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Rest and Sleep Patterns and Activities of Residents in Long-term Care Facilities: A Descriptive Study

Pei-Fen Chang

Texas Woman's University – USA, pchang@twu.edu

Kai-Lai Tsai

Texas Woman's University, Houston – USA, ktsai@twu.edu

Clarissa Richard

Aldine Independent School District – USA, crrichard2@aldineisd.org

Harriett A. Davidson

Texas Woman's University – USA, h davidson380@att.net

Gayle Hersch

Texas Woman's University, Houston – USA, ghersch@twu.edu

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Rest and Sleep Patterns and Activities of Residents in Long-term Care Facilities: A Descriptive Study

Abstract

Background: To facilitate healthy occupational participation and highlight the significance of rest and sleep for older adults, this study aimed to provide a description of rest and sleep patterns and activities of residents in long-term care facilities (LTCFs).

Method: Secondary analysis of rest and sleep data collected from a funded R21 study was conducted. Twenty-nine residents were interviewed using the Yesterday Interview (YI) to describe their time and daily activities, including rest and sleep patterns and activities.

Results: Average time spent sleeping was 10.22 (± 1.77) hr and resting was 4.77 (± 3.3) hr. Data were also collected on the personal and instrumental daily living activities in which residents participated during rest time and sleep preparation.

Conclusion: Occupational therapists working with residents in LTCFs are well suited to incorporate rest and sleep interventions that will enhance the occupational performance of daily living activities. Future research efforts should be directed at strategies to increase the sleep health of residents in LTCFs in collaboration with other in-house professions.

Keywords

rest, sleep, long-term care facilities, occupational participation

Cover Page Footnote

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Credentials Display

Pei-Fen J. Chang, PhD, OTR; Kai-Li Tsai, PhD; Clarissa Richard, MOT; Harriett A. Davidson, MA; Gayle I. Hersch

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As the aging population increases, the need for long-term care facilities (LTCFs) has grown dramatically (Congressional Budget Office, 2013). In 2015, the number of LTCF residents increased to 1.3 million (Harris-Kojetin et al., 2019). Roberts and Evenson (2009) indicated that LTCFs offer health care services to clients who require 24/7 care for an indefinite time and whose home environment makes their functional maintenance and improvement not possible. Chiba (2013) identified several sleep-related disturbances among older adults who reside in LTCFs, such as sleep fragmentation, awakening earlier, decreased deep sleep, medical or psychiatric disease, and sleep disorders. According to Neikrug and Ancoli-Israel (2010), these sleep disturbances can be attributed to multiple factors, including age-related changes in sleep architecture and circadian rhythms, sleep disorders, dementia, depression, other medical illnesses, polypharmacy, and institutional and environmental factors. Researchers have noted that sleep abnormalities are associated with neurological illnesses in older adults who live in LTCFs (Martin & Ancoli-Israel, 2008; Ye & Richards, 2018). Sleep disturbances are also strongly associated with psychological disorders, such as depressive disorders in late life (Cho et al., 2008; Suzuki et al., 2017). Harrington and Lee-Chiong (2007) found that the consequences of poor sleep for older adults may include cognitive dysfunction, daytime sleepiness, and decreased quality of life. Martin and Ancoli-Israel (2008) have suggested that nighttime sleep disruption is accompanied by daytime sleepiness, irritability, poor concentration and memory, slower reaction time, and decreased performance in daily activities. In addition, high blood pressure, heart disease, stroke, diabetes, depression, and motor vehicle crashes also accompany sleep apnea (American Sleep Apnea Association, 2021). These problems become more frequent as an individual progresses through the life span, as evidenced by sleep efficiency decreasing from approximately 86% at 45 years of age to 79% for individuals over 70 years of age (Koketsu, 2013). According to a poll conducted by the National Sleep Foundation, 44% of older adults experience symptoms associated with sleep difficulty for at least a few nights each week or more (National Sleep Foundation, 2013).

Compared to home-dwelling elderly, older adults residing in institutional environments have more impaired sleep (Martin et al., 2008). Research has shown that sleep disturbances in LTCF residents have many negative effects on daily life and facility operations. According to Araújo and Ceolim (2010), the signs associated with poor sleep in the elderly are often misconstrued by health professionals as cognitive loss or dementia. This misinterpretation has implications for the residents' care in that they may receive irrelevant interventions that could be an inefficient use of a health care professionals' time or, worse yet, inappropriate medication distribution.

Clarifying sleep and rest terms is not clear-cut. There is no single perfectly reliable criterion for defining sleep as it is typically described by a convergence of observations meeting many behavioral, motor, sensory, and physiological criteria. According to Mograss (2022), sleep is a normal, reversible, recurrent state of reduced responsiveness to external stimulation accompanied by complex and predictable changes in physiology, like brain patterns of electrical activity and relaxation of skeletal muscles. In 2008, the American Occupational Therapy Association (AOTA) first reclassified rest and sleep as separate areas of occupation in the *Occupational Therapy Practice Framework: Domain and Process (OTPF)* (Gentry & Loveland, 2013). According to the OTPF, rest and sleep are important occupations and have significant roles in the facilitation or inhibition of participation in other desired occupations. As a result, occupational therapy has a role in rehabilitating individuals who have difficulties with the areas of rest and sleep because of its impact on occupational performance. This seems especially applicable to older adults

residing in LTCFs. In the 3rd edition of the OTPF, the AOTA (2014) defines rest as “quiet and effortless actions that interrupt physical and mental activity resulting in a relaxed state” (p. S20) and sleep preparation as “taking care of personal needs for sleep” (p. S20); or, the process of participating in routines that prepares oneself for comfortable rest or prepares the physical environment for rest or sleep. No specific definition of sleep is offered in the OTPF. However, descriptions of sleep preparation routines and patterns are included and specify the following: undressing, reading or listening to music to fall asleep, meditation or prayers, adjusting temperature, preparing for bed, or setting an alarm clock. The sleep participation routines and patterns include napping, dreaming, sustaining sleep without disruption, or performing nighttime care such as toileting and hydration (AOTA, 2014).

Little evidence of rest and sleep patterns and activities in LTCFs was found in the occupational therapy literature that demonstrates the impact of rest and sleep habits on older adults’ occupational performance. It was the intent of this current study to explore the rest and sleep patterns of older adults living in LTCFs using data collected from a funded NIH R21 project (Hersch et al., 2012). Information from a structured measure of a 24-hr day of activity was analyzed to explore sleep routines and associated activities, including sleep time, length of time in one day for rest and sleep, and self-reported sleep preparation and participation tasks. The results from this study aim to expand the scope of occupation in the areas of rest and sleep patterns and activities as they particularly relate to older adults living in long-term residential facilities.

Method

Research Design

The funded R21 study used a mixed methods design with both qualitative and quantitative approaches. In this current study, only descriptive information on sleep routines and patterns from face-to-face interviews were analyzed and reported. The institutional review board approved the study, and all of the participants provided their informed consent.

Participants

The participants in the original study were recruited from six LTCFs in a southwestern city of the United States, resulting in 29 participants. Inclusion criteria were: 55 years of age or older, relocated into a LTCF within a year at the time of the study, receiving licensed nursing care, not in hospice service or locked unit, able to communicate in and understand English, and capable of participating in interviews determined by a score of five or less on the Short Portable Mental Status Questionnaire (Pfeiffer, 1975). Each facility’s social worker and/or activity director assisted in identifying residents who met these criteria.

Measures

The Yesterday Interview (YI) by Moss and Lawton (1982) was used to guide face-to-face interviews in collecting descriptions of individual engagement in activities and social relationships on the previous day from when the resident awoke until the resident went to sleep. The YI is an open-ended interview guide with no predetermined list of activities. It asks the participant to recall all activities that occurred yesterday, including the hourly sequence of activities in which they engaged; the length of the activity; the presence of anyone during the activity, and if so, whom; the location of the activity; and the level of activity enjoyment. Rest and sleep were included in the activities recorded and allowed the residents to describe what activities they performed that constituted rest time and sleep preparation and participation.

Data Collection Procedures

Using data from the primary study, the research team, comprised of five members from nursing and occupational therapy faculty, conducted content analysis and open coding of the interview data. The team concluded, following consensus, that rest and sleep patterns and activities were emerging major categories of occupation among the participants. The team further divided rest and sleep patterns into rest, sleep preparation, and sleep participation. The number of minutes engaged in these rest and sleep activities was calculated. Rest was defined as an area of occupation with quiet time and/or participation in effortless actions that did not include physical and mental activities. Sleep preparation included taking care of personal needs and routines that occurred before a comfortable rest. Sleep participation included going to sleep and staying asleep.

Data Analysis

Descriptive statistics were conducted for demographic information, and the total amount of time in rest, sleep preparation, and sleep participation was determined.

Results

Demographic Information

Twenty-nine residents from six LTCFs participated in the study (see Table 1). Twenty-four participants (83%) were female, and five (17%) were males. Thirteen participants (41%) were Caucasian, and 16 (59%) were African American. The median age of participants was in the 71 to 75 range.

Table 1
Demographics Information of 29 Participants

Characteristics	n (%)
Gender	
Male	5 (17.2)
Female	24 (82.8)
Age Range	
55–59	3 (10.3)
60–65	7 (24.1)
66–70	2 (6.9)
71–75	5 (17.2)
76–80	3 (10.3)
>80	9 (31)
Ethnicity	
White	13 (44.8)
African-American	16 (55.2)

Based on the self-reports of these 29 participants, rest time (in hr) ranged from zero to 11.5 hr. The average number of hr spent on rest was 4.77 (\pm 3.3) hr. Sleep preparation time ranged from zero to 3.5 hr. The average number of hr spent in sleep preparation was .26 (\pm 0.73) hr. Sleep participation time ranged from 7.5 to 14.5 hr. The average number of hr spent in sleep participation was 10.22 (\pm 1.77) hr. In addition, content analysis of the YI, examples of the participants’ responses concerning their rest, sleep preparation, and sleep participation activities are summarized in Table 2.

Table 2*Examples of Rest and Sleep Activities*

Categories	Activities
Rest	Listened to radio, watched TV, napped, listened to music, stayed in bed, sat in chair, sat outside, sat in wheelchair
Sleep Preparation	Took bedtime medications, prayed, got ready for bed, washed up, got dressed for bed, got into bed, watched TV before falling asleep, read a book in bed
Sleep Participation	Went to bed, had a bad dream, slept, went to sleep

Discussion

Rest and sleep patterns and activities of residents in LTCFs are important to understand because each has an impact on occupational performance as well as quality of life (Bergeron et al., 2007; Shang et al., 2019). Previous studies have shown that persons who have a good quality of sleep and routines are able to engage in occupational activities and demonstrate increased quality of life (Leland et al., 2014; Tester & Foss, 2018). One study conducted with community-based older adults noted that a relationship might exist between an occupation-based intervention and changes in sleep behaviors among this population (Leland et al., 2016). Further evidence from an intervention study involving social activation and physical activity with nursing home residents demonstrated significant subjective sleep quality (Kuck et al., 2014). Limitations were noted in both studies, indicating that further research into this specialized area of study is warranted.

Based on the results from this study, the average sleep participation time was 10.22 hr, approximately 2 to 3 hr longer than typical older adults (Smallfield & Molitor, 2018). Keeping in mind that these data were based on self-reported information, it is more likely that this length of sleep time was characterized by wake cycles and sleep fragmentation, which the participants could not recall. As the sleep literature indicates (Capezuti et al., 2018; Williams et al., 2013), many LTCF residents have sleep and circadian rhythm disturbances because of advanced age and the effects of chronic illnesses. Rather than medication use, non-pharmacological interventions to improve sleep among LTCF residents have been studied and proven to increase the quality and duration of nighttime sleep (Capezuti et al., 2018; Shang et al., 2019).

This study provided a valuable and descriptive picture of rest and sleep routines as experienced by older adults residing in LTCFs. Findings revealed the amount of rest and sleep that occurs in a day and what specific activities are associated with these areas of occupation. Such information provides a more accurate picture for occupational therapists who work with older adults in LTCFs to understand how to address the occupational needs of these clients. One example is in the area of ADLs. Determining the independence of the resident in performing simple daily tasks, like cleaning dentures, brushing teeth, and dressing for bed, identifies problem areas for sleep preparation.

Rest and sleep are essential intervention areas for occupational therapists to consider to promote and improve the quality of life for residents. Once the resident's sleep patterns and any potential sleeping issues have been determined, the therapist can set goals and develop interventions to improve quality of sleep (Solet, 2014). According to a scoping review of the sleep research, four sleep intervention areas were identified that align with the practice framework of occupational therapy (Leland et al., 2014). These included cognitive behavioral therapy for insomnia, physical activity, multicomponent interventions, and sleep-conducive environment modifications. As noted by Picard (2017), occupational therapists working in LTCFs have a role in promoting optimal sleep performance, including adjusting sleep routines; training

staff on bed positioning; advocating for activity programs, exercise, and socialization; and instituting environmental adjustments with light, temperature, and sound. However, additional research is needed to support occupation-based interventions that increase quality of rest and sleep and, in turn, quality of life.

Implications for Occupational Therapy

Occupational therapists are qualified to promote and improve the quality of life for residents by working on rest and sleep patterns and activities. Specifically, the occupational therapists, in collaboration with the facility's interdisciplinary team, can promote optimal sleep performance by adjusting sleep routines; providing staff training on bed positioning; advocating for activity programs, exercise, and socialization; and implementing environmental adjustments with light, temperature, and sound.

Limitations

The major limitation of this study was the self-reported information from resident interviews that resulted in some data missing and made it difficult to estimate the duration of the rest and sleep activities accurately. The inability of some residents to recall their actions in the previous 24 hr also limited the accuracy. For example, a few of the residents could not offer specific details about the activities in which they had participated, and some of the residents did not recall when they went to sleep and/or woke up. The data collected were strictly based on what the participant could remember and might have been subject to what the participant thought was important to report.

The original questions on the YI do not specifically focus on rest and sleep, which could have contributed to data limitations. Additional information about any of the participant's sleep disturbances would have helped obtain a better picture of the exact amount of sleep in which the residents engaged. Obtaining the roommate's sleeping schedule might have also been helpful.

Additional limitations included not knowing medication schedules, previous rest and sleep schedules, medical history, psychiatric illness, and more specific environmental and behavioral factors. This information would have been helpful in understanding what was typical as well as unusual about the sleep patterns of each resident.

Conclusion

This study carried out a secondary analysis of data on the rest and sleep routines of older adults residing in LTCFs. The findings serve as a beginning step in understanding the rest and sleep patterns of residents in LTCFs; they could be of value to occupational therapists working with this population to define their role in facilitating quality participation in the areas of rest and sleep. As the data were analyzed, additional questions emerged. Further research using a larger study group, asking additional questions on the YI that are directed toward rest and sleep, and gaining more reliable and complete answers to the YI would be valuable information to have with such a population. Other research possibilities include comparing the residents' rest and sleep patterns to their participation in social and leisure activities. Further sleep studies could also benefit from time sampling and camera usage of rest and sleep activities, along with a measure of sleep. Exploration of other issues related to sleep and rest patterns could include the relationship of sleep patterns to LTCF day-to-day operations, the control and options residents have with their schedule of bathing and dining, and the impact of staff shortages on residents' schedules. As noted here, there is an array of other research topics to explore for occupational therapy researchers interested in the influence of sleep and rest on LTCF residents and their occupational performance.

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Pei-Fen J. Chang, PhD, OTR, is an associate professor in the School of Occupational Therapy, Texas Woman's University
Kai-Li Tsai, PhD, is an associate professor in the Graduate Program in Health Care Administration, Texas Woman's University
Clarissa Richard, MOT, is an occupational therapy practitioner, and at the time of the study, took the lead in this study
Harriett A. Davidson, MA, is an associate professor Emerita in the School of Occupational Therapy, Texas Woman's University
Gayle I. Hersch, PhD, OTR, is professor Emerita in the School of Occupational Therapy, Texas Woman's University
