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Evaluating the Use of Video-Based Modelling to Teach Self-Care Skills to Children with ASD - A Program Evaluation

Authors: Alyssa Corcoran, MSc(OT) Candidate & Kailey Gruber MSc(OT) Candidate

Supervisors: Lowana Lee OT Reg. (Ont.) and Kait St. Pierre OT Reg. (Ont.)

Abstract

Children with Autism Spectrum Disorder (ASD) often experience difficulty managing self-care skills. Independence in self-care skills is related to an increase in self-efficacy and participation for children with ASD and eases caregiver burden. Video-based modelling is an intervention approach used to teach self-care skills to children with ASD. The objectives of this study are to: 1) Review current literature on video-based interventions for use in children with ASD; 2) Complete a program evaluation of the video-based modelling program at CDRP; 3) Evaluate the effectiveness of video-based modelling for use in children with ASD at Children’s Developmental Rehabilitation Program (CDRP). The current body of literature revealed moderate-to-low quality evidence. The results from the literature review and preliminary results from the program evaluation indicate the video-based modelling is an effective intervention at teaching self-care skills to children with ASD.

Introduction

ASD is a neuro-developmental disorder that affects the development of social and communication abilities, as well as aspects of behaviour such as restricted interests and repetitive behaviours. The term “autism spectrum disorder” reflects the current view that the impact of ASD on development, learning and behaviour can range from relatively mild to severe in any or all of these areas of development. The severity of these impairments may lead to deficits in the development of activities of daily living such as personal care skills, such as dressing, toileting and hand washing. Personal care skills and the completion of activities of daily living represents a foundational set of skills needed for individuals with ASD to achieve independence and maintain a desired quality of life.

Video modelling has been used successfully to teach children with a variety of diagnoses a diverse set of skills including language, classroom behaviour expectations, play, self-care and social skills. Video modelling involves watching a video of a model engaging in target behaviours, with the goal that the observer will later imitate those behaviours. There are several types of video models including adult modelling, peer modelling, self-modelling and point-of-view modelling and each of these model types have been used effectively to teach target behaviours to children with ASD.

Methods

Literature Review: The search process consisted of an electronic search of six academic databases (OVID Medline, CINAHL, Cochrane Library, ERIC via ProQuest, PubMed and OTSeeker) following the 6S pyramid and included the following keywords: video model*ing combined with the terms youth OR adolescent OR pediatric combined with the terms autism, ASD. The following inclusion criteria determines which studies qualified for review: (a) at least one participant identified as having ASD that was between the ages of 5 - 15; (b) target acquisition of self-care skills as a dependent measure; and (c) published in a peer-reviewed journal past the date of January 1, 2014. The authors excluded articles containing (a) children outside the age range of 5 – 15; (b) a population of participants that did not include autism or ASD; and (c) did not include the acquisition of a self-care task as a dependent variable. Both authors independently screened all articles included in the related literature reviews against the inclusion criteria and removed any duplicates of articles that were included in the reviews. As a result of the search procedures, 21 articles were identified for possible inclusion in review. These articles were then assessed to determine whether they met the inclusion criteria. Ultimately, a total of 5 articles qualified for the review.

Program Evaluation: A before-and-after design was used to determine the following research question: Is the video-based modelling program at CDRP effective in teaching self-care skills to children, aged 5-15, diagnosed with Autism Spectrum Disorder (ASD)? Five participants (n=5) participated in the program evaluation. An occupational therapist administered the the Adapted Behavior Assessment System Third Edition (ABAS-3) during the initial assessment period to determine the child’s current level of performance in everyday skills. The Canadian Occupational Performance Measure (COPM) was used as an outcome measure to identify participants’ self-care goals. YouTube accounts were created for each participant and based on their age and self-care goal, videos were uploaded to the each individual account. Fidelity checklists were given to parents of the participants to track the viewing frequency. The participants were instructed to watch the video twice per day for three-weeks. After three-weeks, the COPM was re-administered. Parent satisfaction and clinician satisfaction questionnaires were administered to parents and participating OTs.

Results

Literature Review: Overall, the literature on video-based modelling for children and adolescents with ASD to teach self-care skills is limited. All articles included in the review concluded that video-based modelling was effective at improving self-care skills in children and adolescents with ASD. Limitations of the literature include a small sample size across all articles. The authors in one article noted the challenges in recruiting a homogenous sample in individuals with ASD due to the variability in cognitive, social and motor skills. Despite these challenges, future research should include studies including a larger number of participants. There is also a low quality of evidence on this topic area. Future research should include research utilizing higher levels of evidence, such as...
randomized controlled trials, in order to further investigate the effectiveness of video-based modelling interventions to teach self-care skills in children and adolescents with ASD. Another limitation noted throughout the literature was the limited evidence on the maintenance of skills following video-based modelling interventions. Future studies should investigate the maintenance of skills in the long-term.

**Program Evaluation:** Based on the ABAS-3, all participants were below the 13th percentile in conceptual, social and practical domains in comparison to others within their age group (<0.1 - 13 percentiles). Participants included in the program evaluation average age was 9 years old (ages 5 - 11). Across participants, the General Adaptive Composite (GAC) score ranged from <0.1 to the 4th percentile. Using the COPM, each participant identified 1-3 self-care goals. A total of ten goals were identified across the five participants. Goals included toileting, tooth brushing, hair brushing, doing up zippers and/or buttons and putting on a coat. Using the fidelity checklist, participants were asked to watch the videos daily, either in the morning or evening. According to the fidelity checklist, participants watched the videos on average 46.82% of the time in the morning and 71.19% of the time in the evening. When the COPM was re-administered, a clinically significant change (as indicated by a change in score of 2 or more), was noted 80% of the time in the performance rating and 60% of the time in the satisfaction rating.

Parents of the participants were given a parent satisfaction questionnaire to complete following the intervention period. A total of five parents completed the questionnaire. Parents rated an average of 82% satisfaction with the method the videos were administered to them. When asked if they found the videos to be a successful method for teaching self-care skills to their child, they rated an average of 78%. When asked whether they would like to access the videos in the future, 100% of parents answered yes. On average, parents noted their child’s motivation as 58%. When asked if they would recommend the videos to teach self-care skills to others, 100% answered yes. Results from the clinician satisfaction survey were gathered from the clinicians delivering the intervention. A total of two clinicians administered the videos to participants. When asked about their satisfaction on the method videos were administered, clinicians rated an average of 90% satisfaction. Clinicians rated an average of 80% when asked how successful the videos were at teaching self-care skills to children with ASD. Clinicians noted they were 100% likely to continue using videos in their future practice.

**Discussion**

The findings from the program evaluation provide evidence that video-based modelling is an effective intervention approach in teaching children with ASD various self-care skills. The results from the ABAS-3 identify that at baseline, all participants had low levels of functioning in their age group. The results from the COPM indicate that the majority of participants were able to achieve clinically significant changes in performance and satisfaction scores from pre- to post-intervention. It is important to note that the participants who did not achieve clinically significant results on the COPM had lower scores on the fidelity checklist. This may contribute to the lack of change in performance and satisfaction ratings on the COPM.

Feedback was received from parents and clinicians through the parent satisfaction questionnaire and clinician satisfaction questionnaire that highlights some limitations to the program evaluation. Some barriers to accessing the videos were noted. For example, for parents whose first language is not English, it was challenging to navigate Youtube and required additional support from the clinician. As well, confounding factors, such as busy schedules, the environment, or unexpected sickness, were not controlled for. Feedback from parents noted the children found the videos to be “baby-like” which impacted their motivation to watch the videos. The findings from the program evaluation confirm the findings throughout the literature that video-based modelling interventions are a useful alternative approach for children with ASD. The use of video-based modelling was helpful for clinicians as it required direct OT intervention to work on self-care skills. Since the self-care goals were able to be worked at home daily, it created opportunities for the clinician to spend time on other goals the participants may have identified.

**Future Directions**

It would be valuable to compare the effects of video-based modelling compared to OT practice as usual in teaching self-care skills. This would provide useful information on the effectiveness of video-based modelling in reducing OT time spent on teaching self-care skills. Future studies should compare different video perspectives, such as animation versus human subjects, to understand what video modalities result in the greatest amount of skill acquisition. Future research should explore maintenance of skills over a longer duration of time, as well as the generalizability of skill acquisition to other settings.

**Acknowledgements**

The authors would like to thank Lowana Lee and Kait St. Pierre for their guidance and support throughout this project.

**References (seminal)**

**Abstract**

**Purpose**: To evaluate the effectiveness of the Child and Youth Mental Health Program (CYMHP) at McMaster Children’s Hospital in increasing patient’s satisfaction and performance of their functional goals and to explore factors that contribute to program outcomes. **Methods**: Mixed-methods design was used to analyze the difference between patients’ performance and satisfaction from admission to discharge and examine the factors that contributed to the difference. **Results**: Patients’ performance and satisfaction in their goals significantly increased from admission to discharge, with an increase in satisfaction predicting an increase in performance and vice versa. Four themes emerged from the phenomenological analysis of patient comments about the program: 1) Skills Gained, (2) Skills Applied to increase function, (3) Program Support, and (4) Decrease Symptoms. **Conclusion**: The CYMH program is effective at increasing patient’s satisfaction and performance in functional goals. Patient comments provided insight into factors contributing to effectiveness, such as: skills, staff/peer support and decrease symptoms, but a new measurement is needed to quantify the variables contributing to program outcomes. **Part Two**: The results of part 1, a literature review, and consultation with CYMH staff guided the development of a Youth Quality of Life Questionnaire (YQoL), which is comprised of existing validated PROMIS measures. The YQoL measures the following domains: 1) function, 2) mood/emotions, 3) self-efficacy, 4) meaning and purpose, and 5) peer and family. **Future Directions**: The YQoL can be used to explore the factors that predict patients’ increase in performance and satisfaction with their functional goals in the program.

**Introduction**

The Child and Youth Mental Health Program (CYMHP) at McMaster Children’s Hospital is a 4-week inter-professional day program for youth aged 12-18 who are experiencing mental health issues. The aim of the program is to successfully reintegrate youth back into school and the community. The CYMHP program is comprised of group and individual therapy sessions that incorporate principles of Cognitive Behavioral Therapy (CBT) and Dialectical Behavioral Therapy (DBT), in addition to functional activity programming to develop life and coping skills.

**Literature Review**: Day hospital programs for children and youth with mental health concerns can provide a transition from inpatient programs, as well as an alternative to typical outpatient programs. Day hospital programs typically offer intensive treatment by a multi-disciplinary team to support youth in developing life skills, emotional self-management, coping skills, promoting healthy relationships, and educational based programming, while supporting youth in maintaining continued community involvement. Research has been inconclusive on the effectiveness of day hospital programs for children and youth with mental health concerns, with some evidence demonstrating clinically significant increases in symptom reduction and psychosocial functioning, while other studies demonstrated no significant effect on reduction of cost, function, and hospital admissions. **Study Purpose**: A mixed-method approach was used to evaluate the effectiveness of the CYMHP program in increasing client’s satisfaction and performance in their functional goals and to explore factors that predict effectiveness.

**Methods**

**Participants**: A total of 279 (female n=200, male n=79) patients from CYMHP during 2012 to 2018 were included in the study. Their age ranged from 12-17 (M=15.49, SD=1.16). The participants presented with one, or all, of the following psychiatric symptoms: anxiety (n = 222), mood (n = 185), psychosis (n = 20), eating disorder (n = 36), personality traits (n = 64), or other (n = 140). **Measures**: The Functional Activity Questionnaire (FAQ) was used as a pre-post measurement. The questionnaire contains client’s meaningful goals in any, or all, of the following 4 categories: Mental Health, School/Work, Social Life, and Family. Participants score their satisfaction and performance with their goals during admission, and again at during discharge. An open-ended question is added to the questionnaire at discharge asking: What did you like most or what did you learn in the program? **Study Design**: A mixed method approach utilized a pre/post design for the quantitative analysis and phenomenological approach for the qualitative analysis. SPSS version 24.0 was used for a Wilcoxon ranked sign test and stepwise regression to evaluate the effectiveness of the CYMHP program and explore...
the factors that contribute to the effectiveness. Two student researchers independently coded qualitative data with excel software and produced themes.

**Results**

**Quantitative:** Participants’ satisfaction ratings statistically increased at discharge compared to admission ($Z = 11.94, p<0.001$), with a large effect size ($r = 0.51$). Similar results were seen in participants’ performance, with discharge ratings statistically higher than admission ratings ($Z = 12.61, p<0.001$), with $r = 0.53$ indicating a large effect size.

A stepwise regression analysis indicated that a change in satisfaction was the only significant predictor of change in performance ($\beta = 0.56, p<.001$), and that change in performance was the only significant predictor of change of satisfaction ($\beta = 1.01, p<.001$). Factors excluded for non-significance were age, gender, length of stay and psychiatric symptomatology.

**Qualitative:**

**Discussion**

The aim of the study was to evaluate whether the CYMHP was effective at increasing participant satisfaction and performance in their functional goals, and to explore the factors that contributed to this outcome. Results indicated that participants’ satisfaction and performance in their functional goals significantly increased from admission to discharge, with the analysis indicating a large treatment effect size. The only significant predictor of an increase in performance, was an increase in satisfaction, and vice versa. Factors such as length of stay, gender, age, and symptomatology were not significant predictors. Four themes emerged from participants’ responses regarding their experience of the program: 1) Skills Gained (coping skills that were learned in the program), 2) Skills Applied to Increase Function (application of these skills in their school, social, and community life), 3) Program Support (staff, peers, and structure of the program), and 4) Decrease Symptoms (reduction of stress and anxiety/mood since being in the program). These results prompted a need to create a validated measure to quantify patient factors that are influenced during the program that predict an increase in performance and satisfaction of functional goals.

**Part Two**

**Purpose and Method:** The part 1 study results, literature review, and consultation with CYMHP staff guided the development of a self-report quality of life and functional questionnaire. **Results:** A 48 item Youth Quality of Life Functional (YQoLF) questionnaire was created by utilizing existing validated PROMIS scales to measure 5 domains: 1) function, 2) mood/emotions, 3) self-efficacy, 4) meaning and purpose, 5) peer and family relationships.

**Conclusion**

The CYMHP at McMaster Children’s Hospital is an effective program at increasing patient’s satisfaction and performance in their functional goals. Patient comments provided insight into factors contributing to the increase, such as gaining new skills and decreasing symptoms, but a quantitative measure, YQoLF is proposed as a validated scale for future outcome studies. **Implications:** Partial hospital programs can be an effective method for increasing performance and satisfaction in functional goals for children and youth with mental health concerns experiencing difficulties functioning in the community. **Future Directions:** 1) Validate the YQoLF in CYMHP population, 2) explore relationship between YQoLF domains and FAQ outcomes, 3) perform longitudinal study with YQoLF to determine program effectiveness after discharge in community.

**Acknowledgements**

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**References**

**Background:** Autism Spectrum Disorder (ASD) is a neurodevelopmental condition, with approximately 1/66 Canadian children diagnosed. As these youth approach adulthood, they experience considerable challenges navigating and securing employment, with distressingly high unemployment rates of 65%. Individuals with ASD often experience difficulty with social communication, sensory processing, and repetitive or routine behaviours, which can impact workforce entry and engagement in meaningful employment. Notably, youth with ASD who participate in employment activities during high school have a significantly higher likelihood of stable employment in adulthood. Increasing employment rates for individuals with ASD not only has economic benefits for the greater community, but also maximizes the independence, self-efficacy, as well as overall health and well-being of the individual. Despite the existence of employment-focused programs for youth with ASD, a gap within the literature exists surrounding the exploration of youth experiences with early employment opportunities.

The interdisciplinary McMaster Autism Researchers Team worked closely with community partners to implement the 13-week Job-Train Program (JTP) which was carried out in several departments within McMaster University in Hamilton, Canada. The JTP provided early employment to 12 Hamilton high-school students with Autism aged 15-18 who were recruited to participate. While receiving scaffolded support from job coaches (n=3), these youth engaged in a weekly Job Club paired with an 8-week paid summer work experience for 2 half days per week. A total of 6 job placements were offered within various departments on campus. Quantitative and qualitative methods were used to gather data from various participants post-JTP; this report focuses on the qualitative data gathered from student and employer interviews. Findings may help to inform future areas of quantitative analysis, such as outcome evaluation, as well as inform future JTP execution.

**Introduction:** ASD is one of the most prevalent neurodevelopmental conditions in Canada, with approximately 1/66 Canadian children diagnosed. As these youth approach adulthood, they experience considerable challenges securing employment. To address this issue, the Job-Train Program (JTP) was created to provide early employment opportunities for youth with ASD. The JTP is a unique 13-week program involving a weekly classroom-based Job Club and a paid summer work experience on a university campus, alongside job coach support. **Purpose:** This study examines the unique experiences of youth with ASD and employers regarding JTP outcomes, experiences, implementation components, and future changes, as well as the convergence of their perspectives. **Methods:** Semi-structured interviews were conducted post-JTP with students and employers which was subject to a rigorous coding process and inductive content analysis. Qualitative data analysis revealed unique and converging perspectives amongst data sources. **Results:** 12 high school students with ASD (16.2 [0.8] years old, 92% males) and 6 employers from various university departments were interviewed. Overall, participation in JTP resulted in a sense of belonging, student success in structured tasks, application of Job Club to work placement, work placement fit, and changed perspectives of disability. Challenges related to matching job tasks to student skills and the need for individualized job coach support. Future recommendations include, increased preparation time to understand student strengths/needs, as well as increased collaboration with job coaches. **Conclusion:** This data highlights key insights to implementing a successful early employment program through a small number of youth and employer perspectives. Suggestions include improving work placement fit, a sense of belonging, and acceptance in the workplace.

**Aim of Study:** This study examined the experiences of youth with ASD and employers involved in the JTP regarding program outcomes, experiences, implementation components, and potential future changes. Based upon these categories, both unique student and employer perspectives, as well as converging perspectives between these groups were analyzed.

**Methods:** Audio-recorded semi-structured interviews were conducted post-JTP with students and employers. Interviews were transcribed and subjected to a rigorous content analysis within and across data sources. The approach to data analysis was collaboratively completed by two coders using a systematic six phase process: 1) Researchers familiarization with data; 2) Generating initial codes and debrief of transcription process; 3) Searching for themes and determining convergence of student and employer codes; 4) Reviewing themes and researcher triangulation; 5) Team consensus on defining and naming themes; 6) Producing a report with rich descriptions of context. Following debriefing sessions, a third party adjudicator (BDR) was available to discuss discrepancies, thus strengthening the rigour across findings.

**Results:** 12 student participants were interviewed post-JTP with a mean age 16.2 [0.8] years old, 92% male, with secondary diagnoses of anxiety (33%) and ADHD (42%). Interviews were conducted with 8 employers from 6 departments within the university including library, mail room, residences, and office settings. 10 student and 3 employer transcripts were audio-recorded and transcribed verbatim. Separate from this data, 2 student and 3 employment site transcripts were hand-written by
the interviewer and further analyzed by two coders with increased adjudication. All data from unique and converging student and employer perspectives was analyzed using the six phase process then organized into the following categories guided by the interview questions: 1) Outcomes, 2) Experiences, 3) Implementation, 4) Future Changes, and 5) Unprompted Perspectives. Students: 1) Outcomes included multifaceted learning (e.g., improved organizational skills, eye contact). 2) Experiences comprised of previous applicable experience with employment programs, job duties, and Job Club topics. 3) Implementation included Job Club positives and challenges (e.g., helpful for interview skills, boring to learn something they felt they already knew), and JTP positives and challenges (e.g., enjoying having something to do, not enjoying getting up early). 4) Future Changes for JTP consist of involving students with other disabilities. 5) Unprompted perspectives included 1 student learning to embrace their ASD diagnosis. Employers: 1) Outcomes included learning about ASD, building empathy, and realizing that their workplace is not inclusive 2) Experiences comprised of previous applicable experience working with individuals with disabilities 3) Implementation included positives and challenges to JTP preparation (e.g., enjoying JTP presentation, not having enough work for students to complete). More general positives and challenges were also identified (e.g., getting work done faster with student help, difficulties with student to employer ratio). 4) Future Changes comprised of ideas such as wanting to follow-up with students after JTP and more interaction with job coach 5) Unprompted Perspectives included feeling appreciated by students’ parents. Convergent data: Both students and employers identified the following: 1) Outcomes included satisfaction in job performance (e.g., when completing structured tasks) and students’ sense of belonging in the workplace. 2) Implementation included employers’ challenge of matching students with jobs and some students reflected that their job was too difficult or too easy. Job coaches were found to be helpful with acknowledgement that the level of support required is individual. 1 employer and 7 students found Job Club topics applicable to work placement. Employers made efforts to align job tasks with students’ skills and interests, which was evident in students’ enjoyment of their work placement experiences. 3) Future Changes consisted of recommendations to provide information prior to work placement including more work placement information for students, offering more work placement options, and sharing details about students’ strengths and challenges with employers.

Discussion: The findings from this qualitative research contribute to an enriched understanding of youth with ASD and employer perspectives regarding their experiences within a unique summer employment program. These insights may help inform future implementation of the JTP, and potentially other employment programs targeting youth with disabilities. Areas of consideration include utilizing employers who have had previous experience working with individuals with disabilities, and a willingness to accommodate job tasks to students’ skills. Job coaches are a valuable resource, particularly when using a graded and individualized approach to support. In addition to supporting students, expansion of this role could involve employer facilitation. In order to optimize the employment experience for all stakeholders, students’ skills and needs could be better examined and shared with employers in advance. To further this, education about other disabilities could improve stakeholder outcomes, as many participants had co-existing conditions. Questions remain as to whether additional information about diagnoses improves employment outcomes by helping or hindering accommodations in the workplace. These qualitative findings may be useful in concert with quantitative results to potentially identify outcome measures that assess youth and employer needs prior to work placement. In turn, this could help facilitate appropriate job matches for students in future iterations of JTP. Limitations: Due to the small number of student participants recruited, it is unclear how representative this sample is of the diverse spectrum of abilities of youth with ASD.

Conclusion: Overall, JTP has provided a valuable experience not only for youth with ASD, but their employers who benefited from their skills and abilities. Both youth with ASD and employers reported mainly positive outcomes including, improved workplace performance, learning to match worker needs to work demands, a sense of belonging, and increased acceptance of individuals with disabilities. From these results, lessons learned in these 5 categories can strengthen employment programs for youth with ASD.

Future Directions:
- Inclusion criteria for JTP participant recruitment to encompass a broader representation of ASD
- Optimize work placement fit by enhancing preparatory activities for youth and employers
- Increased collaboration, communication, and feedback between the employer and job coaches
- Integrating qualitative and quantitative findings from JTP research to improve outcomes for all stakeholders
- Future research to triangulate parent and job coach perspectives

References
The benefits of participation in sport and play are well known, yet despite this, many children with disabilities are under-engaged. The current project explored the literature examining the various facilitators and barriers to inclusive and accessible community engagement through a scoping review. A Knowledge-to-Action (KTA) framework was adopted and clinical Occupational Therapy (OT) knowledge then utilized to translate the scoping review findings into a community event audit checklist, event recommendations, as well as a guide for stakeholders which outlined how to create accessible and inclusive community spaces. Ultimately, the study concluded with a call to action, both for the community and society at large, to recognize it is not only the fundamental right of the child to be able to participate in play opportunities but also the responsibility of society to work towards advancing accessibility, participation, and inclusion in all settings and environments.

Background Information

Play is an essential component for children's physical, social, and emotional well-being. Through participation in play, children develop important life skills and values. Yet, despite the abundance of literature confirming the benefits of children's participation in sport and play, children with disabilities are consistently under-engaged. Even more limited in play opportunities are children with disabilities of migrant status or identity. These individuals face unique challenges related to learning to manage a new lifestyle in Canada that often differs from old customs, expectations, and traditions. When attending to issues related to children with disabilities in Canada, it is important to acknowledge that those from minority communities may experience intersectionality, a “double disadvantage”, as well as additional barriers to participation and engagement. SMILE Canada is an organization that aims to address some of the barriers experienced by children and youth with disabilities and their families. Annually, the organization plans a recreational community event known as RecFest, aiming to ensure that all children are welcomed and included in activities, spaces, and services.

In efforts to further explore and better understand the experiences of children with disabilities within community recreation settings, the current study utilized a KTA framework and OT lens to examine the barriers and facilitators to accessible and inclusive play. The goal was to better conceptualize the specific accessibility- and inclusivity-related issues experienced by this population in order to inform the development of a guide for stakeholders outlining how to organize more accessible and inclusive community events.

Methods

The KTA framework was used to guide this study. This framework articulates the process of identifying a problem; adapting, developing and tailoring knowledge and interventions to a specific population; and monitoring as well as evaluating outcomes. For the purposes of this study, the three steps to knowledge creation were undertaken and tailored to SMILE’s RecFest: (1) scoping review; (2) pre- and post-event recommendations for community volunteers; (3) accessibility and inclusivity audit checklist; and (4) guide for community volunteers.

Knowledge Inquiry

1. Scoping Review: The purpose of the scoping review was two-folds. Firstly, to identify the barriers and facilitators of participation and inclusion in order to directly apply findings to the development of community event audit checklist. Secondly, to utilize findings to intervene and enhance the inclusivity and accessibility of a community event for children of varying ages and abilities through recommendations. The Arksey and O’Malley framework was chosen to guide the scoping review process. Two searches were conducted on each database in order to ensure both the saturation of literature and sensitivity within the literature regarding marginalized populations. A ‘general search’ was conducted in which search terms reflected three key concepts; (i) children with disabilities, (ii) physical and social engagement, and (iii) terms related to community activities (e.g., recreation, sport, leisure, play). The secondary search conducted included three aforementioned concepts as well as a term related to cultural minority and marginalized communities. Articles retrieved from both searches were compiled. Two independent reviewers read in full-text the 33 articles that met the inclusion and exclusion criteria.

Knowledge Synthesis

2. Accessibility/Inclusivity Audit Checklist: An audit checklist was developed to examine the accessibility and inclusivity of RecFest. This necessitated the development of a model which highlights that five distinct environmental systems interact to affect individuals and their environmental experiences (Macro, Exo, Meso, Micro, Individual). The developed model recognizes the mobile nature and fluidity of community events which tend to be short in duration and held within static physical spaces. Using...
the checklist framed by this developed model, 5 stations at RecFest were audited for accessibility and inclusivity. In order to gain an understanding of the qualitative perspectives and experiences at RecFest, volunteers and attendees were interviewed.

3. Pre & Post Event Recommendations for Community Volunteers: Using the findings from the scoping review, recommendations related to addressing potential barriers and facilitators at community events were created and distributed to volunteers approximately 5 days prior to RecFest. The recommendations were written in easily understood terms and primarily focused on outlining how various barriers and facilitators interact and can be addressed in the Canadian Model of Occupational Performance and Engagement (CMOP-E) domains. Following the RecFest event, at which stations were audited, the results from the checklist were analyzed. Recommendations were then provided to the SMILE team at the macro, meso, and micro-levels. These recommendations were based on observations, the checklist findings, and interviews with volunteers and attendees.

Knowledge Translation

4. Guide for Community Volunteers: A ten-chapter summary of the current knowledge and research on inclusivity and accessibility initiatives was provided to the SMILE organization using scoping review findings and clinical OT knowledge. The SMILE executive director was consulted in regards to relevant content. This final document broadly overviewed important concepts including the importance of play, relevant laws, and theoretical understanding. It also outlined more specific and applicable information such as barriers/facilitators, using disability friendly language, and how to design and facilitate inclusive play. The audit checklist was provided within the Guide with the hopes that SMILE uses this document in the future to train staff, volunteers, and evaluate their event.

Conclusion

There is an extensive amount of research available examining the barriers and facilitators to participation for children with disabilities. The present study used a holistic, OT lens to examine and apply the findings of the literature and, in turn, aim to increase the accessibility, inclusivity, and participation for all children attending SMILE’s RecFest. Through use of a KTA framework, the present study (1) examined and summarized the literature available on the topic using a scoping review; (2) utilized the findings on facilitators and barriers as a means of developing recommendations for community volunteers pre- and post-RecFest; (3) assessed the accessibility and inclusivity of RecFest using an audit checklist; and (4) provided community stakeholders with a guide to creating future accessible and inclusive events. In addition to ample findings of the scoping review, the review process also uncovered an interesting and significant gap within the literature. That is, the literature examining the barriers and facilitators to play or leisure from the perspective of minority and marginalized communities is essentially non-existent. It is evident that more research is required to examine the unique experiences of this population, especially as Canada grows as a multicultural and mosaic country. Beyond academic research pursuits, however, this study also calls for action at community and institutional levels. Children with disabilities and their caregivers have identified a need for more programs/services that address the needs of all children. In order to ensure impactful and inclusive program delivery, increased accessibility and enhanced participation, programs should focus on addressing the environment by using an inclusive design perspective, training staff to have adequate knowledge to work with this population, adapting and modifying activities, and creating a supportive and positive environment. This list, unfortunately, is not exhaustive enough to address this complex and multifaceted issue. Continual efforts must be made to advance accessibility, participation, and inclusion within society as it is the right of all children to be able to engage in meaningful play.

Acknowledgements

We would like to sincerely thank SMILE Canada, the SMILE RecFest team, as well as the volunteers for providing us with the unique opportunity to evaluate and learn from their inclusivity efforts and initiatives.

Seminal References

ABSTRACT

Purpose: The purpose of this scoping review is to examine the current state of the literature regarding the use of improvisation (improv) as an intervention for improving social skills in children and youth with autism spectrum disorder (ASD). Materials and methods: Two authors searched eleven databases. The two authors reviewed the databases and independently screened articles for eligibility. Multiple theatres across North America were contacted for additional grey literature. Data extracted included aims of the study, study design, intervention, outcome measures and key findings. Thematic analysis consisted of identifying common outcomes among studies and classifying them, guided by the subscales of the Social Skills Improvement System. Results: 581 titles were screened and 15 studies met the inclusion criteria. Three studies focused on improv as the sole intervention, nine studies were theatre-based intervention containing elements of improv and three studies contained drama therapy-based interventions which utilized improvisation techniques. The findings were mixed, with both significant and non-significant results across various outcomes. Conclusions: This scoping review found inconclusive evidence regarding the use of improv as an intervention for improving social skills in children and youth with ASD. Gaps in the literature suggest that future studies need to examine improv as the sole intervention in order to evaluate and support its use as a social skills intervention for children and youth with ASD.

INTRODUCTION

Autism spectrum disorder (ASD) is the most common developmental disability and neurological disorder in Canada (Government of Canada, 2019). ASD impacts individuals in all aspects of occupational performance, especially their ability to socialize with others (CAOT, 2018). Specifically, ASD is characterized by deficits in social skills, such as social communication, social interaction, social-emotional reciprocity and nonverbal communication (American Psychological Association, 2013). Improvisational theatre (improv) is proposed as an intervention for the social deficits of individuals with ASD. It is a form of theatrical art in which performance is not scripted, but is created spontaneously and collaboratively by the actors. Bermant (2013) explains that improv is similar to social interactions because it plays out within a social context, where the unscripted nature of improv mirrors everyday social interactions. In addition, improv fosters trust, cooperation and awareness amongst actors in order to create and sustain a scene. Benefits of improv as an intervention include: 1) accessibility of classes 2) removal of stigma, as it is seen as leisure instead of therapy and 3) skills development in a group setting.

To date, no scoping review exists regarding improv as an intervention for children and youth with ASD. The purpose of this scoping review is to synthesize the existing evidence on the use of improv as an intervention for social skills in children and youth with autism, identify research gaps and inform future research.

METHODS

Research Question: What is the available evidence regarding the use of improvisational theatre as an intervention for improving social skills in children and youth with ASD?

Search Strategy: In order to answer the research question, inclusion and exclusion criteria were determined by the authors. Notably, studies which utilized a theatre-based intervention with improv as a component were included due to limited research on solely improv. Databases, including NICE, DynaMed, Cochrane Library, Web of Science, OTSeeker, ERIC, OVID MEDLINE and OVID PsycINFO were searched. Project MUSE, Google Scholar and ProQuest Dissertations and Theses A&I were accessed to search for grey literature. Multiple theatres across North America were contacted for additional grey literature. The two authors independently reviewed the titles and abstracts to determine inclusion and exclusion of articles. Articles were reviewed in full text if their titles and abstracts were vague or if the authors could not reach a consensus based on the titles and abstracts. References of selected articles were also searched.

Analysis: The Arksey and O’Malley (2005) framework was used to extract data from selected studies, including the aims of the study, study design, intervention, outcome measures and key findings. Thematic analysis was conducted, utilizing the Social Skills Improvement System (SSIS; Gresham & Elliot, 2008) as a guide during theme construction.
**Literature Review:** The literature search identified 581 titles with 39 full-text articles selected for further review. In total, 15 studies were included in the final scoping review. The 15 studies enrolled a total of 215 participants. Of the 15 included studies, five were pretest-posttest studies, three were randomized controlled trials, one was a non-randomized control trial, three were mixed-methods studies, and three were qualitative studies. In addition to assessing social skills as the outcomes, the authors also looked at social anxiety, as well as feasibility and considerations for implementation of improv.

**RESULTS**

This scoping review revealed limited studies which investigate the use of improv as an intervention for social skills in children or youth with ASD. The following overarching themes were derived from the scoping review: social skills, social communication, social cognition, social interaction and negative internalizing behaviour.

Three of the 15 included studies focused on using improv as the sole intervention. No findings are reported in these studies regarding improv and its effects on social skills due to poor completion rate of outcome measures. One study found a decrease in nervousness, but no effects on feelings of worry post-intervention. Two studies suggest that parents and healthcare professionals support and believe that improv is a feasible and valid intervention.

Twelve studies focused on using theatre-based interventions and drama therapy that contained elements of improv. Overall, these studies demonstrated mixed results across both the overarching themes and subthemes identified, with some finding significant results and others finding non-significant results. Regarding the overarching themes, general social skills demonstrated an even mix of results. Specifically, three out of six studies suggested that interventions containing elements of improvisation have a significant effect on general social skills at post-intervention or follow up.

Social communication was examined by seven studies with mixed results. Three studies found no significant effect, one study found a significant improvement on one measure but not the other, and three studies found a significant effect of the intervention on social communication or reported improvements in this area.

Social cognition and its subthemes were examined by ten studies with mixed results. The study examining general social cognition concluded that the intervention had a large, significant effect. Theory of mind is one notable social cognition subtheme which did show consistent significant results across all studies in which it was analyzed.

Social interaction and its subthemes were examined by ten studies with mixed results. In terms of overall social interactions, two studies found no significant effect of the intervention. One study did find a significant effect post intervention.

Negative internalizing behaviour encompasses withdrawal and anxiety. One study found no significant effect on withdrawal. One study found an improvement in persistent anxiety, but not current anxiety.

**DISCUSSION**

This scoping review found inconclusive evidence regarding the use of improv as an intervention for improving social skills in children and youth with ASD. Only three studies were found that used improv as a sole intervention on children and youth with ASD. Due to the limited research, evidence had to be drawn from other intervention that contained elements of improv. Therefore, this inherently created confounding biases and it was difficult to conclude that the effects were caused by improv or other elements of the intervention. In addition, the results found from the studies were not generalizable to children and youth in the whole spectrum, as most participants were selected based on high cognitive and/or verbal abilities (i.e. meet IQ cut-off and need to demonstrate verbal fluency). Moreover, most studies entail methodological limitations, such as small sample size, lack of blinding procedures, lack of follow-up and using non-validated and non-standardized outcome measures. Furthermore, due to the inconsistencies of use of outcome measures, it was difficult to group and compare findings across different studies.

**CONCLUSION / FUTURE DIRECTIONS**

Due to the lack of existing research, future research should focus on using improv as the sole intervention in order to determine its efficacy as a social skills intervention. It is recommended that research be paired with an existing theatre that offers improv to children and youth with ASD in order to gather both qualitative data (for thematic analysis) and quantitative data (through the use of standardized assessments to enhance rigour).

**REFERENCES**


Introduction: In Canada, the demand to meet the healthcare needs of frail older adults is focused primarily on addressing the health needs of this population, and sparingly addresses the social determinants of health impacting their well-being. Currently, healthcare systems are not designed to consistently address the complex health and social care needs of this population. Purpose: To identify integrated and coordinated healthcare models that effectively integrate the health and social care needs of community dwelling frail older adults. Methods: A scoping review of the literature was conducted in order to determine the key components of integrated healthcare models. Results: 24 articles were included that described 20 models of integrated healthcare internationally (6=USA, 5=Canada, 5=Netherlands, 1=Australia, 1=Italy, 1=France, 1=other European cities). Key elements included: case management, multidisciplinary team, involvement of a primary care physician and/or geriatrician, an electronic information sharing system, a comprehensive geriatric assessment, and individualized care plans. Conclusion: Although many models had similar components, no two models were identical, indicating that there is no one correct or ‘better’ way to best meet the needs of frail older adults as long as the healthcare provided is integrated and coordinated and addresses both health/social needs.

Introduction

Canada’s population is aging rapidly, and by 2063, 27% of the Canadian population will be older adults (>65 years of age). Currently in Ontario, 1% of the population with complex health and social needs is responsible for 30% of health system costs. This burden on the healthcare system results from frail older adults overusing the scarce healthcare system funding with repeated emergency room visits and long-term care admissions due to unmet needs (Goldhar et al., 2014). Frailty can result in older adults becoming more susceptible to adverse health outcomes, resulting in a decline of both the physical and cognitive body systems. Most often, the healthcare needs of frail older adults are generally addressed first, however many healthcare professionals agree that the social needs (such as limited health literacy and unstable housing/food availability) also have major implications for the overall well-being of frail older adults (Greaves & Rogers-Claeare, 2009). By not addressing the health and social care needs of this population simultaneously, an ineffective system, from both a clinical and administrative perspective, is produced (Beland & Hollander, 2011). Integrated and coordinated healthcare consists of organizational systems that work at various clinical levels to actively collaborate between and within care sectors (Kodner & Spreeuwenberg, 2002). The intent of integration is to create a continuum of care that increases the efficiency, as well as the satisfaction for those receiving care, such as frail older adults who receive services across multiple care providers and settings, in an effort to overcome the administrative and financial barriers that exist (Kodner & Spreeuwenberg, 2002; Beland & Hollander, 2011). The objective of this scoping review is to identify and describe integrated and coordinated healthcare models, both nationally and internationally, that effectively integrate the health and social care needs of community dwelling frail older adults.

Methods

A scoping review of the literature was conducted using the framework proposed by Arksey and O’Malley (2005) to identify integrated models of healthcare that addressed both the health and social care needs of frail older adults. The following electronic databases were searched: MedLine, CINAHL, AgeLine, AMED, PsychINFO, and The Cochrane Library. A search of a generic search engine (‘Google’) was conducted for grey literature and the first five pages of results were screened for relevance. Manual hand searching of the reference lists of studies retrieved from database searching was also completed to identify additional studies. Articles that had a target population of community dwelling frail older adults and were describing a model of healthcare that was integrated and/or coordinated were included. Articles that described models of healthcare that were implemented solely within homecare and/or long-term care and/or palliative/end-of-life care settings and/or in hospital and/or primary care (i.e. only with primary care physicians [PCP]) were excluded. Articles that failed to address both the health and social care needs were also excluded. Additionally, articles that described models of healthcare that were primary web-based/virtual, not available in English and were primarily describing a
study protocol, using the model as part of a program evaluation, or performing an economic evaluation were also excluded. Articles not available online were excluded due to time constraints and costs associated with accessing print resources/interlibrary loan requests.

Results and Discussion

24 articles were included that described 20 models of integrated healthcare internationally (6=USA, 5=Canada, 5=Netherlands, 1=Australia, 1=Italy, 1=France, 1=other European cities). Each model was described differently, for example, some focused on the structure of the model and its implementation, while others focused on the effectiveness of the models or the economic value associated with model implementation. Six models were based off the components described within the Chronic Care Model (CCM), an evidence-based framework described by Wagner (1998). Key elements of the CCM include a multidisciplinary team, chronic-disease self-management education and support, effective integration and coordination of care across all services, better access to and funding for community-based services, etc.

The following elements were determined to be common across models and are associated with positive outcomes for frail older adults: case management, multidisciplinary team, close involvement of a primary care physician and/or geriatrician, a universal electronic information sharing system, a comprehensive geriatric assessment that analyses both the health and social needs of the individual, individualized care plans to address health/social care needs, and smooth transitions across care settings. Models and programs that strive to provide coordinated and integrated care for frail older adults may do well to include these essential components.

Conclusion and Future Directions

What makes one model more successful than another was not clear in the literature, however, to be successfully implemented, care providers must cooperate with each other to address the equally important health and social care needs (Béland & Hollander, 2011). Although many of the models had similar components, no two models were identical, indicating that there is no one correct or ‘better’ way to best meet the needs of this population as many of the models were proven to be effective. Overall, key factors that should be considered when ensuring better continuity of care for frail older adults should include a case manager (or equivalent) who can assist in navigating the healthcare system, integration of services through common information sharing systems, coordination across various services to limit repetition and reduce burden on the healthcare system, and involvement of a primary care physician.

Future research should focus on conducting a systematic review that seeks to understand what components of the models are most effective in addressing the needs of frail older adults, as well as economic evaluations to determine the costs that are associated with model implementation in comparison to potential cost-savings that the healthcare system could benefit from long-term.

As OTs and healthcare providers, it is important to acknowledge the positive impact that integrated/coordinated care can have on frail older adults, and foster an environment of care that is person-centered and fully addresses the needs and concerns of not only the healthcare team, but also the patient and their families.

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References


INTRODUCTION

Cardiovascular Disease is a global pandemic with over 422.7 million cases and is associated with 17.92 million deaths annually. Globally, CVD remains a leading cause of health loss and chronic disability in all regions of the world. The Vascular events In Surgery patients cOhort evaluatIon - Cardiac Surgery (VISION Cardiac Surgery) is an ongoing prospective observational cohort study being completed on adults undergoing heart surgery. Function is an important outcome measure as it contributes to overall quality of life. There is a current lack of evidence investigating the functional outcome of individuals post cardiac surgery, which may be resultant of a lack of a measure that has been validated in this population. The validation of the Standardized Assessment of Global Function in the Elderly (SAGE) scale in adult cardiac surgery patients is a sub-study of the VISION Cardiac Surgery. The SAGE is a new scale used to assess global function that will be administered to determine perceived function in individuals that have undergone heart surgery. To validate the SAGE in this population, different assessment tools are used to help determine its psychometric properties. The SAGE measures of physical and cognitive function by assessing 3 functional domains: ADLs, IADLs, and cognition. This sub-study investigates the concurrent validity of the SAGE for its 3 functional domains. Furthermore, this study will describe functional outcomes of the studied sample and explore trends in demographic variables. Criterion for the SAGE relating to its three functional domains include Barthel Index of Daily Living, Lawton’s Instrumental Activities of Daily Living scale, and the Digit Symbol Substitution Test (DSST). The Barthel Index measures the extent to which somebody can function independently and has mobility in their activities of daily living. The Lawton’s IADLs scale was developed to assess function with respect to completion of IADLs required for living in the community. The DSST is a standardized pencil and paper test measuring psychomotor performance, looking at working memory and attention.

Purpose. The aim of this study is to identify if the SAGE accurately measures functional domains of ADLs, IADLs, and cognition of individuals post-cardiac surgery. Moreover, this study will describe general functional status post-surgery as well as demographic trends associated with this studied population.

METHODS

Participants. Subjects were recruited from a pre-existing roster of participants from the VISION Cardiac Surgery study. Home visits were completed and consisted of a comprehensive functional assessment. Data from previous studies and this current study were pooled for analysis.

Analysis. Sample scores on assessments of functioning including ADL (Barthel), IADL (Lawton) and cognition (DSST) were examined using descriptive statistics. Analyses were completed between domain-specific components of the Barthel, Lawton and DSST versus the corresponding domain specific scores on the SAGE. Sample demographics and functional ability were summarized using descriptive statistics. A regression analysis, ANOVA and independent t-test was completed with the variables of age, sex, ethnicity, level of education and time since surgery to describe the impact of demographic factors and heart function prior to surgery on current function measured by the SAGE.

RESULTS

Description of sample. Sample included 158 participants in demographic analysis. Function as reported on the SAGE was a mean of 2.50 (SD: 3.98) with an average age of 71.00 (SD: 8.24). 118/158 were male (74.7%), 40/158 were...
female (25.3%). Large majority of the sample (89.9%) reported being Caucasian.

**Demographics.** Regression and Pearson's correlation coefficient were calculated for the variables of age, time since surgery and prior heart function; no trends reached significance. An independent t-test was found significant (p=0.015) difference between group means (-2.395) demonstrating men scored lower on the SAGE than women. An ANOVA was run on the variables of ethnicity and level of education demonstrating no significance in between group differences. A regression was repeated for individuals whose function was worse than 1 standard deviation above the mean (SAGE score ≥6) in order to explore trends in this sub-group. Of the variables included, only age reached significance (p=0.006) with moderate negative correlation (r=-0.490).

**Cognition.** A total of 80 participants were included in the analysis. There was a weak negative correlation between the DSST score and the cognitive domain scores of the SAGE (r=-0.198). These results were not statistically significant (p = 0.073).

**ADLs.** A total of 151 participants were included in the analysis. There was a strong negative correlation between the Barthel Index of Daily Living and the ADL component scores of the SAGE (r=-0.713). These results demonstrated statistical significance (p = 0.01).

**IADLs.** A total 152 participants were included in analysis. There was a moderate negative correlation between the Lawton’s IADL scale and the IADL domain-specific scores of the SAGE (r=-0.32). These results demonstrated a statistical significance (p = 0.03).

**DISCUSSION**

Analyses of the global score and ADL domain-specific scores of the SAGE appear to be valid in measuring client-reported function. The assessment demonstrates clinical utility as it is quick to administer, requires no formal training, and is cross-culturally generalizable. Preliminary evidence suggests adequate concurrent validity to warrant the use of ADL domains of the SAGE in practice. A weak correlation was shown for the Lawton’s IADL scale and the IADL domain-specific scores of the SAGE. This suggests that the use of the IADL and cognitive domain of the SAGE in isolation may be insufficient in determining IADL and cognitive function, respectively.

Descriptions statistics of this sample demonstrated a high baseline level of function with the majority of the sample reporting no or minor difficulties on one domain. Furthermore, there was no significant association between time since surgery and the level of function reported on the SAGE. This may indicate that participants have reached a plateau in functional recovery prior to our assessment. There were no age related trends in function when looking at the sample as a whole. Sex was the only demographic variable that reached significance in the full sample. This indicates that in our sample, men reported greater function after cardiac surgery. Caution is required when interpreting these results as a majority of the sample is male, however this difference may justify future investigation. Exploratory analysis of individuals with poor function, found that age was a significant predictor of function with a moderate negative correlation. This trend demonstrated that individuals who had cardiac surgery earlier in life demonstrate poor functional recovery.

**LIMITATIONS**

Limitations for this project include the risk of sample bias, as those who are poorer functioning or those who were deceased since the initiation of the VISION Cardiac Surgery study may have been more likely to score poorly on the SAGE but were unreported for the study. Another limitation is volunteer bias as participants of this study are not being compensated for their involvement.

**CONCLUSION**

The results from this study will be useful in determining whether the SAGE scale accurately reflects the functional status of the adult cardiac population, specifically the ADL, IADL, and cognition domains. Reformattting the IADL specific questions on the SAGE to improve sensitivity and specificity may provide greater concurrent validity associated with IADL function. Further investigation of the cognitive domains of the SAGE is recommended using a more comprehensive assessments to determine its concurrent validity. Our results indicate that functional recovery following cardiac surgery is very strong, however future studies may benefit from having access to pre- and post-data for measuring change in function.

**References**


HIGH INTENSITY EXERCISE FOR TRAUMA PREVENTION AMONGST FIREFIGHTERS

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ABSTRACT

Introduction: Firefighters and other first responders face high levels of stress and trauma, which can have serious negative implications on their overall functioning. There is a growing body of evidence that suggests that high-intensity exercise could help reduce the long-term symptoms associated with trauma, which could provide an accessible, proactive approach.

Objectives: The objectives of this exploratory project were to: (1) Explore the capacity for implementing recommendations associated with high-intensity exercise among firefighters; (2) Identify next steps for research and practice.

Methods: Two occupational therapy students conducted qualitative interviews with 8 firefighters. Consultations were audio recorded and analyzed using a thematic approach (Braun & Clarke, 2006) to identify opportunities and challenges.

Results: Four themes were identified: (1) Current practices are evolving and beneficial, but do not meet the needs of all firefighters; (2) Stigma towards mental health conditions is a dying culture, but is still apparent in firefighters; (3) Most firefighters are receptive to implementing an exercise program; and (4) Implementing a high-intensity exercise program will be challenging for firefighters.

Conclusions: Currently no research exists on the impact of exercise for trauma prevention in first responders. There is a need to develop a protocol for exercise following a critical traumatic incident, specifically to examine timing, duration, and type of exercise program.

INTRODUCTION

Firefighters face high levels trauma in their jobs, which can lead to post-traumatic stress disorder (PTSD) (Rosenbaum, Vancampfort et al., 2015). While there are available interventions for PTSD, there is a growing concern that these interventions are not always accessible to those in need. There is an urgent need to develop interventions that are accessible and acceptable to firefighters in order to prevent PTSD, build resiliency and promote recovery. A promising approach is the use of high-intensity exercise for trauma prevention amongst firefighters. A growing body of evidence suggests high-intensity exercise could help reduce the long-term symptoms associated with trauma (Rosenbaum Vancampfort et al., 2015).

OBJECTIVES

(1) Explore the capacity for implementing recommendations associated with high-intensity exercise among firefighters; and (2) Identify next steps for research and practice.

METHODS

Two occupational therapy students conducted qualitative interviews with 8 firefighters. Recruitment was purposive and based on a snowball sampling approach. The consultations were guided by a semi-structured interview guide focused on understanding their perspectives of current practices following trauma, the feasibility of implementing a high-intensity exercise protocol, and key factors to consider in order to maximize adherence and compliance. The data collected from the consultations was analyzed using a descriptive, thematic approach (Braun & Clarke, 2006).

FINDINGS

Participant Table:

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Role</th>
<th>Career years</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua Campbell</td>
<td>Full time</td>
<td>20 yrs</td>
<td>Male</td>
</tr>
<tr>
<td>Giannis Karabassis</td>
<td>Full time, Volunteer</td>
<td>6 mos, 3 yrs</td>
<td>Male</td>
</tr>
<tr>
<td>David Smith</td>
<td>Full time</td>
<td>13 yrs</td>
<td>Male</td>
</tr>
<tr>
<td>Ravi Kapur</td>
<td>Full time</td>
<td>15 yrs</td>
<td>Male</td>
</tr>
<tr>
<td>Mindy Chu</td>
<td>Full time</td>
<td>5 yrs</td>
<td>Female</td>
</tr>
<tr>
<td>Doug Harris</td>
<td>Full time, WFI*, PFT**</td>
<td>8 yrs</td>
<td>Male</td>
</tr>
<tr>
<td>Amanda Mosinski</td>
<td>Full time</td>
<td>12 yrs</td>
<td>Female</td>
</tr>
<tr>
<td>Tariq Alawi</td>
<td>Full time, Acting Captain, PFT**</td>
<td>26 yrs</td>
<td>Male</td>
</tr>
</tbody>
</table>

*Wellness Fitness Initiative, **Peer Fitness Trainer

Theme 1: Current practices are evolving and beneficial, but do not meet the needs of all firefighters.

“Departments are starting to realize it’s a really big problem, I don’t think they know how to handle it yet.” - Mindy Chu

“The crew or captain can encourage you to reach out for help. As long as you’re doing your job, no one is going to force you to reach out for help.” - David Smith
The fire departments have resources available such as peer support, Critical Incident Stress Teams, and Employee Assistant Programs. For the majority of the time, however, it is up to the individual to reach out and access the services. Therefore, some individuals often do not receive the necessary supports and services they require following a traumatic incident, leading to the potential development of PTSD.

**Theme 2: Stigma towards mental health conditions is a dying culture, but still apparent in firefighters.**

“I run into burning buildings, but I feel sad today.” - Joshua Campbell

“The younger generation, people are more willing to talk about - not so much that ‘suck it up, buttercup mentality,’ but it’s still there for sure.” - Mindy Chu

While some participants stated that stigma towards accessing supports has drastically decreased amongst firefighters, most stated that it is still exists. As current practices are not meeting the needs of all firefighters, many individuals “fall between the cracks.” Often, individuals do not reach out for the fear of appearing weak.

**Theme 3: Most firefighters are receptive to implementing exercise programs.**

“The younger guys are more receptive to exercise.” - Doug Harris

Each stakeholder has confirmed that their firehall does have an exercise facility, but it is typically quite small and has older and/or broken equipment. Firefighters often times bring in their own equipment or do body weight exercises. Some stakeholders reported enjoying group exercise with their team. Some participants noted that older firefighters exercise less often and with less intensity.

**Theme 4: Implementing a high-intensity exercise program will be challenging for firefighters.**

“Everything in your mind and body is heading in the other direction from high intensity.” - Joshua Carter

“If you could prove that it would really benefit your heart and your brain, that might change people’s views” - Amanda Mosinski

Participants highlighted that the timing of the exercise program would have to fit their schedule. When returning from a traumatic call, the main priority is to prepare the truck for another call and to rest. To get buy-in from firefighters to follow an exercise program immediately following a traumatic call, they would need evidence about its benefits, and it would need to be specific and relatively short. Suggestions for implementation included recommending cycling, being mindful of injuries, and keeping the program short in order for the team to be ready for another call.

**DISCUSSION & CONCLUSION**

There is a need to expand trauma prevention interventions amongst firefighters. Evidence suggests that high-intensity exercise could help reduce the long-term symptoms associated with trauma (Rosenbaum et al., 2015). The results of this research indicate that firefighters are receptive to the implementation exercise programs. However, to date, the literature provides little insight into the feasibility of implementing recommendations for high-intensity exercise following a critical incident among first responders. In a future study combining these results with results of the literature review conducted by physiotherapy colleagues at the School of Rehabilitation Science at McMaster University, an accessible, proactive intervention exercise program can be developed and investigated to reduce the impact of trauma on first responders.

**REFERENCES**


‘My AUTO-Biography’: Driving, mobility planning, and older Canadians

Students: Laura MacDonald, MSc. OT 2019 Candidate and Humna Malik, MSc. OT 2019 Candidate
Supervisors: Brenda Vrkljan, PhD, OT. Reg. (Ont.); Ruheena Sangrar, Phd candidate 2019, OT. Reg. (Ont)
Research Team: Chiarina Crawford, OT. Reg. (Ont.); Nitsa Targaras OT. Reg. (Ont.)

**Abstract**

**Introduction:** For individuals aged 65+, decisions concerning driving retirement have been identified as one of the most difficult transitions. Loss of licensure in later life, whether voluntary or otherwise, has been associated with higher rates of depression, social isolation, and even mortality. Driving refresher programs can enable older adults to maintain their behind-the-wheel skills while also providing an opportunity to plan ahead for life without a license. The purpose of this study was two-fold: 1) to explore the meaning of driving in older adulthood (aged 65+) by reflecting on the relationship between having a drivers’ license and sense of self using a lifespan perspective; 2) consider the role of driver refresher programs for supporting mobility in later life. **Methods:** In this qualitative study, semi-structured interviews (n=3) were conducted. Directed content analysis was used to examine the data. **Results:** From the analysis, the main themes identified were: 1) AUTO-biography: linking licensure to occupational identity 2) Self-awareness: Behind-the-wheel accommodations and accountability as an aging driver 3) To drive or not to drive: Factors influencing driving retirement. **Discussion & Future Directions:** Findings highlighted the importance of driving as a meaningful occupation, which develops early in young adulthood and continues throughout life. For clinicians, understanding the importance ascribed to this occupation is key and that driver refresher programs aimed at older adults can provide a context to initiate discussions concerning driver retirement.

**Background**

The ability to drive has been described by older adults as critical to their level of community mobility and social engagement. In fact, one’s identity as a ‘driver’ has been linked to the notion of ‘occupational being’ (see Figure 1), which can shift and evolve as one moves across the lifespan. As individuals grow older, they can experience health and medical changes that can impact the cognitive, visual and motor skills necessary to operate a motor vehicle. In some cases, medical fitness-to-drive may be compromised, which can disrupt occupational participation with resulting consequences on one’s sense of self. Hence, it is important to consider how to best address this disruption while also supporting ongoing mobility and participation.

Driving refresher programs aimed at older adults can provide a strategic and timely opportunity to raise the issue of planning ahead for driving retirement. While recent legislative changes highlight the role of Occupational Therapists (OTs) for reporting those who may be a medical risk behind-the-wheel, ensuring out-of-home mobility remains supported is critical to occupational participation. Furthermore, understanding factors that can influence adults’ engagement in refresher programs can provide important insights for OTs to facilitate the transition to driving retirement.

**Objectives**

1. To explore the meaning of driving to older adults in relation to their occupational identity at different points in their lifespan, including looking ahead to driver retirement;
2. To explore perceptions of receiving feedback on their driving as part of a potential refresher program aimed at supporting community mobility.

**Methods**

This qualitative study builds on priori themes that emerged from focus groups previously conducted with older drivers (n=23). In the current qualitative study, participants were recruited from the intervention arm of a randomized controlled trial that is exploring the impact of video-based feedback on behind-the-wheel skills of older drivers. Semi-structured interviews (n=3) were conducted with two male and one female participant aged 72, 73 and 79 years respectively. Directed content analysis was used to examine the data. Two research team members individually read the transcripts and proceeded with line-by-line coding of the transcripts. Team members discussed the codes, resolved any discrepancies and classified the codes according to emergent themes.

**Results**

**Theme 1: AUTO-biography: Linking licensure to occupational identity.** From the analysis, participants each described how their close relationship to their automobile began early in young adulthood and weaved its way through their respective life narratives (see Figure 1). For example, Bruce identified the sense of “accomplishment” he felt upon getting license for the first time and the freedom to spend time with friends. As they moved into adulthood, participants the reasons for driving changed (e.g., childcare, work and family vacations) and were closely linked to occupational roles, as William stated, “well I needed the car for work, it was essential at the time and also we had a young family.” In older adulthood, participants described access to their automobile as critical to their ongoing participation in meaningful occupations, including maintaining family connections, running errands, and social activities. Jane spoke to the freedom that comes with having a driver’s license: “it enables me to go to the gym when I feel like it.”
Theme 2: Self-awareness: Behind-the-wheel accommodations and accountability as an aging driver. Results suggested a relationship between their changing behind-the-wheel abilities, a heightened level of self-awareness, and their accountability as an aging driver. They were open to receiving feedback about their driving and valued hearing about strategies that might improve their driving skills, as Jane described: “After doing the test [participating in the intervention] I am much more careful. I do have to remind myself... when you have driven for a long time, you might have a lot of bad habits.” When assessing their own behind-the-wheel skills, they compared themselves to ‘other’ seniors who were poor drivers: “We live in a building with a lot of seniors, and, we don’t want to drive like seniors do.” [Bruce]

Theme 3: ‘To drive or not to drive?’: Factors influencing driving retirement. When participants were asked to consider their future mobility, they identified barriers that would impact their occupational participation and a steep learning curve to adapt to life without a license. A lack of viable transportation alternatives was a seen a major problem. Jane described the pressure she felt from peers for even considering giving up her license but still saw the value: “…you have to sort figure it out and you know it is one more thing you have to learn and it is quite a big decision.” None of the participants had formalized how they would navigate their community without a license. Bruce indicated such a plan would only be enacted when he saw fit: “…when I am not comfortable, I won’t drive.”

Discussion & Future Directions
This project outlines preliminary findings that suggested the meaning of driving is established early in life and closely related to one’s identity and occupational participation. This close relationship may be why the transition to driving retirement in later life can be difficult. While caution is warranted due to the small sample, more interviews are planned in the coming months that aim to understand factors that influence this transition. Our results suggest that refresher training programs and the feedback received by older adults is appreciated. Such programs can provide an important opportunity to not only address changes in behind-the-wheel skills, but also initiate discussions on driving retirement. In particular, future work may consider examining the perspectives of older drivers with respect to key ‘players’ involved in their future mobility planning. Such players might include OTs who already have an important role in primary care when it comes to fall prevention. Extending this role to driving as well other transportation options is important to support access to out-of-home occupations that give meaning to everyday life.

Acknowledgements
We would like to thank the older drivers for their participation in the study as well as our community partners Young Drivers of Canada, the McMaster Institute of Research on Aging and the Labarge Optimal Aging Opportunities Fund for supporting this project.

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The effectiveness of Brief Behavioural Treatment of Insomnia (BBTI) for sleep disturbance in community-dwelling older adults with depression or anxiety

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2Halton Seniors Mental Health Outreach Program, St. Joseph’s Healthcare Hamilton, ON, Canada

Abstract

Objective: The aim of this study was to identify if Brief Behavioural Treatment for Insomnia (BBTI) can support improved sleep in community-dwelling older adults with depression and/or anxiety.

Methods: Sleep outcome measures were administered in a before-and-after study design to assess the effectiveness of BBTI with seven participants (86% female, mean age: 79 years).

Results: Participants reported reduced sleep disturbance and sleep-related impairment after the intervention. Sleep efficiency also improved among four of the seven participants.

Conclusion: Emerging evidence indicates that the use of BBTI is a promising behavioral sleep intervention for older adults. Future research should incorporate intervention in a group format.

Introduction

Insomnia is one of the most common complaints among older adults in primary care and it frequently goes untreated1. In this setting, pharmaceuticals remain the most common treatment for insomnia, even though long-term efficacy of medication remains unclear and its prolonged use could lead to tolerance and dependency2. Cognitive behavioral therapy for insomnia (CBT-I) is a first line treatment3. It requires standardized training, is lengthy to administer and is not inclusive of people with cognitive impairment4. BBTI was developed to provide older adults with behavioural techniques to improve insomnia symptoms5. The BBTI protocol uses a one-on-one approach with clients and does not exclude individuals with mild cognitive impairment (MCI), mild depression or anxiety4.

The purpose of this study is to find out if BBTI supports improved sleep and decreased sleep related impairment in community dwelling older adults with depression and/or anxiety.

Literature Review

The purpose of the literature review was to amalgamate the evidence on BBTI. The Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) was used to structure the search process and eleven articles were identified that examined BBTI6. Nine implemented the original BBTI protocol and two implemented a modified protocol. Sleep efficiency and/or sleep quality improved in all studies. BBTI also reduced sleep variability in older adults with chronic insomnia, and participants with higher baseline sleep variability had a greater response to the intervention7.

Methods

The present study used a before-and-after design, and each participant was seen once a week for six weeks. The outcome measures were administered at sessions one and six. These included: Patient-Reported Outcome Measurement System (PROMIS) Short-Form for Sleep Disturbance (8b) and PROMIS Short-Form for Sleep-Related Impairment (8a). Participants also completed daily sleep diaries. The BBTI educational package, reviewed in session two, contains information on insomnia, sleep changes in older adults, factors regulating sleep, and the four BBTI principles. The participants then completed their first Weekly Goal Sheet. Sessions three to five included a review of the participants’ sleep diaries from the previous week and collaboration to problem solve and determine new strategies for the next Weekly Goal Sheet.

Results

Seven participants were included, six women and one man, with an average age of 79 years old (SD=5.8). There was a decline in participants’ PROMIS Sleep-Related Impairment scores ($X_{\text{PRE}}$=25.7, SD=5.2; $X_{\text{POST}}$=18.2, SD=5.5) and Sleep Disturbance scores ($X_{\text{PRE}}$=29.8, SD=5.3; $X_{\text{POST}}$=21.7, SD=8.8) after implementing BBTI. Three participants had
missing sleep diary data. Among the four participants with fully completed sleep diaries, total time awake in bed declined and overall sleep efficiency improved.

Three common BBTI strategies helped improve participants’ sleep: stimulus control, behavioural activation and reducing time in bed. Participants benefited from reducing engagement in stimulating activities prior to bedtime. One participant stated she was making an effort to listen to calming music as well as reduce social activity and screen time near bed time (Participant 7). Participants also engaged in more activities throughout the day. One participant stated “I went from doing nothing to doing one to two activities a week” (Participant 1). Reducing time spent on other activities in bed increased participants’ sleep efficiency and helped them associate their beds and bedtime only with sleep.

**Conclusion**

The results suggest that BBTI can reduce sleep disturbances and improve sleep efficiency among community-dwelling older adults with depression and/or anxiety. These results are consistent with existing literature on BBTI with older adults. Past BBTI articles commonly excluded older adults with psychiatric conditions; however, the present study demonstrated BBTI is effective with this population. BBTI does not require extensive clinician training, and can be modified to suit the needs of a client. BBTI can also be used with older adults who have mild cognitive impairment.

In conclusion, emerging evidence demonstrates that BBTI can be an effective tool to improve sleep outcomes in older adults with depression and/or anxiety. Future research should examine the use of BBTI in a group format to understand if implementation is more efficient and/or effective in a group. Furthermore, additional studies should use more rigorous methodology so that the efficacy of BBTI in this population can be ascertained.

**Acknowledgements**

The authors wish to thank the case managers of the Halton and Hamilton Seniors Mental Health Programs: Lauren Chan, Sue Cunningham, Cynthia Vander Kooij, Linda Kallio, Andrea Oattes and Joanne Levie. We would also like to acknowledge the Clinical Manager of the Seniors Mental Health Outpatient and Outreach Programs, Julia A. Baxter.

**References**

Conceptualizing Safety and Risk in Relation to the Older Adult Population

Authors: Laura Nelson, Maggie Weir, Samantha Maas-Crowell, Cheryl Balzer, M.Sc. (OT) Candidates 2019
Supervisor: Evelyne Durocher, OT Reg. (Ont.), McMaster University

Abstract

Background: Safety is highly prioritized in occupational therapy practice despite there being a lack of clarity in what is meant by “safety” or “risk” in relation to older adults. Purpose: To explore concepts of “safety” and “risk” in order to better understand what is meant by these terms in the literature. Method: A scoping review of the literature guided by the Arksey and O’Malley (2005) framework and the recommendations provided by Levac Colquhoun and O’Brien (2010). Findings: “Safety” and “risk” were defined within ten categories, although all sources had diverse definitions to describe these terms. Implications: This review provides the foundation for a broader critical discussion about how safety and risk fit among other values and priorities informing health and social care for older adults, and how this may differ in various contexts and from a variety of perspectives.

Introduction and Literature Review

Safety is highly prioritized in occupational therapy practice and in the process of making health and social care recommendations for older adults despite there being a lack of clarity in what is meant by “safety.” Additionally, it may not be recognized that ‘safety’ and ‘risk’ can be defined in myriad ways and may hold different meanings or values for individuals and practitioners. There is a need to understand what is meant by safety and risk in order to balance these with aims of promoting aging in place. The purpose of this study is to explore concepts of ‘safety’ and ‘risk’ to better understand what is meant by these terms in the literature.

There are close to 6 million Canadians aged 65 or older today, a number that is expected to rise to approximately 10 million by 2036 thereby representing an enormous number of individuals who are and who will be receiving health and social care services (Statistics Canada, 2018). Based on the literature review, safety for older adults in health and social care services provided a narrow conceptualization of physical safety with limited acknowledgement of other values or concerns. There seems to be a lack of consensus on what is meant by safety and risk for older adults. In order to explore what is meant by safety and risk in relation to the older adult population, this research investigated concepts of risk and safety in the literature through a scoping review.

Methods

This scoping review was guided by the Arksey and O’Malley (2005) scoping study framework and additional recommendations by Levac, Colquhoun and O’Brien (2013).

Results and Discussion

A total of 223 articles were included in this scoping review, 113 of which did not include a definition of safety or risk. 70 articles included discussion using only the keyword of risk, 15 articles included discussion using both keywords of safety and risk and 27 articles included discussion using only the keyword of safety. Articles included were predominantly from North America (89); other sources include: Australia (4), Europe (12), Israel (2), United Kingdom (5) and non-specific (1). Within these articles, definitions of older adults ranged from 50 to 75 and up and 14 articles did not define an age range. Findings are organized below explaining the summarized definition for the categories discovered in the scoping review.

Abuse: Twelve articles broadly defined elder mistreatment or elder abuse as an intentional act, or omission, occurring in a relationship of trust, that can cause harm or risk, and encompasses sexual abuse, physical abuse, financial abuse, emotional abuse and neglect. Related to abuse, suicide and self-neglect were also cited as risks.

Driving: Eleven articles identified risk and/or safety factors associated older adults’ driving. Categories included: physical (e.g. injuries),
cognitive (e.g. divided attention/memory), visual (e.g. macular degeneration) and environmental (e.g. limited public transportation) risk factors. Seven articles identified strategies for older drivers. The categories were: making automobiles safer, making roads safer, assessing driving skills as necessary, developing other means of transportation, providing materials (e.g. ‘drive well’ handbook) and safety behaviours (e.g. self-regulation/monitoring).

**Home Safety:** Twenty-one articles identified home safety concerns for older adults. The risks were presented as environmental hazards such as: physical components around the home, the absence of safety equipment, hazardous areas of the home, stability of the home structure, and older adults’ perception of safety in the home.

**Injury:** Four articles identified risks of injuries for community-dwelling older adults, which included: hazards (e.g. risk of falls, fire or electrical issues; consideration of kitchen and bathroom safety), poor lighting, improper use of vision and hearing devices, and ADL mismanagement (e.g. poisoning, medication management, hot/cold exposure, unattended appliances). Safety from injury was mitigated by financial and social supports to meet basic needs.

**Medication Management:** Eight articles identified medication-related risks for older adults. Identified risks included: medication adherence or non-adherence, and medication misuse or overuse. Medication safety was also defined as maximizing safe medication use.

**Neighbourhood Safety:** Four articles discussed environment factors related to neighbourhood safety. The factors included: neighbourhood accessibility, urban design, sidewalk maintenance, tripping hazards, cyclist behaviours, lack of directional signs, neighbourhood lighting, noise levels, traffic areas, intersection safety, crime rates, supportive housing, and unknown community members.

**Nutritional Risk:** Fourteen articles identified nutrition risks as inadequate dietary intake which encompasses undernutrition and malnutrition, limited availability of safe and adequate food, the ability to consume nutrients, intentional and unintentional weight loss.

**Psychological:** One article examined psychological risk for older adults in the community, which was broadly defined as older adults experiencing: loss of independence, increased reliance on others, loss of identity or loss of purposeful connections with others.

**Sexual Risk:** One article addressed sexual risk in the context of HIV exposure and includes behaviours such as sexual activity without using condoms, alcohol abuse, and injection drug use.

**Social Isolation:** Six articles identified social isolation, emotional isolation, loneliness, social loneliness (e.g. lack of engagement), and emotional loneliness (e.g. loss of a partner) as risk for older adults. One article identified multiple benefits of social networks (e.g. better physical and/or mental health, and less risk of an earlier mortality).

**Future Directions**

Occupational therapy is centered around supporting clients to engage in meaningful occupations. There is a heavy focus on safety despite there not being a consensus on what is understood as safety and what risks are implied. Having a more comprehensive understanding of concepts of ‘risk’ and ‘safety’ will better enable occupational therapists to balance identified risks with aims of promoting engagement in meaningful occupations in current health and social care contexts.

**Conclusions**

Examination of conceptualizations of safety and risk in the literature, this review provides the foundation for a broader critical discussion about how safety and risk fit among other values and priorities informing health and social care for older adults, and how this may differ in various contexts and from diverse perspectives.

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**References**


**Acknowledgements**

The authors would like to thank Dr. Evelyne Durocher and McMaster University for ongoing support and guidance throughout this research project.
Do-Live-Well@Uni: Translating OT Health Promotion Messages for University Students

Authors: Victoria Sarunsky & Yusam Wong, MSc(OT) candidates 2019, McMaster University
Supervisors: Dr. Sandra Moll, McMaster University & Dr. Ellie Fossey, Monash University

INTRODUCTION

Among students pursuing post-secondary education, issues with mental health are prevalent and continue to rise.¹ Promoting mental health and wellness in post-secondary education is an emerging national priority,² yet many campuses are struggling to meet the demands of the increasing number of students seeking support.¹ There are few resources that focus on upstream health promotion on campus, and even less attention to occupational strategies that might build resilience and prevent mental distress. Given that the transition to university is a time when many students must learn to navigate new occupational roles, routines, and social environments for the first time,³ it is posited that an occupational approach to mental health promotion may be beneficial in addressing the current issue.

“Do-Live-Well” (DLW) is a Canadian health promotion framework that explores the link between activity engagement, time use patterns and health, and well-being to expand the dialogue on ways to promote health and well-being.⁴ The purpose of this study is to investigate the relevance of occupation-based health promotion messages of the DLW framework for supporting first-year undergraduate students at McMaster University.

METHODS

A qualitative approach, based on principles of experience-based co-design, was adopted to inform this study. Eight first-year undergraduate students (2 men, 6 women) and five campus support providers (2 men, 3 women) were recruited using a combination of purposive and snowball sampling. Students were all from science-based programs. Campus support providers were a mix of professional and volunteer supporters. Data collection and analysis was conducted by two occupational therapy graduate students.

Focus groups with students, and semi-structured interviews with campus support providers, focused on exploring “touchpoint moments” in the university experience that could impact the mental health and well-being of first-year students. Occupational balance also emerged as a prevalent issue for many students.

CONCLUSION

This study adds an occupational therapy perspective to the growing body of literature surrounding first-year university student mental health. Implications for mental health promotion messages are discussed, as well as directions for future research.

ABSTRACT

Purpose: To investigate the relevance of occupation-based health promotion messages in supporting the mental health of first-year undergraduate students at McMaster University.

Methods: A qualitative approach, based on principles of experience-based co-design, was adopted to explore “touchpoint moments” that can affect student mental health and well-being. Focus groups were conducted with a purposive sample of eight first-year undergraduate students. Semi-structured interviews were conducted with five campus support providers. Each participant also completed a brief survey rating their beliefs about the relevance of messages from the “Do-Live-Well” framework. Data was transcribed, coded, and analyzed for themes.

Findings: Three key sources of stress were identified, including: academics, relationships, and living situation. Connecting with others, developing and expressing personal identity, and taking care of yourself were noted as key dimensions of experience that could impact the mental health and well-being of first-year students. Occupational balance also emerged as a prevalent issue for many students.

Conclusion: This study adds an occupational therapy perspective to the growing body of literature surrounding first-year university student mental health. Implications for mental health promotion messages are discussed, as well as directions for future research.

FINDINGS

Stressors: Participants identified three key sources of stress related to the transition to university, including: academics, relationships and living situations. The pressure to achieve academically interfered at times with students’ valued leisure activities, social relationships, and/or health. Social isolation and loneliness were other common issues, and the stigma surrounding mental health issues was a barrier to seeking both formal and informal support. Living away from home, finding stable housing, and limited finances were additional stressors.
Dimensions of Experience: Based on the survey results, all DLW messages were identified as important. According to the focus group and interview discussions, three of the DLW dimensions of experience were identified as particularly relevant:

Connecting with Others. Students appeared to engage in a continuum of superficial to meaningful connection. Meaningful connections helped to “release” daily stress. When the desired depth of connection was not achieved, however, there were poor mental health outcomes. Many students endorsed the idea of peer mentorship, and campus supporters emphasized the value of developing a support network through shifting focus from academics to social connection.

Developing and Expressing Personal Identity. The transition to university was identified as a time of reflection for many students regarding who they used to be, who they were becoming, and who they wanted to become. One “touchpoint moment” for critical reflection was receiving an unsatisfactory grade, which prompted students to reflect on being “average,” and in some cases, prompted them to reconsider university and career goals. As students struggled to redefine their identity, they often experienced poor mental health, and in some cases, this led to thoughts of suicide. Participants talked about the importance of developing an identity outside of academics as a support strategy.

Taking Care of Yourself. First-year was a time when students often struggled to take care of themselves, often sacrificing self-care (e.g., sleep, exercise) in order to devote more time towards academics. Consequences of this were a decline in physical health, an increase in stress, and a dysregulated cycle of self-care. Participants emphasized taking even a small amount of time for self-care as an important support strategy.

Occupational Balance: Managing one’s time and activities was a challenge reported by many participants. Although exams were a time when this was particularly evident, there were many reports that students consistently felt overwhelmed with balancing their time. An enormous sense of guilt appeared to surround this issue, as students made tough decisions about how use their time. Participants endorsed reflecting on time-use as a strategy to address this issue.

DISCUSSION

This study investigated the relevance of occupation-based health promotion messages in supporting the mental health of first-year undergraduate students at McMaster University. It extends previous research on the student experience of transitioning to post-secondary education by considering occupational balance and by highlighting dimensions of experience that could impact mental health and well-being. Furthermore, this study adds a unique upstream mental health promotion perspective to the discussion on student mental health and identifies areas where students could benefit from additional support. While these findings are based solely within the context of McMaster University, they add to the national dialogue on student mental health and set a foundation for future studies. A limitation of this study was that theoretical saturation was not reached due to the small sample size and lack of prolonged participant engagement; however, this study had the strength of triangulating the voices of both students and their campus support providers.

CONCLUSION & FUTURE DIRECTIONS

This study provides a unique occupational therapy perspective to the mental health issues surrounding transitions and contributes to the understanding of the first-year experience. This study demonstrated that the occupation-based health promotion messages of the DLW framework are relevant to first-year undergraduate students and may be beneficial in supporting student mental health. Next steps will be to re-engage the participants in co-designing appropriate mental health promotion strategies that address the identified issues. This study’s findings may also be useful in informing policy change and funding for services at both a local and national level.

ACKNOWLEDGEMENTS

Thank you to all participants in our study who added their voice to the dialogue on student mental health.

REFERENCES


ABSTRACT

Objectives: Dr. Mary Tremblay (1944 - 2009) was a Canadian occupational therapist, historian and advocate for disability rights. Throughout her career, Dr. Tremblay’s research interests included the experiences of early survivors of spinal cord injury (SCI), veterans of war, history of disability and rehabilitation. Dr. Tremblay created a body of research works currently held in the archives at McMaster Health Sciences Library, Hamilton. Our research examined these archives and focused on experiences of civilians and World War II (WWII) veterans with SCIs before 1960 in light of current understandings of disability, rehabilitation, and the occupational therapy (OT) profession. The research question was: “What are the similarities and differences between the experiences of male WWII veterans with spinal cord injuries compared to male civilians with the injury?”

Methods: A conventional approach to qualitative content analysis was used to interpret lived experiences of participants. Interviews were included if they had transcripts available, were primary accounts and focused on experiences of male civilians and veterans who sustained a SCI before 1960.

Findings: Thirteen interviews with eleven participants were analyzed. WWII veterans were found to have greater availability of supports and services and some became advocates for individuals with SCI. Civilians with SCIs had less access to resources and supports for community reintegration. However, both groups experienced similar physical and emotional challenges following their injury and were influenced by the medical model of disability.

Conclusions: Evolution of medical and rehabilitation practices have allowed individuals with SCI to live a full life. Archives, such as Dr. Mary Tremblay’s, represent a unique source of evidence that shed new light on past, current and evolving understandings of disability, rehabilitation, and our role as occupational therapists.

INTRODUCTION: Before World War II (WWII), life expectancy of individuals with spinal cord injury (SCI) was typically less than three months1. The main cause for mortality was from serious bedsores and bladder infections1. With advances in treatment and management of skin and bladder complications, survival rates after SCI improved significantly1. During the interwar period, Canada witnessed a shift in the philosophy of SCI treatment as rehabilitation gained momentum and revolutionized the care for individuals with SCI. At the end of WWII, Department of Veteran Affairs (DVA) was established to provide treatment, vocational training and other benefits to returning veterans with the goal of community reintegration2. In late 1940’s, there was a change in Canadian policies to also support civilians with SCIs. The Canadian Paraplegic Association (CPA) was founded in 1945 by John Counsell and six other veterans with SCI to serve both civilians and veterans with SCIs2. Under CPA, civilians with a lack of funding had improved access to medical, rehabilitation services and wheelchairs3. The purpose of our research is to compare and contrast the lived experiences of SCI found in Dr. Mary Tremblay’s archives of civilians and WWII veterans. The research question addressed was: What are the similarities and differences between the experiences of male WWII veterans with SCIs compared to male civilians with the injury?

METHODS: This qualitative study examined a subset of oral history interviews conducted and transcribed by Dr. Mary Tremblay in 1990’s. The selected subset of interviews was of male WWII veterans and civilians who sustained a SCI before 1960. Six interviews with five veteran participants and seven interviews with six civilian participants with SCI were included. A conventional approach to content analysis was used by the researchers with the purpose of describing phenomena within the lived experiences of the participants4. The included interviews were coded by two independent reviewers until redundancy was achieved. Patterns and relationships that characterize phenomena in relation to the research question were developed through the identification and analysis of themes4.

FINDINGS: Similarities and differences between experiences of male civilians and WWII veterans with SCIs were found within these themes.

Similarities: Both groups experienced common sequelae of SCI such as pressure sores, bowel and bladder issues and difficulty coping with the loss of function. They encountered early rehabilitation challenges due to social and medical community’s emphasis on regaining ability to walk. Due to the influence of a medical model of disability, the onus was placed on the individual living with SCI to adapt to the environment. Both groups received assistance from the CPA which provided both financial support and support through advocacy for individuals with SCI.
Differences: Funding sources differed between the groups. DVA covered treatment expenses for veterans while civilians often had to self-finance their treatment or obtain funding from Workman’s Compensation Board if they were injured at work. Through the DVA, veterans were provided support for community reintegration while civilians were faced with a lack of services. Within society, veterans with SCI were met often with positive social reactions of honor and sacrifice while civilians felt invisible. Veterans with SCI also founded the CPA through advocacy movements which led to civilians with SCI having greater access to DVA run rehabilitation centers and programs. Figure 1 above depicts central themes found in similarities and differences between veterans and civilians with SCIs.

DISCUSSION/IMPLICATIONS: Previous research by Dr. Mary Tremblay has examined historical accounts of civilians and WWII veterans with SCIs. By drawing on Dr. Tremblay’s archives, we generate new knowledge by comparing these lived experiences. While findings suggest significant differences between funding structures available for civilians and veterans with SCIs, there are also parallels. The underlying norms and societal ideologies expressed in these interviews is representative of a medical model of disability. This was evident within physical rehabilitation practices around walking and through expectations to simply work around barriers within the environment. The lens of history also provides an opportunity to examine the development of the OT profession in Canada and explore trends in international OT practice. In some parts of the world, like Ukraine, history is repeating itself with the profession stemming from the rehabilitation needs of war injured. Likewise, OT still has strong ties to a medical model in some countries while others are seeing the profession grow within the social model of disability. As the profession expands globally, archival records are an important source of evidence to understand history of the profession and client experiences of OT services. It is important to consider limitations of using archives, such as potential biases of the creator of the records and whose voices are given a platform to be heard.

CONCLUSION/FUTURE DIRECTIONS: Before WWII, a serious SCI meant certain death. Advances in SCI care after 1945 and as a result of war injuries improved life expectancies. Seventy-four years since the end of WWII and twenty-five years since Dr. Mary Tremblay conducted her interviews, change is now afoot with the Federal Disability Policy. In order to move forward, the OT profession must understand the past, evaluate the current and embrace the future.

ACKNOWLEDGEMENTS: We would like to gratefully acknowledge the work of Dr. Mary Tremblay, support of the archivist, Melissa Caza and Professors Carol DeMatteo and Shaminder Dhillon.

REFERENCES:
5. WFOT, 2018. Bringing Occupational Therapy to Ukraine. [PPT].
and the earlier these procedures are executed, the greater the recovery. Currently, the optimal method for identifying nerve damage is through the use of direct nerve stimulation which is an invasive procedure. There is a need for a better alternative to identifying nerve damage to allow for earlier intervention.

Temperature, blood perfusion and wrinkling of the digits of the hand are interconnected variables which can impact the overall function of the affected limb. Surgeries are typically performed to correct the nerve damage and the earlier these procedures are executed, the greater the recovery. Currently, the optimal method for identifying nerve damage is through the use of direct nerve stimulation which is an invasive procedure. There is a need for a better alternative to identifying nerve damage to allow for earlier intervention.

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### Abstract

**Purpose:** To explore the viability of using TiVi system in assessing extent of injury related to Obstetrical Brachial Plexus Injuries (OBPI) and to explore the development of a visual wrinkling scale specialized towards OBPI.

**Methods:** EMLA cream was applied to stimulate wrinkling in participants. The TiVi700 and TiVi90 software packages were used to assess blood perfusion and skin wrinkling in the 2nd and 5th distal phalanges of the affected vs. unaffected hands. To develop a visual wrinkling scale, the inter-rater reliability results indicate fair agreement on the Fleiss’ generalized kappa calculation. **Findings:** The results indicate there is no distinct pattern in the difference between the two arms with regards to wrinkling scores and blood perfusion scores. The inter-rater reliability results indicate fair agreement on the Fleiss’ generalized kappa calculation. **Conclusions:** This study shed light on the practical difficulties of using the TiVi system and wrinkles scores to assess nerve function related to OBPI. Further research is required to explore clinical utility of a TiVi system.

### Introduction and Literature Review

**TiVi, Wrinkling and Perfusion:** Nerve damage can often be detrimental to the functional status of an individual. OBPI is a condition where the brachial plexus is injured during childbirth. This can lead to various functional impairments which can impact the overall function of the affected limb. Surgeries are typically performed to correct the nerve damage and the earlier these procedures are executed, the greater the recovery. Currently, the optimal method for identifying nerve damage is through the use of direct nerve stimulation which is an invasive procedure. There is a need for a better alternative to identifying nerve damage to allow for earlier intervention.

Temperature, blood perfusion and wrinkling of the digits of the hand are interconnected variables which can impact the overall function of the affected limb. Surgeries are typically performed to correct the nerve damage and the earlier these procedures are executed, the greater the recovery. Currently, the optimal method for identifying nerve damage is through the use of direct nerve stimulation which is an invasive procedure. There is a need for a better alternative to identifying nerve damage to allow for earlier intervention.

### Methods

**Participants:** The participants were recruited from McMaster Children’s Hospital and were clients of the OBPI clinic. The participants were recruited to attend the study from this site. The age range of the participants ranged from 8.5 to 18. Pictures of n=6 participants were taken on both settings of the camera filters. This was done to compare the difference in wrinkling and blood perfusion levels between the hands of the affected and unaffected arms.

**Data Collection:** Three pictures of each of the hands of the participants were taken on both settings of the camera filters. This was repeated after approximately 30 minutes following EMLA application. This was done to compare the difference in wrinkling and blood perfusion levels between the hands of the affected and unaffected arms.

**Inter-rater Reliability:** Thirteen pictures were selected at random which was distributed through email to each of the raters. The ratings were then collected and a Fleiss’ Generalized Kappa calculation was performed on Microsoft Excel.

**TiVi Blood Perfusion and Wrinkle Scores:** TiVi 700 Analyzer software was used to analyze the TiVi scores of the area inside the Region Of Interest (ROI)
for photos of participants taken in a cross-polarized mode. In this mode, the TiVi700 scores in the ROI are correlated and analogous to the RBC concentration of the blood in this area\textsuperscript{45}. As such, higher TiVi scores are assumed to represent greater blood perfusion in the area. Another software package, the TiVi90, can similarly be used to assess total volume of wrinkles inside a certain ROI. This was performed on participant pictures that were collected in co-polarized mode\textsuperscript{3}. Blood perfusion before and after EMLA application was compared for the finger pads of the distal phalanges of the 2\textsuperscript{nd} and 5\textsuperscript{th} digits of both hands. These were chosen due to the fact that the median nerve innervates the 2\textsuperscript{nd} digit, and the ulnar nerve innervates the 5\textsuperscript{th} digit. As such, the effects of any potential damage to the pathways from the brachial plexus to the ends of the digits could be explored via the mediums of skin wrinkling and blood perfusion. Participants were grouped based on their affected and unaffected hands, and their pre- and post-EMLA blood perfusion and skin wrinkling scores were compared via paired sample T-tests. Shapiro-Wilk tests of normality were performed for both samples as well.

<table>
<thead>
<tr>
<th>Results</th>
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<tr>
<td><strong>Inter-rater reliability:</strong> The inter-rater reliability for the raters was found to be kappa = 0.365. This indicates fair agreement on the Cohen’s Kappa statistics. The P values was 0.518 which is higher than 0.05. Therefore, the null hypothesis is not rejected and there is weak evidence against raters being in agreement.</td>
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<td><strong>Blood Perfusion:</strong> For the affected hands, there was a significant difference in the scores for blood perfusion pre- (M=148.40, SD=66.01) and post- (M=127.60, SD=60.67) EMLA application; t(9)=2.27, p=0.049. However, there was also a significant difference in the unaffected hands in the scores for blood perfusion pre- (M=138.8, SD=71.88) and post- (M=123.2, SD=69.95) EMLA application; t(9)=2.615, p=0.028.</td>
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<tr>
<td><strong>Wrinkling:</strong> For the affected hands, there was no significant difference in the wrinkling scores pre- (M=233.0, SD=40.75) and post (M=212.25, SD=25.47) EMLA application; t(11)=1.898, p=0.084. Furthermore, there was no significant difference in the unaffected hands in the scores for wrinkling pre- (M=225.67, SD=30.19) and post- (M=242.58, SD=25.65) EMLA application t(11)=0.12, p=0.907.</td>
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**Discussion and Limitations**

These data do not appear to follow any specific patterns, i.e. perfusion scores are significantly different in both affected and unaffected hands pre- and post-EMLA. Similarly, there are no significant differences in the affected or the unaffected hands for wrinkling pre- and post- EMLA. If this measure was sensitive to any differences in the affected vs. unaffected hands, there should only have been differences in the affected hands for either wrinkling or perfusion pre- and post- EMLA\textsuperscript{1}. Although these results may be confusing, they make more sense in light of the practical issues regarding the TiVi system. Namely, the authors faced numerous challenges when collecting and analyzing data using this system. The software was unreliable and difficult to time properly when taking pictures. This was essential for taking pictures of infants, which was one group that the authors attempted to take pictures of but could not perform properly due to their hand flexing grasp reflex. Furthermore, the TiVi software seemed to be extremely sensitive to the orientation of the hand, and any deviation from a completely flat and straight image of a hand resulted in supposed errors (as judged visually) of the program in assessing wrinkle and perfusion scores. Understandably, this would be very difficult to do with a population such as children with OBPI, who inherently have difficulties straightening their hands and keeping them there for extended periods of time. Overall, this system did not seem effective at collecting data in a clinical setting at this time, although further research and improvement in techniques may yield different results. Similarly, there was weak evidence for raters being in agreement for a visual wrinkling scale. This could be attributed to a number of realistic factors such as the differences in screens used to view pictures, personal differences in opinions on the severity of wrinkling as well as the inherent difficulty of assigning an arbitrary numerical value to a small picture of a wrinkled fingertip. However, these issues highlight the problems that such a scale may face if it were to be deployed into the world of clinical practice. As such, even if the researchers developed strict guidelines for viewing and rating pictures, they may make the scale too cumbersome to use in a fast-paced clinical setting.

**References**

Title: Developing a functional student self-assessment for clinical placement accommodations

Authors: Taylor Jones (M.Sc. OT Candidate) & Dillon Lee (M.Sc. OT Candidate)

Supervisors: Tim Nolan, Tara Packham, and Ashley Kirk

Abstract: Background: The Ontario government has mandated that all universities provide student accommodations based on physical and mental impairments, rather than diagnosis. Currently, there is no student functional self-assessment tool that exists for clinical placement. Purpose: The aim of this project is to develop a student self-assessment for clinical placement by identifying (1) items that should be included and (2) key physical and mental functional demands required by students on placement. Methods: The Delphi method was implemented utilizing 3 rounds of surveys sent to 60 clinical directors from 33 allied health programs across Canadian universities. A functional student self-assessment for classroom accommodations created at McMaster in 2018 was used as the foundation for the first round of surveys. Qualitative questions were used to identify key functional demands required of students. Results: Quantitative analysis was conducted, and items were mapped to the International Classification of Functioning, Disability, and Health (ICF), while qualitative analysis was conducted to identify themes based on respondents’ answers for key functional demands. Respondents identified that the self-assessment should exclude items under health condition and body structure, and include items that fall under ICF body function, environmental factors, activities and participation. Through qualitative analysis, respondents identified key demands as organization and time management, physical functioning, clinical reasoning and decision making, communication, and one minor theme of emotional regulation. Thus, the functional self-assessment should also aim to assess such demands. Conclusion: The results form the foundation for a student functional self-assessment for clinical accommodations, which can be used by Student Accessibility Services (SAS). Further research is required to identify (1) functional demands at individual clinical sites, (2) optimized implementation of self-assessment for improved intake efficiency at SAS, and (3) OT role in SAS.

Introduction

In 2016 the Ontario Human Rights Commission (OHRC) mandated that a mental health diagnosis is not required for a student to obtain academic accommodations in publicly funded universities. As a result, the OHRC introduced a policy stating that all accommodations, regardless of disability type, are determined based on the student’s self-reported functional impairment, Student Accessibility Services (SAS) assessments, and supporting documentation. Diagnosis notwithstanding, universities may provide accommodations in good faith, on a temporary basis pending further documentation. This resulted in universities having to change their approach to providing accommodations while requiring a way to organize disability. The ICF is an internationally recognized, standardized framework to provide a common language across disciplines that focuses on functioning while measuring health and disability. The ICF will therefore be implemented for this research project.

The purpose of this study is to assist in the development of a standardized functional self-assessment that can be completed by students during the SAS intake process to identify potential accommodation needs during clinical placements.

Literature Review

Currently, the literature focuses on generating accommodations for students in classroom settings. However, it has been identified that clinical placements require different functional skills compared to classroom activities. At the moment, there is no systematic method that universities use to streamline the assessment process to determine accommodations for clinical placements. Furthermore, there is no self-assessment that students can complete for clinical placement accommodations.

Students in programs requiring clinical placements are increasingly accessing SAS, highlighting the need for further functional assessments. While Occupational Therapists (OTs) traditionally do not work in SAS, their philosophy and theories make them well situated in this field for conducting functional assessments and providing client-centred accommodations.

Methods

The Delphi method attempts to gain consensus on a particular topic by surveying expert opinions over multiple rounds. Sixty clinical directors in allied health professions (i.e. occupational therapy, speech-language pathology, physiotherapy, nursing, midwifery, and
child-life specialist) from Canadian universities were surveyed over 3 rounds to identify items that should be contained on a student functional self-assessment for clinical placements. Questions that reached consensus were brought forward and re-evaluated in the next round. Qualitative analysis was used to identify key themes of physical and mental functional requirements for placements. Prior to initiating the survey, research ethics was approved by the Hamilton Integrated Research Ethics Board (HiReb).

Results/ Discussion:
Overall, the average response rate for each round was 18% (n =11). Questions that survived all 3 rounds demonstrated the highest consensus to be included in the functional self-assessment. In analyzing the third round, the protocol for consensus was retrospectively changed from a mode of ‘5’ to a mode of ‘4.’ The original parameters may have been too strict for the small sample size, resulting in the majority of relevant questions (determined through thematic analysis of key placement demands) being deleted. The main themes identified included organization and time management, physical functioning, clinical decision making and reasoning, and communication, while a minor theme was emotional regulation. The results of the paper provided further evidence in supporting the importance of identifying functional impairments over specific health conditions, as well as analyzing the person in context and activity specific situations. This highly correlates with occupational therapy values and theories, by taking on a holistic view that looks at the person, environment, and occupation that is context specific to the individual. This supports the role of OT services in post-secondary accessibility services.

Limitations
Limitations to this research project include the small sample size over all 3 rounds, with an average of 11 respondents, which may impede the ability to generalize the results as it may not be a representative sample. Furthermore, the results of this study may not be generalizable since the sample represented participants from allied health professions. While few respondents had less than 1-year experience, the amount was variable which may translate into different understandings of the functional abilities required for daily tasks on clinical placement. The cut-off values may have been too stringent for the small sample size obtained, which may have resulted in relevant items being deleted that would otherwise have reached a consensus with a larger sample size. Lastly, the tool is a self-assessment requiring insight by the student; however, some mental health impairments may impede their ability to self-reflect and identify how their functioning is impaired.

Conclusion/ Future Directions
This assessment tool may serve as the first functional self-assessment to identify clinical placement accommodations based on a standardized method and framework. Future research may include focusing on surveying preceptors at various clinical work environments for their opinions on functional demands required of students. This would allow further development of the student self-assessment for clinical accommodations from an alternative perspective involving key stakeholders.

Acknowledgements:
We would like to acknowledge and thank the SAS staff at McMaster University, specifically Tim Nolan and Ashley Kirk for providing and supervising this research opportunity; we would like to thank Tara Packham for supervising the ethical and research component of this project. We would also like to acknowledge Hina and Rosemary, previous McMaster student Occupational Therapists, for their original contributions in developing a student self-assessment for classroom accommodations in 2018.

References:
Accessibility and Inclusivity within the Built Environment of Museums: A Scoping Review

Authors: Britney Karnupis, Cara King, Kaitlin Cowper, & Rachel Weekes, MSc(OT) Candidates, McMaster University

Supervised by: Kara Lee OT Reg. (Ont.) and Dr. Tara Packham OT Reg. (Ont.), McMaster University

Abstract

Purpose: To identify how accessibility and inclusivity are described and operationalized within the built environment of public spaces, such as museums, to promote equitable visitor engagement. A scoping review was conducted to inform stakeholders of a Canadian children’s museum regarding the state of the evidence and available resources on accessible design in the physical environment of public spaces, such as museums. Methods: Three search strategies were completed: (1) a systematic search of available academic databases, (2) a grey literature search, and (3) direct contact with museum organizations. Findings were screened, organized, synthesized, and disseminated for knowledge translation. Results: Primary concepts of Universal Design (UD), Universal Design for Learning (UDL), accessibility, and inclusivity were explored. The concept of UD was most frequently used within the resources; however, there was overlap among concept definitions. Recommendations related to built environment and exhibit design were analyzed and categorized. The most common recommendations related to museum design, doorways, hallways, staircases, clearances, flooring, washrooms, communication, staffing, signage, ramps, elevators, play areas, quiet areas, and sensory elements (e.g. lighting, sound, and tactile features). Conclusion: Accessibility and inclusivity are valued by museums. The findings of the present scoping review conclude that efforts are being made by museums to ensure these considerations are increasingly represented in exhibit and building design. Recommendations to enhance equitable visitor engagement were provided.

Introduction

Museums are integral institutions for fostering lifelong learning and enhanced appreciation for the arts, culture, and history. Museums offer communal learning environments that can be accessed by individuals of all ages and abilities for informal educational and leisure purposes. Since museums act as important informal learning environments for all individuals, accessibility and inclusivity are crucial considerations in the built museum environment to ensure equitable opportunities for participation. This scoping review aimed to identify how UD, accessibility, and inclusivity are described and operationalized in the built physical environment to promote equitable visitor engagement in museums.

Methodology

Three search strategies were completed: (1) a systematic search of available academic databases, (2) a grey literature search, and (3) direct contact with museum organizations. (1) Research Librarians were consulted in three academic domains: Health Sciences, Engineering and Sciences, and Social Sciences and Humanities. The Health Sciences databases search consisted of OVID (Medline, AMED and Embase), CINAHL, and Web of Science. The Engineering and Sciences databases search targeted Engineering Village (Compendex & Inspec). The Social Sciences and Humanities databases search consisted of ERIC and Sociology Collections. Articles published before 2003, two years prior to the 2005 enactment into law of the Accessibility for Ontarians with Disabilities Act (AODA), were excluded. Resultantly, 29 studies were included in the review. (2) A search of relevant grey literature was conducted using the search engine Google, yielding 12 relevant resources from the top 40 hits. (3) Relevant museum organizations were contacted for information regarding the implementation of accessibility, inclusivity and UD within exhibit and building design environments. The contact list was developed through a Google search and through prior knowledge of North American museums. The museums were contacted via email or online portals. Of the 42 organizations that were contacted, 19 provided information and resources (e.g. guidelines, handbooks, examples) for inclusion in this scoping review.

Results

1) Systematic Database Search: The most frequently defined concept from the included studies was UD. The concept of UD was defined as the design of the physical environment that is accessible and useable by everyone, regardless of level of ability or age, without the need for specific or individual adaptations. The concept of UDL was reported in fewer studies. The concept of UDL was defined as promoting access to enhanced learning through the use of multiple flexible means of engagement with learning materials. The concepts of accessibility and inclusivity were also cited in the literature. Their definitions tended to promote participation and performance for all individuals in meaningful activities, regardless of personal abilities, by reducing barriers and promoting facilitators. Additional concepts that emerged from the literature included: usability, participation, engagement, flexibility and equity. These concepts were operationalized within the exhibit and building design of museums through the development of recommendations. Based on the database search, the most common recommendations for exhibit design involved
Despite challenges, museums are putting forth efforts to implement UD principles and are measuring outcomes of accessibility. By implementing accessibility and UD principles in the built environment, museum visitors can have a more meaningful leisure or informal educational experience.

**Future Directions / Conclusions**

Museums and similar institutions have recognized the concepts of accessibility and inclusivity as essential. Future directions in this area should include research specific to programming and virtual environments. These areas should be explored in order to further inform how museums and similar informal learning environments are defining and operationalizing the concepts of accessibility and inclusivity for all visitors. A future study could further explore the additional terminology identified in this scoping review in order to define the various notions of accessibility and inclusivity in public spaces. As an implication for clinical practice, it is essential for occupational therapists to consider the engagement and participation of children, whether in a museum context or other environments. During the stages of childhood development, this population is engaged in the occupations of play, schooling, and learning. Occupational therapists are well positioned to partner with informal learning institutions, like museums, to contribute to the development of environments that facilitate the engagement and participation of all children.

**Acknowledgements**

The authors would like to thank Kara Lee and Dr. Tara Packham for their guidance throughout this project. Additionally, the authors offer thanks to the research librarians at McMaster University for their direction related to search processes. Lastly, the authors would like to thank all the museum contacts who provided guidance and resources to further inform the present review.

**References**

Introduction. The Montreal Cognitive Assessment (MoCA) is a standardized assessment tool regularly used in many healthcare settings to screen for cognitive deficits. A score of less than 26 out of 30 indicates a potential cognitive impairment. While this MoCA cut-off score was created to detect mild cognitive impairment in populations with dementia, it is common in practice to use this value to screen for cognitive impairment across conditions, different stages of illnesses, and practice contexts. Objectives. The aim of this study was to review the current literature related to 1) the ideal cut-off score for different conditions and demographics and 2) the normative data pooled from various populations.

Methods. A literature search was completed using relevant databases. Results. Six articles on normative data and 29 articles examining cut-off scores were included. Cut-off data was organized based on condition or demographic. Trends included a negative correlation between older age and MoCA score, and a positive correlation between education and MoCA score. The majority of authors did not recommend <26 as an ideal cut-off score, with most authors endorsing that a lower score would result in higher specificity. Conclusion. Clinicians should use caution when interpreting MoCA scores and consider how factors such as demographics and type of illness may impact a patient’s result.

Background

The Montreal Cognitive Assessment (MoCA) is a standardized assessment tool used regularly in many healthcare settings to screen for cognitive deficits. In the original validation study by Nasreddine and colleagues, sensitivity and specificity were calculated to identify the ideal cut-off score of <26, meaning a score of 25 or lower could indicate cognitive impairment (CI). However, the original study examined community-dwelling older adults with an average of 13 years of education and a mean age of approximately 75 years old. While sensitivity and specificity of the MoCA were excellent within this study (90% and 87% respectively), a growing body of research questions the generalizability and diagnostic accuracy of this cut-off score for other populations.

Occupational therapists who often use the MoCA may use the cut-off to guide their clinical recommendations. While the MoCA was created to detect CI in populations with dementia, it is also used to screen for CI in other conditions, across different stages of illnesses, and practice contexts.

Objectives

The aim of this study was to review the current literature related to 1) the ideal cut-off score for different conditions and demographics and 2) the normative data pooled from various populations. Finally, this paper aims to provide clinicians with a synthesis of ideal cut-off scores for specific patient populations.

Methods

A literature search was completed in March 2019 using relevant databases: Medline, CINAHL, Web of Science, PsycINFO, and Embase. Only studies using the original MoCA in English and were peer-reviewed articles were included into this review to ensure the results were based on high-level evidence. All qualitative studies were excluded due to the focus on examining cut-off scores and normative data, which cannot be identified through qualitative data measures. No limit was placed on age or diagnosis to allow for full exploration of the literature.

Results

The search yielded 9214 records which were screened, and 126 records were assessed in full for eligibility. Six articles about normative data and 29 articles examining cut-off scores were included. Cut-off data was organized into populations based on condition or demographic.

Cut-off Score

Cognitive impairment. The MoCA has been most often used to screen for CI in community-dwelling older adults. Twelve studies examined cut-off scores to distinguish individuals with CI or dementia versus cognitively intact individuals. Overall, a wide range of scores were determined as the optimal cut-off for CI (<21-26) and dementia (<21-24).

Heart disease. Two studies that included participants with heart failure and cardiovascular disease found that
the suggested cut-off of <26 may result in a high proportion of cognitively intact individuals being misclassified as cognitively impaired, concluding that a lower cut-off of <24 and <25 was optimal.

**Stroke.** Four studies were identified with three studies proposing cut-offs ranging from <23 to <25. One study did not recommend a cut-off, however, the authors concluded the cut-off score of <26 often misclassified cognitively intact individuals.

**Substance use disorder.** Two studies examined the use of MoCA within the population of patients with substance use disorders. One article suggested two different cut-off scores based on either preference for sensitivity or specificity with <27 offering greater sensitivity (Sensitivity=0.80, Specificity=0.73), or <26, which offered improved specificity (Sensitivity=0.70, Specificity=0.83).

**Other demographics.** Other condition which were studied but could not be categorized in the above conditions include human immunodeficiency virus (HIV), systemic lupus erythematosus and serious mental illness. Out of the three studies, the study on HIV recommended a lower cut-off score of <23.5. Two other studies focused on demographics which included a veteran and an African American population in the U.S., which recommended a lower score of <21 and <24, respectively.

**Normative Data**

Six studies on normative data were identified from the search process. Five of the six studies were conducted in the U.S. and one study was completed with a Canadian population of individuals with severe schizophrenia. All six studies found that education level had a significant impact on MoCA scores, suggesting that more years of education correlated with higher scores. Age was also correlated with MoCA scores in all but one study, indicating that performance on the MoCA decreases with age.

**Discussion**

Recommended cut-off scores varied based on condition and practice context. Only seven of the 29 articles supported Nasreddine and colleagues' recommended cut-off score of <26 to detect CI within their sample. Finally, it is notable that all studies included in this scoping review found a positive correlation between education and MoCA score and most studies found a negative correlation between older age and MoCA score.

**Future directions.** Clinicians who use the MoCA should be cautious when interpreting cut-off scores due to the variation of ideal cut-off scores present in the literature. Additionally, users of the MoCA need to understand that it is a screening tool and clinical reasoning should be used in conjunction with the patient’s score when identifying CI. Based on this review, several authors suggested a lower cut-off score (<21-25) that may be more accurate when screening for CI depending on the population and demographic characteristics.

A special thank you to Stacey Anderson and Lori McCall for their continued supervision.

**References**

4. List of articles included in the scoping review: [http://tinyurl.com/otmoca](http://tinyurl.com/otmoca) or scan the QR code.
Flexible Assertive Community Treatment (FACT) teams provide multidisciplinary support to individuals with severe and persistent mental illness living in the community. The FACT model originated in the Netherlands, however occupational therapists (OTs) were not included within the development of these original teams. With the recent introduction of the FACT model in Canada, limited research exists regarding the implementation of FACT teams within a Canadian context and the role of OTs as part of these teams. The present study had two objectives: 1) To gain an in-depth understanding of how FACT teams are currently being implemented within a Canadian context, and 2) to explore the OT role on FACT teams in Canada. The study utilized an exploratory sequential mixed-methods design. First, an online survey was completed by 33 OTs on FACT teams across Canada. Subsequently, four survey respondents participated in an in-depth follow-up interview. Analysis of the survey and interviews led to a comprehensive understanding of FACT team implementation in Canada, the role of the OT, and barriers to the provision of services that currently exist. Key issues were identified from both the survey and interviews to develop strategic directions to guide the further development of FACT teams in Canada and the role of the OT within these teams.

ABSTRACT

Flexible Assertive Community Treatment (FACT) teams provide multidisciplinary support to individuals with severe and persistent mental illness (SPMI) in the community. The FACT model originated in the Netherlands in the early 2000s to treat not only the most severely ill 20% of individuals serviced by an ACT team, but also the other 80% of individuals with SPMI who require less intensive support. To accommodate the episodic nature of SPMI, FACT teams utilize a flexible switching system, allowing individuals to switch between ACT and intensive case management as necessary. Through this system, FACT teams are able to support a broader range of individuals with SPMI than traditional ACT teams. A FACT fidelity scale was created in the Netherlands which outlines the recommended structure of FACT team implementation and serves as a guide for the development of new teams. The FACT fidelity scale has since been adapted by provincial associations in Canada for a structured implementation of the FACT model within a Canadian context. Due to the recent implementation of the FACT model in Canada, limited research has been conducted regarding its implementation.

INTRODUCTION

The Assertive Community Treatment (ACT) model involves a multidisciplinary, team-based approach to support the most severely ill individuals with severe and persistent mental illness (SPMI) in the community. The Flexible Assertive Community Treatment (FACT) model was introduced in the Netherlands in the early 2000s to treat not only the most severely ill 20% of individuals serviced by an ACT team, but also the other 80% of individuals with SPMI who require less intensive support. To accommodate the episodic nature of SPMI, FACT teams utilize a flexible switching system, allowing individuals to switch between ACT and intensive case management as necessary. Through this system, FACT teams are able to support a broader range of individuals with SPMI than traditional ACT teams. A FACT fidelity scale was created in the Netherlands which outlines the recommended structure of FACT team implementation and serves as a guide for the development of new teams. The FACT fidelity scale has since been adapted by provincial associations in Canada for a structured implementation of the FACT model within a Canadian context. Due to the recent implementation of the FACT model in Canada, limited research has been conducted regarding its implementation.

OT Role on FACT Teams. Although occupational therapists (OTs) are not currently represented on FACT teams in the Netherlands, many ACT and FACT teams in Canada include OTs as part of the multidisciplinary team. OTs working in community mental health settings in Canada provide treatment aimed at overcoming barriers to daily functioning with the goal of enabling recovery for individuals with SPMI. However, due to the recent implementation of the FACT model in Canada, the specific role and scope of practice of OTs on FACT teams has not been explored.

METHODS

Purpose. The present study had two main objectives. First, to evaluate how FACT teams are implemented in a Canadian context in relation to an adapted provincial version of the FACT fidelity scale. Second, to gain an in-depth understanding of the role and scope of service delivery of OTs on FACT teams in Canada.

Design. An exploratory sequential mixed methods approach was used. A survey was designed using the FACT fidelity scale as a guide to develop questions pertaining to FACT implementation in Canada. The survey included questions related to the team structure, program process, and the OT role on the team. The survey was then distributed using LimeSurvey in both French and English. Upon closure of the survey, in-depth follow-up interviews were conducted through email with consenting survey respondents to gather additional information about individual OT roles.

Participants & Procedure. A purposive sample of n=33 OTs who currently work on FACT and FACT-like teams across Canada were surveyed. FACT-like teams included ACT teams, case management, and other similar teams. Participants were recruited through advertisement on the Canadian Association of Occupational Therapists website. The survey was then distributed through a number of internal email lists including provincial and territorial OT association/societies, the Ontario ACT & FACT Association, and the National Centre of Excellence in Mental Health. In-depth follow-up interviews were then conducted with n=4 OTs via email correspondence.

Analysis. Descriptive statistics of close-ended questions
and a content analysis of open-ended questions were used to explore survey results. The follow-up interviews were analyzed using inductive thematic analysis. Results from the survey and interviews were combined to develop overall conclusions and recommendations for current and developing FACT teams in Canada.

**SURVEY RESULTS**

**FACT Implementation in Canada.** Survey results indicate that 65.6% of FACT teams surveyed followed a provider to client ratio of 1:8-1:15. A variety of full-time and part-time service providers are represented on FACT teams with registered nurses/registered practical nurses (87.8%), social workers (84.8%), and occupational therapists (78.8%) being the most represented within the teams surveyed. With regards to planning and reviewing services for all clients supported by the team, 46.4% of interdisciplinary teams met four or more times per week. At interdisciplinary meetings, 58.6% of FACT teams indicated that at least 90% of service providers on the team were present. With regards to direct service delivery between providers and clients, 82.1% of ACT-level intensity clients receive face-to-face contact with service providers one to three times per week. FACT teams in Canada supported a variety of diagnoses with schizophrenia (100%), schizoaffective disorder (100%), and bipolar disorder (100%) being the most common diagnoses.

**OT Role.** OTs on FACT teams in Canada performed a variety of roles within their OT position such as crisis management (69.2%), case management (80.7%), consultation within the team (88.5%), and 1:1 OT services (92.3%). OTs supported an average of 41 clients at a time ($SD = 34.28$), 95% CI [27.17, 56.15] and were the primary clinician for an average of 10 clients at a time ($SD = 6.84$), 95% CI [7.22, 13.45]. Common assessments used by OTs on FACT teams include the Montreal Cognitive Assessment (60%), Independent Living Scale (55%), and the Canadian Occupational Performance Measure (35%). Common interventions included group therapy (77%), motivational interviewing (50%), and psychotherapy principles such as cognitive behavioural therapy (CBT) and behavioural activation (35%; 20%, respectively).

**INTERVIEW RESULTS**

Three main themes emerged from the follow-up interviews.

1) **Weekly Structure and Role of OT.** Participants indicated that the team structure of FACT is essential in providing optimal client care and is an important aspect of the OTs weekly schedule. Additionally, OTs on FACT teams reported that scheduling is done on a day-to-day basis to account for individual client needs and the ability to respond to crisis or emergency situations.

2) **Use of Cognitive Behavioural Therapy in Practice.** The use of unstructured CBT and CBT principles was highlighted as an important aspect of the OT role on FACT teams by all participants of the interviews. CBT principles were used both as a frame of reference to guide OT practice as well as an intervention for client services.

3) **Barriers in the Provision of Services.** OTs perceived several barriers in the provision of services to clients on their caseload including the lack of staff and clinical time to support client needs, insufficient funding for resources and continuing education, inadequate community supports, and a lack of collaboration and miscommunication with inpatient services regarding the purpose of FACT teams.

**DISCUSSION**

While the OT role on FACT teams is multifaceted and includes a variety of aspects including case management and crisis management, many OTs maintain independent caseloads providing 1:1 OT specific services to clients. FACT teams in Canada are successfully achieving the overall goal of extending ACT services to both case management level clients and ACT-level intensity clients in the community which is evident by the number of clients seen, the broad range and variety of diagnoses and concurrent disorders represented, and the services offered by teams. This indicates that FACT teams in Canada are following the guidelines proposed in the FACT fidelity scale, however many teams are currently in the development stage and thus are still in the process of fully achieving optimal fidelity.

**CONSIDERATIONS FOR FUTURE PRACTICE**

Key issues for action emerged from the present study. First, an adequate ratio of FACT clinicians to clients is required to better support the needs of individuals with SPMI in the community. Currently, the number of service providers on many FACT teams is too low to allow for optimal client care and impedes effective service delivery. Second, an explicit understanding of the OT scope of practice by members of the multidisciplinary FACT team, clients, and in-patient mental health clinicians may enhance advocacy for and utilization of OT-specific services on FACT teams. Third, there is an explicit need for improved access to continuing education opportunities, as well as access to standardized and evidence-based resources to enhance best practice for OTs on FACT teams in Canada.

**Seminal References**


In Their Shoes: Disability Identities from an Occupational Therapy Perspective

Authors: Kaely Danahy & Philip Zbozny, MSc (OT) Candidates, 2019
Supervisor: Rebecca Gewurtz, PhD. OT Reg. (Ont).

ABSTRACT

Occupational therapists often work with people living with disabilities. However, our literature base lacks attention to the experience of living with a disability.

**Purpose:** To explore the current climate within the profession of occupational therapy (OT), and how clinicians understand disability identities in order to capture a range of clinician perspectives that are currently informing client-centered care.

**Methods:** Semi-structured, open-ended interviews were conducted and analyzed using constructivist, grounded theory. Codes were generated based on line-by-line analysis, then grouped together to form higher-level themes.

**Findings:** Five major themes were identified and named. They include Emphasis on Client-Centredness, Disability as a Journey, Reactions to Transability, Models of Disability, and One Opinion as Acceptable.

**Discussion:** A recurring pattern throughout the themes demonstrates participant preferences to default to OT models, theories, and concepts, rather than expressing personal opinion about disability. Findings suggest that OT education and culture lacks opportunities for students and clinicians to freely discuss or debate ideas related to disability and disability identity.

INTRODUCTION

Occupational Therapy (OT) is a health profession that aims to improve function in meaningful activities among individuals who are experiencing barriers to engagement and participation. While it is traditionally assumed that Occupational Therapists (OTs) help clients move away from disability, it is important to evaluate this assumption and expand understandings of what it means to be disabled.

The term disability identity is meant to capture specific and personal relationships to the experience of disability. Johnstone writes, “disability as an identity is often a personal construction, a purposive attempt to make meaning of self in the world.” Varying understandings form a diverse and complex spectrum of possible disability identities that may be imposed on or chosen by individuals. However, to date, there has been little attempt to describe how OTs understand disability identity and the impact on their clients.

Transability represents a unique phenomenological experience that challenges common understandings of disability and disability identity. It describes “people who are considered able-bodied by others and want to become disabled or acquire an impairment by transforming their bodies.” Individuals expressing this need to alter their physical ability often fantasize about the acquisition of specific disability statuses, and describe feeling incomplete in their bodies. Many authors discuss transability as a pathological condition. This understanding fits within the Medical Model of Disability—the belief that impairment is a deficit found within the individual that can be resolved through ‘expert’ intervention, to return an individual to optimal functioning. Recently, transability has been conceptualized as a condition of identity-incongruence, aligning more closely with the Social Model of Disability—that disability is the result of social oppression and environmental barriers.

This study employed transability as a catalyst to explore the current climate within the profession of occupational therapy towards disability. The purpose of this study was to examine how clinicians understand disability identities in order to capture a range of perspectives currently informing client-centered care.

METHODS

This study employed principles of constructivist grounded theory, allowing for the analysis and interpretation of data to occur as it is collected. This helps to identify themes that emerge from the data that describe the experiences and understandings of those involved, and how they may change based on varying social conditions.

**Participants:** Purposeful, snowball sampling was used to recruit seven OTs with diverse clinical experience. Participants ranged from 2 to 39 years in practice and worked in diverse settings, including pediatrics, mental health and physical medicine.

**Data Collection:** Semi-structured, open-ended interviews were conducted in person or through conference call by both student authors, lasting 35 to 60 minutes. Interview questions focused on how clinicians think about and understand disability identity in relationship to their practice settings, colleagues, clients and personal experiences. Interviews were digitally recorded, then professionally transcribed. The student authors removed all identifying information from the transcriptions. The project supervisor received copies of the transcripts to review and enable participation as an expert consultant throughout the process of data analysis.
In Their Shoes: Disability Identities from an Occupational Therapy Perspective

Data Analysis: In accordance with the study’s inductive nature, both student authors conducted data analysis through line-by-line coding following a constant comparative approach. Connections between codes were drawn to form categories, followed by the creation of high-level themes that emerged from the data. Investigator triangulation by student authors was utilized as a methodological strategy after each transcript was coded in order to strengthen trustworthiness. As well, student authors regularly met with the project supervisor to discuss codes and themes as they emerged from the data. Student author diaries were maintained in order to record additional analysis that informed thematic construction.

FINDINGS

Five major themes were identified and named:
1) Emphasis on Client-Centredness: Client-centredness permeated discussions on how participants understood disability identity and their focus in goal setting with clients.
2) Disability as a Journey: Participants saw disability as a journey, rather than a fixed state of being. They saw themselves as playing a role in this journey, with diverging opinions. Some participants saw themselves as expert in guiding the journey, and some saw the client as expert.
3) Reactions to Transability: Participant gut reactions included confusion, shock, or interest, followed by a rationalization of the experience by relating it to their current practice and existing knowledge base.
4) Models of Disability: Models of disablement informed participant understandings of disability identity and clinical reasoning in practice. Some noted a disparity between models imposed by the workplace and participant-held models, leading to tension.
5) One Opinion as Acceptable: When asked about disability identity, participants applied common OT concepts and principles, followed by expressions of embarrassment and apology, and the fear that they were unable to accurately answer the question.

DISCUSSION

Overall, the five themes highlight how participants view themselves within the therapeutic relationship, and their understanding of the role they play in the client’s journey towards making sense of disability. The findings demonstrate how participants tend to default to OT models, theories, and concepts, rather than expressing their personal opinion or understanding of disability, suggesting an overall discomfort with disability and fear of saying something wrong. Notably, the findings suggest that OT education and culture lacks opportunities for students and clinicians to freely discuss or debate ideas related to disability and disability identity, resulting in a reliance on existing OT concepts (including client-centredness), and a fear of expressing opinions that may not fit. These fears were perpetuated by understandings of specific models of disability (either those imposed by the clinician’s workplace, the client, or those held by the clinician themselves) to inform how clinicians not only implicitly understand disability identity, but how they reacted to transability. Despite relying heavily on OT theories and models as a catch-all for describing their practice focus and understandings of disability experiences, clinicians offered a range of reactions to transability that illustrate the existence of differing views on disability identity.

CALL TO ACTION

For OT programs to create comfortable, protected environments for informed and respectful debate on a topic that inherently affects client-centred care: disability identity. Steps to accomplish this may be identified through program evaluations highlighting disability identity discussion within OT programs, and student comfort in expressing their opinions and perspectives of disability.

LIMITATIONS

This research used a qualitative methodology with purposeful and snowball sampling, and the participant sample was small, with clinicians educated at only four different institutions across two provinces. This creates the potential for participant bias and decreases generalizability. This should be considered when applying the study discussion and call to action.

ACKNOWLEDGEMENTS

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REFERENCES

A Scoping Review of Mobility-Focused Community Rehabilitation Interventions in Low-to-Middle Income Countries for Stroke Survivors

Authors: Nicole French & Lauren Halliwushka
Supervisors: Dr. Jackie Bosch, Associate Professor at the School of Rehabilitation Science, McMaster University & Anne Kumurenzi, PhD Candidate, McMaster University

Abstract. The incidence of post-stroke mortality and disability within low-to-middle income countries (LMICs) is significant and is attributed to multiple factors including, lack of resources and community rehabilitation post-discharge. The purpose of this scoping review (ScR) is to identify current community rehabilitation approaches for post-stroke disability management in LMICs. Information from electronic databases, grey literature, and discussions with Rwandan physiotherapists (PTs) was extracted to formulate themes of community stroke rehabilitation in LMICs. Themes include: technology-based, task-sharing, community-based rehabilitation, and community physiotherapy services. The approaches that have demonstrated greater potential in the Rwandan context include the implementation of task sharing technology-based rehabilitation delivered through Community Health Workers (CHWs).

Introduction. Within LMICs, the incidence of stroke has doubled over the previous four decades with 84% of stroke patients dying within 3 years of diagnosis. Various factors contribute to the high prevalence of stroke mortality in LMICs, including delays in timely stroke care, short hospital stays, and a lack of rehabilitation. Currently, CHWs provide preventive and curative services, such as those related to communicable diseases and maternal health, however rehabilitation is not part of their mandate. Multiple barriers exist which prevent Rwandan stroke survivors from accessing rehabilitation services post-discharge, such as limited resources and geographical distances. Given that approximately 14.3% of Rwandan stroke survivors are significantly disabled and 61% do not survive stroke complications, it is important to integrate factors which contribute to improved outcomes. According to recent evidence, the factors most associated with improved disability and mortality outcomes post-stroke are access to stroke unit care and post-discharge rehabilitation in addition to antithrombotic treatment. The focus of this ScR will be on rehabilitation. Rehabilitation is a broad concept and in order to ease the integration of community rehabilitation into the Rwandan healthcare system, there may need to be a focus on a distinct component to reduce morbidity. There is a specific need to address bed mobility in the community as recent data from two Rwandan hospitals demonstrates that only 53% of patients could roll in bed independently and 46% could sit up in bed unsupported at discharge. The inability to move independently from one position to another in bed often results in the development of pressure sores which can lead to infection, rehospitalization and/or death if left untreated. This highlights the need for bed mobility training to be an important component of a community rehabilitation program. More information is needed regarding successful post-stroke community rehabilitation interventions in LMICs prior to making feasible and evidence-informed recommendations that address bed mobility. This has lead to the development of the research question: are community rehabilitation interventions implemented in LMICs to improve mobility outcomes for patients who have experienced a stroke? If so, what interventions are being done?

Methods. The Arksey and O’Malley (2005) ScR framework was followed, supplemented by specific considerations from Levac and colleagues (2010) to guide this search of the evidence on community rehabilitation within LMICs for stroke survivors. Data gathering included: ten electronic databases, hand-searching reference lists, and grey literature. Databases were searched using predetermined key words. Two reviewers collaboratively reviewed each article and further discussed applicability based on inclusion criteria. Eighteen articles were fully reviewed and eight met criteria. They include: two randomized controlled trials (RCTs), one quasi-experimental study, one systematic review, one scoping review, one feasibility study protocol, one needs assessment, and one prospective pre-post design. Results were organized through a thematic summary and four themes were derived through coding of evidence related to approaches to community rehabilitation for stroke in LMICs. Themes were determined by collaboration between two researchers who independently extracted then jointly amalgamated rehabilitation approaches from the literature. A third researcher reviewed...
themes to ensure accuracy. Rwandan physiotherapists (PTs) were consulted to gain insight into the feasibility of the themes within the Rwandan context.

**RESULTS.** The first theme is technology-based interventions. Two studies (needs assessment and RCT protocol) assessed the utility of a smartphone application that has been considered a feasible and acceptable method of stroke rehabilitation in India, however clinical effectiveness has yet to be determined\(^\text{10}\). A third prospective pre-post study design in Ghana demonstrated a significant improvement in stroke symptoms ($p < 0.001$) and a non-significant improvement in functional mobility ($p = 0.06$) after a 12-week implementation of the 9Zest Stroke Rehab Application with community stroke survivors\(^\text{11}\). A second theme identified is task-sharing, an approach where responsibilities are moved or jointly managed by less specialized health care workers\(^\text{12}\). A RCT of family-based rehabilitation-specific task-sharing in India found no significant difference in stroke mortality at 6 months (95% CI 0.78–1.23, $p = 0.87$)\(^\text{13}\). In contrast, a quasi-experimental study of family caregiver intervention in Thailand reported significantly decreased post-stroke complications and increased performance in activities of daily living in survivors whose caregivers had completed the training ($p < 0.001$)\(^\text{14}\). The third theme identified is community based rehabilitation (CBR). CBR protocols focus on health, education, livelihood, social factors and empowerment in the community\(^\text{15}\). A systematic review included four studies evaluating CBR for stroke survivors. Due to different study designs and outcomes, a meta-analysis was not conducted but authors reported potential effectiveness for CBR to improve clinical outcomes in LMICs\(^\text{16}\). The fourth theme identified is physiotherapy services in the community. A RCT was conducted in Nigeria to compare the motor outcomes of stroke survivors receiving physiotherapy services in their home versus in a primary health care centre\(^\text{17}\). Statistically significant improvements in motor outcomes and community participation from baseline to 10 weeks were found for both groups ($p = 0.01$)\(^\text{17}\).

**DISCUSSION/CONCLUSION.** Results demonstrate that there are multiple approaches to community rehabilitation in LMICs. After discussion with Rwandan PTs, the identified approaches which have greater potential in the Rwandan context include the implementation of task-sharing and technology-based rehabilitation delivered through CHWs. Bed mobility, a component of rehabilitation, could be taught by CHWs to reduce the prevalence of pressure sores and promote functional mobility among community-dwelling stroke survivors. To do so, a collaborative task-sharing process involving either written or verbal instruction regarding bed mobility intervention should be completed at the hospital prior to discharge and continued into the community between the PTs, nurses, CHWs, and patients/families. However, multiple barriers exist that limit the feasibility of this option, such as finances and inconsistent conclusions from the research that make it difficult to concretely apply task-sharing to a Rwandan context\(^\text{12,13}\). As highlighted by the Rwandan PTs, a method of collaboration and education within the community between the CHWs, patients, and hospital staff could be the use of cell phones, which are prominent in Rwanda. In contrast, the use of internet applications for educational purposes for patients, such as ‘Care for Stroke’\(^\text{10}\), may not be as feasible within Rwanda due to the limited internet access. Further information is required to understand implications to the Rwandan setting, however the hope is that this information will be helpful for Rwandan researchers as they consider approaches to post-stroke rehabilitation in the community.

**ACKNOWLEDGEMENTS.** A special thank you to Anne Kumurenzi (PT from Rwanda), Gerard Uirimubensi (PT from Rwanda), Leah Hamilton, the Organized Stroke Across Income Levels (OSCAIL) research team, & Dr. Jackie Bosch.

**REFERENCES**


Though involving horses in therapy is unconventional, it has been practiced for hundreds of years. Horses may be incorporated in occupational therapy in numerous ways, including both mounted and unmounted activities. Mounted activities involve supporting the client on top of a horse, where the focus of therapy is using the horse’s movement to work towards therapeutic goals. Unmounted activities encompass any interactions with a horse without riding it, which can include grooming tasks, managing the stables, leading the horse on a rope, communicating with the horses, or observing the horses’ behaviours. It is important to acknowledge that given the diverse scope of occupational therapy practice, each occupational therapist may incorporate horses differently into their practice.

Because there are numerous techniques by which horses can be incorporated into therapy, this can be done with many different client populations. The literature describes these interventions with individuals across the lifespan with physical impairments, such as cerebral palsy, and mental health concerns, such as depression. Despite the presence of existing literature, there is limited research exploring the experiences of occupational therapists and their clients on the use of horses in occupational therapy. Due to the complexity of incorporating horses as a multimodal intervention, it is necessary to explore the experiences of occupational therapists and their clients to begin to understand this therapeutic approach.

An interpretive phenomenology methodology was chosen for this study to allow the researchers’ pre-existing knowledge of the topic to inform a deeper understanding of the experienced phenomena. Participants were recruited using purposeful sampling techniques. Six occupational therapists and four clients were interviewed, totaling a sample size of 10 participants. Active, in-depth interviews were conducted, allowing the participants to direct the topic of conversation. The researchers redirected the discussion whenever it was not narrative, which is congruent with interpretive phenomenology methods. Interviews were audio-recorded and transcribed verbatim. Data analysis was informed by the hermeneutic circle, an on-going, reflective process. Dedoose software was used to facilitate line-by-line coding of the data. The researchers co-coded the first transcript to ensure quality. Following this data reduction, codes were collapsed and abstracted to construct emerging themes. Transcripts, codes, and themes were reviewed numerous times to construct the final results.
The following themes were constructed from this process.

**Horses dynamically contribute to the non-traditional therapeutic experience**

“The horses do the teaching.” - Participant 3

“One of your main team members is your horse” - Participant 5

**Unexpected benefits emerge in addition to achieving therapy goals**

“Those are... bonus, because that’s not the goal of my session, but we see improvements... and it’s exciting to be able to note those things.” - Participant 5

“I don’t know what it is, but like, life is coming together again thankfully, and I owe a lot of it to the horses and, and the therapy I received from them.” - Participant 10

**Breadth of possibilities contributes to individualized therapy experiences**

 “[the session] will be dependent on the kids, because I’m making very specific individual goals for those kids in terms of what I’m going to do” - Participant 5

“There’s all of these variables that you can play with, which is great, because each session is going to be so different” - Participant 2

**The poor understanding and lack of awareness result in many barriers**

“It can be difficult to get the...recognition that you are doing something as a professional” - Participant 1

“I thought... what’s a horse program, like that’s nuts.” - Participant 9

In conclusion, involving horses in occupational therapy is a multi-faceted experience. There is a lack of awareness of this therapeutic approach contributing to various barriers, which further justifies the need for research in this area. This study contributes to a deeper understanding of the experience of involving horses in occupational therapy. As further investigation is required to determine the effectiveness of these techniques, the findings from this study may serve as a foundation on which further research can build.

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Impact of hospitalization 3-months post-gastrointestinal bleed on patient-reported functional performance

Alyssa Prangley, Stefanie Lappalainen
Supervisor: Dr. Jackie Bosch

ABSTRACT:

Objectives: To determine if in individuals who experience GI bleeding secondary to cardiovascular disease, is there a difference in patient-reported functional abilities following hospital discharge?

Methods: 195 INTERBLEED participants hospitalized with a GI bleed between September 2015 and January 2019 met inclusion/exclusion criteria for data analysis. Participants were required to have lowest hemoglobin values, SAGE and EQ-5D measured at baseline and 3-month follow-up. Participants were placed into bleed severity subgroups based on lowest blood hemoglobin (g/L). Associations were determined for SAGE mobility at pre- and post-, bleed severity and change in difficulty walking, length of stay and bleed severity, and length of stay and change in walking difficulty.

Results/Discussion: There is a statistically significant association between baseline mobility and mobility at 3-months post bleed (p < .0001) as measured by the SAGE. There is no significant association between bleed severity and level of difficulty with walking (p = .220) and length of stay and level of difficulty walking at follow-up (p=.451). Therefore, further analyses are required to determine the impact of GI bleeding on other areas of function.

INTRODUCTION:

Cardiovascular disease is the leading cause of mortality and morbidity in the world, to mitigate this risk, medications are recommended1. The use of these therapies, despite lowering rates of cardiovascular events, lead to an increased risk of bleeding, particularly within the gastrointestinal (GI) tract2. The average acute length of hospital stay (LOS) for all GI bleeds is 3.2-4.7 days in Canada3. Longer LOS negatively affects functional ability in older adults independent of baseline physical morbidity4, however it is not clear if this is true for GI bleeding hospitalizations. Regardless of bleed severity, patients report a significant decrease in their health perception2, but the impact on an individual’s functional abilities is unknown. Thus, the research question for this study is twofold: 1) in individuals who experience GI bleeding, is there a difference in patient-reported functional abilities following hospital discharge?; and 2) what is the relationship between LOS and change in patient-reported functional mobility between baseline and 3 months after the bleed? We hypothesize that length of hospital stay is inversely related to functional mobility such that, a longer duration of stay is associated with greater change in functional mobility at 3 months for survivors in GI bleeding. Further, as part of the care team, occupational therapists could mitigate the effect of hospital stays on functional mobility post GI bleed with early intervention as physicians have noted an increase in patient dysfunction. This observational pre-post study is part of INTERBLEED, an ongoing case/control study assessing participants at baseline, 3 and 12-month follow-up.

METHODS:

INTERBLEED enrolled 915 participants with cardiovascular disease who were hospitalized for GI bleeding. Participants were recruited from 11 sites in 5 countries between September 2015 and January 2019. Exclusion criteria for the analysis included: incomplete lowest hemoglobin values (g/L), Standard Assessment of Global Activities in the Elderly (SAGE) not completed at baseline or 3-month follow-up, and incomplete hospital discharge report. In total, 315 participants with complete laboratory values, 115 of whom had incomplete data for reasons including: death (n=29), refused (n=24), no follow-up completed (n=22) and other (n=40). Thus, 195 participants with GI bleed were included in the analysis. Mobility was assessed using the SAGE; a 16 question self-assessment developed to assess an older adult’s ability to complete tasks in 4 domains5. EQ-5D is a self-assessment for quality of life. Analyses compared values at baseline and 3 months and subgroup analyses looked at effect by severity of bleed. LOS was determined between the date of bleed and discharge from hospital and divided into subgroups. All statistical analyses were conducted using IBM SPSS Statistics program. Pearson Chi Squares were conducted to determine the following associations: Mobility at baseline and 3-months, bleed severity and change in difficulty walking, LOS and bleed severity, and LOS and change in walking difficulty.

RESULTS:

Of the 29 participants that died, 55.2% (n=16) would have been in severe bleeding group, 41.4% (n=12) in moderate and 3.4% in mild (n=1).
Overall, there is a statistically significant association between baseline mobility and mobility at 3-months post bleed (p < .0001) as measured by the SAGE (Figure 1).

In those that reported some level of difficulty at baseline there is a statistically significant difference in the level of difficulty reported at 3-months (p<.05), as 29% (n=29) do not continue to experience difficulty with walking at 3-month follow-up (Figure 1, bar 1). Additionally, in individuals reporting no problems at baseline (n=86), there is a significant difference between the proportion of those without problems (n=56, 65%) and those with problems (n=30, 35%) at follow-up (p<.05) (Figure 1, bar 2). However, a larger proportion of individuals maintained the same level of difficulty at 3-months post GI bleed.

There was no association between bleed severity subgroup and change in the level of reported difficulty walking at baseline and 3-month (p = .220). There is an association between LOS and difficulty walking at baseline (p=.009) but the same is not true for level of difficulty walking at 3-month follow-up (p=.451).

Within the current study, there are a variety of limitations that could impact the results such as survivorship bias, pre-existing comorbidities, unknown rehabilitation service involvement, and small sample size across the groups preventing strong analysis.

**CONCLUSIONS & FUTURE DIRECTIONS:**

It is plausible that an individual’s mobility is not impacted in isolation as individuals within the study may be confounded by other conditions (stroke, myocardial infarction, cancer etc.) and psychosocial factors in addition to cardiovascular disease which may impair mobility prior to the incident of bleeding. A larger proportion of participants that experience difficulties with walking prior to admission to hospital have unresolved problems 3-months after their bleed. Future research is needed to determine if there are functional deficits in GI bleeders, and if they can be mitigated by the rehabilitation team. With future research, occupational therapy could assist in the treatment and assessment of individuals with GI bleeds that present to hospital with difficulties walking.

As INTERBLEED is an ongoing study, completing further analyses of the relationship between GI bleeding, functional performance, and quality of life by using the SAGE and EQ5D will provide a clearer understanding of the opportunity for an occupational therapy role with this population.

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**REFERENCES:**

Abstract

**Introduction:** Schizophrenia is a chronic mental illness that remains a challenge to treat, particularly when individuals disengage from services, believing they do not have an illness requiring treatment. **Purpose:** Can a model of self-management (SM) support (SET for Health) be integrated into routine case management services for a high risk group living with schizophrenia. **Methods:** A mixed method feasibility study examining the extent that SET for Health adds value to clients’ and provider’s perspectives; and influences client engagement in treatment, participation in self-management, symptom distress, sense of hope, and quality of life. SET for Health is derived from common elements of standardized self-management programs. 9 case managers (registered nurses, occupational therapists and social workers) are delivering the intervention to 39 clients to-date. **Results:** SET for Health contributed to client engagement in treatment, participation in self-management, decreased illness severity and increased social and occupational functioning. **Conclusion:** SET for Health can be delivered and accessible to a diverse group of clients with varying level of illness severity, comorbidities, function status and social disadvantages.

Introduction

Individuals with schizophrenia and their families are insufficiently involved in their care and lack support for community living (Mental Health Commission of Canada, 2015). Despite medication and education, individuals with schizophrenia lack awareness and insight about their illness and negative symptoms continue. Which further leads to a cycle of disengagement from treatment and relapse. Self-management support is emerging as a feasible, effective intervention for building capacity in individuals and families/caregivers to manage the impact of schizophrenia on daily living and recovery.

Literature Review

Schizophrenia has the 5th highest impact on the life and health of Ontarians (Ratnasingham, Cairney, Rehm, Manson, & Kurdyak, 2012). Individuals have a 20% reduced life span and experience systemic health inequities when compared with the general population reflecting morbidity and mortality from cardiovascular, and respiratory diseases (Hennekens, Hennekens, Hollar, & Casey, 2005). Health Quality Ontario (2018) practice standards expect building capacity through self-management intervention and client/family and provider collaboration. Cognitive behavioural therapy (CBT) has been shown to reduce persistent distressing symptoms that impede functioning, but it has limited effect on illness insight (Pijnenborg et al., 2013). To participate in CBT, clients’ must acknowledge their illness in order to challenge inaccurate beliefs and apply the principles to psychotic symptoms, making it inaccessible (Mueser et al., 2013). Self-management has many definitions, but it involves a client being actively involved in the daily decision-making of their self-care in collaboration with healthcare providers. Effective self-management support is through providing care that is flexible to fit with the clients’ life commitments and pressures. It is assisting people to proactively manage their health through: coaching goal-setting, review, and problem-solving for clients to pursue their recovery goals (Kubina & Kelly, 2007).

However, questions remain about how best to deliver self-management support in a way that is accessible and practical for routine care. SET for Health is a model of self-management support integrated into routine case management services for high risk group living with schizophrenia. This approach engages individuals in their care and builds self-management capacity using motivational and cognitive strategies.

Methods

A concurrent, nested mixed methods approach enables triangulation of information from multiple sources and perspectives. In this study, the quantitative component is nested in the qualitative component. Qualitative data (client/family/provider perceptions) are considered in the context of quantitative data (counts of participants, pre/post measures, completed plans) to enable a comprehensive understanding of feasibility and benefit to stakeholders and how the integrated protocol works in practice.
Results

SET for Health offered expanded values for client participation, client voice and engagement. Variations in delivery were noted across case managers related to challenges changing usual practices.

Quantitative Results: Paired t-tests revealed: statistically significant increases in (P<0.005) scores in the Illness Management and Recovery Scale (IMR) both in the self and clinician version, Social and Occupational Functioning Assessment Scale (SOFAS) and Clinical Global Impression (CGI). This indicated that clients were able to better manage their illness through recovery goal setting and building capacity (IMR), had improved functioning (SOFAS) and decreased illness severity (CGI). However no statistically significant changes were observed in the Integrated Hope Scale, Patient Activation Measure (PAM), Quality of Life and Enjoyment Satisfaction Questionnaire, Self-Rated Health Scale and Distress Q6 of IMR-Self Scores).

Qualitative Results: Clients voiced that SET for Health allowed them to be reflective, gain perspective, learn about themselves, gain self-efficacy and get on with life. Clinicians indicated that SET for Health improved client engagement, supported clients to progress in their recovery, impacted their workload and was consistent with their own beliefs.

Conclusion/Discussion

1. Clinicians engaged & delivered SET for Health to diverse group of clients with varying levels of illness severity, comorbidities, functional status & social disadvantages.
   - It is feasible and accessible to implement SM in an outpatient schizophrenia clinic delivering case-management
2. SM is valued by both clients & clinicians
   - Clients indicated SM improved active participation in care (through sense of self-agency), helped them gain insight (through self-reflection & learning about self), in order to manage illness & improve well-being (by getting on with life & feeling good)
   - Clinicians indicated SM benefitted client engagement, progress in recovery, assisted their work by understanding clients, provided a toolkit/strategies & structure. They were challenged to change old work habits & make SM part of daily practice
3. SET for Health contributed to client engagement in treatment, participation in self-management, decreased illness severity & increased social & occupational functioning
   - Clients reported SM ↑ engagement in care, promoted learning, and ↑self-confidence to manage life challenges
   - Clinicians reported client engagement & progress in recovery
   - Clinically significant changes in SOFAS, CGI, IMR client & IMR clinician scores indicate increased functioning and decreased illness severity

- Statistically significant changes in pre/post IMR scores but not quality of life, distress or hope scale scores are consistent with some studies (Van Langen et al., 2016; Lawn et al., 2018)

Limitations

The study was limited by a small sample size which decreased statistical power and created large standard deviations in some measures. Additionally, clinician drop-out and varying fidelity to administering the intervention affected the provision of SET for Health.

Next Steps & Future Directions

Next steps in this study include ongoing recruitment, data collection to further assist integration into practice and increase statistical power of study. Additionally, a detailed analysis of qualitative data is required to describe program delivery, therapeutic elements and identify potential mechanisms of action. As well as completing a sub-analysis of the measures used within SET for Health to examine hypotheses of influential factors. Future directions for SET for Health is to engage other organizations in preparation for randomized control trial to study causation and theoretical underpinnings. In addition, packaging the Set for Health training and support process for replication.

Acknowledgements

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References

Operation Oasis: Examination of the Service Model and the Way Forward

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ABSTRACT

Operation Oasis (OO) is a respite program that matches rehabilitation science students with families in the Hamilton area. This research project explored respite programs available in Hamilton, and the needs of both student respite providers and families that have children with special needs. Findings inform a sustainable respite program. An environmental scan, including interviews with local respite programs and a university-based respite program, and a survey study were conducted. Environmental scan findings identified few respite agencies in the Hamilton area, offering short- and long-term services, as well as the university-based respite program from Laval University, offering student-led short-term respite. Survey findings showed that families are very satisfied with services, despite difficulty accessing and wanting more frequent services. Current and past students reported ideally providing a few hours of respite per week. All participants indicated preferring a website and coordinator for matching and support. This project indicates discrepancies between the needs of families, student providers, and accessibility of respite services. Findings informed recommendations to improve sustainability of OO, including a coordinator, website and handbook. Further research is required to better understand these gaps, and improve the sustainability of OO.

INTRODUCTION

Established in 1997, Operation Oasis (OO) matches students from the School of Rehabilitation Science programs at McMaster University with families that have children with special needs to provide respite. With the retirement of the program coordinator, a review of the program was needed to ensure OO is meeting stakeholder needs and to explore options for a more sustainable design.

LITERATURE REVIEW

Respite care is defined as temporary care that provides relief to families and caregivers\(^1\). Respite care is offered either in a primary service setting, where the goal of respite is to directly provide families with relief from caregiving, or in a secondary setting, where the main goal of the service is to meet the needs of the child and respite occurs as a by-product of this service\(^2\). Family reasons for accessing respite care include: meeting therapeutic needs, development of social, recreational and life skills, reducing stress, improving overall family functioning, and maintaining the family’s quality of life\(^3\). The largest reported barriers to accessing respite services are a lack of advertising of services and difficulty navigating the system\(^4\).

METHODS

To inform recommendations, an environmental scan of existing respite services and models, and a needs assessment with families and students were conducted. An application for ethics approval was submitted to the Hamilton Integrated Research Ethics Board (HiREB) and was exempt from HiREB review. The first step was connecting with students at Laval University where OO began, to understand their current model. Next, an environmental scan was conducted to identify and contact respite agencies in the Hamilton area. A semi-structured interview was conducted with representatives of the respite agencies to understand key characteristics of the service. A survey study was completed to examine the perspectives and experiences of both families and student respite providers in terms of respite services in general and the OO program. Surveys were developed, pilot tested and distributed via email to the three cohorts: (1) families that have children with special needs, (2) current and past student respite providers through the OO program, and (3) prospective student respite providers. A customized recruitment approach was used for the different cohorts, and surveys remained open for approximately one month. Descriptive data analyses were completed for the three surveys and comments were summarized.

RESULTS

Environmental Scan: In the environmental scan, interviews were conducted with the Laval program (ProjetBEE) and four of the eight respite agencies identified in the Hamilton area. ProjetBEE offers short-term respite services for children, coordinated by a student committee. Respite providers are volunteer student occupational therapists, and the program involves a student committee and an agency coordinator who liaises with student providers and families. The Laval student committee identified an agency coordinator and a student committee as key to sustainability.

Eight respite agencies in the Hamilton area provide day, overnight and vacation services, for individuals across the lifespan with diverse diagnoses. The four agencies interviewed identified a fee-for-service model, customer
satisfaction, a coordinator to provide ongoing support, and unique services (e.g. behavioural or dual diagnosis support) as key factors for sustainability. **Survey Study:** 18 families who completed the survey revealed that most children who receive respite services are 6-13 years old (89%) and have a developmental disability (e.g. Autism Spectrum Disorder, Down Syndrome). Most families had used respite services (61%), commonly provided by family, friends, neighbours and OO. Most families reported receiving under 3 hours of respite per week (44%); however, wanted more hours. While most families indicated that they were very satisfied with their respite services (28%), most families reported that accessing respite services was hard (28%). A website was commonly expressed as a tool to access potential respite providers (67%), as well as a coordinator for ongoing support (44%).

The 17 students who have been part of OO reported providing respite to 4-13-year-old children (82%) with a developmental disability. Most services were provided for a duration of 1-12 months (74%), 0-2 hours per week (71%), which was reported as an ideal length of time for students. Motivating factors to participate in OO included an opportunity for part-time work, gaining experience, enhancing their resume and learning new skills. Students reported a contact person (94%) and website (65%) as an ideal way to hear about respite opportunities.

47 prospective students indicated that they would ideally provide 0-2 hours of service per week (72%), and are, or might be interested in short-term respite opportunities (96%). Motivating factors of prospective respite providers to participate in OO were consistent with the factors identified by students involved in OO. Perceived barriers to providing respite were time commitment and the family’s expectations. Commonly identified features for a future model of OO included a coordinator (81%) or website (53%) to connect with families, as well as more resources and strategies to support service provision.

**DISCUSSION**

The results indicate that although respite services are available in Hamilton, families have difficulty accessing and utilizing these services. Students have difficulty with the time commitment expected by families. Regarding service process, respite services consistently have a coordinator, and this is important to both students and families. All stakeholders were interested in a website to support the matching process. OO uniquely utilizes rehabilitation science graduate students as respite providers, and provides in-home respite, which allows flexibility for varying weekly schedules. However, the following recommendations should be considered to improve sustainability:

- Incorporating a student committee via the McMaster Rehabilitation Student Council to facilitate the matching process, or a student coordinator with previous respite experience to liaise and provide ongoing support to both student respite providers and families. A website should also be considered as a platform to host matching opportunities, as well as a handbook provided to students and families upon registering with the website, outlining the program and expectations.

Limitations of this project include: a small sample size for the family survey, and many participants did not answer all survey questions. However, strengths include use of multiple methods to inform a sustainable model, and an adequate sample size of student participants.

**CONCLUSIONS & FUTURE DIRECTIONS**

Despite identified respite services, families have difficulty finding respite workers. There is a need for further research to examine whether the gap in services is due to lacking knowledge of or satisfaction with available respite services. Families’ needs are not fully met by the currently available respite services. Going forward, the information gained from the surveys indicating the needs of all stakeholders, and the knowledge of existing respite structures as reference, could be used to refine OO into a more sustainable model of respite care.

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**REFERENCES**

Innovation @ Work: Building an e-Mental Health App

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ABSTRACT

Introduction: E-mental health apps can increase accessibility, reduce stigma, and facilitate timely access to information and support. However, it is difficult to find high quality, relevant tools that are customized for the workplace. Objectives: To highlight key steps in the development, implementation and evaluation of “Beyond Silence”, a new evidence-informed mobile-health smartphone app designed to support the mental health of healthcare workers, improve mental health literacy and increase help outreach behaviours. Methods: A non-randomized mixed method (pre and post evaluation) pilot study was conducted to evaluate the quality, feasibility and impact of the app. A purposive sample of 25 healthcare employees participated in the alpha and beta testing of the iPhone prototype for 4 to 6 weeks. Impact on mental health literacy, stigmatized beliefs and help outreach behaviours were evaluated through pre/post surveys and a series of focus groups. Paired t-tests and a Wilcoxon signed-rank test were used to determine statistical significance. The perceived quality of the app was evaluated using an adapted version of the MARS app evaluation tool and through focus group discussion. Results: survey data revealed a significant increase (p <0.001) in mental health literacy following the testing of the app. Participants provided feedback on various components of the app, which reflected ease in navigation, engaging information and features, as well as an overall subjective quality rating of 3.8/5. Improvements were noted in areas related to functional features, content updates and clarification regarding the peer mentor resource. Conclusions: Occupational therapists (OTs) need to increase the visibility and credibility of e-mental health information that is relevant to the practice context.

Introduction
This project builds on an in-person mental health literacy training program entitled “Beyond Silence” with the aim to develop, and pilot test a smartphone app that promotes mental health literacy and mobilizes healthcare workers to seek mental health support for themselves and their colleagues in small under-resourced Ontario healthcare organizations. The following research questions were addressed: Is the “Beyond Silence” app effective in increasing mental health literacy and reducing stigma? Does the app improve participant perceived mental health and did it lead to increased help outreach behaviours? Perspectives related to the quality of the app and implementation issues related to its integration in small healthcare workplaces were also considered.

Literature Review
The quality of healthcare provision is largely dependent on the health and support employees within this sector receive when encountering daily challenges in the workplace. Healthcare workers are at high risk for experiencing stress, burnout, and mental health issues, which has a significant impact on absenteeism and presenteeism leading to decreases in productivity as well as overall well-being. Current literature reports that there is a clear and urgent need to address the mental health of healthcare workers, as many workplace cultures continue to discourage help seeking behaviours among staff. Mobile apps have the potential to deliver highly effective mental health interventions in a cost-effective, confidential and easily accessible manner. Given the lack of healthcare access in rural regions, mobile apps are well positioned to transform the delivery and accessibility of mental health information and support. This is important to consider, as 97.6% of employers in healthcare and social assistance sectors are small organizations. Therefore, relevant evidence-based and accessible online resources are needed within small healthcare organizations in order to increase mental health knowledge and provide support for both employees and their colleagues.

Methods
A non-randomized mixed method (pre and post evaluation) pilot study was conducted to evaluate the quality, feasibility and impact of the “Beyond Silence” smartphone app. App development was informed by best practice principles of app design, including engagement of knowledge users as well as technical designers and developers. A purposive sample of 25 healthcare employees participated in the alpha and beta testing of the iPhone prototype for 4 to 6 weeks. Impact on mental health literacy, stigmatized beliefs and help outreach behaviours was evaluated through pre/post surveys (MHL-W & OMS-HC) and a series of focus groups. Paired t-tests and a Wilcoxon signed-rank test were used to determine statistical significance. The perceived quality of the app was evaluated using an adapted version of the MARS app evaluation tool and through focus group discussion. Participants: purposeful sampling was utilized to recruit small under-resourced healthcare organizations in Ontario.
All 25 participants consisting of 7 males and 18 females, were employed in healthcare organizations with 92% identifying as full-time employees having worked an average of 15.6 years in this sector. Roles in healthcare organizations included clinical service (32%), non-clinical support (32%), and manager/supervisor (16%). Twenty percent of respondents also identified other roles such as health promoter and corporate health and safety advisor.

Results

Table 1: Pre and Post Data Result for Study Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Baseline Mean (SD)</th>
<th>Follow-up Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH Literacy</td>
<td>49.84 (13.6)</td>
<td>61.2 (8.8)*</td>
</tr>
<tr>
<td>MH Beliefs (Stigma)</td>
<td>41.6 (8.3)</td>
<td>41.1 (8.7)</td>
</tr>
<tr>
<td>Mental Health</td>
<td>5.24 (1.0)</td>
<td>5.28 (1.1)</td>
</tr>
<tr>
<td>Outreach Confidence</td>
<td>4.64 (1.6)</td>
<td>4.64 (1.5)</td>
</tr>
<tr>
<td>Outcome</td>
<td>Baseline (%)</td>
<td>Follow-up (%)</td>
</tr>
<tr>
<td>Outreach Behaviour</td>
<td>48</td>
<td>60</td>
</tr>
</tbody>
</table>

*Significant at p<0.001

Findings from quantitative data analysis indicate that there was a statistically significant increase in participant mental health literacy after using the “Beyond Silence” app. The findings further indicate that there is a trend for increased outreach behaviours (providing support to co-workers who were struggling). However, there was no significant change in stigma or overall mental health beliefs. Focus group data suggests that participants appreciated the functionality of the app including ease of use, however, push notifications were requested particularly in the ‘goals’ section to act as reminders and track achievement over time. Respondents noted that the content within the app was both relevant and informative, as it provided resources on how to approach the topic of mental health with colleagues. Participants also appreciated interactive components such as the ‘wellness gauge’, which increased engagement within the app. In regards to impact, participants reported that the app provided a sense of connection to a wider community, thus mitigating feelings of isolation. The app was noted as a reminder that colleagues also required mental health support, as healthcare workers are often solely focused on patient care.

Discussion

The purpose of the “Beyond Silence” app is to build mental health knowledge and literacy, while also serving as a tool for supporting healthcare workers through help outreach behaviours. As outlined in the literature, mental health apps provide significant potential to deliver highly effective mental health supports, particularly in rural regions. This is important to consider, as many workplace cultures are not focused on promoting help seeking behaviours among staff, thus leading to increased stress, burnout and lack of meaningful productivity. Therefore, as the e-mental health industry continues to develop, there is a need to provide effective, confidential and viable e-mental health resources that transform how mental health interventions are accessed and delivered. Study limitations including small sample size and the increased exposure of participants to mental health contexts at baseline must also be noted. Given that the participants were employed in healthcare, they may already have decreased stigma pertaining to mental health beliefs due to the nature of their employment and the populations they serve. As such, it is not unusual that the mental health of participants did not significantly improve pre and post usage, as the app is not designed to act as a modality for treatment.

Conclusions and Future Directions

The “Beyond Silence” smartphone app appears to be a beneficial and accessible tool for promoting mental health literacy and help outreach support for healthcare workers, particularly in small, rural and under-resources workplaces. Participants valued the breadth and depth of resources, ease of use, and the connection to a wider community. Considerations for improvement include features such as push notifications, gamification, continual updates of content, and clarification regarding the peer mentor resource. Larger scale implementation and a systematic RCT evaluation is recommended moving forward to investigate the preliminary results of the “Beyond Silence” smartphone app. OT's need to increase the visibility and credibility of e-mental health information that is relevant to the practice context. OTs are primed to promote e-mental health services for themselves, clients and colleagues.

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References