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Emphasizing Functional Outcomes of Environmental Modifications

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A Capstone Project Entitled

Emphasizing Functional Outcomes of Environmental Modifications

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Abstract

The purpose of an occupational therapy student being placed within the home modification and assistive technology departments was to address the need regarding follow-up about the effectiveness of services and how products impact clients' function. Outcome questionnaires were created to fill this gap in services. Separate questionnaires were created for each department due to their distinct needs. Questionnaires were based on research, previous outcome measures, and needs identified by Easterseals Crossroads. Data from the home modification outcome questionnaire is collected in person at assessment and inspection as well as over the phone at three, six, and twelve months after discharge. Data from the assistive technology outcome questionnaire is collected over the phone at three, six, and twelve months after discharge. Both questionnaires aim to provide information about staff development, use and effectiveness of products, as well as client safety and independence. Leadership skills to work within a multi-disciplinary team and ability to advocate for and educate about occupational therapy were imperative while creating the outcome questionnaires for Easterseals Crossroads.

Keywords: Outcome questionnaire, home modifications, assistive technology, occupational therapy

Emphasizing Functional Outcomes of Environmental Modifications

Approximately 90% of older Americans intend to continue living in their current home for at least the next five to ten years due to several factors including: comfort within their own home, being close to family and friends, and a desire to age in place (American Association of Retired Persons [AARP], 2012). Despite the desire to age in place, many older adults live in homes that lack accessibility. Reports from the 2011 American Housing Survey showed that only 1% of United States housing units have all five universal design features including: no-step entry, single-floor living, extra wide doorways and hallways, accessible electrical controls and switches, and lever-style door and faucet handles (Joint Center for Housing Studies of Harvard University, 2014). Although the homes lack these features, costs of home renovation are typically lower than costs of extended stays in assisted living or skilled nursing facilities therefore, it is more cost effective to make changes to the home (Joint Center for Housing Studies of Harvard University, 2014).

Literature Review

Approximately 60% of the homes in the United States were built before 1979, and many present safety barriers and lack features that are helpful for aging in place, such as walk in showers, visual and verbal reminder systems, safety alarms, ramps, grab bars, and chair lifts (Lee, n.d.). As many adults age, their physical and cognitive function declines which affects their ability to complete daily functional tasks and presents barriers to aging in place (Stark, Landsbaum, Palmer, Somerville, & Morris, 2009). As individuals' function declines, the environment becomes more difficult to navigate creating additional barriers. These individuals also have a lower level of self-rated health, higher degree of depression, and increased social isolation due to their inability to perform daily tasks (Petersson, Liljia, Hammel, & Kottorp,

2008). The goal of environmental modifications is to improve the fit between the person and their environment with the focus on maximizing safety, independence, and participation in daily activities (Fagan & Sabata, 2011). By increasing participation in client-centered occupations, individuals can improve their overall sense of well-being, quality of life, and health (American Occupational Therapy Association [AOTA], 2014; Law, 2002; Schwier, 2015). A modification is simply revising the environment or activity demand to support increased occupational performance (AOTA, 2014). Environmental modifications and interventions are all used with the goal of improving an individual's daily life and occupational performance (Petersson et al., 2008). Thinking of environmental modifications in terms of architectural modifications (home modifications) as well as adaptive equipment (assistive technology) increases the range of options from which an individual can choose (Petersson et al., 2008; Stark et al., 2009).

There is extensive research to support the use of environmental modifications to decrease: dependency, risk of falls, self-rated difficulty of tasks, and the need for caregivers, as well as increase self-rated safety and caregiver self-efficacy (Petersson, Kottorp, Bergstrom, & Lilja, 2009; Petersson et al., 2008; Sanford, Pynnoos, Tejral, & Browne, 2002; Somerville et al., 2016; Stark et al., 2009; Stark et al., 2018). Environmental modifications not only increase an adult's ability to age in place and continue functioning at a safe level within their own homes, but also lowers health care costs (Stark et al., 2009). Providing individuals with more than one option for removing barriers can increase the overall compliance and acceptance with the final modifications, because it allows the individual to exert control over their environmental changes (Stark et al., 2009). A client-centered approach places emphasis on the client's knowledge, experiences, strengths, and ability to choose, which in turn allows for overall autonomy (AOTA,

2014; Stark et al., 2009). This increases adherence to recommendations and changes, leading to an increase in functional outcomes (AOTA, 2014; Stark et al., 2009).

Despite the research that supports the benefits of environmental modifications, the process for obtaining these modifications is difficult (Stark et al., 2018). Centers for Medicare and Medicaid fund occupational therapy home assessments and interventions, but they do not fund the actual physical environmental modifications (Stark et al., 2018). In Indiana, the most common ways to obtain home modifications or assistive technology modifications is through the Medicaid waiver or Vocational Rehabilitation systems (B. Norton & J. Kelly, personal communication, January 18, 2018). When using either of the two funding systems, a home modification specialist or an assistive technology specialist is referred to complete an initial assessment and make recommendations, from which the individual can choose. The recommendations are then sent to a case manager and once the devices or changes are made the state, if the waiver system is used, or vocational rehabilitation will pay for devices and/or modifications (B. Norton & J. Kelly, personal communication, January 18, 2018). The process to get in the waiver or vocational rehabilitation system can be extensive, but the services provided are efficient and effective for individuals (B. Norton & J. Kelly, personal communication, January 18, 2018).

Another gap in terms of environmental modifications, especially in the United States, is the use of functional outcome measures for environmental modifications. Swedish researchers have developed a few studies addressing an individual's function after modifications and have shown that safety in the home and self-rated ability in everyday life increased and difficulty of tasks decreased (Petersson et al., 2008; Petersson et al., 2009). Although research in the United States shows the positive effect of environmental modifications, much of the current

documentation is based on structural changes to the home, which the state requires as feedback to prove their money was used as intended (J. Kelly, personal communication, January 18, 2018; Weeks, Lamb, & Pickens, 2010). For example, instead of focusing on how the person is moving on and off the toilet, the outcomes that are focused on during assessment and inspection per funding guideline are: replacing 14” toilet with 17” toilet and replacing 24” door with a 32” door (J. Kelly, personal communication, January 18, 2018). This doctoral capstone experience aimed to provide Easterseals Crossroads with observation-based and evidenced-based outcome questionnaires for the assistive technology and home modification departments. The focus of the outcome questionnaire is on client function, safety, and difficulty of tasks with regards to home modification and assistive technology services.

Screening and Evaluation

Prior to starting at Easterseals Crossroads I met with my site mentors, including the Vice President of Technology and Information Services and the Director of Assistive Technology, to discuss ideas to fill the site’s current needs. Various ideas regarding the assessment process and department collaboration were discussed. During my first two weeks at Easterseals Crossroads I met with the clinical assistive technology team, home modification team, driving rehabilitation team, employment consultant team, and some aspects of the therapy team to help streamline an idea to address an identified need. After discussion, we discovered there was a gap in assistive technology and home modifications regarding follow-up about how products and services impact clients’ function.

Easterseals Crossroads does not currently have a full-time occupational therapist on staff within the home modification or assistive technology departments (B. Norton & W. Wingler, personal communication, December 5, 2017). As an organization, they do not place a lot of

emphasis on research, but instead place greater emphasis on community outreach, grant funding, and providing individuals with programming to suit their needs (B. Norton & W. Wingler, personal communication, December 5, 2017). As a doctor of occupational therapy student with practice in providing research-based programs, interventions, and resources focused on functional performance, Easterseals Crossroads took the opportunity to partner with me.

It is common for occupational therapists to go into homes and make recommendations about modifications, but the purpose of this capstone experience was for an occupational therapy student to serve as a consultant in conjunction with home modification and assistive technology specialists (Fagan & Sabata, 2011). For this project, the client was Easterseals Crossroads as an organization. Practice with whole organizations is important, because they are the mechanism through which individual clients are served (AOTA, 2014). The focus of this project was less on the individual clients and more on how Easterseals Crossroads can improve their performance in the areas of home modifications and assistive technology. To adequately implement outcome questionnaires, it was important to gain a broad understanding of how the organization performs in both the home modification and assistive technology departments. The outcome questionnaires created during this project will assist in providing a beneficial product for those served by Easterseals Crossroads. The feedback from the outcome questionnaires will provide the departments with knowledge about areas of improvement, areas of strength, and areas of possible growth (J. Kelly, personal communication, January 18, 2018).

Project Origin

Fänge and Iwarsson conducted a study in 1999 with a goal to construct and develop a self-administered assessment that studied clients' own perceptions of accessibility and usability of their housing environment. The results of the study created a tool that was valid, reliable, and

included concepts of: accessibility, suitability, occupational performance, safety, privacy, flexibility, and social contacts (Fänge & Iwarsson, 1999). This study sparked staff at Easterseals Crossroads' interest and brought awareness to the lack of function in Indiana's current assessment and inspection process (J. Kelly, personal communication, January 18, 2018). Due to the focus on state and vocational rehabilitation funding, function, which is a focus of occupational therapy, cannot be emphasized during an assessment, because evaluation of functional performance is beyond the scope of a home modification specialist (J. Kelly, personal communication, January 18, 2018). The departments however, did not want this barrier to prevent them from gaining information about function. My site mentors and I decided I would work to create an assessment which measures a client's change in function. To stay within funding guidelines and a home modification specialist's scope of practice, the outcome questionnaire needed to be self-administered, similar to the 1999 study by Fänge and Iwarsson (J. Kelly, personal communication, January 18, 2018).

Although Fänge and Iwarsson's (1999) study focused on constructional modifications to homes, assistive technology modifications can be included due to the goal of both modifications emphasizing increasing function, decreasing task difficulty, and increasing safety for the individual in their surrounding environment (Goodrich & Garza, 2015; Petersson et al., 2008; Stark et al., 2009). Like home modification specialists, assistive technology specialists are not authorized to follow up on function, but rather make recommendations and train individuals how to utilize the technology (B. Norton, personal communication, January 18, 2018). The outcome questionnaires created during this doctoral capstone project were made to collect information on client function as well as be utilized by specialists who do not have training in functional assessment. The outcome questionnaires were based on prior research regarding reliable outcome

tools and observation of current assessments completed by the home modification and assistive technology specialists. They aim to measure effectiveness of the Easterseals Crossroads' home modification and assistive technology services (see Appendix A for the home modification questionnaire and Appendix B for the assistive technology questionnaire).

Theoretical Basis

An occupational therapy consultant was a beneficial resource for the home modification and assistive technology departments. Occupational therapists' educational background revolves around finding occupations that fit an individual's interests and assisting individuals in making accommodations to reach maximal occupational performance (AOTA, 2014, p. S1). This aligns with assisting individuals to discover helpful home modifications and assistive technology. Due to the education in both areas, an occupational therapy consultant served as a good point of connection and communication for the home modification and assistive technology departments as they worked towards providing outcome questionnaires to show the effects of their products (AOTA, 2014). Collaborative consultation was best for this project as it allows all involved to play a role in the outcomes, uses a problem-solving method, and requires an equal relationship among all involved (Phillips, n.d.).

As an occupational therapy consultant, a systems theory was beneficial for an overarching theme, because it focuses on the relationships between items to create a whole. An open system, specifically, "means that there is a constant inter-change of information, energies, and materials within one's environment" (Cole & Tufano, 2008, p. 40). Throughout this doctoral capstone experience at Easterseals Crossroads it was important to obtain information from both departments in order to increase overall knowledge. This assisted in making beneficial changes that helped the departments and the whole organization. It was important to be sure to keep the

focus equal between home modifications and assistive technology and have the mindset that no one part is greater than the sum of the team, which circles back to the concept of using a systems theory (Cole & Tufano, 2008).

The Person-Environment-Occupation Model (PEO) was an appropriate theory when creating the outcome questionnaires to measure function for the home modification and assistive technology departments. The PEO model places equal importance on its three components: the environment, the person, and the occupation (Law et al., 1996). The focus of PEO is how well the three components overlap to promote optimal occupational performance (Law et al., 1996). When working with the home modification and assistive technology specialists to create the functional outcome questionnaires, the PEO is an ideal fit. As Fagan and Sabata (2011) mentioned, the goal of environmental modifications is to improve the fit between the person and their environment with a focus on maximizing safety, independence, and participation in daily activities.

Although not intentional, the current assessment processes utilized by the home modification and assistive technology specialists follows the PEO model. Most of the time the overlap of these three components is minimal, which is why individuals are referred for a home modification or assistive technology assessment. The PEO model is suitable, not only because the components are already built into the process, but because it can be viewed overtime (Law et al., 1996). The goal of both the home modification and assistive technology departments is to increase the overlap of the person, occupation, and environment to increase occupational performance. Although the departments are looking at each of these three aspects, the focus on occupational performance is lacking. They are often unable to measure or obtain information about how changes to environment, occupation, or person have impacted the occupational

performance of individuals, which is where the goal of this doctoral capstone project comes into focus.

Staff Roles

Home modification specialists are specifically known as Certified-Aging-in-Place specialists (CAPS) and they are often remodelers or designers who do not practice as medical or health professionals (Age in Place, n.d.; AARP Livable Communities, 2015). Easterseals Crossroads has the great fortune to have a home modification specialist who has a background as a physical therapy assistant (PTA). This gives him the knowledge and ability to assess function with greater understanding (Easterseals Crossroads, n.d.b). However, this does not mean he can assess function under the title of CAPS, because funding sources do not allow CAPS to bill for a functional assessment (J. Kelly, personal communication, January 18, 2018). Similarly, assistive technology specialists do not focus on function during their assessment. Their focus is on ensuring clients can use the assistive technology appropriately and that it assists with their deficits (Easterseals Crossroads, n.d.a).

The main role of a CAPS is to make/draw up recommendations based on assessment, then follow up with an inspection when the job is complete (J. Kelly, personal communication, January 18, 2018). The focus of an inspection is to prove to the funding source that the job was completed within the standards that are required for reimbursement (J. Kelly, personal communication, January 18, 2018). Due to the strict guidelines from the state that focus more on objective documentation, as mentioned above, the assessments and inspections lack a portion of subjective questions focused on understanding the feelings or attitudes of individuals regarding their level of function before and after the modifications. (J. Kelly, personal communication, January 18, 2018).

The role of an assistive technology specialist is to work with clients and vocational rehabilitation counselors to assist in reducing barriers and increasing clients' function either in school, at a job, or during the job search. Assistive technology specialists perform evaluations to better understand client's needs, make recommendation and train clients to use the technology to assist in work, school, or the job search. Evaluations and trainings often lack a holistic view due to the funding source of vocational rehabilitation streamlining the client's goal to work related tasks (B. Norton, personal communication, March 15, 2018). Specialists are not given the opportunity to discover clients interest, values, and desires, but rather focus solely on ability to utilize technology effectively and efficiently for work tasks. Currently there is no follow up with clients if vocational goals change or technology no longer fits their needs (B. Norton, personal communication, January 18, 2018).

The CAPS and assistive technology specialists do not currently have an effective way of documenting function, positive or negative, of the environmental recommendations modifications being recommended to individuals (B. Norton & J. Kelly, personal communication, January 18, 2018). Along with the gap in focus on function, funding sources only allow CAPS and assistive technology specialists to focus on short-term changes. Assistive technology specialists and CAPS are billed based on a flat fee to assess environmental modifications (AARP Livable Communities, 2015). CAPS are only required to lay eyes on the client at the initial meeting, and they are not required or trained to observe client's functional performance during any meeting (J. Kelly, personal communication, January 18, 2018). Assistive technology specialists are often only authorized for a few training and evaluation hours (A. Leung, personal communication, January 31, 2018). After the client has been trained and given time to use the product, funding sources do not authorize staff to go back and assess function.

The assumption is once the client learns how to use the product, it will increase function (A. Leung, personal communication, January 31, 2018). Consequently, CAPS and assistive technology specialists are not provided with the tools, time, or knowledge to assess function.

Conversely, occupational therapists emphasize function because their training focuses on how to identify an individual's function within the environment and how this impacts occupational performance (AARP Livable Communities, 2015; AOTA, 2014; Law et al., 1996). Also, occupational therapists are trained to view an individual's functional performance over time to gain an accurate picture of independence level. The occupational therapy process includes: evaluation and analysis of occupational performance, intervention planning, intervention implementation, intervention review, measurements of outcome, and comparing outcomes to goals (AOTA, 2014). This is not a linear process, but a circular process that is continually refined over time as a client's status changes (AOTA, 2014). Observing clients overtime is important for the home modification and assistive technology departments as well, because they commonly work with older adults or individuals with disabilities (B. Norton & J. Kelly, personal communication, January 18, 2018). As individuals age and disabilities progress, function changes, occupations change, and the environment often begins to present barriers.

Many individuals who receive home modifications and assistive technology have progressive conditions, such as Parkinson's disease, vision loss, and multiple sclerosis, which is why it is important to look at function short and long term (J. Kelly, personal communication, January 18, 2018). Wilson, Mitchell, Kemp, Adkins, and Mann (2009) investigated the impact assistive technology and home modifications had on function in aging adults with disabilities by collecting data one and two years after environmental modifications were installed. Although the individuals still showed natural functional decline, the decline was slowed when

environmental modifications were used appropriately (Wilson et al., 2009). This was measured with a self-reported functional outcome tool that was filled out over the phone (Wilson et al., 2009). These results show the short-term and long-term benefits environmental modifications can have on an individual regardless of natural decline.

Despite the funding and knowledge barrier for CAPS and assistive technology specialists, gaining information about how individuals are engaging and functioning within their new environment after environmental modifications is important. Providing individuals with a self-rated outcome questionnaire does not require increased knowledge, training, or assessment time for CAPS or assistive technology specialists. The outcome questionnaires will provide the departments with data about what is working well, what isn't working well, and how individuals are functioning within their environments regarding topics such as: dependency, risk of falls, self-rated difficulty of tasks, the need for caregivers, self-rated safety, and caregiver self-efficacy (Ahn & Hegde, 2011; Petersson et al., 2009; Petersson et al., 2008; Sanford et al., 2002; Somerville et al., 2016; Stark et al., 2009; Stark et al., 2018).

Currently staff's time during visits includes asking questions to determine the correct fit of products and services to client's needs. For example, CAPS focus questions during home assessments on measurements of the space and how the space can be utilized to create the least restrictive environment for an individual (J. Kelly, personal communication, January 18, 2018). On the other hand, during home assessments, an occupational therapist may use a tool such as the Safety Assessment of Function and the Environment for Rehabilitation-Health Outcome Measurement and Evaluation (SAFER-HOME v.3), which measures functional performance in the home rather than the home characteristics, or the Cougar Home Safety Assessment, which measures environmental safety hazards in the home (Weeks et al., 2010). Similar to CAPS,

assistive technology specialists focus assessment questions on usability of a device and client's current interest in devices to meet their needs (A. Leung, personal communication, January 31, 2018). During an assistive technology assessment, an occupational therapist may use the Matching Assistive Technology and Child assessment (MATCH), the Framework for Modeling the Selective of Assistive Technology Device, or the Matching Person and Technology Model (MPT) to evaluate the correct fit between the person, environment, occupation, and device (Jenko & Zupan, 2010). The outcome questionnaires for Easterseals Crossroads will include common themes from the previously mentioned tools, to create generalized outcomes across a variety of situations.

The fine line to draw with the outcome questionnaires is role bleed. It is important not to allow CAPS or assistive technology specialists to take over role of an occupational therapist. Occupational therapists receive foundational education in home modification and assistive technology, so they can tap into both services (AARP Livable Communities, 2015; AOTA, 2014). As mentioned previously, assistive technology specialists and CAPS do not receive education on measuring functional performance. Therefore, the ideal team is to have an occupational therapist working alongside a CAPS and an assistive technology specialist. This team could provide information about a client's occupational performance and how recommendations are enhancing a client's function based on a multitude of factors including: diagnosis, current level of ability, motivation, cognition, etc. (AARP Livable Communities, 2015; AOTA, 2014). This project mirrors the ideal team layout and will likely demonstrate the need for an occupational therapist within these departments.

Each team member brought their knowledge and expertise to the group. Health outcomes for clients can improve through educating one another about each discipline's focus (Moyers &

Metzler, 2014). The occupational therapy student focused on maximizing “health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living”, which is occupational therapy’s vision 2025 (AOTA, 2017). An interdisciplinary team layout provides the clients with well-rounded, collaborative care focused on positive outcomes (Fewster-Thuente & Velsor-Friedrich, 2008).

It is uncommon to have CAPS and assistive technology specialists in traditional therapy settings such as skilled nursing facilities, hospitals, and outpatient centers. In traditional occupational therapy settings, it is normally a team of therapists, nurses, and doctors working with an individual client towards increasing personal factors. Traditional therapy settings focus on the whole picture including: the occupation, environment, and personal factors. The current team at Easterseals Crossroads emphasizes assistive device use and the reduction of environmental barriers. Therefore, they lack the function perspective because they do not have an occupational therapist on staff (B. Norton, J. Kelly, & W. Wingler, personal communication, January 18, 2018). The current team is taking a piece of therapy, the environment, and exploring it in greater detail, but they are missing the whole picture. With an occupational therapist on staff, all the factors affecting functional performance could be emphasized to gain a complete picture of the client’s situation.

A possible solution to assist in gaining a full picture of an individual client could be for Easterseals Crossroads to contract a home health occupational therapy organization or explore the emerging area of telehealth. Telehealth is a service delivery model that transcends all practice areas, therefore it could be used to bridge the current gap that exists between these departments (AOTA, n.d.). Telehealth may not be ideal for CAPS or assistive technology specialists to utilize because their work includes hands-on training of tools and devices and measurements of spaces.

However, telehealth could be used successfully by an occupational therapist to assist clients in increasing physical function and occupational engagement (Cason, Hartmann, Jacobs, & Richmond, 2013). Assistive technology specialists would be a great team member to utilize for telehealth service, because technology is the means of communication in telehealth (Cason et al., 2013). Use of an occupational therapist through telehealth would allow the team at Easterseals Crossroads to be more holistic when providing services to clients.

Implementation

After the need for an outcome questionnaire for each department was identified, I conducted several searches to gain information about current environmental modification questionnaires. Many questions needed to be answered prior to creating the outcome questionnaires. Boynton and Greenhalgh (2004), identify considerations that are important to address prior to creating a questionnaire. First it was important to consider if a questionnaire was appropriate for the information being collected. Questionnaires are appropriate when the participant can give meaningful answers (Boynton & Greenhalgh, 2004). The clients served by the assistive technology and home modification departments are either independent in their homes or have caregivers, who could assist with answering questions. It was also important to consider if there was already an existing instrument that could be used. Ideally a questionnaire that has already been constructed and tested is utilized, however due to the departments' specific requirements, use of a previous questionnaire was not practical (Boynton & Greenhalgh, 2004). The questionnaires that were created are evidence-based and include themes other environmental modification questionnaires contain such as independence, safety, mobility, usability, and task difficulty (Ahn & Hegde, 2011; Jenko & Zupan, 2010; Petersson et al., 2009; Petersson et al., 2008; Sanford et al., 2002; Somerville et al., 2016; Stark et al., 2009; Stark et al., 2018; Weeks et

al., 2010). Overall, both departments wanted a tool that was self-rated, measured client's responses over time, addressed functional use of products, and didn't require clinical reasoning or extensive time to be completed.

Presentation of questions was another consideration to think about when creating the outcome questionnaires (Boynton & Greenhalgh, 2004). Question presentation was important to allow clients to be able to understand what is asked and answers accurately. Questions can be presented as open or closed-ended. Closed-ended questions do not allow for much variance, which makes data easier to compare, however the richness of responses is lower (Boynton & Greenhalgh, 2004). Open-ended questions allow clients to explain their answer and provide variety and richness, but they also make data analysis more difficult (Boynton & Greenhalgh, 2004). In terms of the Easterseals Crossroads' outcome questionnaires, questions are both open-ended and closed-ended in order to obtain comparable yet detailed responses. Lastly, it is important to have a valid and reliable measure (Boynton & Greenhalgh, 2004). Having validity and reliability allows the reader to be sure results represent information that is intended to be collected and there is consistency among the results (Boynton & Greenhalgh, 2004). Regarding the outcome questionnaires at Easterseals Crossroads, validity and reliability were not focused on during this project. The focus of this project was on creation of the outcome questionnaires, which can be measured for validity and reliability in the future.

After analyzing other questionnaires and finding common themes to include, I created a draft of the outcome questionnaires. I proposed drafts to my site mentors and discussed the ways in which data could be collected including: in person, through the mail, over the phone, and through email. Previously, staff have noticed a lack of responses with mail-out surveys, therefore this method was not chosen (B. Norton & J. Kelly, personal communication, January 22, 2018).

Each department made different decisions based on how data would be collected upon completion of this project. The assistive technology department decided information would be collected by the administrative assistant using phone calls therefore, a trial for this questionnaire was completed over the phone. The home modifications department decided that in person and phone calls would be used to collect information. The CAPS can take the home modification questionnaire with him on assessments and inspections to be filled out in person, but the monthly follow ups will be completed over the phone by the administrative assistant. Therefore, both methods were trialed for the home modification questionnaire. Wilson et al. (2009) were successful in collecting analyzable data through use of monthly phone calls to individuals, which is why this method of data collection was trialed in both departments. Data collection at Easterseals Crossroads will be ongoing upon completion of this project. The plan for both departments is to collect long-term information at three, six, and twelve months after discharge.

After my drafts were approved, I began a trial period and made phone calls for both departments and brought the home modification questionnaire to assessments and inspections. The purpose of the trial period was to collect feedback about how easy or difficult it is for clients to complete the tool either in person or over the phone. This feedback gave me information about changes or adjustments that needed to be made to the outcome questionnaires and allowed me to propose the updated outcome questionnaires to my site mentors.

Various changes were made throughout the process of finalizing the outcome questionnaires. During the trial period, I received feedback from clients about questions, layout of the phone calls, and the purpose of the questionnaires. I used this information to make the outcome questionnaires more client-friendly, help the phone calls flow better, and ensure the questions were collecting the correct information. The outcome questionnaires went through five

to six drafts in which various questions were reworded or changed. Changes were made due to confusion from clients over the phone, inaccurate information being collected, or to clarify meaning of questions. Because the home modifications questionnaire is administered in-person and over the phone, a large portion of the questions were changed to increase understanding and eliminate any confusion during data collection. Both outcome questionnaires had to be written at a level where individuals of all educational levels could easily comprehend what was being communicated, which was a challenge when wording questions.

Not only were changes made to be sure clients understood the outcome questionnaires, but also to ensure accurate information was being collected. During the trial period, I gathered information about questions that had multiple interpretations. While making changes to the questionnaires, I had to be certain the questions continued to meet the needs of the site. It was important to keep in mind that long-term the information collected needs to provide feedback that will assist in improvement of quality of services and staff knowledge.

During the trial period, I proposed a solution to the question, how would data collection transition smoothly to the administrative assistants. To combat this barrier, I suggested a training period take place. When this solution was approved, training was designed and organized. The training that took place included details on department processes, how to introduce the outcome questionnaires, how to respond to “red flag” responses, and who to notify if assistance with clients’ responses is needed. The training also had a period of practice which allowed time for questions or concerns to be addressed. The CAPS received no extra training, because he was an active member in creating the outcome questionnaire.

The training helped with staff development, because it assisted the administrative assistants in gaining a better understanding of the work that is being completed within their

department. When fully implemented, the outcome questionnaires I created will provide feedback about clients' thoughts, feelings, and independence levels, as well as feedback about staff performance. The information collected from the questionnaires at three, six, and twelve months will measure clients' subjective responses to what staff is doing well, areas where staff can improve, how products are received, and how individuals feel about safety, independence, and the usability of the products over time. It will allow the staff to know what products are perceived well at the beginning, what continues to work well, what takes time to work, and what doesn't work over time. This will allow staff to develop into stronger departments and make more appropriate recommendations as they gain information about the products they are providing to individuals. Overall, the outcome questionnaires will improve services provided to clients, because staff will be more knowledgeable about what products work well over time. It is the responsibility of the staff to continually use the information gained from questionnaires as feedback about their performance and the usability of the products they are providing.

Discontinuation

Providing detailed information and guidance prior to discontinuation was the most important phase of this project to ensure accurate carry-over. The training period with the administrative assistants was vital for carry-over and allowed sufficient time for implementation prior to the end of my project to address and answer any follow-up questions or concerns. I communicated weekly with the administrative assistants to converse about their comfort level with implementation. Overall, I received positive feedback about the ease of implementation. Both administrative assistants reported it was refreshing to have positive comments being made about departments and felt the questionnaires would provide excellent growth for the departments (Administrative Assistants, personal communication, March 1, 2018).

Data retrieved from the outcome questionnaires will be collected past the time allotted for this project. Both departments are collecting information for clients at least three, six, and twelve months following the environmental modifications, so I was not able to receive specific feedback regarding the questionnaires' outcomes. Therefore, I conducted a satisfaction survey during week fourteen with the site mentors to gather feedback about my role as an occupational therapy consultant (see appendix C for the satisfaction survey). My site mentors rated their satisfaction on multiple aspects including the outcome questionnaires, implementation, carry-over, communication, and professionalism. This information provided me with feedback to know what changes needed to be made or where gaps still existed. Collecting this feedback in week fourteen allowed two weeks for changes to occur. Both site mentors rated each question as "strongly agree" indicating that all expectations for the project were met, student was flexible and professional, and the project was beneficial for the departments. (B. Norton & J. Kelly, personal communication, April 12, 2018).

After data collection from the outcome questionnaires occurs, the information will be analyzed. The site's long-term goal is for another student to follow-through with data collection and analysis. Proper analysis of qualitative and quantitative information will provide feedback about quality improvement and help answer the questions "how are we doing" or "how can we improve" (National Learning Consortium, 2013). Quality improvement is focused on making changes that lead to better client outcomes, better system performances, and better professional development (Batalden & Davidoff, 2007). The information collected by the outcome questionnaires relates directly to quality improvement. Analysis of the outcome questionnaires ensures the best quality of services are being provided to clients, allows staff to develop into stronger, more knowledgeable departments, and eliminates products that are not received well or

do not make a lasting difference in clients' lives. Along with establishing quality improvement, the outcome questionnaires' data will hopefully provide feedback to staff and funding sources that proves services are making a difference in clients' lives, and overall warrant sustainability of the departments.

Society's Needs

Society's needs are continuously changing often resulting in more demands. As mentioned previously, there has been an increase in the number of older adults wanting to age in place as well as an increase in technology use to improve independence and daily participation in schools, homes, and communities (AOTA, 2011; Berry & Ignash, 2003). The outcome questionnaires created aim to provide staff with feedback to ensure they are addressing society's changing needs. The questionnaires also give clients the chance to speak out if their needs have changed or different needs need addressed. The clients served by the home modifications and assistive technology departments are all active members of a changing society. Oftentimes clients are reaching out for services from the departments because they wish to pursue a more active role in the community.

Most of the clients served by the assistive technology departments are either employed, in school, or working to become employed. Assistive technology is recommended to help individuals be more efficient, effective, and independent members of society as they fulfill their roles (Berry & Ignash, 2003). Needs are continuously changing as individuals shift classes, jobs, and goals. The assistive technology questionnaire created will allow staff to reach out to clients to ensure the technology recommended is still serving the client as intended despite changing roles in society. The questionnaire will also assist in identifying if follow-up services are needed.

Although the home modifications department is not focused on engagement in society

when providing services, the questionnaire created measures an individual's comfort and safety within their own home. With society's increasing trend for older adults to age in place, safety and comfort within one's home can ultimately result in more community engagement or increased feeling of self-worth (Petersson et al., 2008). Individuals presented with environmental barriers often have lower level of self-rated health, higher degree of depression, and increased social isolation due to their inability to perform daily tasks (Petersson et al., 2008). Ultimately this can affect their community engagement and participation in daily activities. Feedback from the home modifications questionnaire will allow staff to have a better understanding of clients' ability to engage, which was not collected prior to this project.

Overall as an occupational therapy consultant throughout this project, I have been able to help remind staff the importance of the person, the environment, the occupation, and the changes that take place within each of these components (Law et al., 1996). Throughout this process, I have been able to open staff's eyes to the different ways to view situations and offer a variety of solutions. I have increased staff's knowledge about the bigger picture individuals face, including society's changing demands (B. Norton, personal communication, March 2, 2018). I have received positive feedback regarding my ability to think holistically and relay that information to staff and clients (J. Kelly, personal communication, March 6, 2018). With increased knowledge about ways an occupational therapist may view a situation, staff will hopefully be able to improve their ability to offer helpful, creative, holistic solutions during their evaluations with the idea of society's changing needs in mind.

Leadership Skills

I used the consultative model of service provision to guide me during this project, because it allows individuals to understand roles of all involved, uses a problem-solving method,

and requires an equal relationship among those involved (Phillips, n.d.). I continually challenged staff to include the person and occupation when thinking of implementation rather than just the environmental changes (Law et al., 1996). At the same time, the staff consistently challenged me to think about how I would use my occupational therapy knowledge when working with their clients. This collaborative relationship, in which all involved worked to improve one another's knowledge, increased my ability to step outside of my comfort zone. I had to be a confident leader when presenting my ideas to individuals who think and view situations from different perspectives. I learned a lot about the services that are provided to individuals by the assistive technology and home modifications departments which allowed me to improve my practice skills and knowledge of community resources. Collaborative or partnership consultation worked well for this project because everyone played a role in identifying the problem, planning a solution, and implementing the solution (Dudgeon & Greenberg, 1998; Phillips, n.d.). It was my job as the consultant to "train, guide, and supervise" staff during implementation and be there to remediate barriers and make necessary changes (Dudgeon & Greenberg, 1998, p. 802).

During my time at Easterseals Crossroads, many leadership skills were needed to plan, develop, organize, and deliver the outcome questionnaires to meet the needs of each department. Completion of the CliftonStrengths® assessment identified my top five strengths including: achiever, discipline, responsibility, learner, and developer (Gallup, 2012). Knowing these leaderships strengths assisted me in utilizing them during this project. Each of these has a component of achievement, structure, and improvement, which I used to learn quickly, set attainable goals, and take responsibility for my plan (Gallup, 2012). Although similar in foundation, the two departments I worked with had individual needs, different staff, and offer different products. Therefore, adaptability was also a skill I used a lot throughout this process.

The two departments often came to me with opposing concerns, questions, and comments. I had to be flexible in my ability to change ideas as I switched between the departments and their focuses. Creativity and motivation were important when taking on this project, not only while working to expand my knowledge of the departments' focus, but also while seizing as many hands-on learning opportunities as possible. Making responsible, professional, and educated decisions when identifying, researching, and pinpointing the information to include in the outcome questionnaires was vital.

The two main leadership skills that assisted me in creating a well-received and well-rounded tool for each department was communication and responsibility. Active communication with mentors ensured that I obtained a holistic view of the needs. It also allowed me to discuss my ideas with staff to increase the positive response and adoption of the outcome questionnaires. I knew coming into this position I needed to be confident in my knowledge of occupational therapy and strong in my ability to advocate for the profession. Responsibility was important during this project, because I was the leader, creator, and manager of the project. I was able to make responsible and timely choices to be sure I completed the end goal to the standards that were set.

Overall Learning

Being the first occupational therapy student in the assistive technology and home modifications departments at Easterseals Crossroads provided many opportunities for growth. Communication was vital to ensure I was fulfilling my role as an occupational therapy consultant. There were no pre-set goals in place when I started, so it was important for me to come into this experience with an open mind. During the first two weeks, my site mentors and I had daily face-to-face meetings to discuss my interests along with the site's needs. It was

important for me to be confident in my occupational therapy knowledge during these meetings, because my site mentors relied on me to understand the role an occupational therapist would play in each project idea. To assist in my understanding of Easterseals Crossroads' needs, my site mentors ensured that I had face-to-face communication with each department at the site and educated me about the main roles of all departments. During these initial meetings, non-verbal communication was vital. Not only was I making an impression of myself, but also the profession of occupational therapy. Along with professional verbal communication, non-verbal communication was important to show staff within each department that I was invested and interested.

When the project idea was finalized, my site mentors had a hands-off role. They were available when I had questions or concerns and would come to me with ideas, but much of our communication was through email. My site mentor in the assistive technology department is very active around the site and in the community, and my site mentor in the home modifications department often works from coffee shops between visits, therefore approximately 75% of communication was completed through emails. Although this project was self-driven and it was up to me to determine my schedule, it was still important for me to email my weekly goals and plans to my site mentors. Weekly email updates ensured we were on all the same page and needs were being appropriately met. Based on feedback from site mentors, communication through email was done effectively, efficiently, professionally, and clearly (B. Norton & J. Kelly, personal communication, February 28, 2018).

Despite busy schedules and working between offices and the community, both site mentors and I made sure to meet face-to-face at least once a week. During these meetings, we would discuss changes in relation to project development. I would often ask for feedback about

my performance and expectations to be sure I was continuing to meet their needs. Verbal, written, and non-verbal communication were often strengths mentioned by both site mentors in relation to my interactions with staff and clients (B. Norton & J. Kelly, personal communication, February 28, 2018). Because my time was split between two departments, it was important to not only touch base about projects within each department, but also update each site mentor about my project in the opposing department. This allowed my site mentors to know how I was using my time and aided their communication with one another about my performance.

Not only was it important to communicate well with site mentors, but I also had to build rapport with staff within the departments. It was important to make sure staff members understood my role and why my project was necessary. During my first week at Easterseals Crossroads my site mentors discussed the working environment of Easterseals Crossroads and compared it to working in silos (B. Norton & W. Wingler, personal communication, January 9, 2018). Although teamwork and collaboration is important within each department, collaboration, communication, and teamwork between departments is not stressed at Easterseals Crossroads (B. Norton & W. Wingler, personal communication, January 9, 2018). My site mentors challenged me to explore the working environment of operating within silos. I made it a personal goal throughout my project to increase staff's knowledge about both assistive technology and home modifications.

Building rapport with staff and working closely with both departments facilitated my ability to advocate for and teach about the opposing department. At least once a week I talked to staff about what I was learning in the opposing department. Not only was it was exciting to see staff's curiosity about the other department grow, but it also facilitated teamwork and respect for each other. At a one-day training conference, a staff member from the assistive technology

department and the CAPS both mentioned how they could utilize one another's expertise when working with clients (A. Leung & J. Kelly, personal communication, March 2, 2018). This taught me about the importance of teamwork, collaboration, and communication in order to provide clients with the most well-rounded, knowledgeable care. The process of beginning to breakdown silos required leadership, advocacy, and communication, which helped me grow as a professional.

The learning process throughout this project has taught me a lot about myself and my knowledge of occupational therapy. This project challenged me to step outside of my comfort zone and take on a role as an independent occupational therapy student without direct supervision from an occupational therapy mentor. Not only was this a new experience for me, but also for the departments and my site mentors. My site mentors were very open to my ideas, my thoughts, and what I had to offer, which was helpful as I explored the role of an occupational therapy consultant. It was important for me to be confident in my knowledge of occupational therapy, and this project made me realize that I have the skills and knowledge to utilize occupational therapy concepts in a non-traditional setting. At each client visit, I challenged myself to identify one way an occupational therapist could help the client. When given the time I explained to staff how an occupational therapist may view a client's situation in a slightly different manner compared to an assistive technology specialists or CAPS. It was encouraging to educate staff about the different ways to view situations. Many of the staff gave me positive feedback about how the information I provided could help with other clients in the future (Assistive Technology Clinical Staff & J. Kelly, personal communication, March 5, 2018).

Throughout my project, I was an advocate for occupational therapy, which will help me in future practice. My time at Easterseals Crossroads has allowed me to understand the many

areas in which an occupational therapist can assist clients. I was challenged to think outside of the box when working with the assistive technology department. Assistive technology is something occupational therapists get a limited amount of education on in school, but when working alongside assistive technology specialists for sixteen weeks I could see the overlap between professions. Not only do both professions follow a similar process of client care with evaluation, training/intervention, outcomes/goals, and discharge, but both assistive technology and occupational therapy have the goal of making clients more independent and efficient in a desired occupation (AOTA, 2014; B. Norton, personal communication, February 28, 2018; Easterseals Crossroads, n.d.a). The approaches, interventions, and training information differs, but the two professions work well together when given the opportunity. This project gave me the chance to be an occupational therapy leader within a multidisciplinary team.

Similarly, occupational therapy and home modifications go hand-in-hand. It is very common to hear of occupational therapists completing home evaluations or modifications. Although Easterseals Crossroads does not have an occupational therapist working full-time in the home modification department, my role as a consultant fit very well. I conversed with clients and caregivers about the importance of balance, awareness, community engagement, strength, endurance, etc. Also, I educated the CAPS about holistic care and remind him of many community engagement opportunities to help improve individuals' quality of life (J. Kelly, personal communication, March 6, 2018). This helped me learn to advocate for occupational therapy and educate individuals of all backgrounds about the role an occupational therapist can play in various settings. Overall, this opportunity to work independently as an occupational therapy consultant gave me confidence in my knowledge, ability, and leadership skills to successfully fill my future role as a registered occupational therapist.

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Appendix A

Home Modification Questionnaire

Functional activities performed in the bathroom:**Individual filling out this form: CONSUMER/CLIENT CAREGIVER/FAMILY MEMBER*****If caregiver/family member, please rate based on your understanding of consumer/client's average function****Please rate how you currently feel based on your functional performance**

1. How much help does consumer/client need to get on/off the toilet?
None (0) Supervision (1) A little (2) Some (3) A lot (4)
2. Rate consumer/client's safety in transferring on/off toilet:
Poor (0) Fine (1) Good (2) Very good (3) Excellent (4)
3. How much help does consumer/client need to get in/out of the shower?
None (0) Supervision (1) A little (2) Some (3) A lot (4)
4. Rate consumer/client's safety in transferring in/out of the tub/shower:
Poor (0) Fine (1) Good (2) Very good (3) Excellent (4)
5. How much help is required for:
 - a. Bathing/washing body
None (0) Supervision (1) A little (2) Some (3) A lot (4)
 - b. Washing hands
None (0) Supervision (1) A little (2) Some (3) A lot (4)
 - c. Toilet hygiene
None (0) Supervision (1) A little (2) Some (3) A lot (4)
 - d. Brushing teeth
None (0) Supervision (1) A little (2) Some (3) A lot (4)
6. How much help does consumer/client need for mobility in/around the bathroom?
None (0) Supervision (1) A little (2) Some (3) A lot (4)
7. Rate consumer/client's safety for mobility in/around the bathroom:
Poor (0) Fine (1) Good (2) Very good (3) Excellent (4)

8. Comments regarding current functional use of the bathroom: _____

Stair lift accommodation:

Individual filling out this form: CONSUMER/CLIENT CAREGIVER/FAMILY MEMBER

***If caregiver/family member, please rate based on your understanding of consumer/client's average function**
Please rate how you currently feel based on your functional performance

1. How much difficulty does consumer/client have ascending/descending stairs
None (0) Supervision (1) A little (2) Some (3) A lot (4)
 2. How much time does consumer/client spend on one floor due to barriers to transferring between floors?
None (0) A little (2) Some (3) A lot (4)
 3. What is consumer/client's comfort/confidence in ability to safely navigate stairs?
None (1) A little (2) Some (3) A lot (4)
 4. How much confidence does consumer/client have in your ability to get out of house in an emergency?
None (1) A little (2) Some (3) A lot (4)
 5. Rate consumer/client's safety in transferring between floors:
Poor (0) Fine (1) Good (2) Very good (3) Excellent (4)
 6. Comments regarding current functional use of the stairs: _____
- _____

Entering/exiting home:

Individual filling out this form: CONSUMER/CLIENT CAREGIVER/FAMILY MEMBER

***If caregiver/family member, please rate based on your understanding of consumer/client's average function**
Please rate how you currently feel based on your functional performance

1. What is consumer/client's confidence in ability to get out of house in an emergency?
None (1) A little (2) Some (3) A lot (4)
2. What is consumer/client's comfort/confidence in ability to safely navigate stairs?
None (1) A little (2) Some (3) A lot (4)

3. How much does the current entrance/exit affect consumer/client's participation in outings/activities?

None (1) A little (2) Some (3) A lot (4)

4. Rate consumer/client's safety in entering/exiting the house:

Poor (0) Fine (1) Good (2) Very good (3) Excellent (4)

5. How much help does consumer/client required to get in and out of the house

None (0) Supervision (1) A little (2) Some (3) A lot (4)

6. Comments regarding current ability to get in and out of the home: _____

Assistive Technology Questionnaire

1. What assistive technology do you currently use and what needs does it assist with? _____

2. Are you currently working, in school, etc. _____
 - a. Is the assistive technology used to help you meet those needs?
YES NO
3. How often do you use your assistive technology? (ex: weekly, daily, 2x week, weekends only, etc.) _____
4. I am _____ in using my assistive technology
 - a. Not as confident as I would like
 - b. Confident
 - c. More confident than I expected
5. What is one thing that you wish you could change about your assistive technology? _____

6. I use my assistive technology _____ than I expected
 - a. More often
 - b. The same
 - c. Less oftenAre there any current barriers you are experiencing? _____

7. I have found my assistive technology _____ to use
 - a. Easy
 - b. Medium difficulty
 - c. HardDid the training meet your needs?
YES NO
Would you benefit from more training?
YES NO
If yes, what could you use more training on? _____
8. My assistive technology _____ my needs.
 - a. Exceeds
 - b. Meets on average
 - c. Is inferior toProvide a brief explanation to your answer: _____

9. Since receiving my assistive technology my overall technology needs have
- a. Increased
 - b. Decreased
 - c. Stayed the same
 - d. Changed completely

If needs have changed (increased, decreased, or changed completely), is it a:

- e. medical change
 - f. educational change
 - g. vocational change
 - h. Other: _____
10. Choose/finish the phrase that best fits your belief
- a. I adopted the technology into my lifestyle and it has assisted me as expected.
 - b. I have adopted the technology into my lifestyle but I am still learning how to use it to its full extent.
 - c. I have abandoned the technology due to my change vocational goal.
 - d. I have abandoned the technology due it no longer meets my needs.

Appendix C

Satisfaction Survey

1. The outcome questionnaire meets expectations.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

2. The outcome questionnaire is easy to implement.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

3. Student assisted with smooth implementation and carry over.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

4. Student responded well to feedback.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

5. Student kept open communication throughout the project.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

6. Student implemented project in timely manner.

- a. Strongly agree

- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

7. Student fulfilled expectations of an OT consultant.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

8. Student was flexible with changes to project.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

9. Student was knowledgeable about OT and maintained professional behavior.

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

10. I believe the doctoral capstone experience was beneficial to our department

- a. Strongly agree
- b. Agree
- c. Neither agree or disagree
- d. Disagree
- e. Strongly disagree

Comments: _____

Would you take another student?

YES

NO