

**Occupation-Based Kits and the Action Research Arm Test: Promoting and Measuring
Functional Reach in an Inpatient Rehabilitation Setting**

Abigail A. Sellers

Department of Occupational Therapy

Indiana University Purdue University Indianapolis

Author Note

There is no known conflict of interest to disclose.

Abstract

Occupational therapists and management working in an acute inpatient rehabilitation unit located in a midwestern hospital were seeking evidence-based and site-centered information to inform their assessment and treatment methods. The capstone student conducted a thorough needs assessment as well as an in-depth review of the literature to identify current best practices. The student then developed and disseminated two evidence-based and site-centered resources to inform the unit's implementation of the Action Research Arm Test and occupation-based kits. Occupational therapists were provided in depth information and training on administration of the Action Research Arm Test, an outcome measure to assess upper extremity function in individuals with a neurological diagnosis. In addition, the unit was provided in-depth resources with site specific information to implement meaningful, occupation-based care into treatment via the creation of occupation-based kits. Occupational therapists and management reported that the resources created addressed the needs and goals of patients and practitioners on the unit, were thorough, and provided sufficient information to implement these tools into the unit's assessment and treatment methods. To address sustainability, physical copies of the resources were printed, laminated, and stored in accessible locations within the unit along with electronic copies being uploaded to the hospital's shared document folder. The unit plans to continue to utilize the Action Research Arm Test outcome measure with appropriate patients and will begin to purchase additional resources to assemble the occupational kits to encourage occupation-based care.

Keywords: Action Research Arm Test, Occupation-Based Care, Acute Inpatient Rehabilitation

Occupation-Based Kits and The Action Research Arm Test: Promoting and Measuring Functional Reach in an Inpatient Rehabilitation Setting

As a discipline, occupational therapy has its roots in utilizing the power of occupation itself to empower individuals and populations to participate in life in a meaningful way. According to the Occupational Therapy Practice Framework (OTPF) 4th Edition, occupational therapy can be defined as, “the therapeutic use of everyday life occupations with persons, groups, or populations (i.e., the client) for the purpose of enhancing or enabling participation” (AOTA, 2020). However, while the therapeutic use of occupation distinguishes occupational therapy from other disciplines, the inherently broad nature of occupation can pose as a challenge for practitioners to incorporate into practice. Specifically, in practice settings such as hospitals that typically employ a medical model of care, barriers to occupation-based practice can take the form of high productivity standards, lack of resources or access to equipment, challenges documenting occupation-based care and progress in the electronic medical record, and other requirements needed for reimbursement (Hull, 2021; Wong et al., 2018). The chosen site for this doctoral capstone experience and project was a midwestern hospital, specifically within the inpatient rehabilitation unit. The inpatient rehabilitation unit located at the chosen hospital provides occupational therapy interventions focused on empowering adults to regain functional abilities to improve daily functioning and aide in patient’s ability to discharge from the hospital to their home. The inpatient rehabilitation unit achieves this aim through the provision of intensive rehabilitation provided for at least 3 hours per day and 5 days per week across 3 disciplines including physical therapy, occupational therapy, and speech language pathology. Some of the most common diagnoses seen within the inpatient rehabilitation unit include CVA, TBI, amputation, and general debility, all of which impact an individual’s ability to participate in

meaningful occupation. The purpose of this doctoral capstone project and experience was to expand the capstone student's knowledge regarding the provision and documentation of occupation-based care in a hospital setting through program implementation within the hospital's inpatient rehabilitation unit. The student achieved this by providing the capstone site and key stakeholders with comprehensive and organized information from the literature to support the development of site-centered occupation-based kits and the use of an outcome measure, the Action Research Arm Test (ARAT) assessment tool, in order to address barriers to occupation-based care and to allow the site to make informed decisions when implementing these tools.

Needs Assessment

In order to gather accurate and comprehensive information regarding the capstone site and site stakeholders, a needs assessment was required. The needs assessment process began immediately following the agreement between the capstone site and the capstone student that the project would be completed within the inpatient rehabilitation unit located on site. The needs assessment conducted for this doctoral capstone experience involved a systematic procedure to determine the needs of the capstone site and develop a preliminary plan and purpose for the experience. Prior to the start of the capstone experience, the student first created community and service profiles using available resources in order to gather in depth background knowledge of the site and its context. Next, the student began the interview process by conducting a virtual interview via Zoom with the therapy manager. In this interview the therapy manager had the opportunity to answer questions regarding the site's current practices and explain their perceived needs. Following the interview, the capstone student completed a literature review to gather relevant information on current best practices.

Upon the start of the capstone experience and arrival to the site, the student finalized the needs assessment through additional interviews with the two full time occupational therapists in the inpatient rehabilitation department as well as reviewing and analyzing patient assessments, Canadian Occupational Performance Measures (COPM), provided by the site. Once all of the aforementioned information was gathered, the capstone student was able to synthesize this information to analyze the gap between current and best practices, identify a problem statement, define the overall purpose of this capstone experience, and create an implementation plan for the capstone experience and project. The processes of the needs assessment, as previously outlined, will be described in depth throughout this section.

Community and Service Profile

The chosen capstone site was a midwestern hospital, located approximately an hour northwest of the state's capitol city. Information was gathered about the inpatient rehabilitation unit at the capstone site, where the capstone experience took place. The unit contains 15 beds as well as a dedicated rehabilitation gym with community re-entry tools such as a mock grocery store and restaurant booth (personal communication, February 18, 2021). Within the inpatient rehabilitation unit specifically, individuals must be accepted by the medical director before being admitted into the unit for care. Requirements for acceptance include that the individual has the potential to return to home, is able to tolerate at least 3 hours of therapy per day and has a medical need of 24 hours of nursing care each day (personal communication, March 31, 2021). In order to comply with standards set for the hospital, at least 65% of the clients within the inpatient rehabilitation unit must fall within certain, predetermined diagnoses, though the 65% is calculated as a total of the entire year rather than monitored each week or month. The predetermined diagnoses include cerebrovascular accident (CVA), traumatic brain injury (TBI),

amputation, and spinal cord injury (SCI). Typically, a little over half of the unit is comprised of individuals who have experienced a CVA, but other common diagnoses include Parkinson's Disease, general debility, recovery from COVID-19, and neurorehabilitation. There are some orthopedic diagnoses seen, such as joint replacement or hip fracture however, these are not qualifying diagnoses and therefore are typically only seen when other medical conditions are present as well (personal communication, March 31, 2021).

Interview with Site and Site Stakeholders

Next an interview between the capstone student and therapy manager of the capstone site was scheduled. The purpose of this semi-structured interview was to establish areas of need for the capstone site and determine which areas were of highest priority for the student to address in order to create a purposeful and population centered project. In collaboration with the site stakeholder, the student aimed to establish key goals and areas of focus for the capstone project. As a result of this interview, the student intended to have a clear direction when completing the subsequent literature review for the capstone project. Additionally, the interview would provide a preliminary understanding of the outcomes that will result from the capstone project. Refer to Table 1 for a reference of the questions asked during this interview.

Table 1

Needs Assessment: Interview Questions for Therapy Manager

Question 1	What are the characteristics of the population that you serve that I should be aware of when planning for and completing this capstone project? (i.e. diagnoses, common occupational challenges, common client factors)
Question 2	Currently, what are the common assessments used within the department?
Question 3	In terms of the needs of the department, what tangible outcomes from this capstone project would be most beneficial in supporting occupation-based care?

Question 4	In addition to the Midway and Final presentation made to the department, how would you prefer the information collected in this capstone to be distributed? (Literature review, paper, infographic, etc.)
Question 5	What steps can I take throughout this capstone experience to support the feasibility and sustainability of this project?

One of the main goals of the semi-structured interview questions was to provide the capstone student with a greater understanding of the population that they would serve. With these questions, the need was to gain insight into what the capstone site felt are common barriers to occupation and common client factors that affect the community that they serve. The first question was intended to open up a dialogue that would provide the capstone student with an overview of the population's strengths and challenges as seen by the capstone site. Assessment is a vital part of the occupational therapy process and therefore, the second question provided information about the current assessment patterns of the department. By understanding the department's approach to assessment, the capstone student could better tailor their programming to the department's current approach and needs. Another goal of these questions was to give the capstone site an opportunity to express their specific wants and needs in relation to hosting a capstone student. The third, fourth, and fifth questions specifically provide the site with an opportunity to give the student insight into what they are looking for and what would be most beneficial for their department. By asking these questions, it took into account the mutual relationship between the student and the capstone site and created a greater chance for sustainability of programming.

Interview Themes and Outcome

The initial site interview, occurring prior to the start of the capstone experience, was held virtually via Zoom and included both the capstone student and the site contact, the current

manager of therapy services for inpatient rehabilitation at the capstone site. From this interview, several themes emerged that informed the planning and purpose of this capstone experience. The first theme that emerged was the desire for organized information and literature to support the implementation of occupation-based interventions via occupational kits (personal communication, March 31, 2021). The site contact had attended a continuing education course that proposed the creation and implementation of occupational kits in maintaining occupation-based and client-centered practice within treatment sessions. However, in order to secure adequate resources to create these kits, such as funding and therapist buy in, the inpatient rehabilitation unit needed comprehensive background knowledge and literature to support this endeavor.

The second theme that emerged was the need for increased information and training in regard to an assessment that could accurately measure the impact of the occupational kits on upper extremity function (personal communication, March 31, 2021). The assessment of interest to the unit, as discussed in the interview, was the ARAT assessment. At the time the interview was conducted, the unit used several assessments including the Canadian Occupational Performance Measure (COPM), the Care Tool, the National Institutes of Health Stroke Scale (NIHSS), as well as range of motion and manual muscle testing to gather objective and subjective information about client status. However, the unit was interested in learning more about the ARAT in order to add a tool that specifically addresses upper extremity function to demonstrate positive outcomes in function and occupational performance as a result of participation in therapy. The unit expressed a desire to have supporting research, an understanding of the benefits, and some training with the ARAT in order to implement this

assessment tool to successfully demonstrate quantitative outcomes for documentation and insurance purposes.

In order to gain a better understanding of the patient and therapist perspective within the inpatient rehabilitation unit, the needs assessment continued upon the capstone student's arrival to the site. The student identified the two full time occupational therapy practitioners in the unit as key stakeholders, as they would be implementing the education gained from the capstone project into direct patient care. A semi-structured interview was conducted in person and on site with the capstone student and both occupational therapists present. The questions for this interview were more specific to current facility practices and gaining an understanding of the therapists' perspective of the proposed capstone components established during the first interview with the therapy manager (See Appendix A for interview questions).

One of the themes that emerged from this interview was the desire for access to current literature in order to increase therapists' knowledge and support evidence-based practice within the unit. The therapists stated that they had limited resources to report quantitative change and desired more methods for demonstrating concrete change in their documentation as a result of therapy services (personal communication, January 13, 2022). The therapists reported upper extremity assessment, safety assessment, and vestibular screening as areas in which they desired increased knowledge and resources. In regard to the proposed occupational kits, the therapists stated that items related to activities of daily living (ADL) would be useful and reported return to work and yardwork/gardening as other common interests of the population served. The therapists reported that more physical resources related to these categories would be beneficial in addressing client goals and incorporating meaningful occupation into practice.

From this interview, the capstone student gathered valuable information about barriers to assessment and occupation-based care as well. The OT practitioners reported time as one of the main perceived barriers within the rehab unit. With insurance requirements, as well as site specific requirements, the OT practitioners have several items to complete within the first 72 hours of a patient's admission to the unit including the Care Tool, COPM, NIHSS (if applicable), along with the supporting documentation and clinical decision-making aspects that accompany initial evaluations (personal communication, January 13, 2022). In order to accommodate this barrier, the therapists reported that ease of assessment administration and documentation is key. Other barriers that were discussed included cognitive barriers, in which some clients may have difficulty cognitively interacting with the proposed assessment and occupational kits, as well as the presence of a flaccid upper extremity which would impact participation as well (personal communication, January 13, 2022). The knowledge of these perceived barriers influenced the project goals and plan.

Canadian Occupational Performance Measure (COPM) Results

Lastly, the capstone student aimed to gather information regarding site specific meaningful occupations to inform the development of population-centered occupational kits. As part of the initial evaluation process, each patient admitted to the inpatient rehabilitation unit is administered the COPM (personal communication, March 31, 2021). The COPM is used to gain perspective into the patients perceived occupational performance problems, create patient centered goals, and develop specific and meaningful intervention and treatment ideas. The COPM is then administered a second time immediately before discharge to monitor patients perceived outcomes following participation in therapy.

In order to gain an understanding of the common occupational performance problems and what occupations were most meaningful to the patients in the inpatient rehabilitation unit, the capstone student gathered and organized COPM results from the department. The department kept a file of past and current COPM assessments in the therapy office. The student methodically went through each COPM assessment and input the individual's reported occupational performance problems, date of the assessment, and number of patients into an Excel spreadsheet. The capstone student was able to gather assessment information from 31 patients over the course of 5 months, from October 1, 2021 to February 1, 2022.

The COPM results yielded the following information regarding the most common occupational performance problems for patients in the inpatient rehabilitation department. The most common problem cited was difficulty with functional mobility, specifically walking. Following walking, several common ADLs were then listed including toileting, dressing, and bathing. The fourth most common occupational performance problem was use of the affected upper extremity following stroke/injury, which supports the proposed need of the capstone site for occupation-based resources and an upper extremity outcome measure to promote and measure functional use of the upper extremities. Following these most commonly reported occupational performance problems were many problems that were reported by only one to two patients including occupations related to instrumental activities of daily living (IADL), leisure, work, and functional mobility. The information gathered from the COPM assessments will inform the creation of site-centered occupation-based kits and resources.

Literature Review

Following the comprehensive needs assessment process and throughout the capstone experience, a review of relevant literature was conducted to synthesize evidence and inform the

desired implementation of occupation-based approaches and the ARAT assessment. The literature search was conducted on PubMed and CINAHL with the key terms of occupation-based, occupational therapy, Action Research Arm Test, and purposeful activity. The resultant articles were analyzed by the capstone student to screen for relevant, quality, and current evidence to inform the capstone project and experience.

Occupation-Based Approaches

An important characteristic of occupational therapy practice is its emphasis on the use of every day, meaningful tasks to improve client functioning, participation, wellbeing, and quality of life. According to the Occupational Therapy Practice Framework (OTPF), the core values and beliefs of the occupational therapy profession are rooted in occupation (AOTA, 2020). The term occupation, as defined by the OTPF and as referenced throughout this capstone project, refers to personal and meaningful engagement in daily life events by an individual (AOTA, 2020). The profession of occupational therapy was founded with the ideals that engagement in occupation is both a therapeutic agent as well as the goal of intervention (Fisher, 2013). To align with the foundations of the profession, OT practitioners should use evaluation and intervention methods that reflect occupation as the core (Fisher, 2013). Engaging clients in meaningful, occupation-based interventions supports the tenets of our profession, maximizes the power of occupation as an agent of change, and allows practitioners to assess and address occupational performance in context (Fisher, 2013). Additionally, the central focus on occupation distinguishes occupational therapy from other disciplines and demonstrates the value of the profession in promoting client-centered care and improving health care services within the interdisciplinary care team (Wong et al., 2018).

In further support of the implementation of occupation-based approaches, in 2019 the American Occupational Therapy Association (AOTA) released their top recommendations for OT practitioners as a part of the Choosing Wisely initiative. This initiative, led by the American Board of Internal Medicine Foundation, aims to ensure appropriate, quality care for clients and support safe and effective decisions by healthcare practitioners (Gillen et al., 2019). Among the top 5 recommendations for OT practitioners, was the recommendation to avoid providing interventions that are non-purposeful such as cones, pegs, etc. as they are not relevant to client experiences and have proven to be less motivating to clients (Gillen et al., 2019). In contrast, it is recommended that therapists aim to provide purposeful interventions, that are directly related to occupation and the core values and beliefs of the profession (Gillen et al., 2019). There is evidence to support that purposeful, occupation-based interventions increase intrinsic motivation in clients as well as, “increase attention, endurance, motor performance, pain tolerance, and engagement, resulting in better client outcomes” (Gillen et al., 2019, p. 5). This recommendation directly supports the implementation of occupation-based approaches to care and provides merit to the proposal of creating occupation-based kits to enable purposeful intervention with clients at the chosen capstone site.

Recent research findings substantiate the recommendations for occupation-based approaches to support the health and well-being of clients and populations as well. The site’s therapy manager reported that typically, greater than 50% of the inpatient rehabilitation unit is composed of individuals who have experienced a stroke and therefore, information regarding the efficacy of occupation-based interventions with the stroke population was gathered. A systematic review conducted by Wolf et al. in 2015, synthesized evidence from 21 studies and indicated strong evidence to support the use occupation-based interventions to improve occupational

performance in activities of daily living for individuals who have had a stroke. In addition, a research study by Kim and Park (2019) found that occupation-based bilateral upper extremity training showed significant results in recovery for individuals who have had a stroke, in comparison to typical bottom-up treatment without a focus on occupation. The study found that occupation-based training was effective in improving both physical and psychosocial outcomes in these patients as evidenced by individuals in the study reporting improvements in satisfaction with occupational performance, emotional control, as well as participation in occupation (Kim & Park, 2019). In addition to improvements in occupational performance and participation, overall function of the arm improved with occupation-based training as seen in improvements in the clients ARAT scores which measured grasp, grip, and gross movement of the upper extremity (Kim & Park, 2019).

Strategies to Implement Occupation-Based Approaches

With evidence supporting the use of occupation-focused approaches and occupation-based interventions, OT practitioners must translate this knowledge into practice through their interactions with clients and populations. A study by Nielsen et al. published in 2020, aimed to synthesize the experiences of OT researchers in the area of occupation-based approaches in order to inform OT practitioners' implementation of occupation-based care in practice. The researchers in this study participated in a process known as group concept mapping, in which they organized and integrated their experiences and ideas regarding occupation-based approaches (Nielsen et al., 2020). From the study, recommendations for the implementation of occupation-based approaches include utilizing doing as the core agent of change, creating sustainable change through building habits and involving key stakeholders, allowing for flexibility in occupation-based intervention, and using evaluation methods that address occupation (Nielsen et al., 2020). This study

highlights the importance of engaging clients in the act of doing meaningful occupations and emphasizes the role of the OT practitioner in problem solving barriers to occupational performance in collaboration with the client to promote the establishment of everyday engagement. Additionally, the study noted that groups and peer-support can strengthen the possibility of change via occupation-based interventions suggesting that OT practitioners should incorporate group therapy or facilitate peer support programs with their clients and communities (Nielson et al., 2020). These recommendations inform OT practitioners in their application of evidence-based practice and were incorporated into this capstone experience and project.

An example of occupation-based approaches being applied in clinical practice in a medical model setting can be seen at Rehabilitation Hospital of Indiana (RHI) located in Indianapolis, Indiana. Recently, in response to the Choosing Wisely recommendations published by AOTA, RHI designed and implemented four occupation-based kits in an inpatient medical setting with similarities to the capstone site's inpatient rehabilitation unit (Hull, 2021). RHI outlined the shift from impairment, bottom-up focused care to the use of functional, occupation-based kits to improve client centered outcomes (Hull, 2021). The four kits included a tool kit, a parenting kit, a home care kit, and a traveling kit that each had around 10 items and were curated based on the demographics of the patient population at RHI (Hull, 2021). Following the introduction of these occupation-based kits, RHI noted an increase in OT practitioners choosing purposeful activities over preparatory items and overall increasing success and motivation of clients and OT practitioners through client-centered care (Hull, 2021).

Barriers to Occupation-Based Approaches

Despite the professions foundations in occupation the literature presents common barriers that prevent OT practitioners from providing client-centered and occupation-based care in

practice. Some challenges RHI noted with the implementation of the kits were participation and buy-in from practitioners, incorporating evidence into clinical practice, and concerns regarding the psychosocial impact on clients by introducing items and occupations that were much easier prior to injury (Hull, 2021). Additionally, in a study of OT practitioners working with clients with hip fracture in post-acute care settings, OT practitioners recognized the benefits of providing occupation-based care however, barriers to the provision of occupation-based care included a lack of resources or limited access to equipment at the facility, ability to document occupation-based interventions in electronic medical records, and lack of caregiver support (Wong et al., 2018). Some suggested interventions to address these barriers include the provision of adequate equipment and resources to provide occupation-based care, training in effective documentation strategies, and providing clients and caregivers with tools and resources within the community for use upon discharge (Wong et al., 2018). Despite these barriers, occupation-based approaches continue to be recommended to remain consistent with the profession's core foundation of occupation, increase client motivation, demonstrate the value of the OT profession, and overall improve client outcomes.

ARAT Application

Through the comprehensive needs assessment process, a valid and reliable outcome measure of upper extremity functioning was identified as an additional need in order to assess the effectiveness of occupation-based approaches. Thus, in addition to the implementation of occupational kits, the capstone site identified the application of the ARAT assessment as an opportunity for improved delivery of care. The site identified the ARAT as the chosen assessment method and informed the capstone student of plans to purchase the assessment prior to the start of the capstone experience. The student located current, evidence-based information

to support the application of this assessment method within the capstone site's inpatient rehabilitation department.

Outcome measurement is an essential component of the occupational therapy process. Outcome tools allow OT practitioners to document the results of occupational therapy services, monitor client progress, and quantify client status in order to communicate effectively to relevant stakeholders (AOTA, 2020). Additionally, outcome measures can provide OT practitioners with important information from which to base the development of the intervention plan as well as modify as indicated by results (AOTA, 2020). According to AOTA (2020), when choosing an outcome measure it should be valid, reliable, sensitive to change, consistent with targeted outcomes, and congruent with the client's goals. As discussed in the needs assessment one of the most commonly cited occupational performance problems, along with functional mobility and activities of daily living, was use of the affected upper extremity following an injury. Therefore, the ARAT meets criteria of being congruent with client goals as it addresses this commonly cited occupational performance problem by assessing an individual's ability to use their affected upper extremity with specific tasks. More detailed information about this measure as well as the specific psychometric qualities of the measure will be discussed further in this section.

The ARAT is a standardized observational performance measure developed by Lyle to assess upper extremity functioning in individuals with cortical damage (Lyle, 1981). The ARAT was developed from the Upper Extremity Function Test (UEFT) proposed by Carroll, with the intention of decreasing the amount of time needed for test administration, removing repetitive items, and improving consistency of scoring (Lyle, 1981). Specifically, the ARAT evaluates an individual's ability to use their upper limb for 4 subcategories of movement including grasp,

grip, pinch, and gross motor movements through the observation of movement patterns commonly used in daily activities (Lyle, 1981).

The ARAT consists of 19 items, organized in the previously mentioned subcategories and scored on a scale from 0 to 3, with higher values indicating greater motor functioning, for possible total scores from 0 to 57 indicating overall functional use of the upper extremity (Pike et al., 2018). A score of 3 indicates that the individual performed the test item normally, a score of 2 indicates that the item is performed with great difficulty or requires and an abnormally long time, a score of 1 indicates that the item is performed only partially, and a score of 0 indicates that the individual cannot perform any part of the item (Lyle, 1981). The items within each subtest are arranged so that the hardest item is performed first, with success on this item predicting success on the following items and reducing the time needed to administer the test (Lyle, 1981). Failure on the first item indicates a need to continue to the second, and easiest, item in the subtest. Failure on the second item predicts failure on the remaining items of the subtest, and therefore reduces time needed to administer the test (Lyle, 1981). Scores of a 1 or 2 on the first and second items indicate a need to administer all items in the subtest (Lyle, 1981). There is no test certification necessary to administer the ARAT.

Following its development, several studies have been conducted to determine the psychometric properties of the ARAT assessment to support its application in practice and research. Because the capstone site is proposing use of the ARAT within the inpatient rehabilitation unit, the capstone student first located literature that examined the administration of the assessment in this setting. Rabadi and Rabadi (2006), sought to examine the use of the ARAT and the Fugl-Meyer Assessment (FMA) in acute stroke patients receiving inpatient rehabilitation to determine the correlation between the two commonly used upper extremity

motor assessments as well as their responsiveness to change and correlation with participation in ADL. The study found that both the ARAT and FMA correlated highly with one another and were sensitive to change within the inpatient rehabilitation setting (Rabadi & Rabadi, 2006). Additionally, it was found that the ARAT showed a strong correlation with measures of ADL, specifically FIM-ADL scores, meaning it correlates upper extremity function with the occupation-based outcome of participation in ADL tasks (Rabadi & Rabadi, 2006). This study supports the use of the ARAT with patients who have experienced a stroke and are undergoing inpatient rehabilitation as a tool to measure upper extremity motor recovery.

In further examination of the psychometric properties of the ARAT, a Rasch analysis performed by Chen et al. (2012), found that the ARAT had moderate to excellent predictive validity and high reliability when used to assess patients with mild to moderate upper extremity impairment following stroke. This study also confirmed the proposed difficulty of items, with the first item being the most difficult and the second item being the easiest, supporting the ability to predict success or failure on following items in order to decrease test administration time (Chen et al., 2012).

Finally, a systematic review conducted by Pike et al. in 2018 sought to determine the psychometric properties of the ARAT when used to assess upper extremity function in individuals with more general neurological diagnoses (stroke, traumatic brain injury, cerebral palsy, anoxia, multiple sclerosis) who were undergoing neurorehabilitation. The review indicated moderate to strong evidence to support the intra-rater reliability, construct validity, and responsiveness of the ARAT for populations of stroke and TBI (Pike et al., 2018). The minimum clinically important change for this assessment was found to be 10% of the total possible score, or 5.7 points (Pike et al., 2018). The majority of studies included in this review involved the use

of the ARAT with individuals who did not have spasticity (modified Ashworth score of 3 or less in upper extremity) and therefore, more evidence is needed to recommend the use of this tool with individuals who demonstrate upper extremity spasticity (Pike et al., 2018). The information presented in these studies informs and supports the use of the ARAT within the hospital's inpatient rehabilitation department with individuals who have experienced a stroke or TBI and are experiencing hemiplegia as a result.

While the psychometric properties of the ARAT assessment support its use as a valid and reliable outcome measure of upper extremity motor function, several barriers were noted in the above-mentioned studies. One key barrier is the floor and ceiling effects noted with the ARAT (Rabadi & Rabadi, 2006). The responsiveness of the ARAT becomes less reliable with individuals who have very mild or very severe upper extremity motor impairments (Rabadi & Rabadi, 2006). Therefore, OT practitioners should keep this in mind when determining which patients are appropriate to participate in the ARAT. Additionally, while the ARAT has proven to be valid and reliable, the method of scoring proposed by Lyle lacks detail and can be viewed as ambiguous, with one study even suggesting that the four-point scale of the assessment is redundant and could be reduced to a three-point scale for ease of scoring (Chen et al., 2012). Despite these barriers, several studies continue to recommend the use of the ARAT to measure upper extremity function in patients experiencing hemiplegia.

In his original article, Lyle (1981) outlines the development process of the ARAT and provides an overview of information about test materials, test items, and test scoring (Lyle, 1981). However, as previously noted, the information originally provided by Lyle lacks detail to guide ARAT administration and scoring in a manner that can be standardized across administrators and clinics (Yozbatiran et al., 2008). To address the barrier of uncertainty in

scoring, Yozbatiran et al. (2008) proposed a standardized method of ARAT administration and scoring to reduce variance and improve interrater reliability, intrarater reliability, and validity. With the standardized method proposed by Yozbatiran et al. (2008), the ARAT has been found to be administered with excellent interrater reliability, intrarater reliability, and validity across settings. Therefore, the capstone student chose to consult the standardized protocol provided by Yozbatiran et al. (2008) when implementing the ARAT for this capstone experience and project.

Gap Analysis

Information gathered during the needs assessment and review of current literature identified gaps in both knowledge and resources at the chosen capstone site. The first gap identified was in resources of occupation-based tools for therapists to utilize with clients. Currently, the rehab gym contains several tools to promote functional reach and arm use including some function-based items, peg boards, and cones however, the manager of therapy services was interested in providing her therapists with increased occupation-based resources to use with clients in accordance with the recent Choosing Wisely Recommendations from AOTA (C. Voll, personal communication, February 18, 2021). The second gap in knowledge was related to the use of an outcome tool to measure changes in functional reach and arm use. The manager of therapy services was interested in implementing the ARAT with clients in the inpatient rehab unit but stated that she did not have enough knowledge or information regarding the assessment tool and its efficacy to prepare her therapists to implement this tool (C. Voll, personal communication, February 18, 2021). Additionally, the ARAT kit itself lacked the instructions and scoring guidelines needed to allow the therapists to implement the tool in an effective and efficient manner. The purpose of this doctoral capstone project and experience was to provide the capstone site with comprehensive and organized information from the literature

about occupation-based intervention via the use of occupational kits and the ARAT assessment in order to allow them to make informed decisions when implementing these tools.

Guiding Model

The Canadian Model of Occupational Performance and Engagement (CMOP-E) was chosen to guide this doctoral capstone project and experience. As supported by Fisher (2013), the CMOP-E supports an occupation-centered perspective that allows OT practitioners to maximize the potential of occupation as a therapeutic agent of change. In alignment with the foundations of the profession, this model describes occupation as the core domain of occupational therapy (Larsson-Lund & Nyman, 2017). This model asserts that spirituality is central to an individual's recovery, highlighting the importance of a sense of meaning, purpose, and connectedness in promoting occupational performance and engagement (Wong & Fisher, 2015). In practice, use of the CMOP-E model involves "identifying gaps between desired and actual occupational participation" (p.308) and using this knowledge to promote optimal occupational performance and engagement through considerations of the person, occupation, and environment while maintaining a central focus on the human spirit and what is meaningful to the client (Wong & Fisher, 2015).

Another strength of this guiding model in informing this capstone experience and project is the related assessment tool, the Canadian Occupational Performance Measure (COPM). The COPM is an occupation-focused interview guide that supports an occupation-centered perspective and allows the OT practitioner to gather information on the clients' perceived strengths and problems of occupational performance (Fisher, 2013). As suggested by Nielsen et al. (2020), the use of an occupation-focused evaluation method, such as the COPM, supports the OT practitioners' ability to elicit client-centered and occupation-based goals resulting in the

development of treatment plans that are meaningful to the client. Currently, the site's inpatient rehabilitation department uses the COPM regularly with clients as an assessment tool provided at both initial evaluation and discharge. The established use of the COPM within the department reinforces the use of the CMOP-E as a guiding model and provides valuable information to inform this capstone project and experience. Data from the COPM assessments were gathered during the needs assessment process and used to gain a greater understanding of occupations that are most important to this client population and assist in creating occupation-based kits that are specifically tailored and meaningful to this client population.

Project Plan and Process

To address the identified gap, the intended focus of the capstone project was the development and dissemination of two comprehensive resources containing site-centered and evidence-based information. The first resource focused on the implementation of a new outcome measure, the ARAT assessment, and the second resource focused on the implementation of occupation-based approaches to care via the use of occupational kits.

Goals and Objectives

In collaboration with the site mentors and other key site stakeholders, the capstone student created goals and objectives to address the focus of the capstone project and guide the student's planning process while onsite. The goals and objectives were as follows:

- **Project Goal 1:** In collaboration with the capstone site and its stakeholders, the student will develop a doctoral capstone project plan based on a finalized needs assessment and comprehensive literature review within the first 4 weeks of the capstone experience in order to implement evidence and occupation-based approaches as needed by the organization.

- **Objective 1:** Within 3 weeks, the student will finalize the needs assessment to determine an organizational ‘gap’ in relation to implementing the ARAT assessment tool and occupation-based approaches to be further addressed with the doctoral capstone project and experience.
- **Objective 2:** Within 4 weeks, the student will gather and interpret literature in order to provide the site with current evidence-based research to address the implementation of occupation-based practice.
- **Objective 3:** Within 4 weeks, the student will synthesize the knowledge gained from the needs assessment and current literature in order to develop a plan for the doctoral capstone project and experience to address the needs of the site and reflect updated evidence from the literature.
- **Project Goal 2:** Within 10 weeks of starting the capstone experience, the student will develop and present two comprehensive resources containing evidence-based and site-centered information to inform the site’s implementation of occupation-based kits and the Action Research Arm Test.
 - **Objective 1:** The student will examine and integrate information from the literature and population specific needs via results from the Canadian Occupational Performance Measures (COPM) collected at the site to gain an understanding of meaningful occupations in order to create a plan for occupation-based kits.
 - **Objective 2:** Within 10 weeks of starting the capstone experience, the student will gather and integrate evidence-based literature on the Action Research Arm Test (ARAT) to create an organized resource and present information to

rehabilitation staff in an in-service format to inform the site's implementation of this tool.

- **Objective 3:** Within 10 weeks of starting the capstone experience, the student will provide the capstone site with a comprehensive resource outlining the implementation of evidence-based and site-centered occupation-based kits for use within the inpatient rehabilitation department.
- **Project Goal 3:** By the end of the capstone experience and project, the student will develop and apply a method for measuring the reception to and effectiveness of information and resources provided to the capstone site and disseminate this information to key stakeholders.
 - **Objective 1:** Within 10 weeks, the student will collaborate with the site to determine targeted outcomes of the doctoral capstone project and experience and design efficient measurement tools to address the targeted outcomes and assess the effectiveness of the implementation of the project.
 - **Objective 2:** Within 12 weeks, the student will implement the measurement tools, analyze the collected data, and summarize key results to assess the effectiveness of the doctoral capstone project on addressing the targeted outcomes.
 - **Objective 3:** Prior to the end of the capstone experience, the student will disseminate data and resources gathered during the doctoral capstone experience and project via a presentation to the capstone site's inpatient rehabilitation department and the organization's management team.

To ensure that the capstone student was progressing towards goals and objectives, the capstone student met with site mentors every Monday at 9:30am in the private treatment room on

the inpatient rehabilitation unit. These meetings consisted of the capstone student reviewing the progress and experiences from the previous week, outlining the goals for the current week, and asking any pertinent questions to guide the experience. The site mentors would answer the capstone student's questions as well as pose their own questions and present any ideas or updates regarding the project and experience. In addition to these weekly meetings, the site mentor scheduled a meeting at midterm, Thursday February 24th, and during the final week, Thursday April 14th, to discuss the capstone student's progress and the site mentors' evaluations of the student. For a detailed timeline of the capstone experience and project week by week, see Appendix B.

Evaluation Plan

To measure the effectiveness of the resources and information provided by the capstone student throughout the experience and project, the capstone student developed an evaluation plan prior to arriving to the site. Adjustments were made to the evaluation plan during the first 3 weeks onsite, while finalizing the needs assessment, in order to ensure that the plan aligned with updated goals and objectives. The capstone student created two outcome measures, one with a focus on the ARAT and one with a focus on the occupation-based kits. The outcome measures sought to measure the participants perception of the in-services provided, the resources created by the student, the perceived need for the proposed items, and the practitioner's confidence with implementing these items into practice. The student planned to provide each participant with a paper copy of the outcome measure immediately following each in-service to ensure participation. The outcome measures would be anonymous, and the student planned to step out of the room during their completion to avoid influencing participants.

Project Implementation

Project implementation started at the beginning of week 5 of the capstone experience, following orientation to the site and completion of the updated needs assessment and literature review. Project implementation was separated into two phases, reflecting each of the focus areas of the capstone project. The first phase focused on the development and dissemination of resources related to the ARAT assessment and the second phase focused on the development and dissemination of resources related to occupation-based kits.

Participants

The participants for this project included employees of the hospital system associated with the site's acute inpatient rehabilitation unit as well as other practitioners and members of the management team that had an interest in the project. This included OT practitioners who provided services in the unit either full time or on an as needed basis and the full-time therapy manager for the unit. There were no exclusion criteria for this project, all employees who expressed interest in the project and were able to attend educational in-services were able to participate. This project was classified as exempt by the Indiana University IRB.

Participant recruitment was completed via email. As a result of discussion between the capstone student and site mentor, it was decided that the student would present capstone components at the monthly OT meetings, as these meetings were pre-planned ensuring participant availability and involved relevant stakeholders. The site mentor informed the lead OT, the individual in charge of planning agendas for the monthly OT meetings, of when the student would present, what they would present on, and the approximate length of each in-service. The lead OT agreed to these in-services, and they were added to the OT meeting agendas on February 25th and April 6th.

ARAT Resources

ARAT Toolkit

Prior to the capstone student's arrival to the capstone site, the therapy manager purchased a preassembled toolkit for the ARAT from aratkits.com/buy with department funds from the 2021 budget. The price of the toolkit was \$875 with free shipping and was delivered to the capstone site in December of 2021. The purchased toolkit contained all necessary physical tools to administer the ARAT with patients (See Appendix C for image of the kit and its contents). Additionally, the toolkit came with a one-page reference sheet which outlined the storage and general operation of the kit (See Appendix D). No other tools or information was provided with the ARAT kit.

The pre-assembled ARAT kit purchased by the department was created following dimensions outlined in the standardized protocol created by Yozbatiran et al. (2008) referenced throughout this capstone report. To assist with standardization of the toolkit and ease of administration, the capstone student used sharpie to add fill lines to the cups to indicate 4oz of water, the standardized amount cited in the literature. The capstone student also located a small container to store in the kit to hold the ball bearings and marble to reduce risk of misplacing these items during administration.

Comprehensive Assessment Guide

During the implementation phase, the student conducted research to gather relevant evidence and spent time compiling this evidence into a comprehensive assessment guide for the ARAT. The student utilized resources located during the literature review portion of this project, as well as resources provided by the capstone site mentor and other relevant resources located on PubMed with the search term 'Action Research Arm Test'. From these resources, the student aimed to create a useful guide that would provide evidence to support the implementation of the

ARAT, answer practitioner questions about assessment administration, and provide valuable information for utilizing this assessment in the treatment planning process. The overall goal of the assessment guide was to provide a helpful resource for practitioners within the unit, new practitioners, and students to reference when implementing the ARAT. See Appendix E for an excerpt from the assessment guide created by the capstone student.

The student spent 2 weeks (weeks 5 and 6) locating and interpreting evidence and then creating resources on Microsoft Word to create the comprehensive assessment guide. The capstone student determined what information to include in the guide based on evidence from the literature, specific request from the capstone site mentor and other relevant stakeholders, components of other assessment guides used by the site, and the capstone student's own clinical reasoning. The assessment guide was 31 pages total and was organized into a binder for ease of use. It included a table of contents, an abbreviated literature review, administration instructions with pictures, the standardization protocol, scoring sheets, a scoring guide, information about recovery categories, information about reducing the number of items needed for the ARAT, relevant treatment ideas, as well as a reference list and other helpful resources. The assessment guide was clearly labeled and stored in a cabinet located near the rehab office with other assessments.

Assessment Packet

In addition to the comprehensive assessment guide that was created, the student created an abbreviated assessment packet to be stored within the ARAT kit. The goal with the assessment packet was to create a resource that would provide OT practitioners with clear, concise information needed to accurately administer and score the ARAT. The assessment packet was 4 pages and included a select few items from the assessment guide that were needed

to inform assessment administration. The packet included the instructions made by the capstone student on how to administer the ARAT assessment, a score sheet, the scoring guide made by the capstone student, and the recovery categories reference sheet made by the capstone student. The assessment packet was laminated, held together with a binder ring, and stored within the ARAT toolkit for practitioners to reference as needed during assessment administration with patients.

Educational In-services

To disseminate information about the ARAT, provide a demonstration and train practitioners on administration of the tool, and make practitioners aware of the resources available to them two educational in-services about the ARAT were provided. The first in-service was provided during the monthly inpatient OT meeting. The student created and practiced the presentation during week 7 using Microsoft PowerPoint to create the presentation.

The first in-service was provided on Friday February 25th, 2022 in the Rehab Gym/dining area within the inpatient rehabilitation unit. There were 7 participants present in total including 4 OTRs, 2 COTAs, and 1 Rehab Manager. The in-service lasted approximately 25 minutes total with time for questions throughout. After the presentation, the student provided all participants with contact information and informed participants that the student would be available onsite until April 15 to answer questions, be present during ARAT administration, and discuss any notes or changes to the resources that the practitioners may suggest. At the end of the in-service, the student presented paper copies of the outcome measure for the participants to evaluate the in-service and report their thoughts on the ARAT. The capstone student then stepped out of the room to avoid influencing participants as they were completing the post in-service outcome measure.

The second in-service was provided during the monthly outpatient OT meeting on Wednesday April 6th at the hospital system's nearby outpatient location. There were 6 OTRs present for this in-service, 5 in person and 1 joined virtually via Microsoft Teams. The goal with this presentation was to provide education and resources related to the ARAT to the outpatient OT practitioners as they were beginning to see this assessment in inpatient documentation when completing chart reviews for their patients. The presentation lasted approximately 20 minutes with time for questions throughout. These participants were not provided the outcome measure created by the capstone student as there was no intention to begin implementing the ARAT within outpatient at this time.

EPIC Smartphrase

One of the key takeaways from the semi-structured interview with the OT practitioners in the inpatient rehabilitation unit was the desire for efficient and practical resources. To accommodate this need, the capstone student sought to provide a simple method for documenting ARAT assessment results in EPIC, the hospital's electronic health record (EHR) system. With the EPIC package that the capstone site had, there was not a method for easily pulling the ARAT assessment into the rehab documentation flowsheet. Therefore, the capstone student decided to create a Smartphrase in EPIC, which would allow the practitioners to type a specific phrase in their documentation note to pull up a pre-made scoring chart for the ARAT.

As recommended by the site mentors, the student met with one of the outpatient OT practitioners at associated with the hospital system who had extensive experience with EPIC and building smartphrases. The meeting occurred on Thursday March 3rd, with the student and OT practitioner collaborating to create a smartphrase to promote efficient documentation of ARAT scores. The smartphrase itself included a brief explanation of the ARAT followed by a table

which recreated the ARAT scoring sheet. The smartphrase was labeled as SEARAT, all therapists and managers associated with the inpatient rehabilitation unit were given EPIC access to the smartphrase, and the rehab manager sent a message on Microsoft Teams to inform therapists that the phrase was ready and available for use.

Occupational Kits Resources

In conjunction with the implementation of the ARAT assessment, the capstone student conducted research regarding the creation of site-centered occupational kits to promote occupation-based care and encourage functional use of upper extremities with patients in the inpatient rehabilitation unit.

Comprehensive Occupation-Based Kits Resource

During the implementation phase, the capstone student spent time gathering relevant evidence from the literature and combining this knowledge with information gathered during the needs assessment to create resources for occupation-based kits tailored to the capstone site. In response to discussions with the capstone site mentors, the student decided to create outlines for 6 occupational kits with 7-10 items within each kit. The number of kits as well as the number of items in each kit were decided based on discussions with the site mentors to provide a variety of items to choose from while maintaining a budget and being mindful of the amount of space within the unit.

The capstone student decided on the overall theme of each kit based on the COPM analysis that was completed during the needs assessment as well as the responses from the semi-structured interview with the occupational therapists in the unit. The capstone student presented the kit ideas to the site mentors for approval prior to assembling the outlines and associated

resources. The chosen occupational kits were a gardening/yardwork kit, a return-to-work kit, a cooking kit, a community outing kit, a craft kit, and a caregiver kit.

Once the kit ideas were decided and approved, the capstone student began to create outlines for each individual kit. Each outline contained proposed items for the kit, a list of treatment ideas for the items within the kit, purchase links for each item, and an estimated budget for the entire kit. The capstone site mentor informed the student that the hospital had business accounts approved for purchasing items from Amazon, Home Depot, Walmart, and Staples and therefore, the student located items from these four businesses. In addition to the outlines for each individual kit, the student provided the site with a brief literature review containing relevant evidence regarding occupation-based care and recommendations for practitioners as well as the results of the COPM analysis and suggested methods for assessment to be used with the kits. See Appendix F for an example of one of the six occupation-based kit outlines provided to the site.

Occupation-Based Kit Assembly

The original plan was for the capstone student to assemble two to three of the occupation-based kits and present the completed kits at the educational in-service for staff to visually see the concept and resources being provided for them. However, due to delays in budgeting approval from an administrative level, items for the kits were unable to be purchased at this time. The capstone student engaged in informal discussions with the OT practitioners to identify which occupation-based kits practitioners felt like they would utilize most often. This information was presented to the rehab manager, along with the comprehensive kit resource for the kits to be purchased when budgeting allowed in the future.

Educational In-service

To disseminate information about the occupation-based kits and ensure that therapists in the acute inpatient rehabilitation unit were aware of the plans to provide these resources, an educational in-service was provided. The in-service was provided during the April monthly inpatient OT meeting. The student created and practiced the presentation using Microsoft PowerPoint during week 12 of the capstone experience.

The in-service was provided on Wednesday April 6th, 2022, in the Rehab Gym/dining area within the inpatient rehabilitation unit. There were 5 participants present in total including 3 OTRs, 1 COTA, and 1 Rehab Manager. The in-service lasted approximately 15 minutes total with time for questions throughout. Immediately following the educational in-service, the student presented paper copies of the outcome measure for participants to have an opportunity to evaluate the information and resources provided. After providing the outcome measures, the capstone student stepped out of the room to avoid influencing participant responses.

Project Evaluation

Following project implementation, participants were provided with two separate outcome measures to assess the effectiveness of the resources and in-services provided. The goal with this capstone was to provide the capstone site with evidence-based and site-centered resources and education and therefore, the outcome measures focused on assessing the effectiveness of the informational resources and presentations provided by the capstone student. The outcome measures also assessed the participants' reception to these resources to gain an understanding of the participants perception of the need and sustainability of the project components. Each outcome measure consisted of 7 statements that participants were to rate on a 5-point Likert scale indicating their level of agreement with the statement ranging from 'strongly disagree (1)' to 'strongly agree (5)'. In addition, there were 3 open ended questions that allowed participants to

expand on their thoughts and provide suggestions for modifications to the resources and ideas for future programming. See Appendix G for the exact outcome measures provided to the participants.

The outcome measures were printed, and a paper copy was provided to all participants that were present for the educational in-services presented to the acute inpatient rehabilitation staff. After each outcome measure was completed on paper by each of the participants, the capstone student input the results for all of the questions into Qualtrics, which was accessed through the university. The results from the outcome measures were input into Qualtrics to aid in data analysis and the creation of visual components, including charts, to display outcome data in an organized format.

Results

The results indicate that the ARAT in-service and related resources were effective and informative as indicated by all participants reporting that they either ‘somewhat agree’ or ‘strongly agree’ with each of the statements on the outcome measure. 85.7% of participants strongly agreed that the ARAT addresses the goals and needs of both patients and providers within the unit and 100% of participants strongly agreed that the in-service was organized and adequate resources to implement the ARAT into practice were provided. The results indicate that the occupation-based kits in-service and resources were effective and informative as indicated by all participants reporting that they either ‘somewhat agree’ or ‘strongly agree with each of the statements on the survey. 80% of participants strongly agreed that the occupation-based kits addressed the needs and goals of patients and providers within the acute inpatient rehabilitation unit. Additionally, 80% of participants strongly agreed that the in-service was organized and

flowed well. See Appendix H for the entirety of the results generated on Qualtrics for both outcome measures.

In addition to the formal outcome measures, an informal method of evaluation was utilized with the ARAT and its resources. Following the educational in-service, the capstone student was able to observe while OT practitioners implemented the ARAT with appropriate patients on the inpatient rehabilitation unit. The capstone student was present for at least each practitioner's initial administration of the assessment, noted observations from implementation, and engaged in follow up discussions with practitioners. From these observations and follow up discussions, a few themes emerged including thoroughness of the instructions provided, difficulty with the pinch subtest of the assessment, and interest in the new outcome measure and its potential.

The OT practitioners who administered the assessment with patients reported that the instructions provided by the capstone student were thorough and they had minimal questions or clarifications that needed to be made. Practitioners reported some confusion with the order of items, as some items are able to be skipped based on hierarchy of difficulty and patient performance however, the capstone student noted that these challenges improved with continued administration of the assessment. Another theme that emerged in discussion and observation was a common difficulty among patients with the pinch subtest of the assessment. Because the patients seen in the acute inpatient rehabilitation unit tend to have moderate to severe deficits that require intensive rehabilitation, this particular subtest requiring precise fine motor coordination was often the lowest scoring and most difficult subtest. Several patients who participated in the assessment would get frustrated during the pinch subtest, some even becoming tearful. Therapists reported that with the knowledge that this portion can be particularly

frustrating to patients, they can be prepared to employ therapeutic use of self and provide education about the typical healing process following stroke or TBI, which often occurs proximally to distally. Lastly, the multidisciplinary team within the acute rehabilitation unit, including the OT practitioners, the PT practitioners, and the physiatrist expressed continued interest and excitement about the implementation of a quantitative outcome measure for upper extremity function.

Discussion and Impact

In terms of the goals and objectives outlined at the beginning of the capstone project and experience, the capstone student met each of these goals. The capstone site was provided with evidence-based and site-centered information in the form of resources created by the capstone student as well as educational in-services to support the implementation of the ARAT assessment and occupation-based kits. These resources were reported as effective and satisfactory by OT practitioners on outcome measures provided following each in-service. In addition, OT practitioners were able to successfully administer the ARAT with appropriate patients and continued to report the resources provided as helpful and thorough.

Limitations

One of the most notable limitations with this capstone was the absence of one of the key stakeholders throughout the capstone experience. Typically, there are two full time OT practitioners who consistently work on the unit, with other OT practitioners helping on an as needed basis. However, one of the two full time OT practitioners left for maternity leave during the second week of the capstone experience and therefore, was unable to be present to collaborate with the capstone student throughout the experience or attend either of the educational in-services.

Another limitation, affecting the ability to implement the ARAT and the occupation-based kits, were restrictions and temporary policy changes put in place because of the COVID-19 pandemic. With the increase in COVID-19 patients being treated at the hospital during the months of December and January, the acute inpatient rehabilitation unit capacity was decreased from 15 beds to 5 beds to provide beds to overflow patients from medical floors of the hospital as well as address the shortage of nurses. The unit was limited to a maximum of 5 to 7 beds for the first 8 weeks of the project, before it increased to 12 beds for the remainder of the capstone experience. With fewer patients present, there were less data available for COPM analysis and fewer patients appropriate for participating in the ARAT.

Lastly, as previously mentioned, budgeting delays did not allow the capstone site to purchase the occupational kits during the capstone student's time onsite. This limited the student's ability to provide participants with a visual representation of the proposed resources and did not allow the capstone student to observe the practitioner's use of these resources. However, the rehab manager reported plans to purchase and assemble 3 of the kits as soon as budgeting allowed.

Impact

With this opportunity, the capstone student was able to gain in depth knowledge and practice with the ARAT assessment as well as occupation-based care. The capstone student gained experience with leadership and education via the provision of 3 educational in-services with current clinicians, managers, and administration at the midwestern hospital. In addition, the capstone student received exposure to multiple settings of occupational therapy practice within the hospital's network including time spent observing and getting some supervised hands-on

treatment experience in the acute inpatient rehabilitation unit, acute care setting, outpatient adult setting, and the neonatal intensive care unit (NICU).

Overall, the capstone site was incredibly receptive to the capstone student's project and the resources provided. OT practitioners on the acute inpatient rehabilitation unit as well as OT practitioners from other units of the hospital expressed interest and reached out to the capstone student with questions during the time onsite. In addition to OT practitioners, other stakeholders including the physical therapy practitioners and the physiatrist on the acute inpatient rehabilitation unit expressed interest in the capstone project and frequently engaged in discussion with the capstone student. The capstone student emailed a copy of each of the student's in-service presentations to the physiatrist on the unit upon request. The patients within the unit who participated in the ARAT assessment with the OT practitioners were all able to follow commands and complete the assessment, and future patients will continue to benefit from the use of this standardized assessment to inform treatment planning and provide clear communication of patient status with relevant stakeholders.

The OT practitioners in the acute inpatient rehabilitation unit plan to continue to implement the ARAT with appropriate patients and will train students and new practitioners on this outcome measure as well. The rehab manager informed the capstone student of plans to use budgeted funds to purchase more of the resources needed to assemble the occupation-based kits outlined by the student. In addition, the outpatient location within the capstone site's network plans to purchase a second ARAT toolkit for the outpatient OT practitioners to utilize with appropriate patients to promote continuity of care and alignment of inpatient and outpatient outcome measures.

Conclusion

The overall purpose of this doctoral capstone project and experience was to provide the acute inpatient rehabilitation unit at a midwestern hospital with comprehensive and organized evidence-based information to inform the implementation of the ARAT assessment and occupation-based intervention. All goals and objectives created in collaboration with the site were met during the capstone student's time on site. Through extensive literature review and time spent creating and continually editing resources in response to site feedback, the student was able to present the site with two comprehensive resources to inform their implementation of evidence-based approaches to assessment and treatment via the ARAT and occupation-based kits. Following the presentation of educational in-services to disseminate resources and information from the capstone, OT practitioners and the rehab manager indicated agreement or strong agreement with statements that the resources and in-services were responsive to the patients' needs, practitioners' needs, and were thorough, and organized.

References

- American Occupational Therapy Association. (2020). Occupational Therapy Practice Framework: Domain and Process (4th ed.). *American Journal of Occupational Therapy*, 74(Suppl. 2), 7412410010. <https://doi.org/10.5014/ajot.2020.74S2001>
- Chen, H. F., Lin, K. C., Wu, C. Y., & Chen, C. L. (2012). Rasch validation and predictive validity of the action research arm test in patients receiving stroke rehabilitation. *Archives of Physical Medicine and Rehabilitation*, 93(6), 1039–1045. <https://doi-org.proxy.ulib.uits.iu.edu/10.1016/j.apmr.2011.11.033>
- Fisher, A. G. (2013). Occupation-centred, occupation-based, occupation-focused: same, same or different?. *Scandinavian Journal of Occupational Therapy*, 20(3), 162–173. <https://doi.org/10.3109/11038128.2012.754492>
- Gillen, G., Hunter, E. G., Lieberman, D., & Stutzbach, M. (2019). AOTA's Top 5 Choosing Wisely® Recommendations. *American Journal of Occupational Therapy*, 73(2):7302420010. <https://doi.org/10.5014/ajot.2019.732001>
- Hull, K. (2021). A Transition to Occupation-Based Care: Implementing AOTA's Choosing Wisely® Recommendations in a Medical Model Rehabilitation Setting. *OT Practice*, 26(2), 21-24.
- Kim, S. H., & Park, J. H. (2019). The Effect of Occupation-Based Bilateral Upper Extremity Training in a Medical Setting for Stroke Patients: A Single-Blinded, Pilot Randomized Controlled Trial. *Journal of Stroke and Cerebrovascular Diseases: The Official Journal of National Stroke Association*, 28(12), 104335. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2019.104335>

- Larsson-Lund, M., & Nyman, A. (2017). Participation and occupation in occupational therapy models of practice: A discussion of possibilities and challenges. *Scandinavian Journal of Occupational Therapy*, 24(6), 393–397.
- Lyle, R. C. (1981). A performance test for assessment of upper limb function in physical rehabilitation treatment and research. *International Journal of Rehabilitation Research*, 4(4), 483–492. <https://doi-org.proxy.ulib.uits.iu.edu/10.1097/00004356-198112000-00001>
- Nielsen, K. T., la Cour, K., Christensen, J. R., Pilegaard, M. S., von Bülow, C., Brandt, Å., Peoples, H., Jonsson, H., & Wæhrens, E. E. (2020). Lessons learned about occupation-focused and occupation-based interventions: A synthesis using group concept mapping methodology. *Scandinavian Journal of Occupational Therapy*, 27(7), 481–492. <https://doi.org/10.1080/11038128.2018.1561940>
- Pike, S., Lannin, N. A., Wales, K., & Cusick, A. (2018). A systematic review of the psychometric properties of the Action Research Arm Test in neurorehabilitation. *Australian Occupational Therapy Journal*, 65(5), 449–471. <https://doi.org/10.1111/1440-1630.12527>
- Rabadi, M. H., & Rabadi, F. M. (2006). Comparison of the action research arm test and the Fugl-Meyer assessment as measures of upper-extremity motor weakness after stroke. *Archives of Physical Medicine and Rehabilitation*, 87(7), 962-966.
- Wolf, T. J., Chuh, A., Floyd, T., McInnis, K., & Williams, E. (2015). Effectiveness of occupation-based interventions to improve areas of occupation and social participation after stroke: an evidence-based review. *American Journal of Occupational Therapy*, 69(1), 6901180060p1–6901180060p11. <https://doi.org/10.5014/ajot.2015.012195>

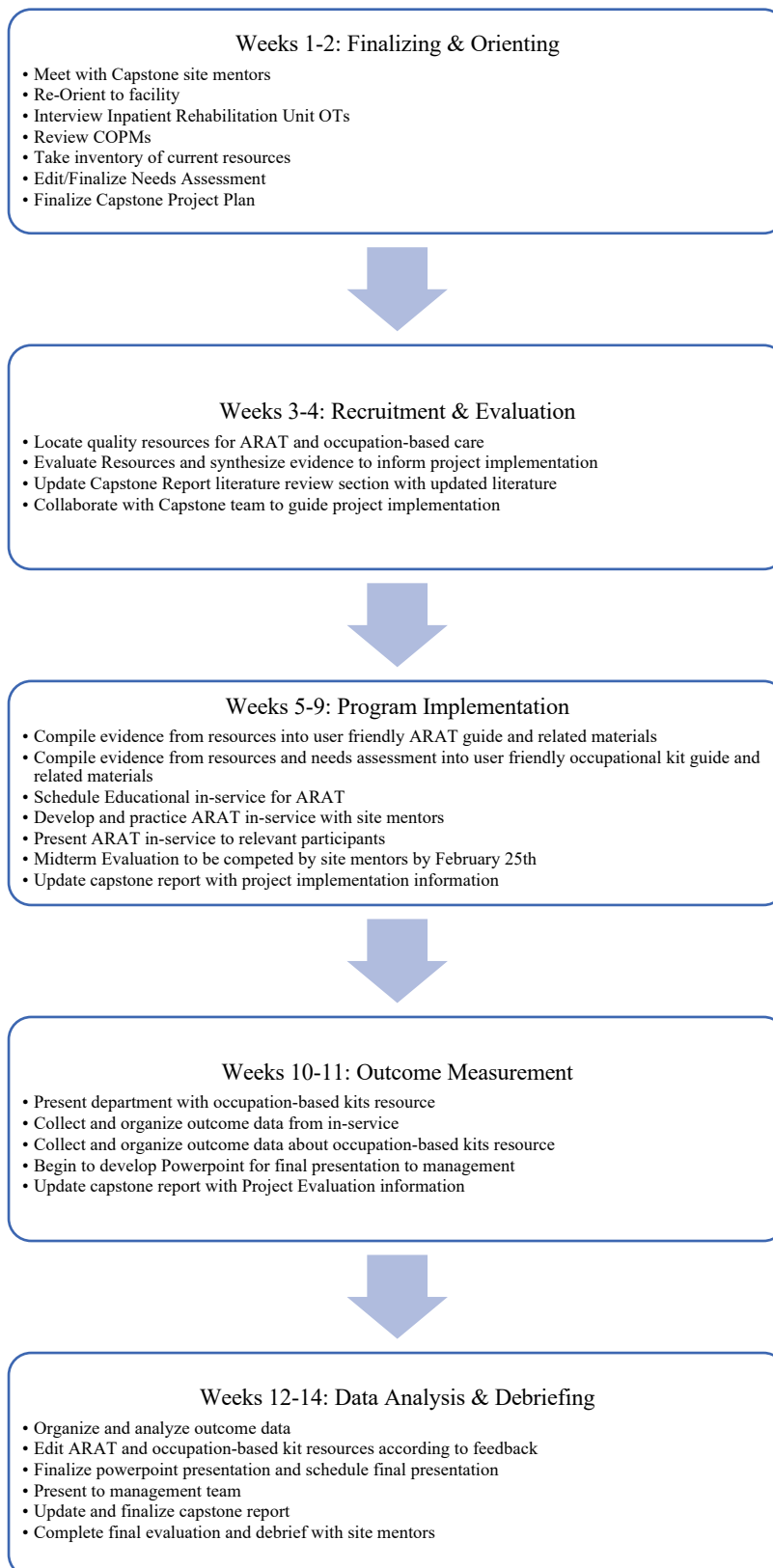
- Wong, C., Fagan, B., & Leland, N. E. (2018). Occupational Therapy Practitioners' Perspectives on Occupation-Based Interventions for Clients With Hip Fracture. *American Journal of Occupational Therapy*, 72(4), 7204205050p1–7204205050p7.
<https://doi.org/10.5014/ajot.2018.026492>
- Wong, S. R., & Fisher, G. (2015). Comparing and Using Occupation-Focused Models. *Occupational Therapy in Health Care*, 29(3), 297–315.
<https://doi.org/10.3109/07380577.2015.1010130>
- Yozbatiran, N., Der-Yeghiaian, L., & Cramer, S. C. (2008). A standardized approach to performing the action research arm test. *Neurorehabilitation and Neural Repair*, 22(1), 78–90. <https://doi.org/10.1177/1545968307305353>

Appendix A

Needs Assessment: Interview Questions for Occupational Therapists

1. What are the most common occupational performance problems seen/addressed with the population that you serve?
2. Are there specific occupational performance problems that are most difficult to address?
3. Currently, what are the most common assessments used within the department?
4. Are there any additional assessments that you feel would be beneficial?
5. What resources/items do you feel would be beneficial in promoting client-centered and occupation-based care within the department?
6. What are the perceived barriers to occupation-based care in your opinion?
7. What are the perceived barriers to implementation of the ARAT in your opinion?
8. In terms of the needs of the department, what tangible outcomes from this capstone project would be most beneficial in supporting therapy services?

Appendix B



Appendix C

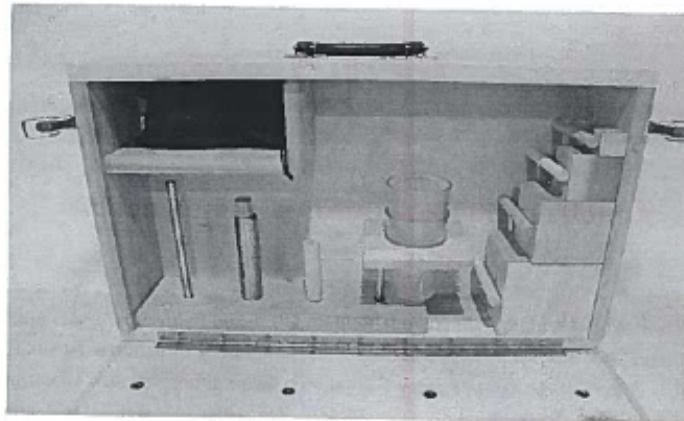


Appendix D

Action Research Arm Test Kit Instructions

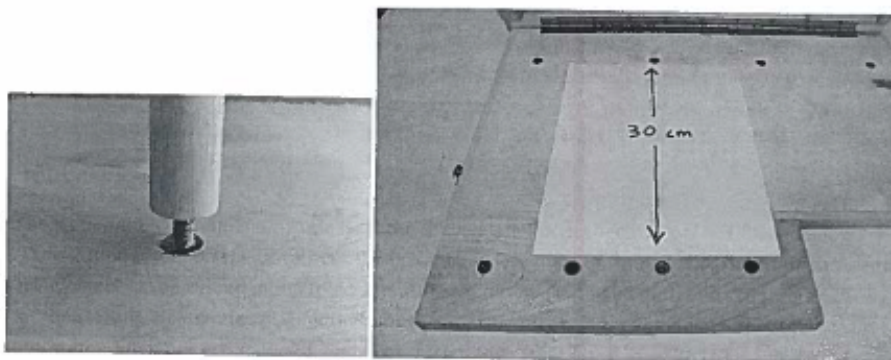
Storage

All items stow neatly in the custom designed box in the manner shown in the picture below. The marble, ball bearings, washer, tin can, cricket ball, extra bolt, and sharpening stone are stored in the black velvet bag provided with the kit. The stainless steel tubes sleeve over a wooden dowel and bolt. The blocks stack neatly on the right side, positioned by dowels fastened to the back of the box. The cups store in the middle holder also fastened to the back of the box.



Operation

Place the kit upright. Open the lid by releasing the draw latches on either side of the box and allow the lid to rest on the table. With 4 rubber feet on the bottom of the box, the lid lays flush on a table. The top of the box is the correct height for placing objects as described in the ARAT literature. Additionally, the lid of the box contains 4 threaded inserts which serve as the starting location for placing the tubes. The wood plank, also containing 4 threaded inserts, serves as the target location. When placed against the edge of the lid, the target distance of 30 cm is achieved. Each of the dowels or threaded bolts can be fastened to both the plank and the lid as necessary to perform the test. This sequence is shown below.



***These instructions are a guide for operating the kit. It is the responsibility of the licensed clinician to determine the proper method for correctly administering the Action Research Arm Test.

Appendix E

1

Action Research Arm Test



Table of Contents

Table of Contents	1
Abbreviated Literature Review	2
Administration Instructions	3
Standardization Article	7
Scoring Sheets	20
Edited Scoring Sheets	22
Scoring Guide	24
Recovery Categories	25
Reduction of Items	26
Related Treatment Ideas	28
References and Resources	29

Action Research Arm Test Abbreviated Literature Review

Outcome Measures: Outcome tools allow OT practitioners to document the results of occupational therapy services, monitor client progress, and quantify client status in order to communicate effectively to relevant stakeholders (AOTA, 2020). According to the American Occupational Therapy Association (2020), when choosing an outcome measure it should be valid, reliable, sensitive to change, consistent with targeted outcomes, and congruent with the client's goals. The chosen outcome measure, the Action Research Arm Test (ARAT) addresses each of these recommendations as outlined below.

Action Research Arm Test: The ARAT is a standardized observational performance measure developed by Lyle to assess upper extremity functioning in individuals with cortical damage (Lyle, 1981). The ARAT consists of 19 items, organized into 4 subcategories including grasp, grip, pinch, and gross movement and scored on a scale from 0 to 3. Higher values indicate greater motor functioning with possible total scores on the ARAT ranging from 0 to 57 indicating overall functional use of the upper extremity (Pike et al., 2018). There is no test certification necessary to administer the ARAT. A score of 3 indicates that the individual performed the test item normally, a score of 2 indicates that the item is performed with great difficulty or requires an abnormally long time, a score of 1 indicates that the item is performed only partially, and a score of 0 indicates that the individual cannot perform any part of the item (Lyle, 1981).

Psychometric Properties: Following its development, several studies have been conducted to determine the psychometric properties of the Action Research Arm Test to support its application in practice and research. A Rasch analysis performed by Chen et al. (2012), found that the ARAT had moderate to excellent predictive validity and high reliability when used to assess patients with mild to moderate upper extremity impairment following stroke. To address its use in an inpatient rehabilitation setting, a study by Rabadi and Rabadi (2006) found that both the ARAT and Fugl-Meyer Assessment (FMA), another commonly used upper extremity motor assessment, correlated highly with one another and were sensitive to change when used with individuals with acute stroke within the inpatient rehabilitation setting. Additionally, it was found that the ARAT showed a strong correlation with measures of ADL, specifically FIM-ADL scores, meaning it correlates upper extremity function with the occupation-based outcome of participation in ADL tasks (Rabadi & Rabadi, 2006). One key barrier to note is the floor and ceiling effects noted with the ARAT (Rabadi & Rabadi, 2006).





Target Population: The ARAT is intended for use with individuals who have experienced damage to the nervous system and are demonstrating impaired motor function of the upper extremity as a result (Lyle, 1981). A review by Pike et al. (2018) indicated moderate to strong evidence to support the use of the ARAT for populations of stroke and TBI however, more evidence is needed to recommend the use of this tool with individuals who demonstrate upper extremity spasticity (modified Ashworth score of 3 or greater in upper extremity). The responsiveness of the ARAT becomes less reliable with individuals who have very mild or very severe upper extremity motor impairments (Rabadi & Rabadi, 2006). Therefore, within the inpatient rehabilitation setting, the ARAT should be employed with individuals who have experienced a stroke or TBI, have reduced (but not absent) upper extremity motor function as a result, and a modified Ashworth score of 2 or less.

Clinical Information: The minimum clinically important change for this assessment was found to be 10% of the total possible score, or 5.7 points (Pike et al., 2018). To aid in clinically meaningful interpretation, ARAT scores can be grouped into categories. A score of 0-12 represents poor capacity; 13-33 points represents limited capacity; 34-49 points represents good capacity; and 50-57 points represents excellent capacity of the upper extremity (Stinear et al., 2012).

Action Research Arm Test Instructions

Set-up: Have patient seated in front of a table in a chair with no armrests (or wheelchair with armrests removed). Adjust the table height to approximately the midabdomen of the patient and position the patient close to the table to ensure that they are able to reach the testing tools. Place the kit upright and open the lid using the draw latches on either side. The proximal edge of the lid should align with the front of the table to begin.

For each item, the patient is to complete it first with their unaffected arm, then with their affected arm. In addition to verbal instructions, the therapist may visually demonstrate each item.

Item	Picture of starting position	Verbal Instructions
Grasp Subtest		
1. The patient is to grasp the 10cm wooden block, lift it from the table, and release it onto the top of the box. <i>If the patient scores a 3, their subtotal for the grasp subtest is 18 and move to item 7.</i>		“Grasp the block that I have placed here, lift it up, and place then release it on top of that shelf”
2. The patient is to grasp the 2.5cm wooden block, lift it from the table, and release it onto the top of the box. <i>If the patient scores a 0, their subtotal for the grasp subtest is 0 and move to item 7.</i>		“Grasp the block that I have placed here, lift it up, and place then release it on top of that shelf”
3. The patient is to grasp the 5cm wooden block, lift it from the table, and release it onto the top of the box.		“Grasp the block that I have placed here, lift it up, and place then release it on top of that shelf”
4. The patient is to grasp the 7.5cm wooden block, lift it from the table, and release it onto the top of the box.		“Grasp the block that I have placed here, lift it up, and place then release it on top of that shelf”

Appendix F

Gardening and Yardwork Kit

Contents of Kit

1. Small pots
2. Aquarium Rocks
3. Watering can
4. Seed Packets
5. Fake flowers
6. Vase
7. Gardening Gloves
8. Entire Gardening Tool Set
9. Twine

Gardening Kit Treatment Ideas

Activities to complete with this kit:

- Creating a flower arrangement in the vase
- Using the shovel to scoop rocks into pots
- Creating flower arrangements in the pots, using rocks to stabilize them
- Sorting the seed packets
- Spraying/watering the flowers
- Functional electrical stimulation (FES) to support grasp and release with various items from the kit
- Using pruning shears to cut twine to simulate pruning bushes, plants, etc.
- Organizing tools within the tool box

Below are several different treatment ideas to address...

- **Standing Tolerance**
 - o Complete tasks related to gardening/yardwork kit in standing which could include sorting seeds, watering plants, arranging flowers, etc.
- **Upper Extremity and Grip Strength**
 - o Reaching for items related to the task
 - Using arm weights during tasks if task is not challenging enough
 - o Use of the spray bottle to spray each plant with water for a specific number of repetitions to promote grip strength
 - o Gripping pruning shears to cut several pieces of twine
 - o Use of watering can and gripping the handle to pour water into each plant
- **Sitting Balance**
 - o Have patient reach outside base of support for individual flowers and place them into the vase to create a flower arrangement
 - o Complete tasks related to gardening kit seated edge of mat and have participants reach for certain objects while sitting unsupported and maintaining balance
- **Visual Scanning**
 - o Lay flowers out on a table in front of the patient and have them scan the table from L to R or from R to L to pick up each flower and put it in the vase
 - o Lay out the seed packets in a grid in front of the patient and ask them to hand the therapist a specific seed, forcing them to visually scan and attend to both sides of the environment
- **Cognition**
 - o Ask patients about the steps of planting a seed prior to completing the task
 - o Have patient identify familiar objects from the kit
 - Example: Therapist could state, "What would I use to water my garden?" and patient would identify which objects would relate
- **Neuromuscular Re-education**
 - o Prompt patient to utilize affected upper extremity to complete tasks related to the gardening kit (grasp and release, reaching, pronation/supination when scooping rocks, etc.)
 - o Have patient weightbearing through affected UE during tasks (ex: while seated EOM)
 - o Utilize affected UE as an active assist to stabilize pots, vase, etc. during task

Links to Purchase

1. Small pots
 - a. <https://www.walmart.com/ip/Plastic-Pots-for-Plants-Cuttings-Seedlings-4-Inch-30-Pack/168008015>
 - b. <https://www.walmart.com/ip/Jiffy-Pots-5-Diameter-Seed-Starting-Biodegradable-Peat-Pots-6-Pack/19243033?athcpid=19243033&athpgid=AthenaItempage&athcgid=null&athznid=si&athicid=v0&athstid=CS004&athguid=7JXHacoKZBLI3KsLeu-lrILN204-iOkCbrUV&athancid=null&athena=true>
2. Aquarium Rocks
 - a. https://www.amazon.com/Glofish-Aquarium-Gravel-Solid-5-Pound/dp/B007TGMLXM/ref=sr_1_3?crd=21D4VOAM0BMS&keywords=aquarium%2Brock&qid=1647266792&prefix=aquarium%2Brock%2Caps%2C104&sr=8-3&th=1
3. Watering can
 - a. <https://www.walmart.com/ip/Expert-Gardener-56-Ounce-Resin-Watering-Can-Gray/870771286>
4. Seed Packets
 - a. https://www.amazon.com/15-Culinary-Herb-Seed-Vault/dp/B07JCFWJ98/ref=sr_1_19?crd=3JDKUTSDFRZIH&keywords=seeds&qid=1646752379&prefix=seeds%2Caps%2C116&sr=8-19&th=1
5. Fake flowers
 - a. https://www.amazon.com/KIRIFLY-Artificial-Arrangements-Decorations-Centerpieces/dp/B08QZBDW17/ref=sr_1_3?crd=2GTNPU16HFQZ4&keywords=fake%2Bflower&qid=1647352592&prefix=fake%2Bflower%2Caps%2C453&sr=8-3&th=1
 - b. https://www.amazon.com/Mandys-Artificial-Flowers-Wedding-Decoration/dp/B09BCTF5JP/ref=sr_1_13?crd=2GTNPU16HFQZ4&keywords=fake%2Bflower&qid=1647352807&prefix=fake%2Bflower%2Caps%2C453&sr=8-13&th=1
6. Vase
 - a. Already have
7. Gardening Gloves
 - a. <https://www.walmart.com/ip/Hyper-Tough-67402-26-Leather-Palm-Glove-Size-L-Multiuse/187118078?athbdg=L1600>
8. Entire Gardening Tool Set
 - a. <https://www.walmart.com/ip/Garden-Stainless-Tools-Set-10Pcs-Shovel-Sprayer-Digging-Weeder-Rake-Pruning-Shears-Gardening-Hand-Kit-Round-Sharp-Tine-Weeding-Knife-Storage-Box/411791287?athcpid=411791287&athpgid=AthenaItempage&athcgid=null&athznid=si&athicid=v0&athstid=CS004&athguid=06ocogF371xd3hulEP-hYM4CYkyIjPd2LayL&athancid=null&athena=true&athbdg=L1700>
9. Twine
 - a. <https://www.walmart.com/ip/Hyper-Tough-Item-SP20E-4HT-Sisal-Twisted-Twine-Natural-Color-525-Length-1-Each/701937434>

Total Budget: Approximately \$93.16

Appendix G

Post-Inservice Survey

Please rate on a scale of 1 to 5, 1 being strongly disagree and 5 being strongly agree, to indicate your agreement with the following statements.

1. The implementation of the ARAT addresses the needs and goals of the individuals served by this department.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. The implementation of the ARAT addresses the needs and goals of the providers within this department.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. I have sufficient evidence and resources to implement the ARAT into my practice.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. I will utilize the resources about the ARAT provided by this project.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. I am confident in my ability to implement the ARAT into my treatment planning.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. The ARAT will fit with existing practices in the inpatient rehabilitation setting.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. The inservice provided was organized and flowed well.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you have any changes or additions you would make to the inservice provided?

Are there any additional materials/resources that would be helpful in implementing this tool?

Additional Comments:

Post-Inservice Survey

Please rate on a scale of 1 to 5, 1 being strongly disagree and 5 being strongly agree, to indicate your agreement with the following statements.

1. The implementation of occupation-based kits addresses the needs and goals of the individuals served by this department.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. The implementation of occupation-based kits will meet the needs and goals of the providers within this department.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. I have sufficient evidence and resources to implement the occupation-based kits into my practice.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. I will utilize the occupation-based kits provided by this project.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. I am confident in my ability to implement occupation-based kits into my treatment planning.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. The occupation-based kits fit with existing practices in this setting.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. The inservice provided was organized and flowed well.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Do you have any changes or additions you would make to the inservice provided?

Are there any additional materials/resources that would be helpful in implementing these kits?

Additional Comments:

Appendix H

Question 1 - The implementation of the ARAT addresses the needs and goals of the

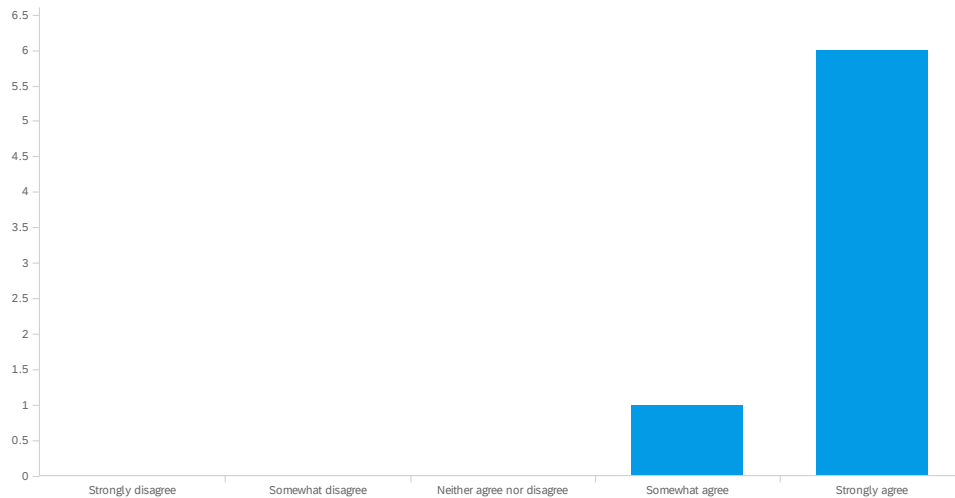
individuals served by this department.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The implementation of the ARAT addresses the needs and goals of the individuals served by this department.	4.00	5.00	4.86	0.35	0.12	7

Question 2 - The implementation of the ARAT addresses the needs and goals of the

providers within this department.



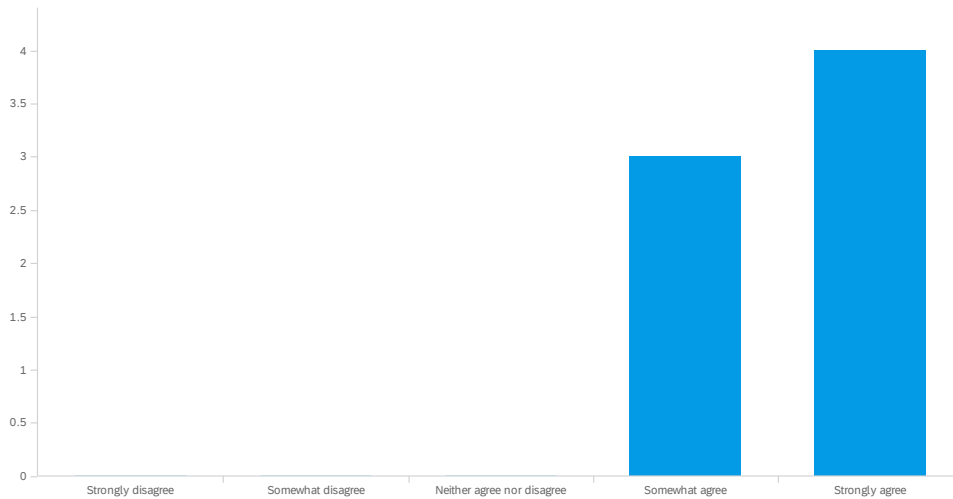
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The implementation of the ARAT addresses the needs and goals of the providers within this department.	4.00	5.00	4.86	0.35	0.12	7

Question 3 - I have sufficient evidence and resources to implement the ARAT into my practice.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I have sufficient evidence and resources to implement the ARAT into my practice.	5.00	5.00	5.00	0.00	0.00	7

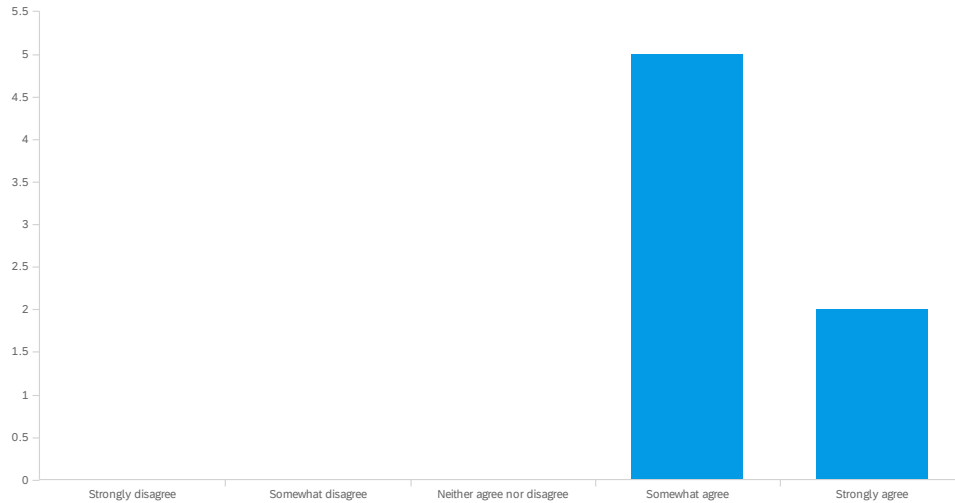
Question 4 - I will utilize the resources about the ARAT provided by this project.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I will utilize the resources about the ARAT provided by this project.	4.00	5.00	4.57	0.49	0.24	7

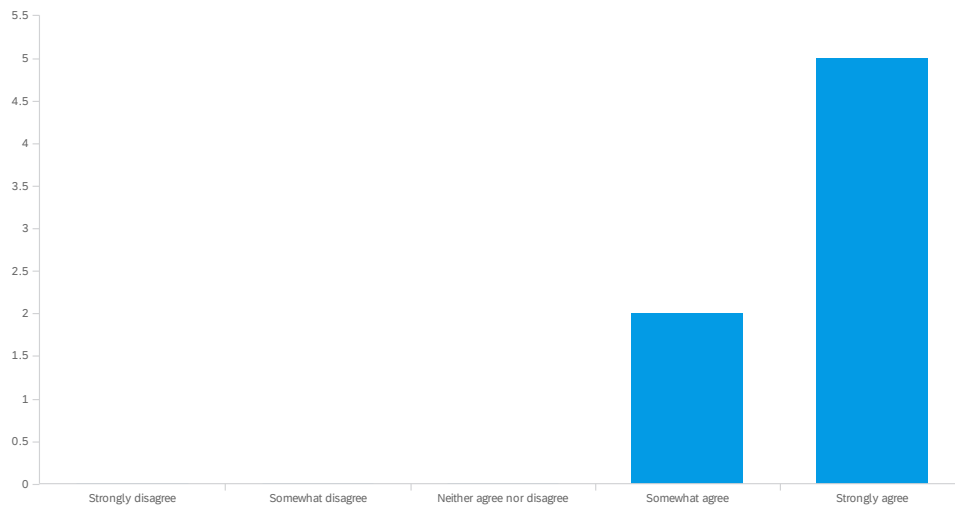
Question 5 - I am confident in my ability to implement the ARAT into my treatment

planning.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I am confident in my ability to implement the ARAT into my treatment planning.	4.00	5.00	4.29	0.45	0.20	7

Question 6 - The ARAT will fit with existing practices in the inpatient rehabilitation setting.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The ARAT will fit with existing practices in the inpatient rehabilitation setting.	4.00	5.00	4.71	0.45	0.20	7

Q7 - The inservice provided was organized and flowed well.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The inservice provided was organized and flowed well.	5.00	5.00	5.00	0.00	0.00	7

Q8 - Do you have any changes or additions you would make to the inservice provided?

Do you have any changes or additions you would make to the inservice provid...

No

No, it would be helpful to have a video

No! Abby did a great job!

No, great job!

N/A

No, I appreciated the organization and resources provided!

N/A

Q9 - Are there any additional materials/resources that would be helpful in implementing this tool?

Are there any additional materials/resources that would be helpful in imple...

No

N/A

Maybe just practicing on each other

No, you thought of a lot!

N/A

No!

N/A

Q10 - Additional Comments:

Additional Comments:

N/A

N/A

Best student presentation we've had!

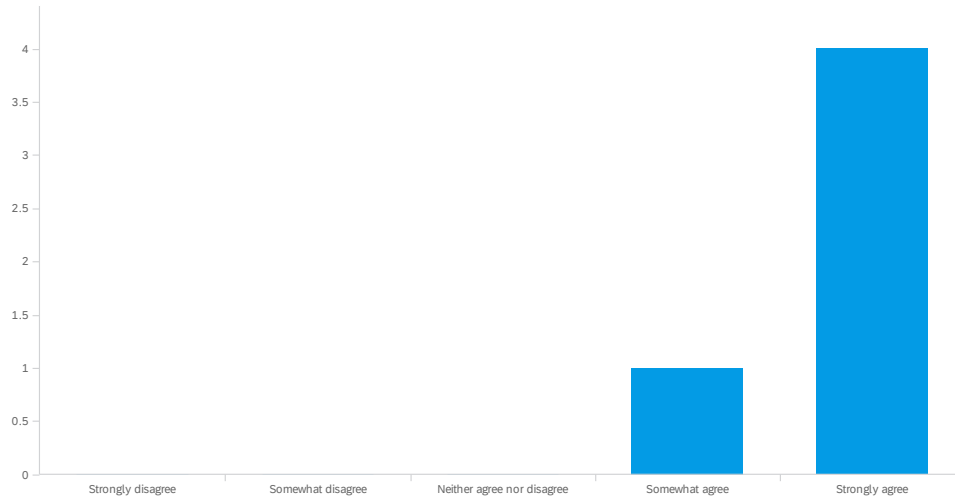
N/A

Very well organized. Love the resources and cheat sheets.

N/A

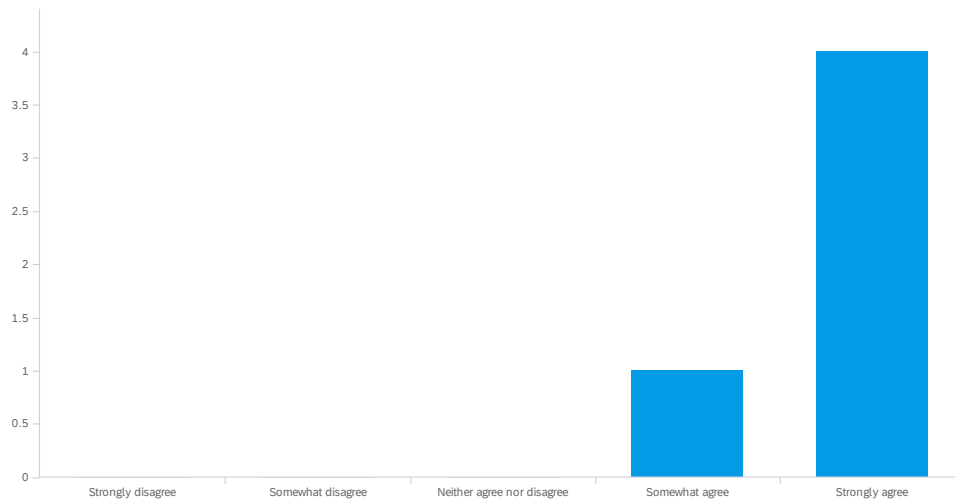
The inservice was very well organized and explained well. The resources and demonstration were very well implemented and easy to understand.

Q1 - The implementation of occupation-based kits addresses the needs and goals of the individuals served by this department.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The implementation of occupation-based kits addresses the needs and goals of the individuals served by this department.	4.00	5.00	4.80	0.40	0.16	5

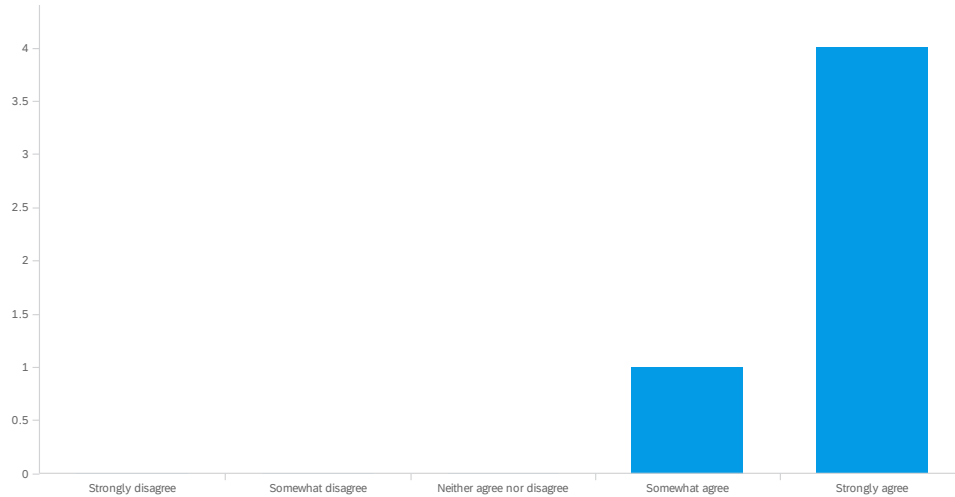
Q2 - The implementation of occupation-based kits will meet the needs and goals of the providers within this department.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The implementation of occupation-based kits will meet the needs and goals of the providers within this department.	4.00	5.00	4.80	0.40	0.16	5

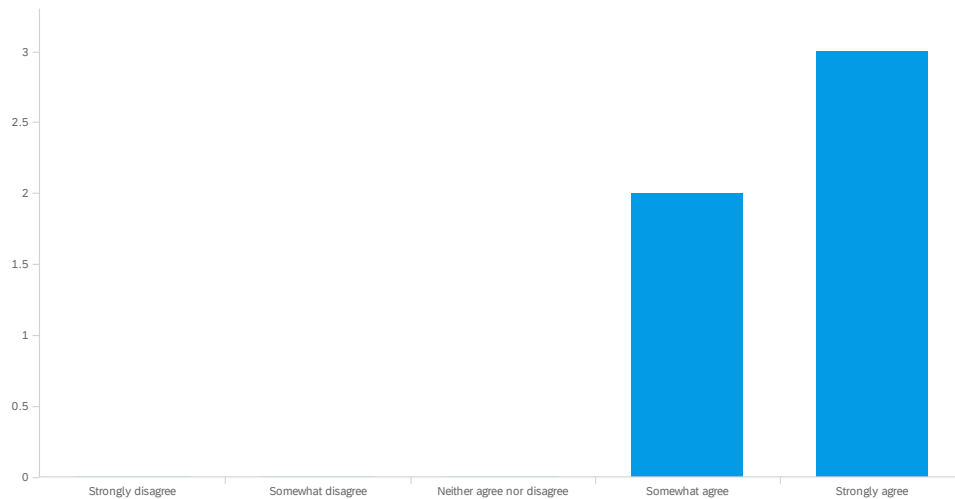
Q3 - I have sufficient evidence and resources to implement the occupation-based kits

into my practice.



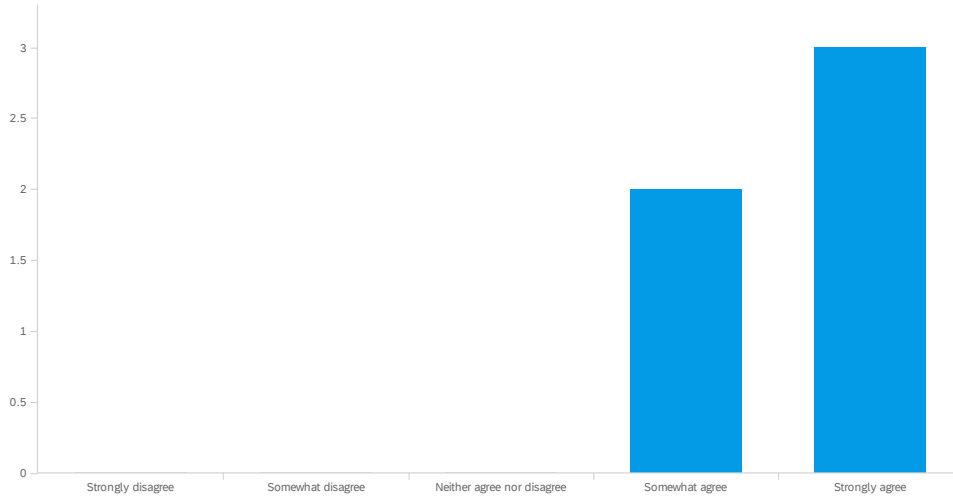
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I have sufficient evidence and resources to implement the occupation-based kits into my practice.	9.00	10.00	9.80	0.40	0.16	5

Q4 - I will utilize the occupation-based kits provided by this project.



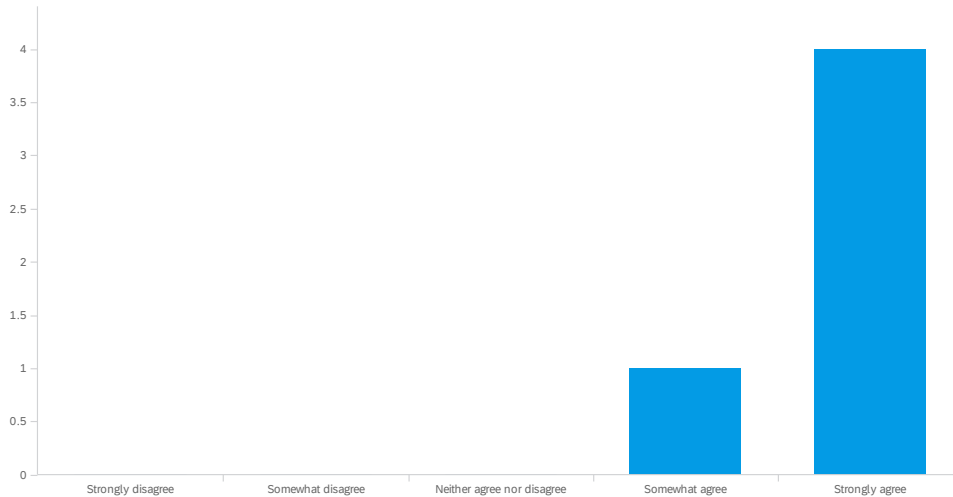
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I will utilize the occupation-based kits provided by this project.	4.00	5.00	4.60	0.49	0.24	5

Q5 - I am confident in my ability to implement occupation-based kits into my treatment planning.



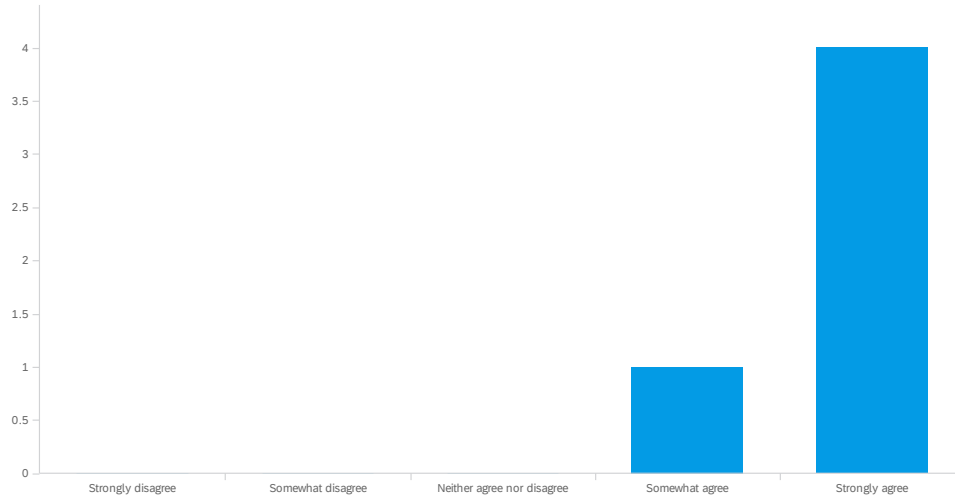
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	I am confident in my ability to implement occupation-based kits into my treatment planning.	4.00	5.00	4.60	0.49	0.24	5

Q6 - The occupation-based kits fit with existing practices in this setting.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The occupation-based kits fit with existing practices in this setting.	4.00	5.00	4.80	0.40	0.16	5

Q7 - The inservice provided was organized and flowed well.



#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	The inservice provided was organized and flowed well.	4.00	5.00	4.80	0.40	0.16	5

Q8 - Do you have any changes or additions you would make to the inservice provided?

Do you have any changes or additions you would make to the inservice provid...

n/a

No

n/a

n/a

No! So excited to implement the occupation-based kits into treatments.

Q9 - Are there any additional materials/resources that would be helpful in implementing

these kits?

Are there any additional materials/resources that would be helpful in imple...

n/a

No

n/a

n/a

Nope! I love the treatment ideas for various deficits in each kit.

Q10 - Additional Comments:

Additional Comments:

Great job!

n/a

n/a

n/a

I am so impressed by your organization and professionalism! You will make a fantastic OT.