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Skilled Nuring Facilities Therapists' Experiences with Acquiring Wheelchairs for Their Clients

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Executive Summary

Background: The United States population is aging resulting in a larger number of seniors that will require skilled nursing facility (SNF) care. Many of these residents will require a manual wheelchair (MWC) for mobility in the facility. Most SNF MWC are in various conditions that could compromise fit and use by the residents.

Purpose: This research project is designed to understand SNF providers' experiences with acquiring mobility devices for their clients; specifically, manual wheelchairs. There are no studies that determine a process in which therapists acquire wheelchairs for their clients or who funds the cost of such wheelchairs. There currently are no established criteria to guide SNF therapists on how to acquire wheelchairs for their clients. There are often institutional barriers in SNF related to provision of wheelchairs that are appropriate for clients.

Theoretical Framework. There are two theoretical frameworks that helped to shape this research project: the Person-Environment-Occupation-Performance (PEOP) model (Cole & Tuffano, 2020) and the Human Activity and Assistive Technology (HAAT) model (Cook & Polgar, 2008).

Methods. This quantitative survey was developed to collect desired data on how therapists acquire MWC for the residents of SNF. The format of the survey was closed- and open-ended questions with open-ended follow up explanations for certain answers to gain a richer understanding of therapists' perceptions.

Results. Results from this survey indicated that over half of the respondents worked in facilities that did not require a comprehensive evaluation prior to provision of MWCs. A greater percentage of respondents report that they assess all residents for MWC needs, yet the assessments are not part of a comprehensive evaluation. Survey participants were asked to share their productivity requirements and if they felt the requirements impacted their ability to provide MWCs to clients to which they said yes.

Conclusions: Currently in the U.S., there are no established best practices for providing MWCs in SNFs. The process for supplying MWCs to residents can be time consuming, expensive and met with resistance from administrators, insurance companies and even families. Residents of SNFs who are not provided appropriate fitting MWCs are at risk of being deprived of occupational performance. They may also suffer physical or psychological consequences from an ill-fitting wheelchair.

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CERTIFICATION OF AUTHORSHIP

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Section 1: Nature of Project and Problem Identification

Aging in the United States (U.S.) has been on the incline due to the "baby boom" population (Administration for Community Living, 2021). Currently, in the U.S. Skilled Nursing Facilities (SNF) there are about 1.2 million residents and that number is expected to triple by 2050 (McCain, 2022). Of those SNF residents, it is estimated that between 70 to 80 percent use wheelchairs for mobility (Gavin-Dreschnach et al., 2012; Wick & Zanni, 2007). Use of an appropriately fitted wheelchair can allow the SNF resident the ability to navigate the facility and engage in occupation. Poorly fitted wheelchairs can result in injury, unnecessary expenses and abandonment of the wheelchair (RESNA, 2011). However, provision of wheelchairs to SNF residents can be costly to the facility, especially if the recommendations do not fit the residents' needs.

Abbreviated Literature Review

Most SNFs have a variety of manual wheelchairs (MWC) in various states of condition that can be offered to newly admitted residents. Occupational and physical therapists are usually the gatekeepers of mobility device provision in SNFs. Therapists are alerted when a new resident arrives so an assessment will be performed in order to determine the level of function for activities of daily living (ADL). If a MWC is required, the therapist is often responsible for finding an appropriate device. Wheelchairs that are not tailored to the resident through a comprehensive wheelchair safety and seating assessment can place the resident at risk for injury, falls, decubitus ulcers or even death (Brienza et al., 2018; Gowran et al., 2020; Wick & Zanni, 2007). Conversely, supplying SNF residents with a wheelchair tailored to their body could enhance independence with occupational performance. To supply residents with tailored, fitted wheelchairs requires a trained staff and may require the facilities to adjust their budgets for

durable medical equipment. The Office of Inspector General identified that in 2015 the Center for Medicare Services (CMS) inappropriately paid $18.4 million in claims for DME that should not have been covered (OIG, 2018). CMS identifies wheelchairs as an item of DME therefore it is reasonable to infer that a portion of the payments went to wheelchairs. Due to increases in healthcare costs, this amount is likely significantly more today. Sprigle et al. (2022) report that the US market for wheelchairs in 2011 was 1.5 billion dollars with a reported estimate of 9.4% compounded annual growth rate (p. 308). They presented that in 2005 there were an estimated 3.3 million users of wheeled mobility with 56% of them being over the age of 65 (Sprigle et al., 2022).

Manufacturers of wheelchairs and Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) make recommendations regarding proper fit of a wheelchair for a client. A comprehensive seating assessment is composed of multiple steps as proposed by RESNA Wheelchair Service Provision Guide (RESNA, 2011). Minkel (2018) compares the process of supplying appropriately fitting seating and mobility devices to solving a mystery (p. 3). The RESNA Guide identifies the need for a referral to a qualified clinician (usually an occupational or physical therapist) who is experienced with seating and mobility if the client/resident will be using the wheelchair longer than 6 months (RESNA, 2011). The Guide identifies the comprehensive nature of provision of a wheelchair to a client and the broad spectrum and components of a wheelchair (Schein et al., 2021). The Guide further identifies areas that are important for therapists to consider when providing wheelchairs: the assessment , environment , current technology for mobility, family andsocial support, caregiver, attitude toward use of a device, activity, participation, body structure, body functions, fitting, training in use, and procurement of the wheelchair.

Theoretical Frameworks

There are two theoretical frameworks that helped to shape this research project: the Person-Environment-Occupation-Performance (PEOP) model (Cole & Tuffano, 2020) and the Human Activity and Assistive Technology (HAAT) model (Cook & Polgar, 2008a). The PEOP model identifies that when a person is faced with the transition to a SNF the focus needs to be on occupational performance. Into which occupational activities does the client wish to engage? The PEOP focuses upon the interaction of the person-environment-occupation-performance and how these factors will work in unison with each other, giving the therapist guidance as they determine the appropriate device to assist the client. This model proposes a top down application starting with the client's story to gain an understanding of their occupational independence and how that has been impacted causing them to require SNF. The model identifies 4 components to consider for meaningful transition into life at a SNF: narrative story, persons' factors, occupational factors and environmental factors (p.128). Wink and Zanni (2007) found that the transition to a SNF can be difficult due to loss of independence and self-autonomy. They also found this transition will often involve the need to use a wheelchair which changes the clients' visual spatial orientation thus impacting their understanding/interaction with their new environment.

Therapists who supply mobility devices to their clients will often use the HAAT model described by Cook and Hussey as the basis for their assessments (Crane, 2008). This model would define the human as the resident who is performing an activity. The activity would be the occupations in which the resident desires to engage. The assistive technology would be the wheelchair. The model goes on to define the context or environment where the activity is taking place, which would be the SNF. An example of the HAAT model would be an 84 year old client who is in a oversized manual wheelchair that she is unable to reach the handrims to push herself

to the dinning room for bingo. The therapist would need to measure the client (human performer) to provide a correct fitting wheelchair (the assistive technology) so she can push herself (task) to the dinning room for bingo (activity).

Operational Definitions

Assistive Technology (AT) is defined by Cook and Polgar (2008b) as the following:

> A broad range of devices, services, strategies and practices that are conceived and applied to ameliorate the problems faced by individuals who have disabilities (p. 545).

The wheelchair is considered AT, as it can reduce a resident's fear of falling while providing mobility for occupation when strength for ambulation has decreased (Wolosyzn, 2021). Occupational performance can be defined as an activity that has meaning for the client, tasks that are performed by the client or a role in which they engage (AOTA, 2020b; Cole & Tufano, 2020; Hinojosa & Kramer, 2014).

From clinical experience the vast majority of wheelchairs in SNFs are manual wheelchairs (MWC). There is not a set standard for MWC, they vary in shape and size yet most have larger rear wheels with hand rims for self-propelling on the outside of the wheel. These chairs will have smaller front wheels called casters (Wick & Zanni, 2007). They often will have vinyl or cloth seats and backs, called sling seats, so they can be folded for transportation. Firm seat and back inserts with cushions can be fitted to the frame of the MWC. Adding solid seating and backs can provide support to correct or decrease deformities the resident might experience or deformities, which could result from using the sling seat. Although there is no "standardized" MWC seat, manufactures size wheelchairs by width of the seat. Seat widths can range from 12" to 32" and usually increase in 2" increments. The most common widths range from 16" to 20" and most MWC in this range have a 16" seat depth. A number of manufacturers offer varying

depths of seats to provide options for the clinician to order. The residents' weight and height determine what size wheelchair they are supplied in order to support their body frame. Residents who are heavy and tall require larger MWC, which can be more difficult to maneuver. The majority of MWC have back canes that end in handles allowing caregivers/staff to easily push residents (DiGiovine, 2014; WHO, 2010; Wick & Zanni, 2007).

Residents of SNF often require MWC to engage in occupational activites. Therapist who have training in wheelchair provision can advocate for the provision of correctly fitting wheelchiars. Wheelchairs can vary in size, shape and weight which can offer SNF resisdents options to meet their varying needs.

Purpose Statement

This research project is designed to understand SNF providers' experiences with acquiring mobility devices for their clients; specifically, manual wheelchairs.

Problem Statement

1) There are no studies that determine a process in which therapists acquire wheelchairs for their clients or who funds the cost of such wheelchairs.

2) There currently are no established criteria to guide SNF therapists on how to acquire wheelchairs for their clients.

3) There are often institutional barriers in SNF related to provision of wheelchairs that are appropriate for clients.

Project Objectives

1. Describe therapists' perception of how healthcare reimbursement policies have an impact on wheelchair provision in SNFs.
2. Describe therapists' perception of the effect of facility policy/procedure on wheelchair provision in SNFs.
3. Describe the process of wheelchair provision from evaluation to receiving the device.
4. Describe the challenges associated with providing wheelchairs in SNFs.

Project objectives will be assessed and met through the design, development and analyzing of data from the survey.

Significance of the Project

In a study by Gowran et al. (2022) the authors found that barriers during the wheelchair and seating provision process caused the clients to be dependent rather than providing desired independence (p.378). The authors expressed that from a human rights perspective, adequate AT should meet the clients' health and well-being needs, thus allowing them to participate within their environment (p. 379). Adequate AT for a resident of a SNF would be a wheelchair that has been tailored to meet their abilities for movement and occupational performance.

Summary

The U.S. population is aging due to the "baby boomer" generation (Administration for Community Living, 2021) and as a result SNFs could see a dramatic increase in residents (McCain, 2022). Wick and Zanni (2007) estimate that more than 70% of SNF residents will use wheelchairs for mobility. Most SNF MWC are in various conditions that could compromise fit and use by the residents. Poor fitting MWC can place the resident at risk for injury, falls, decubitus ulcers, or death (Brienza et al., 2018; Gowran et al., 2020; Wick & Zanni, 2007).

Fitting a SNF resident with a wheelchair should entail a comprehensive seating assessment, which can provide the best opportunity to participate in occupational performance in the facility (RESNA, 2011). Currently the literature does not contain information on the process therapists employ to supply MWC to their clients. Due to the large cost associated with providing MWC and the large number of SNF residents who could benefit from them, understating the perceptions of therapists can decrease possible waste and enhance provision of appropriate wheelchairs. The purpose of this quantitative cross-sectional survey design was to examine the perceptions therapists have on their experiences with providing MWC to SNF residents.

Section 2: Review of the Literature

Skilled Nursing Facilities

In 2020 there were about 1.2 million Skilled Nursing Facilities (SNF) residents in the United States (U.S.) (McCain, 2022). There was a decrease of 10 million SNF residents from 2010 to 2020 reported by McCain (2022). As the US population ages the number is expected to grow, especially those who are over the age of 65. The population of over 65-year-olds is anticipated to increase from 47.8 million in 2015 to over 87.9 million by 2050 (Administration for Commuinty Living, 2021). Aging can involve both physical and psychological changes that affect occupational performance and quality of life (Brienza et al., 2018; Gowran et al., 2022; Kemmis et al., 2021; Woloszyn et al., 2020; Woloszyn et al., 2021). Skilled nursing facilities are places where, mostly elders, will reside when they are not sick enough to be in a hospital setting however are too sick, physically disabled or mentally disabled to be in their own home. They may not require high level of skilled nursing assistance but do require 24-hour care that cannot be provided in their home (Britannica, 2023; Howley, 2022; Zhang et al., 2022). Most of the

residents of SNFs require assistance with one or more of the following Activities of Daily Living (ADLs): eating or preparing meals, bathing, dressing, toileting, managing medications, or mobility issues. Eskildsen and Price (2009) point out that there are often two types of SNF residents: those who will be long-term residents due to ongoing chronic conditions and are unable to participate in the above ADLs and those who are at the SNF for sub-acute care. This is commonly following a hospitalization and further rehabilitation or nursing is needed prior to returning home. Both groups might need a MWC for mobility in the facility, but the long-term resident may require a chair, which can transition over their stay.

Physical aging is often accompanied by decreases in strength and mobility, which can result in the need for a mobility device such as a wheelchair. SNF residents will often have multiple medical and physical co-morbidities that may decrease their independence. Depression has been associated with moving into a SNF, which can again compound or exacerbate mobility issues. Residents of SNFs often require a wheelchair for mobility in order to navigate the facility and engage in occupation. Currently, in the United States SNF are required to provide a wheelchair for mobility with the goal of providing a means for participation in occupational activities. Often, wheelchairs provided may not be tailored to the residents' individual requirements. The chairs may be too wide, too narrow, or too deep. They may not supply support needed if the resident has a diagnosis that affects body/joint structure. Proper fitting wheelchairs carry the potential to increase functional safety while engaging in occupational performance (Brienza et al., 2018, McEachern & Mortensen 2021). In a study of 11 long-term care facilities in Canada, McEachern & Mortensen (2021) found that if residents could not cover the cost of a fitted light weight wheelchair, they would be placed in a facility chair which resulted in leaving many residents with ill-fitting, heavy wheelchairs (p. 668). There is little research related to the

process SNF utilize to supply wheelchairs to their residents. This capstone project is necessary due to the potential increase in the number of SNF residents and the need those residents will have for occupational engagement which could be enhanced or limited by the use of an MWC.

Use of Wheelchairs for Occupational Performance

A study by Brienza et al. (2018) found that SNF residents were able to achieve increased safety as well as increased independence when supplied with a wheelchair that was configured specifically for them (p. 172). The study authors reported that facility-provided wheelchairs did not provide as effective use of the wheelchair for occupational performance as a custom configured chair provided. Gowran et al. (2020) further reported that an ill-fitting wheelchair could increase "physical impairment, pain, depression, isolation and death" (p. 371).

Conversely, functional mobility has been shown to increase occupational performance, which in turn has a positive effect on quality of life (Kemmis et al., 2021). When functional mobility is neglected, SNF residents are often unable to care for themselves in many areas of ADLs. If the MWC is too heavy they may need assistance to attend meals or activities in the facility. Woloszyn et al. (2021) identify that SNF quality of care has improved for the resident over the last few decades. Even so, practice experience observations demonstrate that many SNF residents experience inactivity. Manual wheelchairs can be beneficial in providing an avenue for mobility, which could enhance the residents' social and occupational performance.

Challenges associated with Skilled Nursing Facilities

Nursing homes have been perceived as places where the resident has received minimal or custodial care, however, many of the residents require skilled or advanced care due to their level of co-morbidities (Cortes, 2022). According to McCain (2022) 83.5 percent of SNF residents are over 65 years old, which is about 4% of the U.S. population. Of this 83.5 percent, the largest age

group is over 85 years, with 38.6% of the population. She also reports that the average life span is 2.2 years for SNF residents. This figure was based on a three-year study period from Norway, which might not generalize to U.S. facilities. This critical factor of life expectancy should encourage administrators to provide higher priced more effective wheelchairs for their residents, which could offer increased occupational participation and quality of life for the residents' remaining years.

A major challenge for staff in SNF is determining the appropriate wheelchair. There are multiple manufacturers, styles and designs of wheelchairs available that can be purchased from $200 to thousands of dollars. One manufacturer, Drive Medical Equipment, has basic manual wheelchairs whose prices range from around $200 to thousand dollars based on the size, weight capacity and adjustability (Drive Medical, 2023). Other companies who supply lightweight, higher end wheelchairs have prices that start at over $2,000 (USA FM, 2019). In the primary author's clinical practice experience, if the wheelchair was over $300, the administration would not approve the recommended chair and request that an alternativebe found. This could be a challenge, even in an older facility with a number of donated wheelchairs. Usually donated wheelchairs are not adjustable, which often results in ill-fitting wheelchairs imposing a negative impact upon an individual's occupational performance. The older chairs may also be in poor working condition.

MWCs are considered durable medical equipment (DME) (Medicare.gov, 2023). Therefore, payment responsibility for these items could prove difficult to determine. Some states require the facility to purchase needed items from the funds they receive for the care of their residents, and some states will purchase a chair properly fitted for the resident. Obtaining or determining funding can be burdensome for the therapist who tries to acquire the appropriate

MWC for their clients. What is recommended may not be what the facility or family are able to pay for, so the therapist may have to make modifications to existing chairs in the facility or supply the client with a substandard chair, with the hopes that an appropriate chair will become available in the future. Development of pressure areas and other difromities can develop in a short time frame if a resident is in a MWC that is not fitted to their specific body and needs. Best practice would be to supply the resident with a fitted MWC that meets their body design and functional needs.

Summary

Skilled nursing facility residents may not require total assistance with all ADLs, yet they are often unable to stay in their home and require 24-hour care (Britannica, 2023; Cortes, 2022; Howley, 2022; Zhang et al., 2022). SNF residents can be either long term or in the facility to receive sub-acute care following an illness or injury (Eskildsen & Prince, 2009). Both groups often will require a MWC that is appropriately fitted to provide functional safety while engaging in occupational performance (Brienza et al., 2018, McEachern & Mortensen 2021). There is little research related to the process SNF therapists use to supply MWC to their clients. The literature does stress the importance of having a well-fitting wheelchair for occupational performance (Brienza et al., 2018; Gowran et al., 2020; Karmarkar et al., 2010; Paulisso et al., 2021; Wick & Zanni, 2007; Woloszyn et al., 2021) and can have a positive effect on quality of life (Kemmis et al., 2021) The literature identified the increases in population related to age and how that can affect SNF populations (McCain, 2022). Little research was found related to the cost of providing MWC to residents of SNF.

Section 3: Methods

Project Design

This research project was a cross-sectional quantitative survey design utilizing an online anonymoussurvey to investigate experiences and perceptions of therapists who supply manual wheelchairs to SNF clients. Using anonymous surveys is one method to study topics that may be difficult to discuss face-to-face (Nardi, 2018). An online survey was chosen as it can be presented to larger numbers which could provide a large response rate. Conversely, a low response rate can have a negative effect on generalization (Creswell & Creswell, 2018; Forsyth & Kviz, 2017; Lysack et al., 2017). A self-administered online survey decreases research bias of familiarity with the researcher and the desire of the respondent to "look good" and give "correct" answers (Lysack et al., 2017). Eastern Kentucky University (EKU) Internal Review Board (IRB) granted approval for the study on January 3, 2023 research protocol #5058 (see Appendix A).

Setting

This research project utilized a web-based survey (see Appendix B). Qualtrics (Qualtrics, Provo, UT) was utilized to create, distribute and analyze the survey. Qualtrics was chosen for development of the survey due to its ease of use and automatic data entry which decreases errors from manual data entry. Qualtrics identifies that they utilize a high-end firewall system that ensures security of data. They utilize independent third party tests annually to asses strength of applications. Access to their systems is restricted to need to know information. A benefit of web-based surveys is that they are cost effective compared to mailing surveys. For this study, web-based surveys make it difficult to determine a response rate due to the wide distribution of anonymous links.

Participants

Participants are Occupational Therapists (OT), Certified Occupational Therapy Assistants (COTA), Physical Therapists (PT) and Physical Therapy Assistants (PTA) who have supplied manual wheelchairs to residents of SNFs. Requests for participation in the survey was emailed through various social media platforms, professional organizations, universities and local contacts. This survey was disseminated using a purposive sample of therapists who have worked in SNF.

Inclusion/Exclusion Criteria

The inclusion criteria for this study require respondents to be OTs, OTAs, PTs or PTAs who currently supply or have supplied wheelchairs to SNF residents. This study is looking at SNF in the U.S., therefore the clinicians needed to be practicing or have practiced in the U.S. Results may be generalizable to SNF with similar funding structures as those used in the U.S. The researchers are English speakers, therefore respondents needed to be able to read/write in English. Exclusion criteria are defined as: practicing outside of the U.S., no experience in SNF, inability to read/write English and does not provide or work with the provision of wheelchairs.

Nardi (2018) reports that a major limitation to computer-based surveys is that they can have a dramatic effect on generalization of findings depending on "computer ownership based on race/ethnicity, age, sex, income and education" (p. 74). The survey was sent to therapists who had received, at minimum, an associate degree which should meet educational requirements. The survey does not address race or sex which addresses those limitations. The limitation that age imposes could be on therapists who have been in the field for an extended time. They may not be comfortable with technology, therefore an online survey could impose barriers. However, almost all SNF now use electronic charts which should provide some comfort with computer

technology. The socioeconomic barrier could be evident if therapists did not have time at work to complete the survey and did not have a computer at their home. In review of these possible limitations, the benefits of the survey and the probability that most therapists did not have barriers outside of the inclusion criteria, outweighed concerns.

Respondents were recruited through social media posts in the American Occupational Therapy Association (AOTA) CommunOT. Another social media platform specific to therapists that was utilized was RESNA Connect Professional Specialty Groups (PSGs) for OT/PT and the Special Interest Groups (SIGs) accommodations and wheeled mobility and seating. Emails were also sent to instructors and fellow students at EKU requesting assistance with posting the survey link. Two instructors at Huntington University's OTD program were sent the link via email with the request to disseminate the link to alumni of their school. Seven local SNF that identified their willingness to participate were sent the link. The survey link was sent initially starting the week of January 03, 2023 after IRB approval was granted with an initial response deadline established as January 31, 2023 which was extended to February 15, 2023 to allow for increased participation. Follow up reminder emails were sent to all the entities listed in mid-January and prior to the close of the survey.

Project Methods

This quantitative survey was developed to collect desired data on how therapists acquire MWC for the residents of SNF. The survey was developed after the literature review determined there is little information related to how therapists determine the appropriate MWC for their clients. Extensive clinical experience has shown that most SNF residents are not properly "fitted" with the chair that is supplied to them. Often the chair has had multiple users of various shapes and sizes and can be in poor quality or require repair to make the chair safe.

The format of the survey was closed- and open-ended questions with open-ended follow up explanations for certain answers to gain a richer understanding of therapists' perceptions. Open-ended questions provide respondents with the ability to explain their experiences in greater detail. The survey consisted of an introduction that identified the purpose of the research, IRB approval, contact information and consent to participate in the survey. The next section consisted of 5 demographic questions. No identifiable questions were asked to maintain anonymity of the respondents. Examples of the demographic questions were:

1. What is your profession?
2. What length of time have you worked in a SNF?

The final section consisted of the 18 open and closed ended questions with space for follow up explanations. Samples of the questions asked in this section would be;

1. Have you received any formal or informal training in wheelchair provision (including fitting clients, finding appropriate cushions, and other accessories, etc.).
   If yes, please describe.

2. What is your productivity requirement?

3. Do you feel that this productivity requirement impacts your ability to engage in quality evaluation and/or provision of wheelchairs (including chair type, fit, cushions, accessories, etc.) with your clients?
   - yes
   - no

   If Yes, please describe:

4. Does your facility require a comprehensive wheelchair/mobility device evaluation prior to recommending/supplying/ordering the device?
   - yes
   - no

   If yes, who completes the evaluation?
   - OT
   - PT
   - Other

Outcome Measures

The survey was developed based on a review of the literature and clinician experience, with input by the committee members, who have graduate education and successful experience with survey research. The chair and committee members and therapists from two local SNFs then piloted the survey. Minor structural and grammatical changes were suggested which were implemented in the survey prior to opening for data collection. One therapist who piloted the survey gave specific feedback that challenges were asked to be identified but there were no questions that asked if the therapist had received support providing MWC. A question that was added that probed the support respondents had received was: "What support have you experienced in providing wheelchairs to clients of your facility?".

The responses from the survey provided outcomes data that was formulated into charts and tables. Quantitative results are reported in frequencies and percentages using the descriptive data provided by the respondents. The descriptive data may provide further support to guide evidence-based practice of supplying MWC to residents of SNF. Open-ended questions were analyzed using Qualtrics word cloud and bar graph software for visual representations of responses.

Ethical Consideration

Ethical issues can arise during research at any stage of the process, from conception of the study to reporting the data and all the steps between (Creswell & Creswell, 2018). Researchers must anticipate ethical issues that could arise from areas such as: Internet data collection, response bias, researcher bias, use of social media and ethics related to professional organizations (Creswell & Creswell, 2018). The EKU IRB process requires consideration of ethical issues related to harm that the subjects might experience.

Coercion is a form of harm that was addressed by the IRB. Participants were instructed of the voluntary nature of the survey and that they could withdraw at any time during the web-based survey with no fear of reprisal. Participants were instructed that no identifying data would be used which would preserve their autonomy. The study involved minimal risk to the participant and did not include special populations. There were no anticipated physical, social, or economic risks related to participation in the survey.

Asking the respondents to explain answers for many of the questions minimized response bias for this web-based survey. This allowed the respondent to express their experiences and opinions (Forsyth & Kviz, 2017). Researcher bias could be present due to the researcher's experience with acquiring MWC for residents in SNF. The writer's experience has often been that when a specific wheelchair was required it was difficult to obtain or the facility leadership would decline to purchase the requested chair opting for an existing chair that might not be a good fit for the client. With this knowledge the lead researcher required objectivity as he examined the methods and conclusions from the survey (Creswell & Creswell, 2018).

Use of social media to disseminate the survey could have created the bias of only respondents who are comfortable with web-based activity responding to the survey. Those clinicians who are not as comfortable with technology might have choose not to participate due to fear/apprehension about Internet use. By using a web-based survey there was the possibility that there could be rich data being missed, but the benefit of cost and time outweighed the concerns of missing data.

The professional organization of AOTA Code of Ethics lists 6 principles to guide practice. Principal #4 of Justice relates to this study in the desired outcome of fair, equitable and appropriate treatment of those who require a manual wheelchair for occupational performance.

Principle #6 of Fidelity discusses maintaining respectful collegial and organizational relationships that balance the duties that therapists have to supply MWC to their clients while respecting the organizations who employ them (AOTA, 2020a).

Capstone Timeline

Table 1: Time Frame of Capstone Project

Time Frame	Expected Results
October 2022	Finalized capstone project topic
November 2022	Survey questions finalized and target social media distribution sites identified.
November 22, 2022	IRB Application for Expedited Review submitted.
November 28, 2022	Feedback from the IRB administrator was received with the suggestion to change from Expedited Review to Limited Review Application for Exemption Determination
November 29, 2022	IRB Limited Review Application for Exemption Determination submitted
December 01, 2022	Qualtrics survey completed and distributed for pilot to Chair, Committee Member and 3 OT/OTAs
December 14, 2022	Revisions made in Qualtrics survey based on feedback from pilot.
January 03, 2023	IRB Approved
January 04, 2023	Survey Distributed
January 04, 2023	Due date for completion of survey January 31, 2023 established
January 23, 2023	Due date for survey extended to February 15, 2023
February 15, 2023	Survey Closed
March 03, 2023	Data analysis completed.
May 05, 2023	Capstone paper completed
May 10, 2023	Presentation of completed Capstone Project

Section 4 Results and Discussion

Results

Introduction

The data collected and analyzed from this study was based on the capstone objectives. Data was collected using both open ended and closed questions to identify both challenges and

support for determining appropriate devices and provision of devices for their clients. Participants identified the level of training, both formal and informal, for provision of MWC. They were asked to indicate if productivity levels had an effect on MWC provision. The survey explored facility policy and procedure related to use of comprehensive evaluations, admission process, roles professional organizations might play and who decides how much to spend on wheelchairs.

Therapists were invited to participate in the survey thorough AOTA CommunOT, RESNA, and local SNFs. There was a total of 42 respondents who started the survey with 28 of those 42 completing over 50% of the survey. The participants utilized a link to an online survey developed in Qualtrcs from the emails sent to the above listed social media sites. By proceeding with the first question respondents consented to participate in the research study.

Demographics

Survey respondents consisted of 81.25% (n=26) Occupational Therapists, 15.63% (n = 5) Occupational Therapy Assistants and 3.13% (n = 1) Physical Therapy Assistant (see Table 2). No Physical Therapists identified that they completed the survey. Experience as a therapist was varied with the majority of 59.38% (n = 19) having greater than 9 years of experience in their profession (see Table 3).

Table 2: Respondent Profession by Discipline

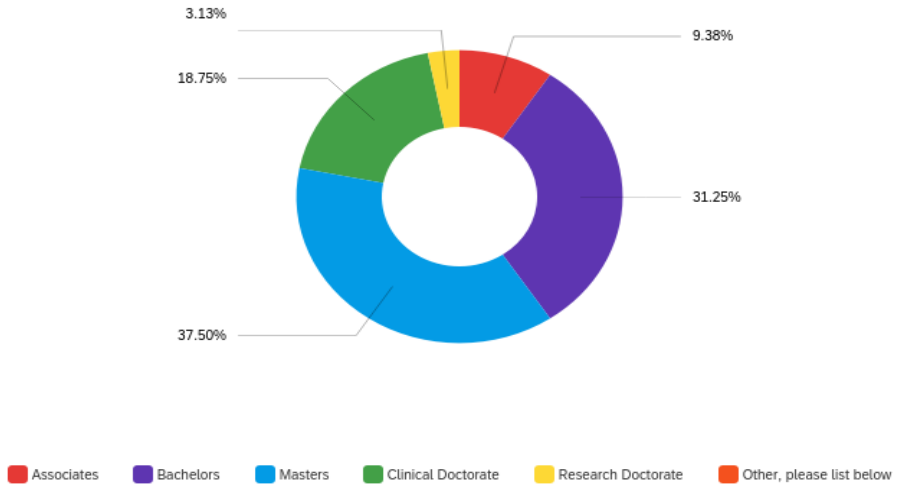
#	Answer	%	N
1	OT	81.25%	26
2	OTA	15.63%	5
3	PT	0.00%	0
4	PTA	3.13%	1
	Total	100%	32

Table 3: Years of Experience

#	Answer	%	N
1	< 1 year	0.00%	0
2	1 to 3 years	15.63%	5
3	4 to 6 years	18.75%	6
4	7 to 9 years	6.25%	2
5	> 9 years	59.38%	19
	Total	100%	32

Participants were then asked to identify their highest degree completed (see Figure 1). The majority of respondents had received a Master degree (37.50%; n =12) with the second most having a Bachelor degree (31.25%; n =10). Respondents who identified that they had a Clinical doctorate were the third largest group with 18.75% (n= 6). There were 9.38% (n = 3) who reported having an Associate degree while 3.13% (n = 1) had a research doctorate.

Figure 1: Participants Highest Degree Obtained



Participants were asked to select what length of time they had worked in SNF. There were 32 respondents whose answers ranged from 0 years to 43 years. The average length of years worked in a SNF was 10.75 (n = 32; see Table 4). Length of time working in SNF was not an aspect of this research study although it could give insight into MWC provision and would contribute to the body of information.

Table 4: Years Worked in SNF

Years working in SNF	**N**
Zero	1
One	2
Two	3
Three	3
Four	1
Five	2
Six	3
Eight	1
Nine	1
Ten	4
Twelve	1
Thirteen	2
Fourteen	1
Fifteen	2
Eighteen	1

Thirty	2
Thirty five	1
Forty three	1
Total	32

Participants identified if they had received specialty certifications with respondents reporting having an Assistive Technology Professional (ATP) certification (6.25%; n = 1) and Seating & Mobility Specialist (SMS) (6.25%; n = 1). The remaining respondents 87.5%; n = 14) indicated "other" and identified what type of certificate they had if any (see Table 5).

Table 5: Survey Participants Specialty Certification

Certification in Wheelchair provision	**N**
ATP	1
SMS	1
Other	
Lymphedema Certification	3
Pediatrics	1
NDT	1
CAPS	1
AEP	1
None	6

When asked about training respondents had received in wheelchair fitting and provision, 96.77% (n = 30) reported that they had received either formal or informal training (see Table 6). Of the 30 that reported they received training in wheelchair provision, 59.26%; (n = 16) reported that their employer did not supply the training, while 40.74%; (n = 11) reported they did receive the training from their employer.

Table 6: Participants Training in Wheelchair Fitting and Provision

Continuing Education	**N**
Vendor	8
Online (OTOnline, etc.)	5
Professional Organization (AOTA, RESNA)	4
Workshop/Seminar	6
Formal Education	
Work sponsored	2
University	4
Informal Education	
On the job training	5

Therapists' Perception of Reimbursement Policies

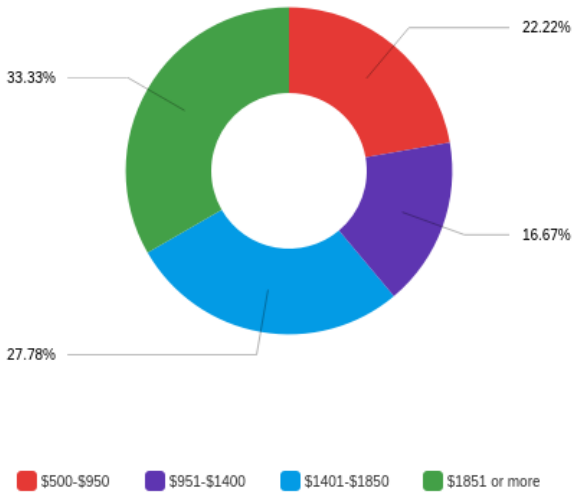
When asked if a separate Medicare/Medicaid funding category for MWC would assist the therapist with wheelchair provision, 79.31% (n = 23) selected "yes" while 20.69% (n = 6) selected "no". Respondents were asked to enter a comment if they selected "yes" to the questions. A representative sample is reported in Table 7.

Table 7: Comments in Support of Medicare/Medicaid Funding MWC

Reduces time adjusting, ordering, revising, family questions
Increase access to wheelchairs
I believe a separate funding category would allow for opportunities to address specialty options maybe? I'm not sure.
access to Group 3 chair access or ultra light manual chairs is limited
Medicaid has been the primary funder of w/c's, especially power chairs. Private insurance, even Medicare Advantage will not pay if the client and their family decide to remain in the SNF vs discharging home.
Allow the time and effort it takes to address this important area

Participants were asked if they would support professional organizations like AOTA and RESNA in lobbying efforts to Congress for funds to supply MWCs to residents in SNFs. There were 20 therapists who responded to this question with 95% (n = 19) in support and 5% (n = 1) not in support of lobbying efforts for MWC funds. They were asked to identify dollar amounts that could be proposed to Congress. The two largest dollar amounts available to select received the most support from therapists with 33.33% (n = 6) checking '$1851 or more' and 27.78% (n = 5) checking '$1401-$1850' (see Figure 2).

Figure 2: Proposed Dollar Amount for MWC



Effects of Policy/Procedure on MWC Provision in SNF

Therapists were asked to describe the process for MWC provision in their facility. Responses ranged from simple statements to complex processes. There were similar processes identified with a sample of the statements presented in Table 8. Therapists were then asked if the process of assessing for wheelchairs include all residents of the facility and when they might

receive the assessment. The majority of respondents (68.42%; n=13) answered “yes” that all residents of the facility received assessments for wheelchairs. Less than half (31.58%; n=6) responded “no” to assessments being done on all residents.

Table 8: Process Used to Provide MWC to Clients

Typically residents are provided a w/c upon arrival, sometimes they are taken to their room via transport chair from EMS. Occasionally we do not have the appropriate size w/c, with the influx of residents we have had not every resident has the appropriate leg rests of size w.c based on hip measurements. If the facility has the w/c in storage, the resident normally receives the suggested w/c (if adjustments need to be made after they are initially received to the facility) within 1-2 days, in other buildings this could take a week or more. If the w/c needs to be ordered, it could take anywhere from 2-5 weeks
OT screening; OT eval; engage mobility provider if custom w/c is fundable; order/create components if not fundable; write any justification letters needed. Resident usually d/c'd from OT while waiting for any seating equipment. Back on caseload once rec'd - fit & modify seating; training to resident/caregivers, d/c from OT.
We initially trial what is available in the facility, and if a different chair is needed then we complete a thorough assessment and make recommendations for the appropriate wheelchair.
They have an inventory of wheelchairs, mostly general but in different sizes. We provide information on cushions and sometimes families will purchase, but overall, wheelchairs are the property of the homes.
Screen is sent to rehab. OT performs the evaluation and make recommendations. If a safe and appropriately fitting chair is not available in the building, authorization to call in a vendor is given by administration. Simultaneously, funding sources are explored and verified. Vendor and evaluating OT meet with client to draw up w/c specifications. Vendor may provided client with trial w/c and/or cushion. Custom w/c is decided upon and costing provided by vendor. Expense is cleared with administrator, insurer and client/family. W/c is ordered. W/c arrives and there may be 1-2 follow-up fittings or adjustments made if OT is not able to make the adjustments themself.
Order through Direct Supply

A separate follow up question asked the time frame for receiving the assessment for a wheelchair. There were 4 options presented to the therapist that identified when the residents would be assessed for a MWC (see Figure 3). The largest number of therapists (55.00%; n=11) responded: “other”. Participants were prompted to explain the response of “other” with those answers found in Table 9.

Figure 3: Time Frame for MWC Assessment

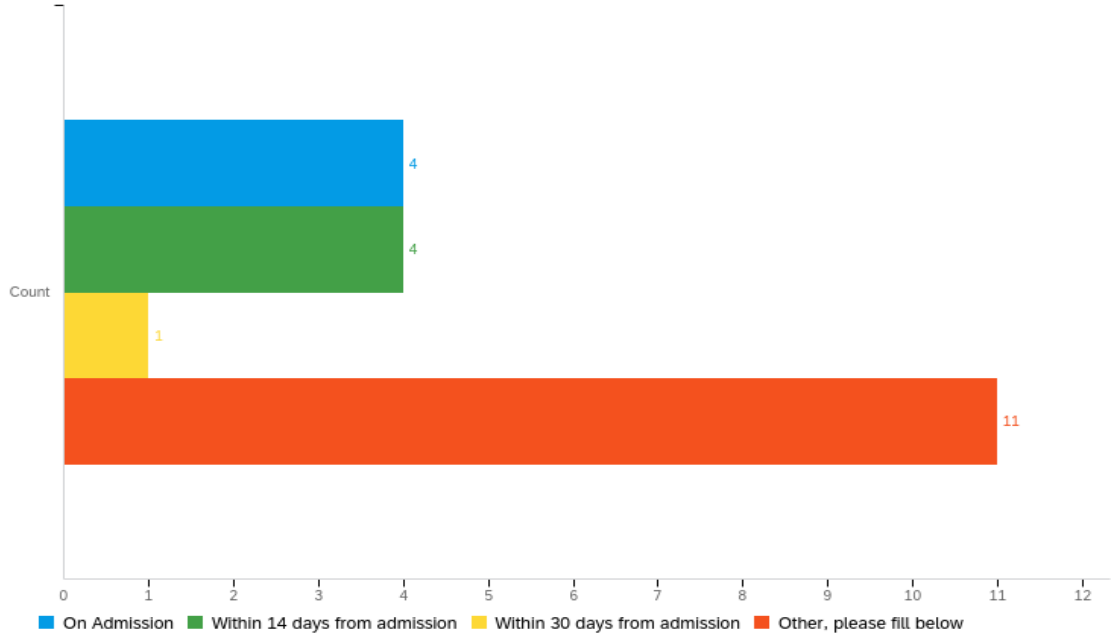


Table 9: Answers to Other on Figure 3

When pt *(patient)* needs changes ie need for tilt in space
It varies. New residents are screened; as residents change an eval (*evaluation*) might be warranted even if they've been in the facility a while. New skilled admissions are eval's (*evaluations*) as routine or closer to d/c once needs are evident.
Initial encounter-informal, later in stay or close to d/c as needed.
There is no formal w/c (*wheelchair*) assessment for any of the buildings I work in
Std (*Standard*) wc (*wheelchair*) on admission, Custom WC when needed. CWC (*custom wheelchair*) are only covered by state for Medicaid pts (*patients*). We are able to adapt CWC that are no longer in use for use by other patients
It's just part of initial eval, not formal
As requested by family, nursing of therapy staff
The OT usually provides w/c upon initial evaluation. The patient receives his personal w/c at discharge; unless it's a long term patient, he will get whatever is in the facility (usually poor quality and very used).
As needed or noticed based on changes or changing needs

Note: Responses copied verbatum from survey. Lead researcher added italized explanations of acronyms for clarity.

Therapists were asked what their productivity level was (see Figure 4) and if they felt the productivity requirements impacted their provision of wheelchairs to their clients. Respondents reported productivity ranges from 50% (n = 1) to 100% (n = 1) with the most reporting that their requirement is 85% (n = 8) and 90% (n = 6). When asked if productivity affected their ability to provide MWCs, the vast majority (82.76%; n = 24) of respondents selected, “yes” that productivity requirements affected their ability to provide MWCs. A much smaller portion of therapists (17.24%; n = 5) responded “no” to the same question. The therapists who answered that productivity levels affected their ability to provide MWC were asked to describe how they had been impacted with the results consolidated into similar experiences in Table 10.

Figure 4: Productivity Requirement

Note. Size of numbers does not correspond with frequency of numbers reported.

Table 10: Impact of Productivity Requirements on MWC Provision

High productivity demands impact amount of one on one time available to spend with each client as well as time available for treatment planning, etc.
Each pt is unique with different needs. Having to do a thorough evaluation, treatment and provide necessary/appropriate equipment and document the whole process in 60 mins is ridiculous.
I do not feel list i can spend adequate time making all of the necessary adjustments and provide self care training and therapeutic exercise/ activities. In my facility we rely heavily on the maintenance man to complete w/c adjustments, which extends the amount of time the pt is not properly supported/ positioned or does not have tight w/c brakes
Time is taken away from therapy with point of service documenting due to productivity.
Any time not in direct pt contact is considered non-productive
It's hard to find the necessary time to spend on this. We have to take what chairs are available and adapt them.
There is a lot of extra work that we a required to do that does not reflect on our schedule since only patient contact time is billable. The work expectations are unrealistic (complete notes, chart review, transporting, care meetings, finding wheelchairs, ordering DME, read emails, complete NMNC, and UR. Its a business and not actual health care or Occupational therapy.

Note. Responses were consolidated into similar experiences with productivity demands.

Participants were asked if the facilities where they worked required a comprehensive wheelchair evaluation prior to recommendation/supplying/ordering any device for the client. Of the 27 participants who responded to the survey item, 55.56% (n = 15) reported that their facility did not require a comprehensive w/c evaluation. Conversely, 44.44% (n = 12) reported that their facility did require them to perform a comprehensive w/c evaluation. An open-ended follow up question asked who was responsible to complete the evaluation. There were 20 respondents to this survey item, 55.00% (n = 11) selected OT completes the comprehensive evaluation. Conversely, 45.00% (n = 9) selected “other” completed the evaluation. Responses were presented with an open-ended question to determine whom the “other” would be to provide a MWC evaluation. There were 7 respondents and their answers are reported in Table 11.

Table 11: Who Completes Comprehensive W/C Evaluations

Who Completes Comprehensive W/C Evaluations	**N**
Both OT & PT	5
Depends on the needs of the Person	1
Can be either but often social worker orders a general recommendation as often a comprehensive eval not needed	1

Participants were asked who decides how much will be spent on purchasing MWCs in their facilities. There were 21 respondents to this survey item, with 14 reporting the Administrator/CEO would make the decision on how much was spent. The next most identified was insurance/Medicare/Medicaid with 5 respondents. There were 3 respondents who stated "I don't know" in reference to who decides how much is spent on wheelchairs (see Figure 5).

Figure 5: Decision Maker on Dollars Spent for Mobility Devices in SNF

Wheelchair Provision from Evaluation to Delivery

Due to the importance of understanding the process therapists utilize to provide MWC to their clients, the participants were presented with one closed-ended question and two open-ended questions related to the process. The closed-ended question asked it the therapists utilized a standardized evaluation to determine an appropriate wheelchair for their client. Out of the 26 participants who responded to this question, 65.38% (n=17) said "no" they did not utilize a standardized evaluation to determine an appropriate MWC for their client. Conversely, 34.62% (n=9) indicated that they did utilize a standardized evaluation. An open-ended question asks the participants to list the assessment, and the following assessments were listed:

PIDA
Tape Measure (for hip width, etc)
TUG
Functional Reach
Grip/Pinch
ROM
MMT
SLUMs

Participants were asked to describe their process for evaluating clients for provision of a wheelchair. There were 14 participants who responded to this survey item and the most common responses are listed in Table 12.

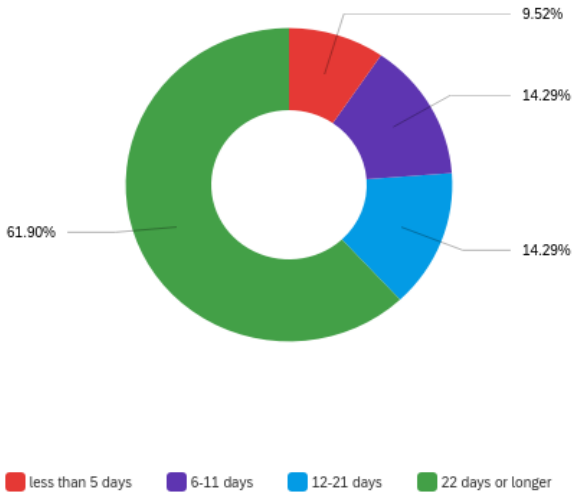
Table 12: Process for Providing Wheelchairs to Residents

Global assessment of cognition, sensory motor, vision systems. Deep dive into PMH including skin breakdown, edema, neuropathies, prior and current physical and mental levels of engagement in ADLs. Means of independent propulsion (if one exists). Availability of staffing to reposition and transfer client throughout the day
Power chairs require cognitive testing, vision testing, and test drive in a chair therapy uses for evaluations. Manual chairs, patient are looked at for shoulder range of motion and needs/abilities to self propel along with measurements for proper fit.
Therapy tech receives height and weight as well as diagnosis. They build a wheelchair based on that info. The primary therapy team can request or make modifications if the patient needs more accessories or a different chair
General data taken from the physical and occupational therapy evaluations, height, weight and body measurements of the patient, skin assessment, assessment of special accomadations (i.e. arm trough for hemiparesis, leg rests vs foot rests)
We use the typical wheelchair measure and perform mat evaluation when applicable.
Visual observation of size/weight of person, measure width and height of chair needed with clinical knowledge. Observe body position in any special equipment needed for positioning determined at that time.
??? That would be a very long answer - a solid overall eval is needed to determine any ortho/neuro issues, occupational profile is done. then typical w/c measurements & supports are id'd.

Note. Responses were consolidated into similar experiences in providing MWC to their clients.

Participants were asked to identify the length of time between making a recommendation for a MWC and the client receiving the device. They were given 4 options to choose from (Figure 6). There were 21 participants who responded to this survey item with 61.90% (n=13) reporting the length of time was “22 days or longer”. Both “6-11 days” and “12-21 days” had 14.29% (n=3) as the second most selected items, with 9.52% (n=2) responding they would receive MWC in less than 5 days after requesting the wheelchair.

Figure 6: Length of Time Between Requesting and Client Receiving MWC



Challenges Associated with Providing MWC in SNFs

The survey contained 2 open-ended questions aimed at a deeper understanding of the challenges therapists experience when providing MWCs to their clients. Participants were asked to describe both internal and external challenges. There were 18 respondents to both questions. Below are summaries of similar responses to both questions in Tables 13 and 14 respectively.

Table 13: Internal Challenges to Providing MWC

Administrators do not see the benefit/ understand the importance of positioning, they only see costs
Time taken to get them. Facilities not wanting to purchase high-end chairs with high adjustability for comfort and fit
Therapists being trained to create valid and complete justifications; with this I haven't been denied by facility personnel.
In-house equipment is in serious state of disrepair. If client is unable to advocate for themselves or family/case manager is unable to advocate for them, new equipment is not provided often until client has injury such as skin breakdown or fall out of the chair.
Getting them paid for especially for rehab to home patients. Having a chair can make the difference of having to stay in the facility long term or being able to return home. Also, for long term patients we are often piecing chairs together to get them a chair that barely offers what a patient needs in a wheelchair. Ex: tilt back, high back, adjustable height, extending leg rests

Table 14: External Challenges to Providing MWC

Time between ordering chair and delivering it can be 6mos to 1 yr.
Getting them paid for in general is difficult
Insurance approval for obtaining equipment for individuals; denials, co-pay
lack of accessibility in people's homes
Limited payer source for wheelchairs, not all are able to afford purchasing their own wheelchair

Next, participants were asked 2 closed-ended questions with the option to describe their answers if they responded yes to either question. The first question asked if the therapist had been denied by facility administration when attempting to supply a MWC due to costs of the recommended wheelchair. Of the 26 respondents, 57.69% (n=15) selected “yes” they had been denied while 42.31% (n=11) selected “no” they had not been denied. Those that responded yes to being instructed to supply a different MWC based on cost were prompted to provide a

description of the reasons for denial. Participant responses have been consolidated in Table 15. The second closed-ended question was had the therapists been instructed to provide a MWC that did not meet expectations. There were 24 respondents to this question with 54.17% (n=13) who selected “no” they had not been instructed to supply a MWC that did not meet expectations while 45.83% (n=11) who selected “yes” they had been instructed to provide MWCs that did not meet expectations. There were 7 respondents who gave a description of how they were instructed to give MWCs that did not meet expectations (see Table 16).

Table 15: Therapists Comments on Denial of MWC Due to Cost

it was a cost issue/ the facility did not have any additional in stock at the time, often this is more of an issue when down grading to geri chairs or needing chairs w/ reclining backs.
I had to revise the recommendation and/or use alternate means to address seating needs, e.g. home-grown components
facility will only pay for w/c(s) that can be used for multiple people
Too expensive and not universal for other patients
we are able to get highback semi recliners and we have recycled the customized w/cs if family donates upon their death
Payment methods make it difficult. Consolidated billing can be a barrier. Letters of medical necessity are time consuming.
SCI patients or Patients with Hemiparesis have to be referred to w/c fitting specialists from companies who assess for neurological appropriate chairs.
Items get substituted by another managing therapist or so.
On rare occasion does this happen. If it does they try to find the next best option
Costs is reason why denied

Table 16: MWC not Meeting Expectations

having a pt who has the trunk control to sit in a standard back 18" w/c was given a 22" reclining back w/c.
Not having appropriate size wc to put a patient in. Too big, not the right height.
obtaining a reclining w/c instead of a tilt in space
n/a
They aren't that dumb to state it that way
standard "issue" DRIVE manual chair
Due to limited equipment/ lack of money

Support Associated with Providing MWC in SNFs

The survey contained one open-ended question that asked participants to present support that they have received when providing MWCs to their clients. There were 16 participants who responded to this survey item and responses are represented in Table 17. Responses ranged from "none" (n=1) to "I've been the one who has taken on the greatest role in this; DOR & Regional directors have been supportive, again w/ solid justifications. These are billable services!" (n=1).

Table 17: Support Received in Supplying MWC to SNF Clients

Our supplier's wheelchair expert are our biggest asset in finding what we can get for a patient at the most affordable option
Recycled equip for those who do not qualify or have poor funding
Connecting with wheelchair suppliers who help navigate the reimbursement or payment for the wheelchair.
natural resources such as lending libraries
ATP
our maintenance man is amazing, is is great at finding what I ask for and working with me to make sure the residents have what they need as fast as he can get to them
Administration and Vendor support!

Note. Summary of similar responses

Discussion

The purpose of this study was to gain an understanding of SNF providers' experiences in regards to acquiring mobility devices for their clients, specifically manual wheelchairs. Clinical practice and review of literature led to the development of the 4 outcomes that guided survey question development and will be addressed in the sections that follow. Review of literature indicates that there has been little research concerning how therapists provide manual wheelchairs to their clients. No literature was found that supported best practice in MWC provision as presented by RESNA Wheelchair Service Provision Guide (RESNA, 2011). This study was unique from existing literature in that it surveyed providers of MWC to understand their experiences.

Therapists' Description of Reimbursement Policies

Funding for MWC varies vastly from state to state due each state's allocation of funds procedure. A few respondents reported that their states provide funds for MWC with appropriate documentation. Other respondents identified that their facility would be reluctant to fund

individualized wheelchairs, but outside sources such as family might provide funds. According to CMS, spending on DME which includes wheelchairs, is expected to increase to $97.8 billion by 2027 (Pifer, 2019). A majority of participants felt that a separate funding category for MWCs would assist them in their ability to provide the appropriate chair for their clients. The majority of respondents felt that professional organizations should lobby Congress to increase funds for MWCs. The largest dollar amounts proposed received the most support from respondents. Review of lobbying efforts by AOTA does not indicate attempts to increase funding for DME. Of the over $9.4 million dollars spent by AOTA since January 2008, budget allocations have focused on provision of OT in school systems, Mental Health, and telehealth (ProPublica, 2015). While increased funding is needed to support best practices regarding provision of MWCs for improved client outcomes, other factors such as facility policies also impact clients' access to appropriate MWCs.

Effects of Facility Policy/Procedure on Provision of MWCs in SNFs

Participants identified processes they incorporated to provide MWCs to their clients. A number of the respondents identified that an O.T. evaluation would be performed most often with available facility owned wheelchairs. If an appropriate MWC could not be located or was not available, the theapist would seek approval from administration or family to purchase an appropriate wheelchair; however, approval from administration or family was not always provided which usually resulted in supplying a substandard facility wheelchair. McEachern and Mortensen's (2021) research supported the finding that lack of financial approval to purchase a MWC fitted to the resident often left the resident in an ill-fitting and heavy wheelchair (p. 668).

It appears that although a greater percentage of respondents report that they assess all residents for MWC needs, the assessments are not part of a comprehensive evaluation. RESNA

suggests that residents who use a MWC for longer than 6 months should have a comprehensive seating assessment (RESNA, 2011). McCain (2022) reports that the average life expectancy of a SNF resident is 2.2 years; given that 70-80% of SNF residents use wheelchairs for mobility, many will require compressive wheelchair evaluations to enhance occupational performance.

Survey participants were asked to share their productivity requirements and if they felt the requirements impacted their ability to provide MWCs to clients. There were a number of respondents who reported that their productivity requirement negatively affected their ability to supply appropriate MWC . These comments may correlate with the perception that comprehsive wheelchair evaluations are too time consuming. "Not enough time to give an individualized assessment" was the bulk of the comments received in this current study.

Residents of SNFs benefit from wheelchairs that have been configured to fit their needs. An appropriately configured MWC can provide the opportunity for residents to participate in occupational performance (Brienza et al., 2018; Gowran et al.,2020; Karmarkar et al., 2010; Paulisso et al., 2021 Woloszyn et al., 2021). Therapists have ethical responsibilities as established by AOTA Code of Ethics (AOTA, 2020) to provide fair, equitable and appropriate treatment for their clients. A comprehensive MWC evaluation can provide the client with access to occupational performance while respecting the organizations that employ the therapists (AOTA, 2020b). More research is needed with larger sample sizes to determine best practice in MWC provision, from initial contact with the client at evaluation all the way through delivery of the MWC to the client.

Wheelchair Provision from Evaluation to Delivery

Participants were asked if they utilized standardized evaluation to determine an appropriate wheelchair for their clients. The majority of respondents reported that they did not

utilize a standardized evaluation. This is consistent with the earlier reported survey item that facilities do not require a comprehensive fitting for MWC provision. Adopting standardized evaluations could assist therapists with establishing a comprehensive MWC fitting program. Establishing a structured evaluation process could give therapists the time needed for approiate provision of MWC.

Respondents to the survey reported that the length of time between requesting a MWC for a client and receiving the chair can be greater than 22 days. Most SNF residents are over 65 years of age (McCain, 2022) and are at increased risk of injury from poorly fitting wheelchairs (Wick & Zanni, 2007). Waiting over 22 days to receive an appropriately fitting MWC could place residents at risk for discomfort, decubitus ulcers, falls and even death. More research should be conducted to understand the length of time for MWC provision to develop best practices for ethically and timely supplying appropriately fitting MWCs to residents of SNFs. Research is also needed to explore barriers, both internal and external, to the appropriate provision of MWCs to clients in this setting.

The Challenges Associated with Provision of MWCs in SNFs

Participants discussed both internal and external challenges they have experienced when providing MWCs to their clients. Respondents reported that their administrators were often the internal challenge they faced. They also spoke of cost, disrepair of facility wheelchairs, and the residents' inabilities to advocate for themselves as internal challenges. One respondent stated that if the therapists were trained to create a valid and complete justification there was not a challenge in acquiring the MWC for clients. This supports training in wheelchair provision

(RESNA, 2011). Another respondent stated that their state would purchase standard MWCs, therefore this respondent did not feel acquiring MWCs was a challenge.

Participants who reported external challenges to acquiring MWCs focused on payer source as the main challenge. Payer sources were identified as insurance companies, Medicare/Medicaid, and private pay. One respondent felt the length of time it took to receive the wheelchair could be the external challenge and they reported that it could take up to a year for the respondent to receive their wheelchair. As reported earlier, clients could experience major changes in their body structure in a year which could affect the size/style of MWCs that would meet their needs.

The survey included 2 closed-ended questions that explored what happened when the recommended wheelchair was denied based on cost and if therapists had been instructed to supply a MWC that did not meet the therapists' expectations. A number of respondents reported they had been denied a MWC due to costs. Reasons given for denials varied from "cost, lack of universality of the wheelchair" (cannot be used for other residents), to "time required to write medical necessity letters to justify the wheelchair". Respondents identified that they would only have access to MWCs in their facility or with select vendors which often limited their ability to provide a custom MWC fitted to the client.

The majority of respondents to the question of whether or not they had been instructed to supply a MWC that did not meet expectations, responded that they had not been instructed to supply a MWC that did not meet expectations. One of the respondents who answered that they had been instructed to supply a sub-standard wheelchair had an interesting statement that "they aren't that dumb to state it that way". This possibly reveals some underlying tension between this respondent and their supervisors. Other answers indicated that therapists were instructed to

provide wheelchairs that might not be appropriate given the clients' functional status: "obtaining a reclining wheelchair instead of a tilt in space" and similar statements that point to provision of MWCs that could be detrimental to the client. While many barriers were reported by providers in this current study, some supports were also identified related to providing MWCs for clients in SNFs.

Support Therapists Receive when Providing Wheelchairs to Clients

The survey had one open-ended question to allowed respondents to identify support they had received in their attempts to provide MWCs for their clients. Respondents identified that vendors are often the best resources for acquiring MWCs. Other respondents identified staff at the facility where they were employed - OTs, and maintenance workers were reported to be the best supports by survey participants. One respondent did not feel they received any support, as indicated by their response of "none" to this question item. Conversely, respondents also identified their "administrator" and "DOR (director of rehab) and Regional Director" as supporting them, which was the opposite of what was identified in an earlier item where the majority of respondents reported that administrators were the challenge to providing wheelchairs. Adminstrators were identified as both a support and barrier in this current study.

Strengths and Limitations

Strengths: The research project answered the research questions proposed. The data collected provided insight on the process therapists utilize to supply MWCs to their clients. Results identified challenges that participants experience and their understanding regarding how policies/procedures impact MWC provision. The use of open-ended questions supplied clarity to closed-ended questions which provided deeper insight into the processes. Another strength of this study is that knowledge gained from the participants could promote further studies in MWC

provision. Knowledge gained from this capstone could further lead to more equitable distribution of MWCs to those who currently are being provided insufficient MWCs, limiting their occupational performance. Finally, the clinical knowledge base of the research team, including the faculty members and student researcher, was a strength of this capstone study. Each member has clinical experience with suppling MWCs to clients in SNFs.

Limitations: The survey size is a limit on the ability to generalize the results nationwide. The survey was posted on a number of social media sites and in local SNFs, therefore it is impossible to know how many potential therapists could have participated. The number of 42 respondents was less than the initial target of 50 respondents. These respondents' opinions might not be representative of the therapists who practice across the nation. Nationwide, the different states all have different processes and levels of support they provide for supplying MWCs. Therefore, while the therapists who responded might have limited support for wheelchair provision, therapists across the nation could have limitations that are not related to administrators of their facilities. Another possible limitation was how participants interpreted survey questions. Some responses to survey items indicated that participants misunderstood some of the open-ended questions. The final limitation was that no physical therapists identified that they participated in the survey, thus a possible large population of MWC providers were not represented in the responses.

Implications for Practice

This capstone study examined therapists' perspectives on MWC provision in SNFs. Juckett et al. (2021) identifies the importance of OT practioners providing their unique and valuable perspective in occupation to research which can guide the transition of knowledge into practice (p. 3). Therapists have limited research to develop interventions that are outcome-based

for best practice in wheelchair provision that is part of a comprehensive evaluation (RESNA, 2011). This capstone study identified that there are challenges providing wheelchairs in SNFs. Some of the challenges expressed were time, costs, funding sources, and administration. This report, as well as the study conducted by Brienza et al. (2018), indicate that residents with individual configured MWC show improvement in their safety and effective use. This research can be presented to administrators and funding sources to overcome some of these challenges. This capstone demonstrated the need for further study in the provision of MWCs in SNFs.

Future Research

This capstone study provided research to support the need for further study on the various state regulations/supports for MWC provision in SNFs. Data collection identified that funding for MWCs should be addressed in a uniform manor which will require further research to understand the variations in current funding. A larger and targeted distribution of research aimed at broader populations of MWC providers in SNFs would be beneficial. A survey aimed at a larger provider population would also provide the ability to increase generalization of the results.

Conclusion

Currently in the U.S., there are no established best practices for providing MWCs in SNFs. The process for supplying MWCs to residents can be time consuming, expensive and met with resistance from administrators, insurance companies and even families. Residents of SNFs who are not provided appropriate fitting MWCs are at risk of being deprived of occupational performance. They may also suffer physical or psychological consequences from an ill-fitting wheelchair. Funding for MWC can vary from state to state and there are no studies to determine best practice to supply wheelchairs to SNF residents. Therapists working in SNF would benefit

from considering the outcomes of this study to assist them with providing appropriate wheelchairs to their residents.

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Appendices

Appendix A

Hello Vincent Campbell,

Congratulations! Using a limited review process, the Institutional Review Board at Eastern Kentucky University (FWA00003332) has approved your request for an exemption determination for your study entitled, "Skilled Nursing Facility therapists' experience with acquiring wheelchairs for their clients" This status is effective immediately and is valid for a period of three years as long as no changes are made to the study as outlined in your limited review application. If your study will continue beyond three years, you are required to reapply for exemption and receive approval from the IRB prior to continuing the study.
As the principal investigator for this study, it is your responsibility to ensure that all investigators and staff associated with this study meet the training requirements for conducting research involving human subjects and comply with applicable University policies and state and federal regulations. Please read through the remainder of this notification for specific details on these requirements.

Adverse Events: Any adverse or unexpected events that occur in conjunction with this study should reported to the IRB immediately and must be reported within ten calendar days of the occurrence.

Changes to Approved Research Protocol: If changes to the approved research protocol become necessary, a Protocol Revision Request must be submitted for IRB review, and approval must be granted prior to the implementation of changes. If the proposed changes result in a change in your project's exempt status, you will be required to submit an application for expedited or full review and receive approval from the IRB prior to implementing changes to the study. Changes include, but are not limited to, those involving study personnel, subjects, recruitment materials and procedures, and data collection instruments and procedures.

Registration at ClinicalTrials.gov: If your study is classified as a clinical trial, you may be required by the terms of an externally-sponsored award to register it at ClinicalTrials.gov. In addition, some medical journals require registration as a condition for publication. In the case of journals with membership in the International Committee of Medical Journal Editors, clinical trials must be registered prior to enrolling subjects. It is important that investigators understand the requirements for specific journals in which they intend to publish. In the case of sponsored project awards, timeline requirements will vary for awards that require registration. Approved consent forms must be uploaded in the system for all Federally-funded clinical trials after subject enrollment has closed, but earlier registration is not required for all agencies. If you have questions about whether a sponsored project award requires registration and on what timeline, please send an email to tiffany.hamblin@eku.edu before beginning recruitment so that the specific terms of the award can be reviewed. If you have a need to register your study and do not have an account in the system, please send an email to lisa.royalty@eku.edu and request to have a user account created.
If you have questions about this approval or reporting requirements, contact the IRB administrator at lisa.royalty@eku.edu or 859-622-3636.

For your reference, comments that were submitted during the review process are included below. Any comments that do not accompany an "I approve" response have been provided to you previously and were addressed prior to the review process being completed.
View Application

Faculty Advisor Approval
Reviewer 1

Comments	Response
Reviewer Input: : Best of luck with your study.	I Approve

Reviewer 2

Comments	Response
Reviewer Input: : I look forward to collaborating with Vince on this research study.	I Approve

Department Chair Approval
Reviewer 1

Comments	Response
Reviewer Input: : good luck with the study	I Approve

IRB Review - Round 1
Reviewer 1

Comments	Response
Reviewer Input: : Approved	I Approve

Appendix B

Skilled Nursing Facility Therapists' Experience with Acquiring Wheelchairs for Their Clients

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Start of Block: Block 3

Q33 Skilled Nursing Facilities Therapists' Experience with Acquiring Wheelchairs for Their Clients.

Researchers at the Eastern Kentucky University are inviting you to take part in an online survey about. Skilled Nursing Facilities (SNFs) therapists' experience with acquiring wheelchairs for their clients.

If you are a healthcare provider in one of the following disciplines: occupational therapist, occupational therapist assistant, physical therapist, or physical therapist assistant we invite you to participate in the survey if you have been involved in the provision of wheelchairs to residents of SNFs.

The survey will take about 15 - 20 minutes to complete. There are no known risks to participating in this study. Your survey will be kept confidential to the extent allowed by law. When we write about the study you will not be identified as we will not be collecting personal information.

You have a choice about whether or not to complete the survey/questionnaire, but if you do participate, you are free to skip any questions or discontinue at any time. You will not be penalized in any way for skipping or discontinuing the survey. Please be aware, while we make every effort to safeguard your data once received from the online survey company (Qualtrics), given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes will be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to ask, my contact information is given below. Thank you in advance for your assistance with this important project. To ensure your responses/opinions will be included, please submit your completed survey by February 15, 2023.

If you do wish to participate in the study, you may complete the survey beginning on the next question. If you do not want to be in the study, there are no other choices except not to continue with the survey.

Please feel free to share the survey link with your colleagues or known contacts!

Sincerely, Vincent Campbell, OTR/L, ATP
Doctor of Occupational Therapy Program
Eastern Kentucky University
Phone: 260-710-7224
E-Mail: Vincent_campbell17@mymail.eku.edu
Committee Chair: Allen Keener, OTD, MS, OTR/L, ATP

IRB Approval #5058 Eastern Kentucky University of Institutional Effectiveness at (859) 622-0269

Please answer these questions based on your experiences while working in SNF setting.

I am giving my consent to participate in the survey by responding to the survey questions below.

End of Block: Block 3

Start of Block: Demographic

Q1 What is your profession?

- ○ OT (1)
- ○ OTA (2)
- ○ PT (3)
- ○ PTA (4)

Q2 How long have you been in your profession?

- ○ < 1 year (1)
- ○ 1 to 3 years (2)
- ○ 4 to 6 years (3)
- ○ 7 to 9 years (4)
- ○ > 9 years (5)

Q3 What length of time (in years) have you worked in a Skilled Nursing Facility (SNF)?

_____

Q4 What specialty certification do you have?

- ○ ATP (1)
- ○ SMS (2)
- ○ NRRTS (3)
- ○ Other, please list below (4) _____

Q5
What is your highest degree?

- ○ Associates (1)
- ○ Bachelors (2)
- ○ Masters (3)
- ○ Clinical Doctorate (4)
- ○ Research Doctorate (5)
- ○ Other, please list below (6) _____

End of Block: Demographic

Start of Block: Clinical Practice Questions

Q6 Have you received any formal or informal training in wheelchair provision (including fitting clients, finding appropriate cushions, and other accessories, etc.)

- ○ Yes (1)
- ○ No (2)

Skip To: Q7 If Have you received any formal or informal training in wheelchair provision (including fitting clie... = Yes

Q7 If yes, please describe:

_____

Skip To: Q8 If Condition: If yes, please describe Is Not Empty. Skip To: If Yes, did your facility provide the....

Q8 If Yes, did your facility provide the training?

- ○ Yes (1)
- ○ No (2)

Q9 What is your productivity requirement (in percentage) for your facility?

_____

Q10 Do you feel that this productivity requirement impacts your ability to engage in quality evaluation and/or provision of wheelchairs (including chair type, fit, cushions, accessories, etc.) with your clients?

- ○ Yes (1)
- ○ No (2)

Skip To: Q11 If Do you feel that this productivity requirement impacts your ability to engage in quality evaluati... = Yes

Q11 If yes, please describe:

_____

Q13 Would a separate Medicare/Medicaid funding category for Durable Medical Equipment (DME) assist with provision of wheelchairs in your facility?

- ○ Yes (1)
- ○ No (2)

Skip To: Q34 If Would a separate Medicare/Medicaid funding category for Durable Medical Equipment (DME) assist wi... = Yes

Q34 If yes please describe:

○ 1 (1) _____

Q14 Does your facility require a comprehensive wheelchair/mobility device evaluation prior to recommending/supplying/ordering the device?

○ Yes (1)

○ No (2)

Skip To: Q15 If Does your facility require a comprehensive wheelchair/mobility device evaluation prior to recomme... = Yes

Q15 If yes, who completes the evaluation?

○ OT (1)

○ PT (2)

○ Other, please list below (3) _____

Q16 Do you utilize a standardized evaluation to determine an appropriate wheelchair for your client?

○ Yes (1)

○ No (2)

Skip To: Q17 If Do you utilize a standardized evaluation to determine an appropriate wheelchair for your client? = Yes

Q17 If yes, please list assessment(s):

_____

Q18 Have you made recommendations for a wheelchair but been denied by facility administration due to cost?

- Yes (1)
- No (2)

Skip To: Q19 If Have you made recommendations for a wheelchair but been denied by facility administration due to... = Yes

Q19 If yes, please describe:

_____

Q20 Have you been instructed to provide a wheelchair that did not meet expectations?

- Yes (1)
- No (2)

Skip To: Q21 If Have you been instructed to provide a wheelchair that did not meet expectations? = Yes

Q21 If yes, please describe:

_____

Q22 Who decides how much will be spent on wheelchairs and power mobility devices in your facility?

_____

Q23 How long does it take to receive a wheelchair that you recommend to your supervisor/administrator?

- ○ less than 5 days (1)
- ○ 6-11 days (2)
- ○ 12-21 days (3)
- ○ 22 days or longer (4)

Q24 Describe the process that your facility uses to provide wheelchairs to residents.

_____

Skip To: Q25 If Condition: Describe the process that y... Is Not Empty. Skip To: Does the process include all facility....

Q25 Does the process include all facility residents?

- ☐ Yes (4)
- ☐ No (5)

Q26 At what point does the facility where you work provide the wheelchair assessment?

- ○ On Admission (1)
- ○ Within 14 days from admission (2)
- ○ Within 30 days from admission (3)
- ○ Other, please fill below (4) _____

Q27 Describe your evaluation process for providing wheelchairs to residents.

_____

Q28 Would you support professional organizations (like American Occupational Therapy Association, American Physical Therapy Association) lobbying congress to include funds in SNF reimbursement for wheelchair provision?

- ○ Yes (1)
- ○ No (2)

Skip To: Q29 If Would you support professional organizations (like American Occupational Therapy Association, Ame... = Yes

Q29 If yes, what dollar amount should be proposed?

- ○ $500-$950 (1)
- ○ $951-$1400 (2)
- ○ $1401-$1850 (3)
- ○ $1851 or more (4)

Q30 What challenges have you experienced acquiring recommended wheelchairs for your clients internally (i.e. administrator, DON, Rehab manager, etc.)?

_____

Q31 What challenges outside the facility have you experienced in acquiring recommended wheelchairs for your clients (ie. government payor sources, third party payor, etc.)?

_____

Q35 What support have you experienced in providing wheelchairs to clients of your facility?

_____

End of Block: Clinical Practice Questions