional well-being and positive engagement in interactions, allowance of individualized level of physical engagement in a task, and understanding the therapist's own behavioral norms and how they may interact to best

	Overview of Article (7)
	fit the clients' needs before changing their client. Strengths of the article include detailed analysis from neurodiverse authors and extensive resources.

	Overview of Article (8)
Type of article	*Overall Type*: Primary Research Study (qualitative, quantitative, etc.) *Specific Type:* Survey research
APA Reference	McAvoy, L., Smith, J.G., Rynders, J.E. (2006). Outdoor adventure programming for individuals with cognitive disabilities who present serious accommodation challenges. *Therapeutic Recreation Journal, 40*(3), 182-199. https://wi.cdn.brillianthosting.app/uploads/2014/03/904-3748-1-PB.pdf
Abstract	"An outdoor adventure program was offered to 23 individuals with cognitive disabilities who presented serious accommodation challenges. Participants were accompanied by 23 support personnel, many of whom were group home staff, providing the capability of pair-wise response agreement. Assessment of outdoor recreation skills was done through a questionnaire on a pre-post basis; trip satisfaction was assessed through a post-trip questionnaire; and social/ socialization development was assessed with a follow-up interview. Findings revealed that participants' outdoor skills, level of satisfaction and social/socialization abilities generally increased as a result of the outdoor experience. A set of programmatic strategies are offered as a means of supporting the participation of persons with cognitive disabilities who present serious accommodation challenges in an outdoor adventure program." (p.182).
Author	*Credentials*: Ph.D. *Position and Institution:* Former professor in the program in Recreation, Park and Leisure studies at the University of Minnesota *Publication History in Peer-Reviewed Journals:* 48
Publication	*Type of publication:* Scholarly peer-reviewed journal *Publisher:* No publisher or sponsoring organization listed, all authors associated with the University of Minnesota
Date and Citation History	*Date of publication:* 2006 *Cited By:* 39
Stated Purpose or Research Question	"The primary purpose of this study was to assess growth in leisure skill functioning of persons with cognitive disabilities relative to participation in an outdoor adventure program. There were two secondary purposes. These were: (a) to assess participants' level of satisfaction with key components of an outdoor adventure trip program and the overall outdoor experience, and (b) to assess participants' social/socialization skill development in an outdoor adventure trip program" (p. 183).
Author's Conclusion	"Findings of this study support the capability of a Gateway trip to promote participants' outdoor recreation skills, foster satisfaction with the trip experience, and enhance social/socialization skill growth" (p.197).

	Overview of Article (8)
Overall Relevance to your Doctoral Capstone Project	*Overall Relevance of Article:* Good *Rationale:* This article is relevant to the project because it discusses Wilderness Inquiry programming specifically. While the Gateway to Adventure program has changed and the focus is on neurodiverse affinity group trips rather than trips for people with cognitive disabilities, the article still describes program outcomes, activities, and evaluation in a way that is useful background information for my project. Information must be incorporated into research with caution due to age of article as well.
Overall Quality of Article	*Overall Quality of Article:* Moderate *Rationale*: The author and journal are reputable sources and the reference is moderately detailed. Methodology is well-explained; however, strengths and limitations are not described in this study.
Your Focused Question and Clinical Bottom Line	*Question:* What are perspectives of participants on important supports outdoor programs should provide for their participants? *Clinical Bottom Line:* Suggestions for best outcomes for outdoor programs provided include structured outdoor task training with concrete demonstration, grading outdoor skills incrementally, repeating education, creating routines for groups, promoting a positive and cooperative culture, utilizing positive reinforcement and communication, assuring respect, and offering choices when available. *Recommendation:* Build upon these foundational ideas for providing supports in creating education to be used with volunteers on how to assist and communicated with individuals with disabilities on trips.
Your Lay Summary	This study talks about how useful the Wilderness Inquiry Gateway to Adventure program is for people with cognitive disabilities. This focuses on people that find outdoor experiences very difficult. The goal was to look at satisfaction of people involved and see how their skills have changed because of the outdoor experience. Twenty-three people were a part of the program and were interviewed for the study. Some were people with disabilities and some were people who support them. Two surveys were used to understand feelings on the experience. People who were a part of the study enjoyed the activities and felt increased confidence. They also showed improvement in social and outdoor skills. These include camping, canoeing, and working with a group. It also suggests making routines and slowly building activities for greater comfort in the outdoors activities. The study describes the importance of teaching skills many times, creating a positive team, and building trust with support people.
Your Professional Summary	This article discusses a study on the effectiveness of Wilderness Inquiry's Gateway to Adventure program, a recently rebranded program that offers outdoor adventure trips for individuals with cognitive disabilities who have serious accommodation challenges. The objective of this study was to assess participant satisfaction and skill development for the Wilderness Inquiry program focused on providing outdoor experiences to people with cognitive disabilities. Study participants were participants in the Wilderness Inquiry 'Gateway to Adventure' program, including 23 individuals between the ages of 21 and 62; both participants and support staff were selected. Two surveys were administered to participants pre-/post-trip experience to assess their skill development and participant satisfaction with the trip, including the use of a Likert scale. Semi-structured interviews were also utilized to gather data on participants' trip experiences. Participants reported high levels of satisfaction with their trips, as well as increased confidence with many social and outdoors skills such as camping, canoeing, and being a contributing member of a group. Primary recommendations for structured, concrete skill teaching on socialization and outdoor skills are provided for program developers and some examples include: developing a sense of trust and safety in

	Overview of Article (8)
	participants, providing ample support to develop skills, and creating a teamwork culture. Overall, the study has limited evidence and sample size associated, but methods (qualitative and quantitative) are well described.

	Overview of Article (9)
Type of article	*Overall Type:* Review of Research Study (e.g., systematic review, meta-analysis, scoping review, etc.) *Specific Type:* Systematic review
APA Reference	Giummarra, M. J., Randjelovic, I., & O'Brien, L. (2022). Interventions for social and community participation for adults with intellectual disability, psychosocial disability or on the autism spectrum: An umbrella systematic review. *Frontiers in rehabilitation sciences*, *3*, 935473. https://doi.org/10.3389/fresc.2022.935473
Abstract	"Objective: This umbrella systematic review examined the effectiveness, facilitators, and barriers of interventions for social, community and civic participation for adults on the autism spectrum, or with intellectual or psychosocial disability. Data Sources: Eight databases were searched to identify eligible reviews defined by the: Sample (≥50% adults on the autism spectrum or with intellectual or psychosocial disability), Phenomena of Interest (interventions in community settings that aimed to improve social, community or civic participation, or capacity to participate), Design (any), Evaluation (any method that evaluated impacts on participation or capacity to participate), and Research type (reviews as journal articles, dissertations or in grey literature, in English, published 2010-2020). Review Methods: Rapid review methods were used. One researcher screened 27,890 records and 788 potentially eligible full texts. A second reviewer independently screened 20% of records, and ambiguous full text publications. Study quality was extracted, and review quality was assessed with the Assessing Methodological Quality of Systematic Reviews (AMSTAR) checklist. Data from 522 studies in 57 eligible systematic reviews were extracted for narrative synthesis. The Corrected Covered Area (CCA) was calculated to indicate overlap between reviews. Results: There was a pooled sample of 28,154 study participants, predominantly from studies in North America, the UK and Europe. There was very low overlap between reviews (CCA = 0.3%). Reviews were predominantly low quality: 77.2% of reviews met <50% of AMSTAR criteria. Most studies were low (45.4%) or moderate (38.3%) quality. Three broad intervention categories improved participation, inclusion and belonging outcomes: (1) interventions to help people identify and connect with participation opportunities (e.g., person centred planning); (2) participation opportunities or activities (e.g., joining a community group, sports or outdoor activities, or arts-based activities); and (3) supports to build skills and capacity to participate socially and in the community. Conclusions: The evidence highlighted that improved social and community participation requires purposeful strategies that identify meaningful participation preferences (e.g., where, when, how, and with whom) and provide support to build capacity or enable ongoing participation. Community capacity building, peer support and advocacy may also be needed to make the community more accessible, and to enable people to exercise genuine choice." (p.1)

	Overview of Article (9)
Author	*Credentials:* BA, Ph.D. *Position and Institution*: Professor at the School of Public Health and Preventive Medicine, Monash University *Publication History in Peer-Reviewed Journals:* Contributions to 135 peer-reviewed articles
Publication	*Type of publication:* Scholarly peer-reviewed journal *Publisher:* Frontiers *Other*: NDIA Funding
Date and Citation History	*Date of publication:* 2022 *Cited By:* 0
Stated Purpose or Research Question	"This review sought to systematically identify and synthesize the available evidence for the effectiveness of interventions or supports that aim to improve social, community, and civic participation of adults on the autism spectrum, or who have intellectual or psychosocial disabilities" (p.3)
Author's Conclusion	"Overall, interventions that support people to have both the capacity and accessto social and community participation opportunities improved participation for adults on the autism spectrum, with intellectual disability, and psychosocial disabilities. It is important that people have access to personalised supports, where possible, and that they are given the opportunity to practice skills with active support or mentoring in the community in real-life settings" (p.24)
Overall Relevance to your Doctoral Capstone Project	*Overall Relevance of Article:* Good *Rationale:* While not all activities directly correlate with the outdoor activities performed with Wilderness Inquiry, the evidence for improved participation is relevant to the population I will be working with and therefore has transferable principles to my capstone project.
Overall Quality of Article	*Overall Quality of Article:* Good *Rationale:* This article is published by a reputable journal and author, and provides both detailed methodology and reference lists for further examination. The citation history of the article does not indicate good quality, however, all other factors indicate high quality.
Your Focused Question and Clinical Bottom Line	*Question:* In broad terms, what are the themes in facilitators/barriers used to promote participation for adults with autism spectrum disorder or intellectual disability? *Clinical Bottom Line:* Attributes of the program or intervention that promote participation include skills of the facilitator with multiple types of support provided, appropriate structure and rules to the program, choice in activities, and feeling a sense of community with leaders of the same disability. Barriers to participation included feeling a lack of support or feeling dependent on others, poor access to transport, and limited financial resources. *Recommendation:* Include these principles in education to volunteers and staff.
Your Lay Summary	This study was meant to look at articles on how people help people with autism or other cognitive disabilities to be a part of their community in many ways. There were 522 articles as part of the study and a combined 28,154 people, but the study does not

	Overview of Article (9)
	report that it many articles were good. The study found that it is important to have personal connection and support for your needs to practice skills. It also found that giving people tools, as well as use of activity and skill building groups are useful. This study shows that people with disabilities should be a part of making groups/activities for them. It also shows that training of staff is important for more engagement. Problems like cost and location should be reduced when possible in creating programs. Bad quality articles were reported which limits this study.
Your Professional Summary	This study was designed to synthesize evidence available on interventions that are effective in promoting community participation for individuals with autism spectrum disorder or with intellectual or psychosocial disability. Authors utilized the PROSPERO systematic review protocol to choose articles for inclusion/exclusion in eight different databases with screening of thousands of records. The final review included 522 studies with a pooled sample of 28,154 study participants. Utilizing AMSTAR article quality review, most reviews were determined to be low or moderate quality. Findings determined that overall, access to personalised supports and active support/mentoring are necessary for practicing skills. The article also identifies that activities related to skill building, connecting people to resources, and community-building activity groups are useful in promoting participation in community for people with intellectual disabilities or who are on the autism spectrum. Implications of studies showed that staff skills and policies affect program implementation, people with disabilities should participate in program development and delivery, and any barriers to participation should be eliminated when possible (i.e. cost, location, community, expectations). Strengths of the study include the thorough design methods and sample size. Identified limitations of the study include issues related to the quality of articles included.

	Overview of Article (10)
Type of article	*Overall Type:* Primary Research Study (qualitative, quantitative, etc.) *Specific Type*: Qualitative, semi-structured interviews
APA Reference	Armstrong, M., Sharaievska, I., Crowe, B.M., & Gagnon, R.J. (2022). Experiences in outdoor recreation among individuals with developmental disabilities: Benefits, constraints, and facilitators. *Journal of Intellectual & Developmental Disability, 48*(1), 1-12. https://doi.org/10.3109/13668250.2022.2104449
Abstract	“Background: Individuals with developmental disabilities have specific physical and psychosocial needs that can require extra support to participate fully in and enjoy many benefits of recreation activities. Unfortunately, little is known about individuals with developmental disabilities’ experiences in outdoor recreation. The purpose of this study was to explore adults with developmental disabilities’ perceived benefits of outdoor recreation, and the constraints or facilitators that affected their participation. Method: Qualitative, semi-structured interviews were conducted with seven adults with developmental disabilities. Interviews were analysed using open, axial, and selective coding techniques. Results: Results revealed three themes: (a) benefits of; (b) constraints to; and (c) facilitators of outdoor recreation. Benefits of outdoor recreation reported by study participants included their experiencing satisfaction, mental reprieve, empowerment, enlightenment, social connectedness, and thrill. Participants also shared intrapersonal, interpersonal, and structural constraints and facilitators related to

	Overview of Article (10)
	their outdoor recreation participation. Conclusions: Practical implications and future research recommendations are discussed" (p.1).
Author	*Credentials:* No credentials listed *Position and Institution:* Part of the Clemson University Parks, Recreation and Tourism Management program; supported by associate professor Ryan Gagnon, Ph.D. *Publication History in Peer-Reviewed Journals:* 0
Publication	*Type of publication:* Scholarly peer-reviewed journal *Publisher:* Taylor and Francis group
Date and Citation History	*Date of publication:* 2022 *Cited By:* 0
Stated Purpose or Research Question	"The purpose of this study was to explore adults with developmental disabilities' benefits of outdoor recreation, and the constraints or facilitators that affected their participation" (p.1).
Author's Conclusion	"Findings suggest there are many perceived benefits of outdoor recreation participation among individuals with developmental disabilities. Results also indicate that outdoor recreation experiences are unique to each individual, thus constraints and facilitators are also individualised" (p.10).
Overall Relevance to your Doctoral Capstone Project	*Overall Relevance of Article:* Moderate *Rationale:* This article is moderately relevant to my doctoral capstone project because it describes a variety of barriers and facilitators to outdoor recreation participation. While not specific to my population, these are useful areas to assess during evaluation to see if they are being addressed in Wilderness Inquiry training.
Overall Quality of Article	*Overall Quality of Article:* Poor-moderate *Rationale:* While this article is published in a reputable journal article and there are extensive resources provided to support the work, author details and citation history limit the quality of the article.
Your Focused Question and Clinical Bottom Line	*Question:* What are notable barriers and facilitators to outdoor recreation participation for people with developmental disabilities? *Clinical Bottom Line:* There are structural, interpersonal, and intrapersonal barriers to participation in outdoor recreation that needs to be reduced in order to promote participation for this population. *Recommendation:* Include training on communication, sensory overload, and dealing with a variety of behaviors in a compassionate manner.

	Overview of Article (10)
Your Lay Summary	The goal of this article was to look at how adults with disabilities are a part of outdoor activities. Authors talked to seven adults with disabilities. They found that being a part of outdoor activities provided confidence and community. People did not do outdoor activities when they were fearful, did not feel supported, or did not have people to do outdoor activities with. They also were limited by lack of time, gear, and money. Curiosity, wanting a challenge, and having a community to do outdoor activities and plan with is important to people doing more outdoor activities. Going on experiences with an organization also make people more likely to do outdoor activities. The study shows that it is important to train outdoor leaders on working with people with disabilities for a better experience for all. Limiting need for gear or money is also important. This study is limited by the small number of people.
Your Professional Summary	The objective of this article was to investigate the experiences of adults' with developmental disabilities in outdoor recreation, as well as inhibiting and facilitating factors to participation. In order to investigate this, researchers utilized interviews with seven adults with developmental disabilities. Coding was completed to identify themes in the interviews. After analysis of results, the researchers found that outdoor recreation provided satisfaction, a mental break/mental health improvement strategy, opportunities to overcome challenges, and a community to share experiences with. Constraints to participation included intrapersonal (fear, discomfort, sensory overload); interpersonal (not having people with shared outdoor interests); and structural (time, equipment, finances, difficulties with planning). Facilitators to participation included intrapersonal (curiosity, desire for challenge); interpersonal (community, support in determining logistics); and structural (weather, organization-led opportunities). Recommendations made include reducing all structural barriers as possible to individual participation (i.e. transportation, cost) and training trip leaders in skills to enhance ability to limit intrapersonal barriers (i.e. modifying the environment, communication techniques, understanding sensory overload). Limitations of the study include limited reputability of author and small sample size, as well as the exclusion of participants who are not involved in any outdoor recreation previously which biases results. Strengths include detailed interview analysis and discussion of results.

Appendix C: Volunteer Survey Questions

- Summary of professional background
- Choose the programs that you have volunteered with currently or in the past.
    - Canoemobile / Youth day events
    - Great River Race
    - Multi-day trips
    - Community events (i.e. Mpls Pride, Share the River, FreezeFest)
    - International trips
    - Other:
- What inspired you to volunteer with Wilderness Inquiry?
- On a scale of 1-5, how prepared have you felt for your volunteer responsibilities? (0-not at all, 5-very)
- Please describe why you chose your answer to the previous question.
- What has gone well during your volunteer experiences?
- What has been challenging in your volunteer experiences?
- What knowledge or skills do you feel would be beneficial for you or new volunteers to learn in training?
- Please share any additional questions, comments, or concerns you may have regarding training or the volunteer experience

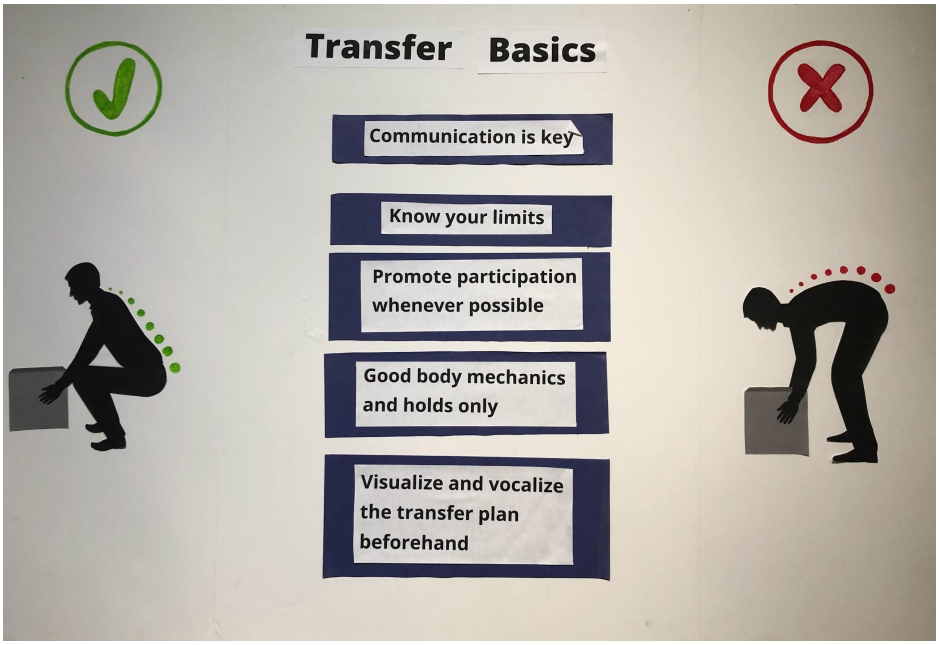
Appendix D - Volunteer Interview Questions

- What has been most challenging for you on WI trips? Why?
- Have you felt prepared for addressing challenges that arise on trips?
- What would you want to share with someone signing up for a Wilderness Inquiry trip?
- Do you have any topics that you would like to learn more about in preparation for trips?

Appendix E - In-Person Transfer Training Outline

(1.5 hours total) Materials required: enough chairs to practice in pairs, gait belts, wheelchair if possible, transfer board, sling, posterboard visual, van

Slightly more detailed talking outline here.

1. **Introduction (1 min)**
    a. Pronouns
    b. Background
2. **Purpose of training (2 mins)**
    a. Preparing you to safely assist or transfer a person protecting yourself and the other individual
    b. Each situation is unique
    c. If you take away anything from this training, I want it to be the following:
        i. Be overcautious and COMMUNICATE with the transferee
    ○ 

3. **BASIC Principles (10 mins)**
    a. Communication is key
        i. Ask participant for preferences for mobility/ transfers
    b. Good body mechanics and holds only
    c. Promote participation whenever possible
    d. Know your limits
    e. Visualize and vocalize the transfer plan beforehand
4. **Practice time in stations (70 mins)**
    a. Chair and floor transfers (includes transfer board)
    b. Vehicle transfers
    c. Carries/lifts (focus on from the ground, canoes, sling use)

*equipment use integrated throughout

5. **Opportunity to walk through outdoor leader (OL) lived experience (10 mins)**

6. **Questions & conclusion (1 min)**

Appendix F - Transfer Handout

Transfer Tips

Aim: to provide the knowledge needed to keep yourself and your participant safe when helping them move between surfaces during an outdoor experience

Note: Throughout the following handout, links to transfer videos are attached to underlined words and QR codes for further reference.

Communication is key.

- Always communicate directly with the person you are transferring
- Coordinate with other participants but have one person lead
- Explain the plan and count to three prior to transfer

Know your limits.

Ask for help or to take a break as necessary.

Use good body mechanics.

- Squat and use lower body rather than back to transfer.
- Do NOT hold onto a person's clothing or arms/armpits, and do NOT allow them to hold onto your head or neck.
- Use your knees to support the knees of the person you are transferring, as needed.
- Assist the person to stand from the EDGE of their seat
- Rocking back and forth can provide useful momentum for standing.

Visualize the process before beginning a transfer.

See checklist below.

Consider the environment.

- Don't fight gravity!
- Allow more space than you think you may need
- If pivoting is needed after being seated, it can be useful to place a dry bag or raincoat underneath the person to reduce friction.

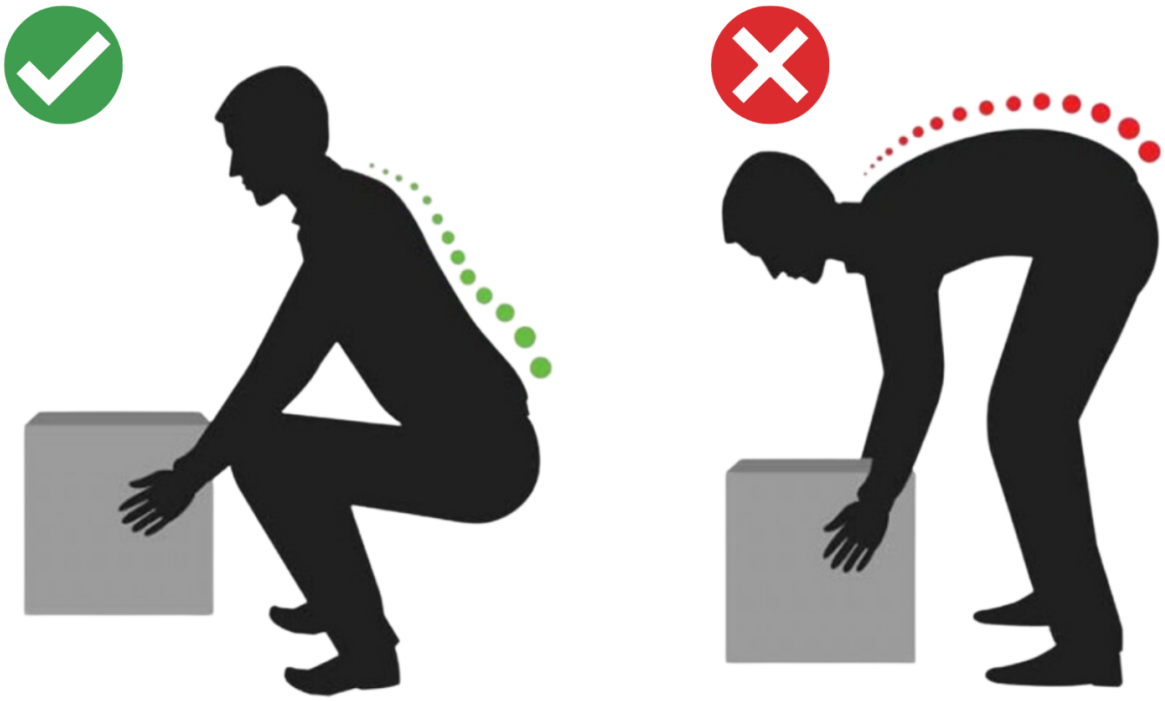
Promote independence whenever possible.

If the person you are transferring can participate in any way whether verbal or physical, encourage it within the limits of safety!

Prioritize comfort.

- Protect skin from rubbing against various hard surfaces (i.e. canoe seat, bench) through the placement of cushions or bolsters around the body.
- After sitting in final destination, ensure upright posture and use bolsters or cushions for support if necessary.

Using appropriate body mechanics will reduce your chance of injury.



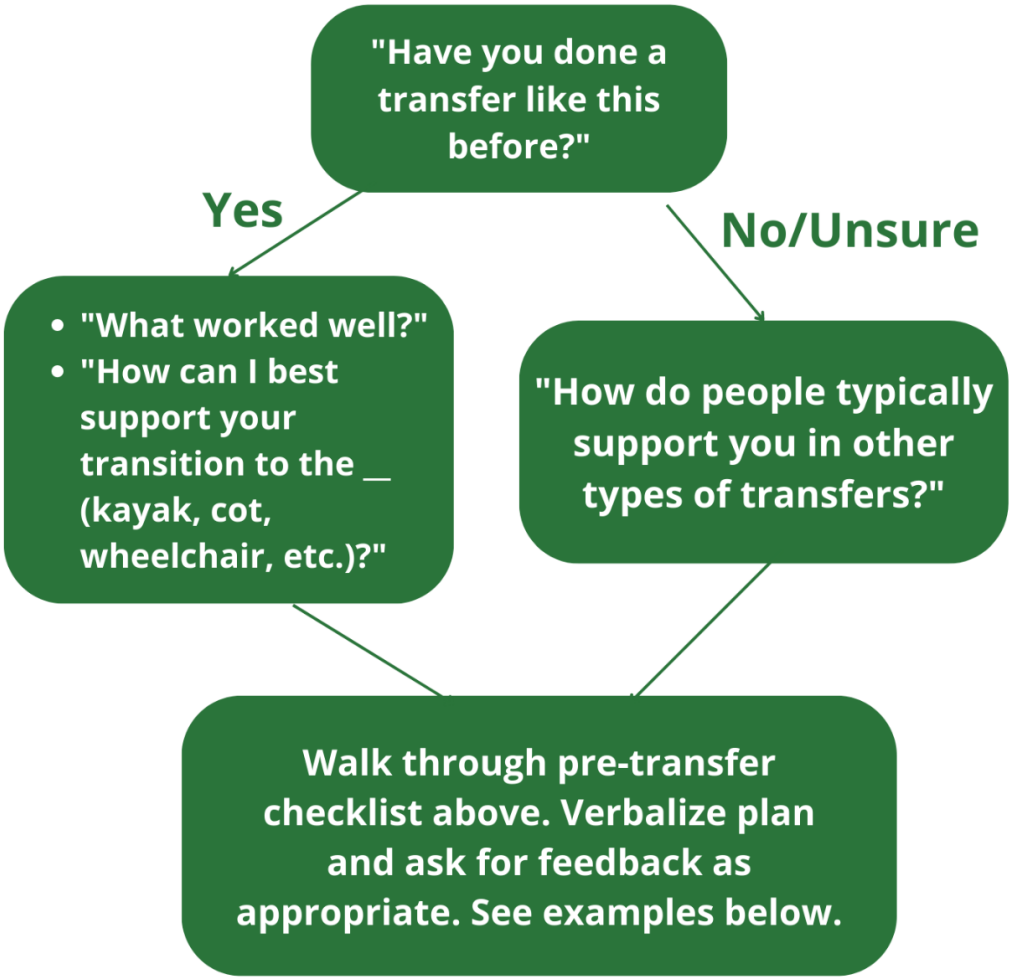
Apply a gait belt for extra support and stability during a transfer.

1, 2

Pre-Transfer Checklist

- [ ] What are the preferences/needs indicated by the person being transferred?
- [ ] Where am I going?
- [ ] How will I set up my equipment for ease of transfer (distance, space for moving, gravity)?
- [ ] Are my surfaces stabilized?
- [ ] Are there any hazards in the path between surfaces? If so, how will I control these?
- [ ] How can I set up my body to protect myself and make the transfer easier?
- [ ] Are there any items/devices (i.e. catheters that need to be transferred with a person?
- [ ] How many people will I need to comfortably support this person?
- [ ] Who will be verbally directing the process? (and ensure all parties are on the same page)
- [ ] Do I need any other equipment within reach to safely complete this transfer? (i.e. gait belt, sling, transfer board)

Transfer Communication Flow Chart

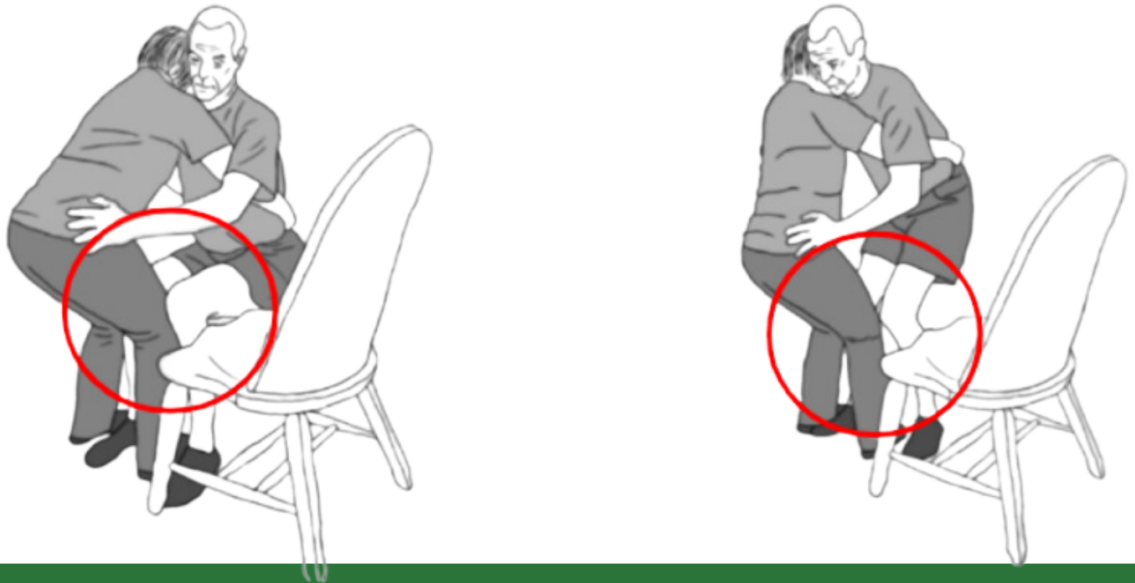


Examples:

- "Okay, so it sounds like you like to use a gait belt and pivot when getting from your wheelchair to your commode chair. I am going to move your chair next to the toilet, put on your gait belt, and then we will stand together on the count of three. Sound good?"
- "This is your first time getting into a canoe from your wheelchair, awesome! I am going to have Bob and Grace stand in the water and stabilize the canoe, I will support you as you get down onto the dock from your wheelchair, and then I will help guide your legs into the canoe before you lift yourself onto the seat. Any questions?"

Feet should be placed shoulder width apart with one foot a half step in front of the other on the side that you are pivoting towards.

Lower Body Support/Body Positioning Set-up

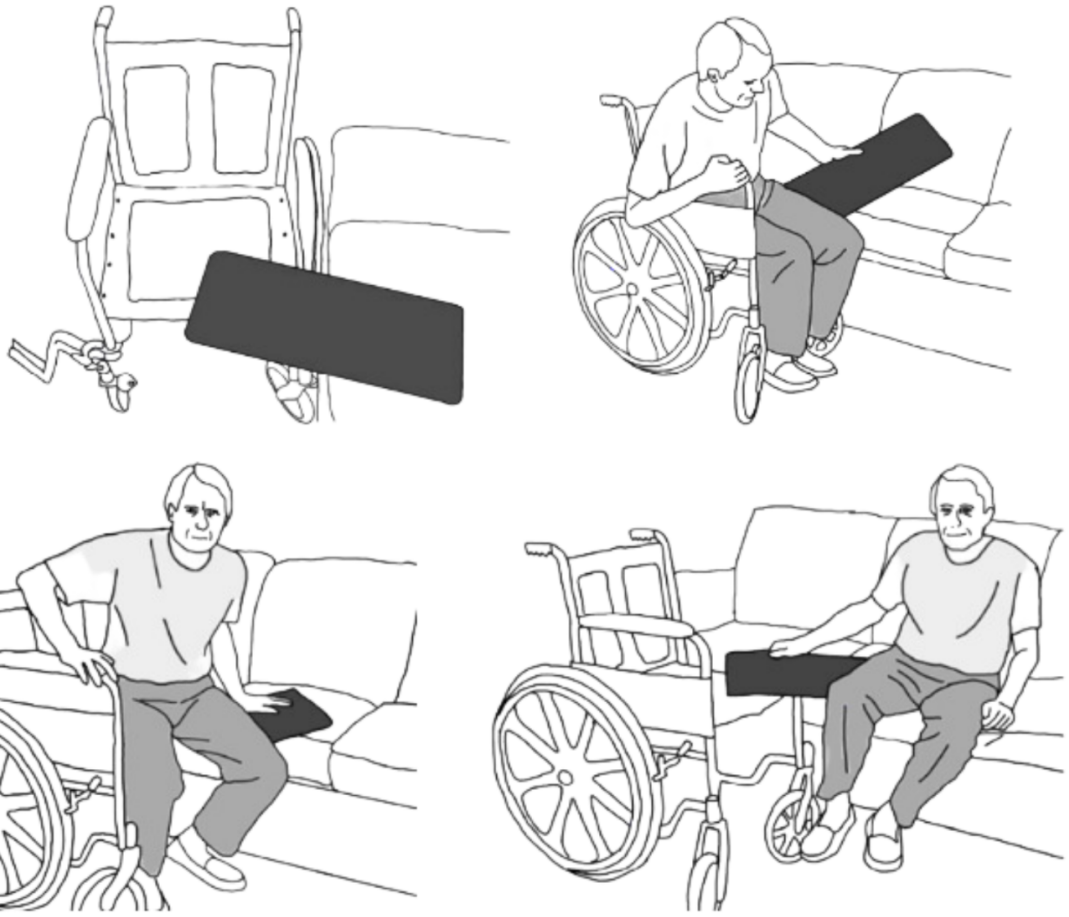


Stand Pivot*

*Note: Pictures show using a gait belt meant for transfers, not holding onto clothing

Sit Pivot

Transfer Board



8, 9

Floor Transfer*

*Does not represent every method of floor transfers

Vehicle Transfer

Tips for getting into a vehicle:

- Consider the length of ride/transferee comfort (front vs. back seat)
- Remove all potential hazards
- Encourage the use of handles/stable handholds for support
- Use a stepstool as necessary

Canoe/Kayak Transfer

While each watercraft transfer will look different depending on the person and environment, here are a few options that may be used:

1. Stabilize the watercraft while others lift the person into the seat (see first image).
2. Stabilize the watercraft so the person can lower themselves in with their upper body (see second image).
3. Lift the person and stand in water while another helper moves the watercraft underneath the transferee.

No-Sling Lifts

From the ground:

- Assist transferee to a sitting position by squatting behind them and supporting their head with your thighs as you lift
- One lifter squats behind the participant, crosses the participant's forearms, and holds their torso to lift
- Support participant's head with chest

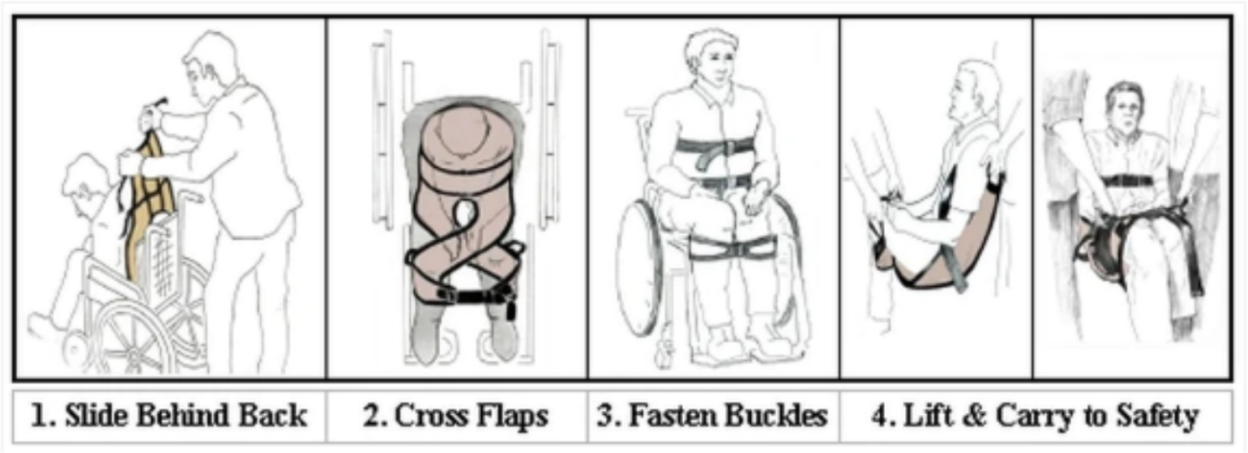
From a chair:

- Ensure surfaces are stable
- One lifter squats behind the participant, crosses the participant's forearms, and holds their torso to lift
- One person squats in front and supports legs during lift

- **Get up one leg at a time instead of trying to stand all at once**
- **Use 3 people or a sling as necessary for a better hold**

15-17

Using a Sling



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Appendix G - Neurodiversity Presentation

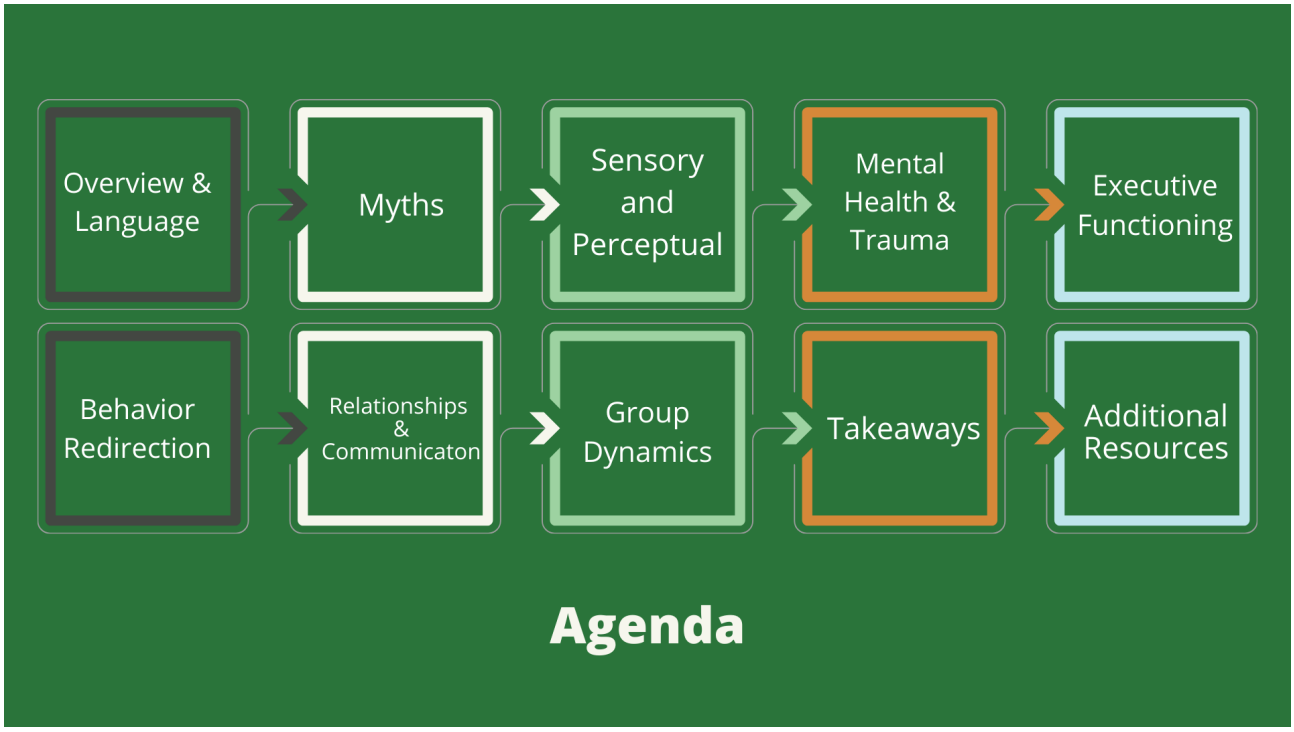
2023

Understanding Neurodiversity

Providing outdoor leaders and volunteers with the knowledge needed to understand differences in thinking and processing to better support neurodivergent trip participants

Learning Objectives

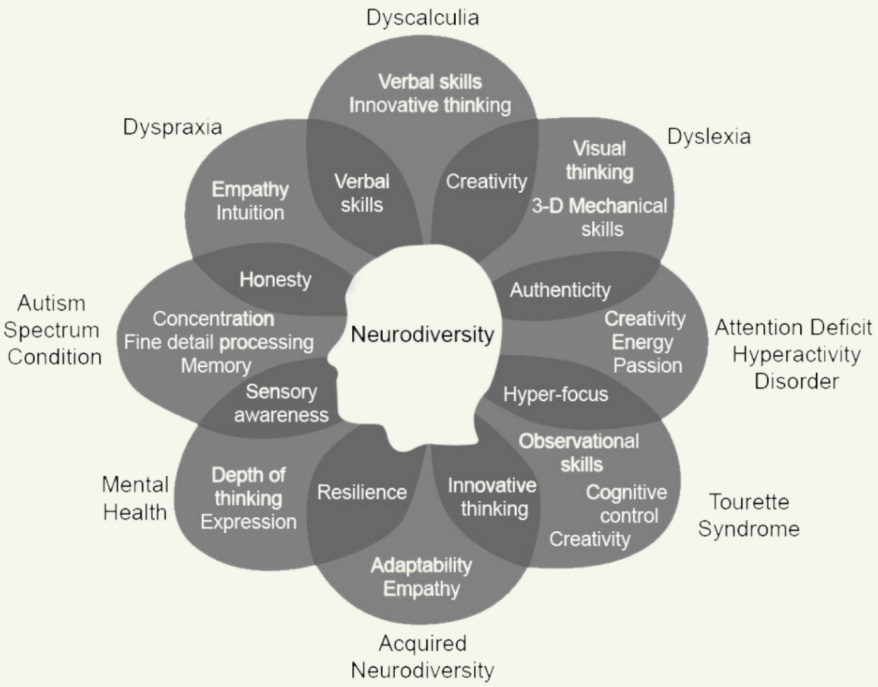
- Learners will **understand the concept of neurodiversity** and the current language around neurodiversity.
- Learners will be able to **identify common differences in thinking and processing** between neurodivergent and neurotypical populations.
- Learners will **gain knowledge on resources available and strategies for supporting** neurodivergent trip participants.



What is neurodiversity?[1-5]

- **Neurodiverse** - everyone!
- **Neurotypical** - most common type of brain; culture designed around this type of brain
- **Neurodivergent** - a type of thinking/processing that differs from neurotypical
- Identity-first vs. person-first language
- Avoid phrases such as "high" or "low-functioning"

6-7



Myths

8-9

NEURODIVERGENT MEANS NOT INTELLIGENT.

SITTING STILL, MAKING EYE CONTACT, AND BEING SILENT IS THE ONLY WAY TO LISTEN.

NEURODIVERGENT =AUTISTIC.

PEOPLE ONLY HAVE ONE TYPE OF NEURODIVERSITY.

NEURODIVERGENTS ARE NOT EMPATHETIC.

TOUCH/TACTILE
Perception of pressure in skin

HEARING
Perception of sound by detecting vibrations

SMELL
Ability to detect scent

SIGHT
Ability of eyes to focus on and detect image

TASTE
Capability of detecting taste of substances

PROPRIOCEPTION
Sense of where your body is in space

VESTIBULAR
Perception of body in relation to gravity, movement, and balance

10-11

Sensory/Perceptual Differences [11-14]

- Neurodivergent brains process stimuli differently than neurotypical brains.
  - Can lead to cognitive fatigue, challenges planning and regulating emotions
- Consider bodily needs first:
  - Temperature
  - Hunger or thirst
  - Over/understimulation
  - Uncomfortable tactile sensations

Sensory Awareness Activity [15]

Do you:	Do you:
Y N layer your clothing often	Y N avoid food with mixed textures
Y N overdress for the temperature	Y N have difficulty swallowing
Y N prefer long sleeves, even in summer	Y N like noxious odors (gasoline, etc.)
Y N pick illogical clothing preferences	Y N seem overly sensitive to smells
Y N like an exaggerated personal space	Y N avoid noisy places
Y N find that closed rooms bother you	Y N need absolute quiet to concentrate
Y N avoid crowded places	Y N get agitated by white noise (fan, etc.)
Y N get irritated by showering	Y N get irritated by sounds others would
Y N get irritated by face washing, or	ignore

Stimming [13, 16]

Natural behaviors to prevent overload and improve emotional regulation

- flapping hands, rocking, moving body rhythmically
- sniffing people or things
- moving fingers in front of eyes, staring at a set of twinkling lights
- making vocal sounds, snapping fingers, repeated words or phrases
- licking or chewing objects
- scratching, rubbing skin or muscles, twirling hair

Sensory Seeking [13, 16]

Higher threshold for sensation; seeks more input to achieve balance

- Lack of awareness of personal space
- Prefer tight or heavy clothing
- Enjoys listening to or making loud noises
- Moves body constantly
- Touches other people or objects a lot
- Chews or sucks on hands, nails, items, etc.
- Swings and spins frequently
- Plays rough
- High tolerance to or indifference to pain

Sensory Seekers in the Outdoors [18]

allow motion while listening/in group activities, set up hammock, provide something to carry or put on a heavy blanket

quick tempo music, practice bird calls

chew gum

set group boundaries for touching, but provide input in another way (i.e. fidget toy)

Sensory Avoiding [13, 16]

Lower threshold for sensation; avoids too much stimulation

- May not like touch
- Perceives noises with greater intensity than others
- Bothered by bright light
- Certain textures on the skin may be especially uncomfortable
- Certain food textures or odors may be triggering
- May not like to get dirty

Sensory Avoiders in the Outdoors [18]

- provide ear plugs for night time or as needed, slow music
- use nose plug or calming scent (i.e. essential oils)
- ensure boundaries are in practice, provide wet wipes for self-cleaning, ensure comfort with clothing
- ensure food is not too spicy

Interoception[19-22]

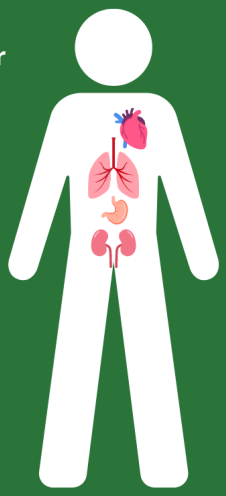
SENSE THAT HELPS US UNDERSTAND AND FEEL WHAT IS GOING ON INSIDE OUR BODIES

Feeling thirsty, hungry, or having a dry mouth

Hunger or nausea (feeling sick)

Feeling hot or cold

Needing to go to the toilet



The speed or strength of your heartbeat

How fast or deep your breathing is

Feeling something tickly or itchy on your skin

Pain or tension in muscles

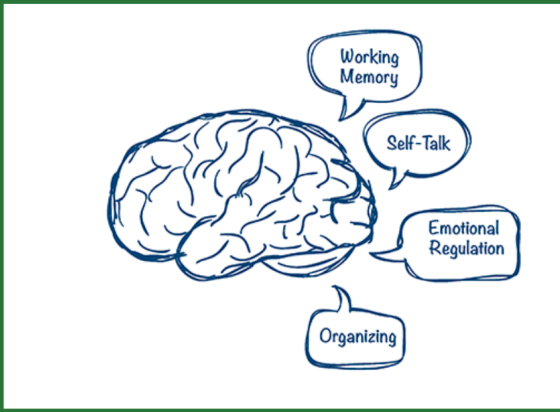
Mental Health[13, 23-24]

TRAUMA AND COEXISTING ANXIETY, DEPRESSION, OR OTHER MENTAL HEALTH CHALLENGES IS COMMON.

- With Autism, there is a 42% lifetime prevalence for any anxiety disorder; 37% for any depressive disorder
- Masking or camouflaging
  - Making eye contact even when it's uncomfortable
  - Not talking about interests too much

Executive Functioning [4, 13, 25-28]

- Monotropism vs. polytropism
- Prioritization based on passion/interest rather than social importance
- May involve more circular or 'percolating' reasoning before arriving at a conclusion



Behavior & Redirection

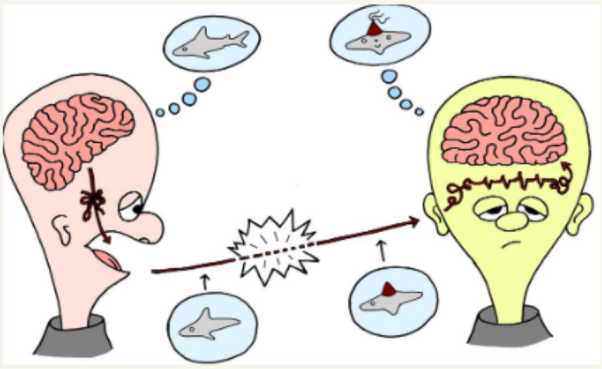
IS THE BEHAVIOR A PROBLEM OR IS IT SIMPLY OUT OF YOUR COMFORT ZONE?

- **ALL BEHAVIOR IS REACTIVE.**
  - Sensory or cognitive overload
  - Bodily needs (hungry, thirsty, tired, etc.)
  - Uncertainty/anxiety
- **ADDRESS THE ROOT OF THE PROBLEM.**
  - Listen and ask questions
  - Provide alternatives to address the problem
  - First/then language
- **SET CLEAR EXPECTATIONS AT START OF TRIP AND ENSURE UNDERSTANDING.**
- **UTILIZE THE DECISION-MAKING TOOL LINKED ON THE SIDE OF THE SCREEN FOR HELP.**

13, 29-32

Relationships and Communication[4, 13, 33]

- Double Empathy theory: social mismatch
- Avoid sarcasm, euphemisms, and implied messages
- Break tasks into small steps
- Provide warnings about changes in plan or next steps in a routine
- Always treat participants as intelligent adults



SUPPORTING GROUPS[4, 13, 33]

- Varying needs of a group can be tricky to juggle!
- Provide options for more/less stimulating activities as able
  - I.e. seated vs. moving
- Learn each person's strengths and capitalize on those strengths
- Perfection isn't necessary, teamwork/communication is

Takeaways

- Treat everyone as intelligent, capable human beings
- Our brains all work differently; building off of each individual's strengths will lead to the best trip possible
- Taking time to understand a person's sensory needs will help you help them have a better experience on the trip
- If you don't know, ask

Resources for Further Learning

Neurodivergent Voices:

- **Minnesota Neurodivergent Education Advocacy and Therapy Services (MnNeat):** https://mnneat.org/resources/
- **Lived Experience Educator:** https://www.livedexperienceeducator.com/resources
- **Neurodivergent Insights:** https://neurodivergentinsights.com/blog
- **NeuroClastic (advocacy by and for neurodivergent people):** https://neuroclastic.com/
- **Autistic Self Advocacy Network (ASAN):** https://autisticadvocacy.org/
- **Autism Level UP! Resources:** https://www.autismlevelup.com/#tools
- **Neurodiversity TEDTalk:** https://youtu.be/Qvvrme5WIwA
- **Short Films About Mental Health - Neurodiversity**: https://youtu.be/u9ZOqSw9ZLc
- **The Neurodiversity Podcast:** https://neurodiversitypodcast.com/
- **The Neurodivergent Woman:** https://www.ndwomanpod.com/

For full reference list, scan QR code below:

Appendix H - Visual Schedule

Snack

Make meal

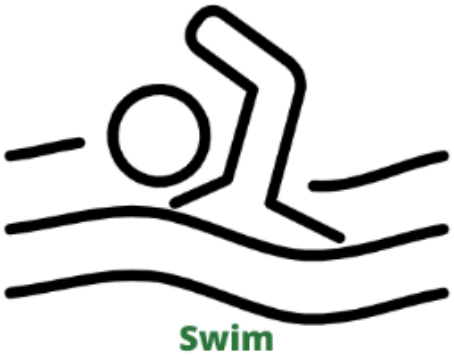
Stargaze

Hike

Fish

Campfire

Relax

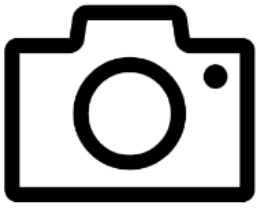


Swim

Eat meal

Paddle

Set up camp



Take photo

Introductions

Go home

Bird watching

Sleep

Play game

Wash dishes

Clean up camp

Appendix I - Adaptive Gear Slides

2023

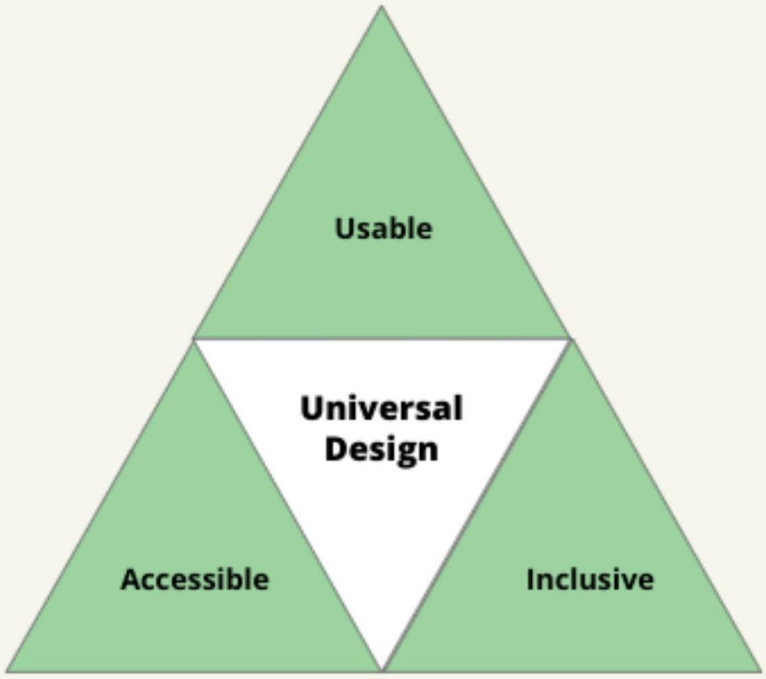
Adaptive Gear Quick Reference

Purpose: Orient outdoor leaders to universal design, adaptive equipment, and problem-solving adaptations

Learning Objectives

1. Understand basics of universal design and principles of appropriate adaptation.
2. Orient learners to equipment available at Wilderness Inquiry and how it can be used.

1-2



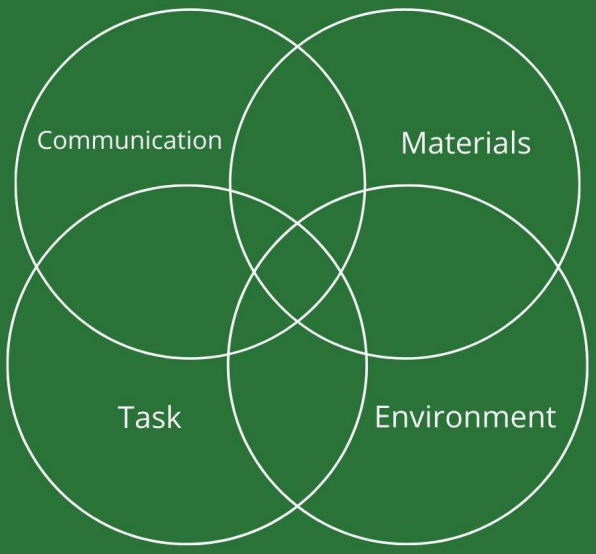
3

Do:

- Adapt only when **necessary**
- Adapt on an **individual** basis
- Make adaptations **as close to the typical set-up as possible**
- Adapt for **availability** and **simplicity**
- Use common sense and creativity

Don't:

- Adapt with no input from the person you are adapting for
- Strap anyone into the canoe
- Assume one piece of equipment is for one adaptation!



Outdoor Wheelchair Usage

4

5

Wheelchair Use on Rough Terrain

- Utilize rear wheels to get over rough terrain
- Push and pull gently for rough terrain
- Do not grab removable wheelchair parts when lifting or pushing
- Use rickshaw or Free Wheel

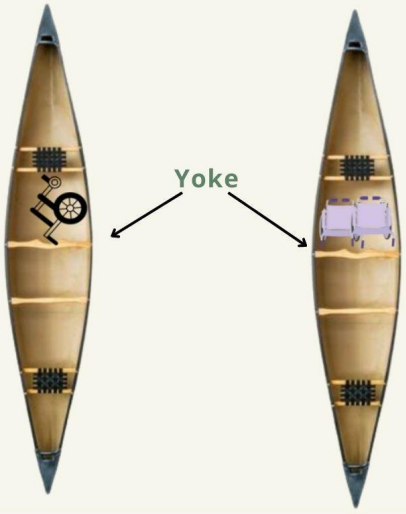
Tips for Wheelchair Transportation

- Extra space in canoe capacity
- Extra flotation may be needed
- Prepare for potential of canoe tipping
- Consider transfers into/out of wheelchair

6, 7

Common Placements of Wheelchairs in a Canoe

Lay chairs on bottom of canoe, front wheels (casters) away from the yoke



Chairs can be folded and set side by side. Put front wheels (casters) away from yoke.

Mobility

8

Slings

Purpose: provides support and safe handholds for transfer

Click the link on the side of the screen for a video on how to apply and use the ComfortCarrier sling.

9, 10

Transfer Board

Purpose: provides stable surface to slide from one seat to another

Click the link on the side of the screen to view a transfer board in action!

Rickshaw

Purpose: attaches to wheelchair to navigate rough terrain

Click the link on the side of the screen for assembly instructions!

11-13

Free Wheel

Purpose: attaches to wheelchair to navigate rough terrain

Click the link on the side of the screen to see the Free Wheel attachement in use!

14

Trekking Poles

Purpose: support when hiking or navigating challenging terrain

Trunk Support

Cushions

Purpose: skin protection, comfort

Bolster

Purpose: support for sitting upright, skin protection

15

Crazy Creek (canoe chair, camp chair)

Purpose: support for sitting upright, comfort

Universal Paddling Seat #1

Purpose: support to sit upright in canoe

Universal Paddling Seat #2

Purpose: support to sit upright in canoe

Upper Body Adaptations

16

Able Arm

Purpose: adaptable arm cuff to minimize gripping handles (i.e. paddle, fishing rod)

Click the link on the side of the screen to see Able Arm in action!

17, 18

Palm Cuff and Reel Attachment

Purpose: provides support for control of fishing rod through minimizing the need to grip handle

Click the links on the side of the screen for Palm Cuff/Reel attachment usage!

19, 20

Praddel Paddle

Purpose: allows strong paddle with one arm

21, 22

One-Arm Adapted Paddle

Purpose: provides stability at shoulder to enable one-armed paddles

Paddle Grip Attachment

Purpose: attach to paddle to provide extra hand stability

23

Pogies/Flexion Mitts

Purpose: allows participants to grip paddle with ease and keep hands warm

24

Semi-Dry Suits

Purpose: temperature regulation while wearing less restrictive clothing

Adaptive Utensils

Purpose: increased ease of gripping or holding onto utensil

Anything can be adaptive!

- Tape or rubber tubing strips - increased friction and grip
- Dry bag, pillow case, or raincoat - decreased friction
- Tennis balls - increased grip
- **Use your creativity - what can you think of in the warehouse that could be used to adapt during a trip?**

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Appendix J - Adaptive Gear Shelf QR Codes

Slings

Transfer board

FreeWheel

AbleArm

ReelDeal Use

ReelDeal Attachment

One-Arm Canoe Paddle

Universal Paddling Seat

Rickshaw

Appendix K - Neurodiversity Pre-/Post-Survey

Pre-Survey

1. Have you heard of the term neurodiversity before?
    a. Yes
    b. No
2. On a scale of 1 to 5, how comfortable would you feel describing the term ‘neurodiversity’ to another person?
    a. 1 is “I wouldn’t know where to start” and 5 is “I could easily describe neurodiversity and its implications in daily life”

Post-Survey

1. Do you feel comfortable in your ability to seek out more resources related to neurodiversity?
    a. Yes
    b. No
    c. Maybe
2. On a scale of 1 to 5, how comfortable would you feel describing the term ‘neurodiversity’ to another person?
    a. 1 is “I wouldn’t know where to start” and 5 is “I could easily describe neurodiversity and its implications in daily life”
3. What is one takeaway you would like to share from this module on neurodiversity?

Appendix L - Adaptive Gear Pre-/Post-Survey

Both surveys describe the purpose of the materials as to evaluate outdoor leader comfort with and understanding of adaptive gear available at Wilderness Inquiry". Pre- and post-surveys are the same.

1. On a scale of 1-5, how comfortable are you with how to use the adaptive gear at Wilderness Inquiry?
    a. 1-5; 1 - Never tried it, 5 - I could teach someone else how to use it
2. On a scale of 1-5, how comfortable are you understanding when to use the adaptive gear at Wilderness Inquiry?
    a. 1-5; 1 - no idea, 5 - very comfortable

Appendix M - Public Presentation Slides

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ACCESSIBLE OUTDOORS: PREPARING VOLUNTEERS AND STAFF TO WORK WITH DIVERSE POPULATIONS

Ellen Hiestand, OTS
Faculty Advisor: Stephanie de Sam Lazaro, OTD, OTR/L
Capstone Mentor: Anne Strootman, Participant and Volunteer Engagement Manager
Acknowledgements: Wilderness Inquiry

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Purpose

To enhance knowledge and confidence of Wilderness Inquiry staff and volunteers on topics related to working with individuals with physical or neurodivergent abilities during organizational activities.

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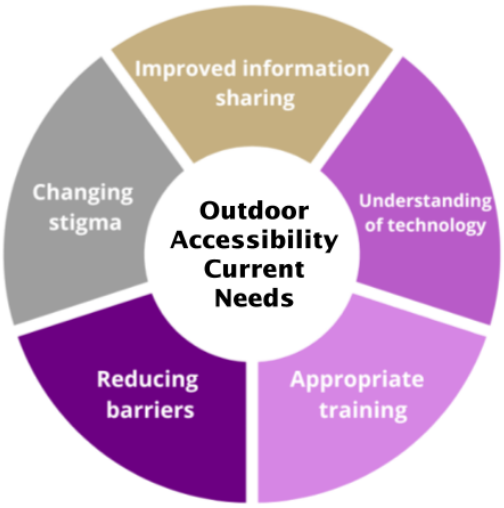
Background

- Significant benefits to outdoor activity participation
- Growing interest in outdoor accessibility
- Inconsistent accessibility standards and application



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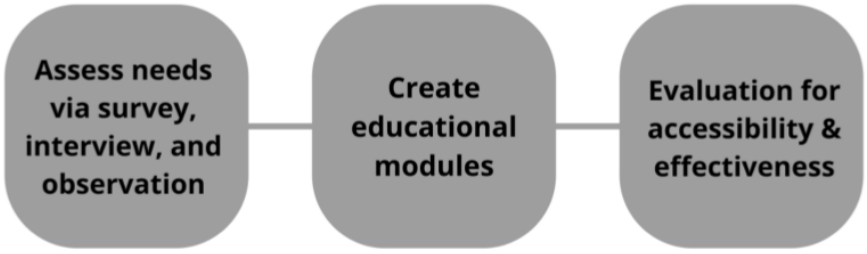
Approach/Method



Education topics:

1. Transfers
2. Neurodiversity
3. Adaptive gear

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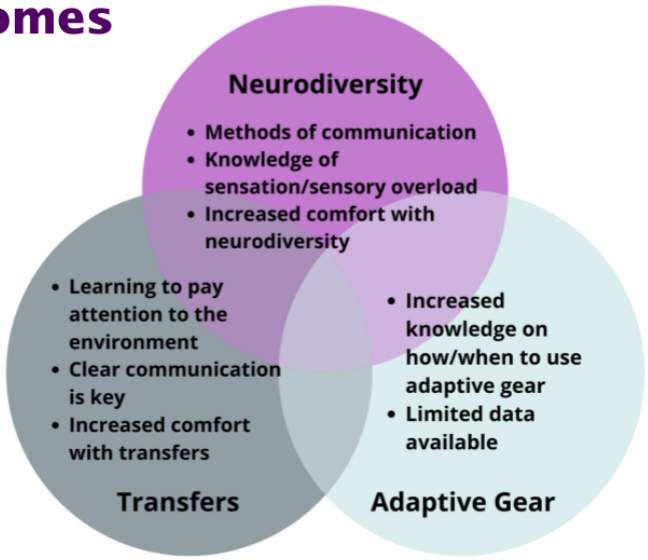
Outcomes



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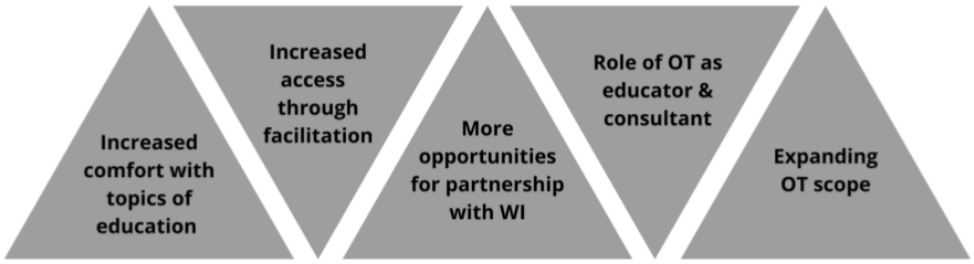
Implications and Recommendations



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