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Education and Perceptions of Post-Therapy Maintenance Programs in Long-Term Care: A mixed Methods Exploratory Study

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Education and Perceptions of Post-Therapy Maintenance Programs in Long-Term Care: A mixed Methods Exploratory Study

Abstract

Background: Occupational therapists develop maintenance programs (MPs) for long-term care (LTC) residents to optimize participation in everyday activities. The purpose of this study was to examine nursing professional attitudes and knowledge of MPs and to evaluate the effectiveness of an occupational therapist-led in-service.

Method: Nursing staff (n = 20) attended the in-service, completed a pre and posttest, and completed interviews (n = 5). We used an exploratory sequential mixed methods design with a one-group quasi-experimental design for the quantitative portion and a descriptive qualitative approach for the interviews.

Results: The results indicated significantly increased knowledge regarding MPs, use of the MPs, and overall perception of nursing management support ($p < 0.05$). Qualitative analysis of the interviews revealed four themes: MPs promote resident independence, perceived multiple barriers prevent implementation, the need for increased staff training and communication, and positive interdisciplinary MP communication.

Conclusion: Preliminary data indicated that therapists-led educational sessions may have a positive impact on nursing staff knowledge and perceptions of MPs. However, future programming to develop training to overcome barriers of MP implementation is needed.

Comments

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Keywords

functional decline, long-term care, maintenance programs, nursing facility, rehabilitation

Cover Page Footnote

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Credentials Display

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In 2015, more than 1.3 million persons resided in nursing facilities in the United States (Harris-Kojetin et al., 2019). Residents of nursing facilities have only a 44% probability of maintaining their current functional capacity and may experience a 54% decline in functional abilities over 2 years (Jerez-Roig et al., 2017). The cause of functional decline is multi-factorial, including age, education level, chronic illness, cognitive impairment, and continence changes (Jerez-Roig et al., 2017). In addition to the increased cost associated with the functional decline of older adults, the functional decline may result in a significant loss of quality of life for these individuals (McGrath et al., 2019). Rehabilitation services, including occupational therapy, physical therapy, and speech and language pathology, are covered by the Centers for Medicare and Medicaid Services (CMS) in nursing facilities based on medical necessity (CMS, 2019). Occupational therapists develop and implement intervention plans focused on helping long-term care nursing facility residents regain and maintain functional independence. These services include developing a collaborative intervention plan to address occupational performance needs and, when appropriate, creating a plan for the resident to return to home or the community (American Occupational Therapy Association [AOTA], 2015). If a resident is unable to return to the community safely, occupational therapists may develop programs aimed at helping residents maintain their current level of functional performance with everyday activities (AOTA, 2015). Such programs are designed to continue strategies developed during rehabilitation services to optimize the resident's occupational performance. Examples may include cueing strategies for residents with dementia, environmental modifications to address low vision, or provision of durable medical equipment for fall prevention. CMS (2014) identifies the establishment and implementation of maintenance programs by therapists as reimbursable when the following conditions are met:

To the extent provided by regulation, the establishment or design of a maintenance program by a qualified therapist, the instruction of the beneficiary or appropriate caregiver by a qualified therapist regarding a maintenance program, and the necessary periodic reevaluations by a qualified therapist of the beneficiary and maintenance program are covered to the degree that the specialized knowledge and judgment of a qualified therapist are required. (p. 64)

CMS defines a maintenance program (MP) as:

A program established by a therapist that consists of activities and/or mechanisms that will assist a beneficiary in maximizing or maintaining the progress he or she has made during therapy or to prevent or slow further deterioration due to a disease or illness. (CMS, 2014, p. 71)

MPs established by occupational therapists use ongoing interventions to help residents maintain the optimal level of functional independence on discharge from skilled therapy services. The burden of ensuring these programs are carried out often falls on the nursing staff. Examples may include the provision of adaptive equipment during dressing or self-feeding; environmental modifications, such as appropriate lighting or proper setup for grooming or toileting; and optimal assistance and cueing during functional transfers. MPs are designed by skilled therapists, like occupational and physical therapy therapists. They include the training of caregivers to facilitate continued implementation upon discharge from therapy services (CMS, 2014).

With proper and consistent implementation, researchers have demonstrated the positive effects of general maintenance programs in nursing facilities. Lee and Hee (2016) concluded, through a meta-analysis of fall prevention programs in long-term care, that exercise programs are effective for fall prevention. They further concluded that such programs demonstrate greater effectiveness when combined with additional strategies, such as modifying the environment or using assistive devices, like walkers or grab bars, for stability during transfers and mobility (Lee & Hee, 2016). Huang and colleagues (2016) also demonstrated that exercise-based groups combined with cognitive-behavioral training positively affected fall prevention in older adults. Kuo et al. (2017) also reported that participation in physical activities alleviated depression, prevented cognitive decline, and improved physical function in long-term care. A systematic review by Roe et al. (2015) also reported the positive effects of toileting programs in long-term care on the management of urinary incontinence. These examples all demonstrate the potential benefit of consistent implementation of MPs.

The success of these programs, however, is dependent on the consistent implementation by the certified nursing assistants (CNAs), who provide care under the direct supervision of licensed practical or registered nurses. Broad (1997) reported that CNAs transfer into practice only 10%–30% of the activities for which they are trained. Furthermore, Aylward and colleagues (2003) reported poor long-term carryover of care-based information presented to CNAs. This is likely because of many factors, such as limited training, that result in a lack of clinical knowledge and skills, high turnover, use of agency staff, understaffing (Castle et al., 2016), and a lack of empowerment (Barry et al., 2019). A multi-faceted intervention that includes education, on-the-job coaching, and policy has been shown to have a greater effect on nursing behaviors in nursing homes (den Ouden et al., 2019). Furthermore, den Ouden and colleagues (2019) found a difference between perceived and observed behaviors among nursing staff in nursing homes. Empowering education is an emerging framework that shows positive results when applied to the ongoing education of nursing staff (Ahamed & Meshah, 2019; Chaghari et al., 2017). This theory places a high focus on self-direction and the practicality of education. In this context of self-direction, the empowering education model calls for staff participation in the design and implementation of training and in addressing organizational challenges (Chaghari et al., 2017). Chaghari et al. (2017) concluded that greater educational outcomes are achieved when the learners are engaged in creating and evaluating the training methods. To facilitate the successful and consistent implementation of MPs, occupational therapists must engage the learners in the learning process by first exploring and understanding the perceived barriers faced by the nursing staff charged with carrying out the programs.

This study aimed to explore the perceptions and knowledge of nursing staff in a nursing facility toward MPs and to evaluate the effectiveness of education on the nursing staff's understanding of these programs and attitudes toward these programs. The researchers addressed two questions: What are the attitudes of nursing professionals toward maintenance programs implemented by therapists in nursing facilities? Does increased education on MPs affect nursing staff's understanding of and attitude toward the programs?

Method

This study used an explanatory sequential mixed methods design allowing the researchers to first collect and analyze quantitative data and then use qualitative information to explain the results (Creswell & Clark, 2018). DePoy and Gitlin (2016) further stated that mixed method designs may use qualitative data to explain knowledge gaps through further exploration of a topic. An explanatory sequential design was used, beginning with a quasi-experimental component with a pre/post survey format. This design was

chosen to address the research question related to the impact of education on the attitudes and knowledge of MPs. According to Portney (2020), this design may be used to measure the effectiveness of an intervention. For this study, the intervention was in-service training. This was followed by a naturalistic component using a descriptive qualitative approach through interviews (Thomas, 2006). According to DePoy and Gitlin (2016), interviews allow for probing of an individual's perceptions and experiences. This study received institutional review board approval, and all of the participants provided consent.

Participants

The participants were recruited from a skilled nursing facility that implements an active functional maintenance program system. The participants consisted of registered nurses, CNAs, and licensed practical nurses who have worked in the facility for at least 3 months as full-time, part-time, or per diem employees and have participated in MPs. Additional inclusion criteria for each portion of the study included the ability to read, write, and communicate in English. For the quantitative portion, the inclusion criteria also included the ability to attend the education component on the designated date. Exclusion criteria included working at the facility for less than 3 months, being under 19 years of age, and having no exposure to MPs at this facility.

For both parts of the study, nonprobability convenience sampling was used. The participants who met the inclusion and exclusion criteria and agreed to participate in the study were recruited. The participants were recruited through informational flyers placed throughout the facility approximately one month before the in-service training. The primary researcher also made two personal contacts with potential participants, explaining the study and answering questions as needed. The interview participants were not required to participate in the quantitative portion of the study, nor were they excluded from the interview if they chose to participate in the quantitative portion. Of the five interview participants, two also participated in the quantitative portion. Because of limitations of time and resources, the researchers completed only five interviews.

Instruments

Survey

For the quantitative portion of this study, the first and second authors followed Creswell and Clark's (2018) mixed methods study design and developed a 22-question survey using information from the literature, their combined 40 years of long-term care clinical expertise, and Dillman's guide to survey development (Dillman et al., 2014). The eleven questions used a Likert scale to gather data, both pre and post data, regarding the maintenance program education and to determine the change in the nursing staff's perceptions and attitudes toward MPs. The answer choices included five options, rated 1–5: *never*, *sometimes*, *about half the time*, *most of the time*, and *always*. Five questions used multiple-choice to assess the participants' knowledge about MPs. The multiple-choice questions consisted of both single-answer and multiple-answer questions to limit the effects of guessing and were used to compare knowledge about MPs before and after the education component. The remaining five questions inquired about the participant's demographic information. An expert panel (n = 4) of bioethics, public health, and occupational therapy researchers reviewed the survey for content validity, with minor wording clarifications made after the review.

Questionnaire

Following Thomas' (2006) broad qualitative approach, the researchers developed a semi-structured questionnaire to guide the individual interviews. The first two researchers used a similar process to the survey development through the careful reflection of their combined clinical expertise, literature

review, and an expert panel review (n = 4). An additional expert panel consisting of one physical therapist and one occupational therapist from the same facility reviewed the questionnaire and provided feedback to increase the validity of the questionnaire. These experts were chosen based on their consistent use of MPs at the facility and ongoing interaction with the nursing staff. The questionnaire provided the participants with an opportunity to provide in-depth answers to the previous survey questions and to identify any additional perceptions, attitudes, and barriers to the implementation of the maintenance programs (see Figure 1). The questionnaire also sought information about the perceived benefit of increased education for MPs. Finally, probing questions allowed for further exploration of emerging topics as needed.

Figure 1

Semi-Structured Interview

1. Tell me about yourself.
2. How do you feel about maintenance programs set up by the therapists?
3. Tell me about your experiences with maintenance programs.
4. How does implementing maintenance programs affect your job?
5. What effect do you think the maintenance programs have on the residents?
6. Tell me about your interaction with the therapists with the maintenance programs.
7. How did the training session impact your opinion of maintenance programs?
8. From your experience, what are the barriers to performing maintenance programs in your facility? Can you give me examples?
9. What has been helpful for you to follow through with maintenance programs?
10. What would support you to follow through with maintenance programs?

Procedures

The quantitative portion of the study used a quasi-experimental one-group pretest post-test design. The participants gathered at the skilled nursing facility on the date designated by the facility administrator for mandatory in-service training. Those who chose to participate in the study completed a paper survey consisting of various closed-ended questions designed to evaluate the participants' attitudes toward and knowledge of maintenance programs. Knowledge-based questions addressed the participants' understanding of MPs' purpose, benefits, and requirements. Perception-based questions addressed the participants' experiential attitudes toward MPs. The empowering education theory for in-service training in health care was used to guide question development. The participants then attended a 30-min educational seminar about the history, benefits, and implementation strategies of MPs. Information about the history of MPs and recent legal rulings was included to educate the participants about legal obligations to provide services that help residents prevent functional decline. Additional information included research illustrating the benefits of MPs for both residents and staff and practical strategies to foster

successful implementation. This seminar was conducted by the primary researcher, an occupational therapist. The participants then immediately completed the same survey as a post-test for score comparison. The participants were given a \$5 gift card on completion of the post-test. Unique numeric identifiers were used to match pre and post surveys.

The interviews focused on extricating and describing the experiences of the participants. On notification from a potential participant of consent to conduct the interview, the researcher established a time and a location for the interview. The interviews were conducted face-to-face by the primary researcher to establish rapport and elicit in-depth information from the respondents' verbal answers as well as their physical behaviors. An audio recorder was used to record the interviews. The primary researcher then used a web-based program for the transcription of the interviews. Fidelity was maintained through the researcher directly comparing the transcription to the audio file. The participants were given a \$10 gift card upon completion of the interview.

Analysis

Data analysis occurred through a sequential mixed methods approach. The pre and posttest survey scores were entered in Statistical Package for Social Science (SPSS) for data analysis (Version 26; IBM Corp., Armonk, NY). The Wilcoxon signed-rank test calculated the change in perceptions about MPs, while the McNemar test calculated the change in knowledge about MPs.

For the qualitative portion of the study, a broad qualitative approach through inductive analysis was implemented to describe the participants' experiences with MPs (Thomas, 2006). The first two authors read and re-read the transcripts for immersion in the data. Initial codes were then individually identified. Following additional readings of the transcript and a review of the initial codes, the researchers organized the codes into preliminary themes using the identification of common phrases or words until consensus was achieved. The first two authors discussed, debriefed, and categorized the preliminary themes into final emergent themes based on content similarity.

Trustworthiness was established through multiple methods. First, we employed methodological triangulation by using both quantitative and qualitative methods (Curtin & Fossey, 2007). The first author maintained a detailed audit trail through electronic notes of the entire research process, allowing for a thick description of the investigated topic, methods, and procedures to establish transparency and appropriateness of the study (Curtin & Fossey, 2007). The first and second authors engaged in electronic journaling and peer debriefing to allow for reflexivity and acknowledgment of the researchers' thoughts and interests in the topic of study. The first author maintained an additional journal to guide decisions and reflect on reasons for decisions during the study. To complete member checking, the first author presented the final themes to three members of the nursing staff, two of whom participated in the interview, to establish the transferability of the findings. All three staff members agreed with the thematic findings from the interviews.

Results

Twenty of the participants completed the quantitative portion of the study. These participants all completed the pre survey, attended the in-service training, and completed the post-survey immediately following the training session. Five individuals participated in the qualitative portion of the study by completing the individual interview. Two of these participants completed both portions of the study. The demographic information of the participants is illustrated in Table 1.

Table 1*Demographic Information of Participants*

	Survey (n = 20)		Interviews (n = 5)	
	n	%	n	%
Gender				
Male	2	10.0	0	0
Female	18	90.0	5	100.0
Profession				
LVN	7	35.0	2	40.0
CNA	12	60.0	3	60.0
RN	1	5.0	0	0.0
Age (years)				
19–24	5	25.0	0	0.0
25–34	6	30.0	1	20.0
35–44	2	10.0	2	40.0
> 44	7	35.0	2	40.0
Ethnicity				
Caucasian	8	40.0	2	40.0
African-American	3	15.0	1	20.0
Latino	8	40.0	2	0.0
Asian/Pacific Islander	1	5.0	0	0.0

Note. CNA = certified nursing assistant; LVN = licensed vocational nurse; RN = registered nurse.

Survey Findings*Perception Questions*

The participants completed a survey immediately before and immediately following a 30-min in-service educational section presented by the primary investigator. The survey scores were then compared to evaluate the effects of the training. Eleven questions used a Likert scale to evaluate participants' perceptions about MPs (see Table 2). All of the participants demonstrated a positive change from pretest to posttest scores.

Table 2*Comparison of Pre and Posttest Scores and Associated p-values for Perception Questions and Knowledge Questions*

Questions	Mean ± SD Pre Score	Mean ± SD Post Score	t	p
I understand what I am supposed to do.	4.5 ± 0.6	4.6 ± 0.5	-.577	.564
I have time to complete MP activity.	3.6 ± 0.9	4.0 ± 0.9	-1.721	.085
I believe MPs are important.	4.9 ± 0.4	4.9 ± 0.4	.000	1.000
I believe MPs make my job easier in the long run.	4.8 ± 0.4	4.0 ± 0.3	-1.732	.083
Other shifts should complete MPs.	4.5 ± 1.0	4.7 ± 0.9	-1.342	.180
I plan to do the MPs as directed.	4.6 ± 0.7	4.0 ± 0.4	-1.667	.096
I am able to remember all of the MPs.	4.1 ± 0.8	4.2 ± 0.7	-.796	.426
I know the MPs on other halls.	2.6 ± 1.2	2.8 ± 1.3	-1.414	.157
MPs are useful.	4.6 ± 0.7	4.0 ± 0.4	-1.667	.096
My manager supports MPs.	3.5 ± 1.2	4.2 ± 1.2	-2.565	.010*
Therapists help me implement MPs.	3.9 ± 1.0	4.2 ± 0.9	-1.207	.228

Note. MPs = maintenance programs.

Five additional questions on the survey addressed the participants' knowledge about MPs. Pre and posttest scores for the five questions were scored using a binary system for correct or incorrect (see Table 3). Four out of five questions achieved statistical significance for positive score change. One question demonstrated a positive score change without achieving significance. The statistically significant improvement in knowledge about MPs suggested that the participants had a better understanding of the historical development of MPs and the constitution of an MP following the lecture.

Table 3

Comparison of Pre and Posttest Correct Answers and Associated p-values for Knowledge Questions

	Pretest Correct Answers (N = 20)	Posttest Correct Answers (N = 20)	p
CMS addresses prevention of functional decline.	16	19	0.250
Which are effects of physical activity?	10	18	0.021*
Which law established nursing home guidelines?	9	18	0.004*
Which are examples of MPs?	7	19	0.001*
Which recent Supreme Court case addressed maintenance in nursing homes?	2	10	0.008*

Note: Based on the McNemar test, *notes statistical significance with $p < .05$; CMS = Centers for Medicare and Medicaid Services.

Questionnaire Findings

Five members of the nursing staff completed individual interviews with the primary researcher, two of whom also completed the quantitative portion. From these interviews, the following themes emerged: MPs help residents maintain independence, barriers exist that limit implementation, more communication and training of nursing staff are needed, and staff perceives positive collaboration with occupational therapists. The theme of barriers was further divided into the following three subthemes: time management, not knowing the programs, and resident refusal to participate. The themes are described in detail below.

Maintenance Programs Promote Resident Independence

All five of the participants identified the use of MPs in helping residents maintain independence. They all agreed that the MPs provide residents with something to do after the conclusion of therapy services, which helps to maintain skills. They also all agreed that helping the residents maintain functional independence is beneficial to both the residents and the staff. One participant stated that the MPs “benefit the resident when they are out of therapy.” Another stated, “once they’re [residents] out of therapy, they have nothing to do.” They all agreed that MPs can be beneficial in terms of fall prevention, contracture management, and prevention of functional decline. One participant noted that there is “always potential for slowing down something [decline],” while another stated that “I still think there’s a chance there to capture some of what they were functioning at prior to coming here.” They also all identified the importance of the residents having things they can do for themselves. As one participant stated, “the more they’re able to do for themselves, it helps in the long run.”

Barriers Prevent Implementation

Time Management. Four out of five of the participants identified time management as a barrier to implementation. They noted that they are often short-staffed, which affects their workload. They also noted that unexpected events, such as the admission of new residents, can often affect their workload by adding unanticipated and unscheduled tasks to their workday. One participant stated, “If you get changed to a different hall if we’re short-staffed, it’s just, it just depends on what kind of day you are having.” Another stated, “just [being] shorthanded on floor. That’s my main thing” when asked to describe potential barriers.

Unfamiliarity with MPs. Four out of five of the participants identified a lack of knowledge about MPs, as each resident has an individualized program. Furthermore, the participants stated that they might not be familiar with the various care programs (or MPs) for residents for whom they do not frequently care or work. Because the CNAs are often moved to different halls, this becomes a barrier to implementation. One participant stated, “say we get moved to a different hallway or get changed to different people, we need to know what kind of program they’re on.” Another stated, “everybody needs to know what they are doing.” When asked about the current system in place of program identification, the participants all stated that the system is inefficient and impractical in that the programs are not included in the current electronic documentation system for the nursing staff. The participants recommended writing orders for the programs so that they appear in their daily documentation. Another participant requested that the programs be posted on the residents’ closet door to improve the staff’s access to information about the specified program.

Refusal to Participate. All five of the participants identified resident participation as a barrier to implementation. They reported that implementing the programs requires that the residents participate in the program when the caregiver has time to implement it. Often, this interferes with other activities or resident preferences. They further stated that the residents would often do activities for the occupational therapists, but they want the caregivers to provide more assistance. One participant stated, “that’s a struggle sometimes. It’s like, I’m not going to do that. I’m done. I’m finished.” Another participant stated that “residents know who’s the therapist and who’s the CNA.” Four of the participants believed that the residents participate more for the therapists and may express interest in the programs to the therapists but then refuse to complete them with the staff.

Increased Training And Communication

The participants identified several factors related to the need for additional training and communication with the occupational therapists developing the MPs. The participants stated that they needed training earlier in the process rather than at the time of discharge from therapy. They also reported a preference for a demonstration of the MPs from the therapists. One participant expressed the benefit of visual aids for communication. Four of the participants also stated that the current education focuses on the CNAs only rather than the charge nurses. All of the participants agreed that nursing professionals from all shifts should be trained and educated on the programs. One participant stated, “there are a lot of things that there’s a gap in therapy and nursing because therapists know a lot of stuff about nursing, but nursing doesn’t know too much stuff about therapy stuff.” Another stated, “I think it could be a little bit better as far as communication,” while another stated, “always more training is better.” Both suggested that training with the therapists as soon as an MP is developed would be beneficial, allowing the nursing professional time to practice the program with supervision and feedback.

Positive Interdisciplinary Communication

When asked about the general environment of collaboration and communication with the occupational therapists, all five of the participants agreed that they view their interactions with the therapists as positive. They all stated they felt comfortable asking the therapist questions, seeking recommendations, and requesting further training. One participant stated, “If I don’t know exactly what to do, they always explain it or show it.” Another reported, “I think they’re receptive to hearing what nursing has to say.” A third reported, “I interact with the therapists really good, you know?”

Discussion

This study aimed to explore the perceptions and knowledge of nursing staff in a nursing facility toward MPs and to provide a preliminary evaluation of the effectiveness of education on the nursing staff's understanding of these programs and attitudes toward these programs. The results of the quantitative portion of this study indicate that an educational session had a positive effect on knowledge but only a minimally positive effect on the perception of the nursing staff in the skilled nursing facility. However, only one question achieved statistical significance for a positive score change ($p < .05$), and four additional questions approached statistical significance with $p < .1$. The questions that achieved or approached statistical significance included the following: I have time to complete MP activity; I believe MPs make my job easier in the long run; I plan to do MPs as directed; MPs are useful, and my manager supports MPs. The improvement in these categories suggested that the information presented during the lecture regarding the use of MPs and the strategic recommendations made during the presentation may have positively affected these perceptions. This positive change was an expected finding supported by existing data that shows education to have a positive effect on nursing interventions in nursing homes (Bleijlenevens et al., 2013; den Ouden et al., 2019; Rahn et al., 2017). However, only one perception question achieved a statistically significant change. This could be attributed to the short duration and unimodal form of education (lecture only). This indicates the need for additional facets of intervention regarding the successful implementation of MPs. den Ouden et al. (2019) also expressed the importance of nursing staff awareness of their roles in care, supporting the idea that informational education could impart knowledge about MPs.

The interview results indicated that nursing professionals generally have positive attitudes toward MPs. The participants agreed that MPs are beneficial to the residents in that they help residents maintain progress made during therapy. They also agreed that MPs offer the residents activities to do upon the completion of therapy services. However, multiple barriers to implementation existed. Specifically, the participants identified time management, lack of education, resident factors, and poor communication as limiting factors. These results are congruent with previous studies, which identified similar barriers to resident care. Chan and Chan (2018) reported limited knowledge, staffing deficits, and poor communication as primary barriers to the implementation of fall prevention programs in nursing homes. Similarly, Benjamin et al. (2014) cited staffing issues, communication, resident factors, and lack of time as barriers to restorative care in nursing homes. The participants recommended increased education over a longer period before resident discharge from therapy and increased demonstrations and coaching for optimal carryover.

Limitations

The primary limitation of this study was the number of participants. This preliminary study was only completed at one facility, and the participants were only representative of that facility. The generalizability of these results to other facilities is unknown because of the differences in the use of and exposure to MPs among facilities. In addition, the in-service training was limited in scope and consisted of only one education session. This limited intervention offers insight into the potential benefits of education of the nursing staff for the successful implementation of MPs. However, no data were gathered to measure the actual effect of the educational session on the implementation of MPs. Although the survey showed that the educational intervention affected the knowledge of the participants, the educational intervention had a limited effect on the participants' perceptions about MPs. In addition, the study did not measure whether or not the educational intervention affected the actual implementation of MPs.

Future Research

This study explored the preliminary effectiveness of an educational program that consisted of only a lecture for a specific long-term care facility. Future research should explore the effects of expanded educational sessions. Such studies should also evaluate the value of multi-faceted educational programs which incorporate such educational modes as lectures, demonstrations, return demonstrations, and coaching. The educational session presented in a lecture format was sufficient in increasing the knowledge of the participants but nominally changed the nursing staff's perceptions. The focus of these other facets of the educational program should introduce the material that also addresses the perception of the participants. In addition, future studies should expand the program into other facilities to explore the generalizability of the program. Future studies should also collect data about how the educational programs benefit the residents who participate in the MPs. Furthermore, future research should utilize the information gathered from the qualitative portion to guide program modifications and measure the effectiveness of such changes.

Implications for Practice

This exploratory study supports the growing body of literature which identifies the impact of continued nursing staff education on the quality of care. Kim and Tak (2018) indicated that the knowledge and attitudes of nursing staff affect care behaviors. However, current research demonstrates the necessity of multi-faceted systems of education as opposed to unidimensional education. Kuk et al (2017) reported that nursing staff prefers interactive sources of education. Additionally, Dahl et al (2018) identified the necessity of accounting for fluctuating contextual factors for effective education and program implementation in nursing homes. This integrated information implies that occupational therapists should use multiple educational modes and account for contextual fluidity when designing educational programs for nursing professionals

Conclusion

This study revealed information about what nursing professionals in this nursing facility perceive about MPs. Preliminary information was gathered about perceptions of the benefits of MPs, the communication and implementation process of MPs, and the barriers to implementation. Both positive and negative aspects of the programs were explored, resulting in knowledge that can be used to improve the system of education, communication, and implementation. Occupational therapists can use this information when designing MPs with increased consideration of potential barriers such as resident compliance and nursing staff scheduling and shortages. Based on information from this study, therapists should consider using MPs during all shifts and provide adequate interactive education to nursing staff across all shifts and job descriptions. Occupational therapists should design MP systems that ensure that all nursing staff always have access to current programs. By considering the perceptions and recommendations of the nursing staff indicated in this study, occupational therapists can foster optimal collaboration with the nursing staff and successful implementation of MPs.

References

- Ahamed, D. S., & Mesbah, S. K. (2019). Empowering education: As a new vision of nursing education. *IOSR Journal of Nursing and Health Science*, 8(3), 88–92. <https://doi.org/10.9790/1959-0803048892>
- Aylward, S., Stolee, P., Keat, N., & Johncox, V. (2003). Effectiveness of continuing education in long-term care. *The Gerontologist*, 43(2), 259–271. <https://doi.org/10.1093/geront/43.2.259>
- American Occupational Therapy Association. (2015). *Fact sheet: Occupational therapy's role with skilled nursing facilities*. Retrieved from: https://www.aota.org/-/media/Corporate/Files/AboutOT/Professionals/WhatIsOT/RDP/Facts/FactSheet_SkilledNursingFacilities.pdf
- Barry, T., Longacre, M., Carney, K. O., & Patterson, S. (2019). Team inclusion and empowerment among nursing staff in long-term care. *Geriatric Nursing*, 40(5), 487–493. <https://doi.org/10.1016/j.gerinurse.2019.03.014>

- Benjamin, K., Edwards, N., Ploeg, N., & Legault, F. (2014). Barriers to physical activity and restorative care for residents in long-term care: A review of the literature. *Journal of Aging & Physical Activity*, 22(1), 154–165. <https://doi.org/10.1123/japa.2012-0139>
- Bleijlevens, M. H., Gulpers, M. J., Capezuti, E., van Rossum, E., & Hamers, J. P. (2013). Process evaluation of a multicomponent intervention program (EXBELT) to reduce belt restraints in nursing homes. *Journal of the American Medical Directors Association*, 14(8), 599–604. <https://doi.org/10.1016/j.jamda.2013.03.002>
- Broad, M. L. (1997). Overview of transfer training: From learning to performance. *Performance Improvement Quarterly*, 10(2), 7–21. <https://doi.org/10.1111/j.1937-8327.1997.tb00046.x>
- Castle, N., Handler, S., & Wagner, L. (2016). Hand hygiene practices reported by nursing aides in nursing homes. *Journal of Applied Gerontology*, 35(3), 267–285. <https://doi.org/10.1177/0733464813514133/jag.sagepub.com>
- Centers for Medicare and Medicaid Services. (2014). CMS Manual System: Pub 100-02 Medicare Benefit Policy Transmittal 179. <https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R179BP.pdf>
- Centers for Medicare and Medicaid Services. (2019). State Operations Manual, Chapter 7: Survey and enforcement process for skilled nursing facilities and nursing facilities. <https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/som107c07pdf.pdf>
- Chaghari, M., Saffari, M., Ebadi, A., & Ameryoun, A. (2017). Empowering education: A new model for in-service training of nursing staff. *Journal of Advances in Medical Education & Professionalism*, 5(1), 26–32.
- Chan, D. K. Y., & Chan, L. K. M. (2018). Falls in nursing homes: Challenges from a nursing perspective. *British Journal of Community Nursing*, 24(1), 6–8. <https://doi.org/10.12968/bjcn.2019.24.1.6>
- Creswell, J., & Clark, V. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications, Inc.
- Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *The Australian Occupational Therapy Journal*, 54(2), 89–94. <https://doi.org/10.1111/j.1440-1630.2007.00661.x>
- Dahl, H., Dewing, J., Mekki, T. E., Haland, A., & Oye, C. (2018). Facilitation of a workplace learning intervention in a fluctuating context: An ethnographic, participatory research project in a nursing home in Norway. *International Practice Development Journal*, 8(2), 1–17. <https://doi.org/10.19043/ipdj.82.004>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method* (4th ed.). Wiley.
- den Ouden, M., Zwakhalen, S. M. G., Meijers, J. M. M., Bleijlevens, M. H. C., & Hamers, J. P. H. (2019). Feasibility of DAILY NURSE: A nursing intervention to change nursing staff behaviour towards encouraging residents' daily activities and independence in the nursing home. *Journal of Clinical Nursing*, 28(5–6), 801–813. <https://doi.org/10.0000/jocn.14677>
- Depoy, E., & Gitlin, L. (2016). *Introduction to research: Understanding and applying multiple strategies* (5th ed.). Elsevier.
- Harris-Kojetin, L., Sengupta, M., Lendon, J. P., Rome, V., Valverde, R., & Caffrey, C. (2019). Long-term care providers and services users in the United States, 2015–2016. National Center for Health Statistics. *Vital Health Statistics*, 3(43). https://www.cdc.gov/nchs/data/series/sr_03/sr03_43-508.pdf
- Huang, T., Chung, M., Chen, F., Chin, Y., & Wang, B. (2016). Evaluation of a combined cognitive behavioral and exercise intervention to manage fear of falling among elderly residents in nursing homes. *Aging & Mental Health*, 20(1), 2–12. <https://doi.org/10.1080/13607863.2015.1020411>
- IBM Corp. (2019). IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp
- Jerez-Roig, J., Ferreira, L., Araujo, J., & Lima, K. (2017). Functional decline in nursing home residents: A prognostic study. *PLOS One*, 12(5). <https://doi.org/10.1371/journal.pone.017753>
- Kim, J., & Tak, S. (2018). Factors influencing care behavior of certified care assistants for older adults with dementia. *Journal of Korean Gerontological Nursing*, 20(3), 185–192. <https://doi.org/10.17079/jkgn.2018.20.3.185>
- Kuk, N. O., den Ouden, M., Zijlstra, G. A. R., Hamers, J. P. H., Kempen, G. I. J. M., Bours, G. J., & J. W. (2017). Do nursing staff encourage functional activity among nursing home residents? A cross-sectional study of nursing staff perceived behaviors and associated factors. *BMC Geriatrics*, 17, 1–10. <https://doi.org/10.1186/s12877-017-0412-9>
- Kuo, H., Lin, K., Lan, C., & Li, I. (2017). Activities of daily living trajectories among institutionalized older adults: A prospective study. *Journal of Clinical Nursing*, 26(23–24), 4756–4767. <https://doi.org/10.1111/jocn.13828>
- Lee, S., & Hee, S. (2016). Exercise interventions for preventing falls among older people in care facilities: A meta-analysis. *Worldviews on Evidence-Based Nursing*, 14(1), 74–80. <https://doi.org/10.1111/wvn.12193>
- McGrath, R., Al Snih, S., Markides, K., Hackney, K., Bailey, R., & Peterson, M. (2019). The Burden of Functional Disabilities for Middle-Aged and Older Adults in the United States. *Journal of Nutrition, Health, and Aging*, 23(2), 172–174. <https://doi.org/10.1007/s12603-018-1133-2>
- Portney, L. (2020). *Foundations of clinical research: Applications to evidence-based practice* (4th ed.). F.A. Davis.
- Rahn, A. C., Behncke, A., Buhl, A., & Kopke, S. (2017). Implementation of a guideline-based programme on physical restraint reduction in home care and nursing homes in northern Germany—multi-centre before-after study. *BMC Nursing*, 16, 1–4. <https://doi.org/10.1186/s12912-017-0218-2>
- Roe, B., Flanagan, L., & Maden, M. (2015). A systematic review of systematic reviews for the management of urinary incontinence and promotion of continence using conservative behavioral approaches in older people in care homes. *Journal of Advanced Nursing*, 71(7), 1464–1483. <https://doi.org/10.0000/jan.12613>
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2), 237–246. <https://doi.org/10.1177/1098214005283748>

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