Iatro-Compliance: An Unintended Consequence of Excessive Autonomy in Long Term Care Facilities

Melanie V. Taverna, MSDH, RDH; Carol Nguyen, MS, RDH; Rebecca Wright, MS, RDH; James W. Tysinger, PhD; Helen M. Sorenson, MA, RT

Abstract

Purpose: Periodontal disease and caries remain the most prevalent preventable chronic diseases for seniors. Seniors transitioning into long term care facilities (LTCFs) often present with oral health challenges linked to systemic diseases, plaque control, psychomotor skills and oral health literacy. Many retain a discernible level of physical and cognitive ability, establishing considerable autonomy. This study examines the effect of autonomy on residents' ability to perform oral hygiene.

Methods: Descriptive data were developed utilizing mixed methodology on a convenience sample of 12 residents and 7 care staff of a LTCF. One-on-one interviews consisted of questions about demographics, and exploration of the influence of ageism, respect and time constraints on resident autonomy in oral care practices.

Results: Data suggests shortcomings, such as failure of the staff to ensure oral hygiene oversight and failure of the resident to ask for assistance. Autonomy, while laudable, was used by residents to resist staff assistance, partially motivated by residents' lack of confidence in care staff oral hygiene literacy and skills. In turn, by honoring resident's independence, the staff enabled excessive autonomy to occur creating an environment of iatro-compliance.

Conclusion: While it is beneficial to encourage autonomy, oversight and education must remain an integral component of oral hygiene care in this population. Improved oral hygiene skills can be fostered in LTCFs by utilizing the current oral health care workforce. Registered dental hygienists (RDHs), under indirect supervision of a dentist, can fulfill the role of an oral health care director (OHCD) in LTCFs. A director's presence in a facility can decrease staff caused iatro-compliance and increase oral hygiene skills and literacy of the residents, while enhancing their autonomy through education and support.

Keywords: Autonomy, Oral Hygiene, Long Care, Term Care Facilities, Health Promotion, Disease Prevention, Oral Health Care Director

This study supports the NDHRA priority area, **Health Promotion/ Disease Prevention:** Investigate how environmental factors (culture, socioeconomic status-SES, education) influence oral health behavior.

Introduction

By 2030, Americans over 65 will represent 19% of the entire U.S. population.[1] Today's 65 year old will have a 25% chance of reaching 90. This will rise to 40% by 2050.[2] The "older-old" category (those 85 and older) will account for 4.3% of the population and represent the group most likely to require long term care services.[2,3] This longevity has been attributed to discoveries in prevention, control and eradication of chronic adult diseases.[4] However, medicine does not stand alone in such advancements.

It is well known that oral health has seen advancements, such as reducing tooth loss from dental caries and periodontal disease. Introduction of stannous fluoride in dentifrices (Crest® Toothpaste) in 1955 and fluoridation of municipal water systems in 1962 reduced the incidence of caries hence tooth loss.[4,5] Discoveries and applications in dental science have improved diagnosis, treatment and prevention of periodontal disease.[6] Therefore, the overall numbers of edentulous elders (no retained natural teeth) decreased from over 45% of the population in 1974, to nearly 25% in the most current survey dated 1999 to 2002.[4,6] Despite these advancements, dental caries and periodontal disease remained the most prevalent preventable chronic diseases for seniors. Of dentate elders (retaining at least one tooth), 23% had untreated dental caries. Of those, greater than 14% had moderate to severe periodontal disease.[7]

Challenges for oral care providers will increase as the senior population transitions into long term care facilities (LTCFs).[8] Such challenges include:

- Medically complex residents presenting with oral health issues linked to systemic diseases (e.g., diabetes, pulmonary and cardiovascular disease)[8,9]
- Environmental factors, such as tobacco and alcohol use, poor diet and nutrition, reduced sali-

vary flow, history of fluoride exposure, and limitations to activities of daily living[10,11]
- Oral health literacy and skills of care staff[12-14]
- Oral health literacy and skills of residents[15-17]
- Understanding residents' autonomy in performing oral hygiene[15,18]
- Residents willingness to report oral hygiene needs[18,19]

Many residents entering LTCFs retained a discernible level of physical and cognitive ability. These residents represented the autonomous segment of the LTCF population who exerted control over their care staff interactions. Yet few studies within literature specifically addressed how LTCF resident autonomy impacted oral hygiene skills.[15,18] Autonomy, defined as an ability to govern ones-self and have independence of will, seemed out of reach to the LTCF resident. One way to engender autonomy was through an individual's capacity to self-advocate or enlist the aid of an advocate.[19] Successful self-advocacy was dependent on a resident's ability and willingness to be heard, matched by staffs' willingness to listen and act as an advocate. Therefore, the purpose of this study is to explore the influence of resident autonomy on their oral hygiene care.

LTCFs originated in 1954 with an amendment to the Hospital Survey and Construction Act.[20] This legislation funded construction of facilities that extended the medical model of treatment from hospitals to new care environments.[21] The medical model, based on biomedicine, assumed that "disease could be fully accounted for by deviation from the norm of measurable biological variables."[22] It required that disease was treated separately from psychosocial influences. Thus health outcomes desired and expected were less related to psychosocial influences such quality of life (QoL) than medical outcomes.[22]

Since 1997, new care models and trends, exemplified by The Greenhouse concept and The Eden Alternative, focused on resident centered care and QoL issues.[21,23] These models introduced a philosophy of care and practice focused on resident-directed and consumer-driven health promotion.[21,23-25] This new focus emphasized the importance of resident autonomy and its influence on resident QoL.[23,26] As theoretical frameworks grew, newer guidelines addressed insufficient oral health care practices for LTCF residents. Resulting federal regulations outlined by the Health Care Financing Administration (HCFA) mandated all nursing homes receiving federal reimbursement improve resident oral health by providing routine and emergency oral health care services.[27] These regulations became effective April 1, 1992 and required LTCFs to:

- Assist patients in obtaining routine and emergency dental care
- Provide dental care internally or obtain care from an external source
- Assist in scheduling appointments for dental care and arrange transportation
- Develop an oral health program that includes annual staff in-service training, oral examinations within 45 days of admission, repeated annually for each resident and a daily oral hygiene preventive care plan for each resident[27]

Despite these mandates, LTCFs apparently did not consider oral health an institutional priority.

More recently objectives were developed from governmental initiatives, such as Healthy People 2010 and 2020 and ongoing Centers for Disease Control (CDC) funding,[27,28] in conjunction with the Association of State and Territorial Dental Directors, which assisted in promoting and monitoring oral health behaviors nationwide. One objective of Health People 2020 was to increase the proportion of dentists with geriatric certification from 20% in 2007, to 22% by 2020.[27] While this targeted increase addressed geriatric oral health, the majority of the Healthy People 2020 objectives addressed children and adults less than 64 years of age.

In 2003, 40% of ambulatory institutionalized older adults had gingivitis and 33 to 60% had some degree of attachment loss due to periodontal disease.[29] A seminal study by Yoneyama et al reported links between periodontal pathogens and pneumonia, the leading cause of death in elderly long term and hospitalized patients.[30] Further studies reported improved oral hygiene practices reduced morbidity and mortality related to new pneumonia cases and number of febrile days not associated with urinary tract infections in LTCFs.[31-33]

Physiological changes in the oral cavity occur with age. Xerostomia, the most common adverse effect of medications commonly prescribed in LTCFs, exacerbated age related epithelial alterations.[31] Therefore, xerostomia increased plaque control challenges for residents and care staff alike. Plaque control was an important preventive measure to reduce bacterial propagation, periodontal pathogens and systemic complications of oral inflammatory processes.[34] Many autonomous residents developed poor oral care practices in the absence of care staff assistance.[31] Further barriers were created when LTCFs, as organizations, did not place a priority on oral health or develop oral health policies for care staff compliance.[35]

Effects of Oral Hygiene Autonomy

In a study authored by Bytheway, ageism was defined as "discrimination against older people on the grounds of age."[36] Residents in LTCFs were presumed inflexible in their beliefs with old fashioned morality and skills.[37] Residents perceived oral hygiene as forceful encounters performed by staff. Care staffs had opportunities to change these perceptions if they understood the level of hygiene residents could perform for themselves and when to assist.[26,37]

Ageism, while discriminatory, was not entirely negative. Under the influence of ageism, staff and residents formed "fictive kin" relationships similar to those of family members.[38] These relationships fostered protectionism and devotion toward the resident and allowed autonomy to develop.[19]

Respect involved demonstrations of consideration and regard for one another. Care routines thus became key factors in developing relationships.[39] Respect demonstrated by staff was influenced by the leadership style within the LTCF. In a facility where the priority was a home-like environment, respect was displayed by informal communications and kind gestures that represented an understanding of resident desires.[39] In an effort to demonstrate respect for the resident, staff acceded to their wishes. If care staffs determined a resident did not wish or require assistance in oral hygiene tasks, they would leave them alone.[40] Autonomous residents required less care staff time. Therefore, it was beneficial to care staff when residents were autonomous.[41,42]

Of the 3 effects explored in this study, time constraints was unique because it involved a directly measurable quantity, that of time. Time's value was most appreciated when "time has run out." Nevertheless, constraints placed upon time available were not consistently quantifiable. For instance, all of the following contributed to the concept of time constraints:[43]

- Imposed limits of an eight hour work shift
- Number of mandated and non-mandated tasks
- Medical and personal complexities of residents
- Number of residents assigned to a staff member
- Relationships between staff and resident

Thus, it was gathered from the findings of a 2007 study, where 92% of LTCFs lacked adequate care staff to provide the level of care mandated. Time constraints represented a significant impact on the staff-resident relationship.[43] Time constraints were reduced using positive relationship skills and demonstrations of respect.[38,39] Demonstrations of oral hygiene autonomy by residents were considered beneficial even though they contributed to the lack of oversight by care staff.[41]

Methods and Materials

This study used a mixed study design on a convenience sample of 12 residents and 7 care staffs that resided or were employed in a LTCF. Resident inclusion criteria limited participation to those who could speak and understand English, were able to participate in a 30 minute face-to-face structured interview, could understand questions and make reasonable responses. Care staff inclusion criteria limited participation to those who could speak and understand English, had direct contact with residents, and were currently employed by the facility.

One-on-one interviews were conducted, formatted as Likert Scale fixed answer questions about demographics and oral hygiene care practices. Open-ended narrative interviews explored influences of ageism, respect and time constraints on autonomy in oral hygiene tasks. Narrative answers were analyzed to describe resident experiences, supplemented by salient points derived from Likert Scale questions. All interview data was digitally recorded and detailed field notes were taken. Interviews were transcribed into Microsoft Word 2010 and entered into NVIVO 9 for analysis in the constructivist tradition. Fixed data were analyzed using descriptive statistics. Measures of central tendency were normalized using a convenience sample into percentages to supplement qualitative findings. Responses from residents and care staff were aggregated to develop non-biased results.

Limitations of Study

Purposeful limitations placed on this study included a single LTCF and resident participants who were not intubated or ventilated, or unable cognitively to partake in the interview process. This study was designed to explore residents with partial or complete autonomy in performing oral hygiene tasks. Due to the use of a single LTCF, these findings could not be generalized to other facilities. The instrument used to gather data was developed specifically for this study and is in process of validation.

Results

Care staff spent 2 hours and 44 minutes with patients per patient/day. This figure was slightly better than the national average of 2 hours and 28 minutes per patient/day.[44] Within that time frame CNAs were responsible for the majority of direct care tasks: waking and dressing, bathing, assisting with meals, light housekeeping, transporting, lifting, and oral hygiene

care. These care tasks were performed for numerous residents with a variety of needs.

While all participants agreed oral health was important for general health, it remained a low priority for all in the facility. Oral health priority was evaluated by interviewing administrative staff, direct care staff and residents. At the administrative level federal guidelines were adhered to and resident oral care plans developed. However, care plans were directed solely towards dietary planning. There were no comprehensive dental examinations for plaque, caries or oral disease to establish comprehensive oral hygiene care. Any concerns that required referrals were directed to the family, yet there were no guidelines that assured appointments were made.

The facility's administration required that care staff perform oral hygiene care yet did not promote oral hygiene care plans that included oversight. The administrator stated oral hygiene care was based primarily on resident input: "A lot of our patients are alert and do not need a lot of help." Those comments were contradicted by residents with the noteworthy (83%) negative response when asked if care staff monitored their oral hygiene care. Additionally, one third of residents perceived care staff had little time or desire to perform oral hygiene care.

Care staffs' oral hygiene education conformed to federal guidelines consisting of bi-annual in-service training provided by the facility's contracted dentist. However, this infrequent level of educational intervention without constant reinforcement did not maintain oral health literacy.[45] Significantly, several residents reported they lacked confidence in care staffs' oral hygiene care skills. A sample quote from one report read: "I don't know what kind of course they give but I figured the course they gave them any fifth grader would pass."

While the facility's administration made basic armamentarium available for daily oral hygiene care, it did not emphasize the importance of daily or professional oral care. One half of residents reported having no dentist and more than half had not had a professional scaling since entering the facility. Of those who stated they had a dentist, nearly 67% had not made a professional dental or dental hygiene appointment. Therefore, in the protective supportive environment of a LTCF, the majority of residents were not provided access to a dental home or a source of oral health education.

The priority residents placed on oral hygiene care was evaluated, in part, by exploring their oral hygiene care practices. The majority of residents brushed their teeth and half reportedly brushed twice daily for 3 minutes or more. Therefore, minimal oral hygiene literacy was inferred from these responses. However, with no oversight or professional care, resident oral hygiene literacy or care practices could not be confirmed.

Ageism and respect appeared inter-woven as effects of poor oral hygiene care oversight. Relationships that developed between resident and care staff, fostered by ageism and respect, were beneficial and improved resident QoL. Care staff commented:

"We know this is their home. We have to respect their privacy. We have to respect their wishes."

However, this respect developed into a routine where care staff was encouraged to avoid interjecting oral hygiene care assistance. Residents contributed to this routine by refusing assistance. Residents noted: "No, not for my teeth, they just never ask. They probably think it would aggravate me if they did (ask me) and it would. That's a task that's not difficult," and "I usually do everything for myself. "Add to these comments the residents' lack of confidence in care staff, and oral hygiene care oversight was virtually non-existent.

Resident responses regarding access to a dental home revealed their complicity since they did not partake in available oral health services. One-half of residents had not seen a dentist and 58% had not had professional oral care while in the facility. While 42% of residents self-reported having a dentist, 67% reported never visiting a dentist while in the facility. Only 33% of residents interviewed reported having had professional cleanings. Two residents participated in community rotations with the Health Science Center Dental School's Division of Dental Hygiene senior students. These dental hygiene seniors provided oral hygiene services including assessment, treatment and education free of charge for residents who had a dental exam within the previous year.

Discussion

The purpose of this study was to examine the effect autonomy had on the ability of residents to perform personal oral hygiene care. As data was collected a cause and effect relationship became apparent between the influences of ageism, respect and time constraints on resident autonomy, generating compelling findings.

Ageism was found beneficial and even preferred by residents. "They treat me better because I'm older." Thus ageism was an important component of respectful relationships and facilitated task completion. These findings were supported in literature that described

"fictive kin" relationships and established that residents ultimately exerted control over day to day relationships through manipulation.[19,38] Care staffs comments of "Because it depends on the person and their mood at that time" reflected this.

Respect was directly affected by ageism and based upon affection. Care staffs were reluctant to intervene if assistance was not requested. Residents stated: "There are certain things I should be able to do by myself. But if not, I'll ask for help." An unintended consequence of this respect was excessive autonomy, leaving the resident without assistance or oversight in their daily oral hygiene care. These findings were supported by Cook, who found that residents were active in how they responded to institutional processes.[15] Cook also found that residents lived as "active biographical agents" instrumental in shaping their life in a facility. This challenged an initial assumption that residents were inactive or passive recipients of care.[19,42]

Time constraints were initially considered to be the exclusive domain of care staffs. Within an 8 hour work shift, care staffs had limited time to devote to each resident. Time distributions could not be normalized for any individual - any given task could take an unspecified, and often unexpected, amount of time. Residents were aware of this work load, commenting: "Well, I think they need more (employees), particularly the CNA's. You can sit here and wait and wait and wait."

Significant data from this study described autonomy in oral hygiene care as initiated by residents. Residents, while aware of time constraints, were motivated to be autonomous largely due to a lack of confidence in care staffs' oral hygiene care skills. Thus they presented themselves fully capable of performing their own oral hygiene care and resisted care staffs' offerings of assistance.

Care staff, because they were less involved in oral care, had additional time to devote to other residents. They respected resident autonomy but also exploited it as an excuse not to intervene in a task they were uncomfortable performing. As a member of care staff indicated: "I mean like I'm not against it. I would say though if I were super-duper crunched for time it's not a priority."

These care staff, similar to those discussed in the literature, would rather perform any task than oral hygiene care.[37] Tasks such as transporting, lifting, bathing, eating and toileting were caring tasks, while oral hygiene care was directly related to the health of the resident. Thus, residents' autonomy was a welcomed respite for staff, yet resulted in benign neglect. This resulted in iatro-compliance by care staff when they shifted oral care responsibility fully to the resident.

While this facility administration, care staffs and residents all indicated oral health was important to general health, none appeared to place a priority on oral hygiene care. Residents felt it was too simple a task to require assistance. Without consistent care staff oversight or record of professional oral care, there was no way to monitor proficiency. Therefore, there existed the potential for substandard oral hygiene care practices.

This facility monitored and managed residents' general health, while specific oral health was marginalized. Daily oral hygiene care plans were based on limited intake oral evaluations and resident feedback, not professional oral health examinations. Oral diseases were under diagnosed if there was no institutional oral care plan. Resulting oral diseases could impact a residents' ability to masticate, swallow, speak, consume food and remain pain and infection free.[12,28,31,32]

Even though this facility contracted with a dentist as required by mandate, this contract did not ensure provision of a dental home. Because residents reported few or no visits for professional oral care it could be surmised there was little in the way of professional oral hygiene education provided. There would have been little change in residents' approach to their oral hygiene care as their oral environment changed with age. Therefore federal mandates provided little oversight or funding to insure compliance. Residents bore responsibility, along with the facility, by not placing a priority on their own oral health.

Due to the study's small sample size and single facility, the results cannot be generalized. However, by sampling autonomous residents, this data gives oral health providers in LTCFs added information about effects on oral health. This study provides new insight about how autonomy affects the ability of a resident to perform acceptable oral hygiene by demonstrating the unintended consequence of iatro-compliance by staff and resident alike.

Conclusion

Many LTCF residents retain a discernible level of physical and cognitive ability enabling them to establish considerable oral hygiene care autonomy. This autonomy, while laudable, is a mechanism used to rebuff care staff's assistance when residents lack confidence in their skills. By conforming to resident autonomy, care staffs miss opportunities to engage in improved oral hygiene care. This relationship is instrumental in fostering a facility-wide complacency about resident oral health. The unintended consequence of this relationship is iatro-compliance.

This phenomenon could be ameliorated by developing the role of an Oral Health Care Director (OHCD). This director, a registered dental hygienist could coordinate patient evaluations, treatment, and referrals. The OHCD would train and supervise staff, collaborate with medical professionals, and gather data to support funding for continued care.

To determine if iatro-compliance is evident throughout the industry, this study should be expanded to multiple facilities with different organizational environments. Further research about the impact of resident autonomy on oral hygiene care in these varied environments could inform oral health care providers of ways to enlist residents to capitalize on their autonomy to reduce the benign neglect of iatro-compliance.

Melanie V. Taverna, MSDH, RDH, is an assistant professor/clinical faculty at the Department of Periodontics, Division of Dental Hygiene. Carol Nguyen, MS, RDH, is an assistant professor at the, Department of Periodontics, Division of Dental Hygiene. Rebecca Wright, MS, RDH, is an assistant professor/clinical faculty at the Department of Periodontics, Dental Hygiene Division. James W. Tysinger, PhD, is a distinguished teaching professor with tenure in the Department of Family and Community Medicine, and serves as Vice Chair for Professional Development. Helen M. Sorenson, MA, RT, is an associate professor in the Department of Respiratory Care. All are at the School of Health Professions at The University of Texas Health Science Center at San Antonio.

Acknowledgments

I would like to thank: my thesis committee, husband and family whose guidance and support were invaluable. I am also grateful to the administrator, nursing staff, and residents with whom I spent many hours researching this project. Lastly Nana Bana, who, at 98, was the epitome of autonomy.

References

1. Administration on Aging: Profile on Older Americans. US Department of Health and Human Services [Internet]. [cited 2012 January 31]. Available from: http://www.aoa.gov/AoAroot/Aging_Statistics

2. Fact sheet on older Americans. Encore.org [Internet]. [cited 2012 January 30]. Available from: http://www.encore.org/find/resources/fact-sheet-older

3. The 2012 Statistical abstract of the United States; the national data book. Census.gov [Internet]. [cited 2012 January 2]. Available from: http://www.census.gov/compendia/statab/2012/tables/12s0107.pdf

4. Shrestha LB. CRS Report for Congress: Life expectancy in the United States. Domestic Social Policy Division; Library of Congress [Internet]. 2006 [cited 2011 October 24]. Available from: http://aging.senate.gov/crs/aging1.pdf

5. Morbidity and Mortality Weekly Report. Centers for Disease Control [Internet]. [cited 2011 October 23]. Available from: http://www.cdc.gov/mmwr

6. Jones S, Burt BA, Petersen PE, Lennon MA. The effective use of fluorides in public health. *Bull World Health Organ*. 2005;83(9):670-676.

7. Oral Health in America: A report of the Surgeon General. National Institute of Dental and Craniofacial Research [Internet]. [cited 2011 October 16]. Available from: http://www.nidcr.nih.gov/DataStatistics/SurgeonGeneral/sgr/home.htm

8. Tooth loss in seniors. National Institute of Dental and Craniofacial Research [Internet]. [cited 2011 May 8]. Available from: http://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/ToothLoss/ToothLossSeniors65andOlder.htm

9. Kandelman D, Petersen PE, Ueda H. Oral health, general health and quality of life in older people. *Spec Care Dentist*. 2008;28(6):224-236.

10. McNabney MK, Samus QM, Lyketsos CG,et al. The spectrum of medical illness and medication use among residents of assisted living facilities in central Maryland. *J Am Med Dir Assoc*. 2008;9(8):558-564.

11. Dounis G, McClain M, Cappelli D, Mobley C, Ditmyer M. Promoting healthy aging: How to effectively address the oral health issues faced by older adults. *Dimensions*. 2011;9(8):16-19.

12. Ferozali F, Johnson G, Cavagnaro A. Health benefits and reductions in bacteria from enhanced oral care. *Spec Care Dentist*. 2007;27(5):168-176.

13. Boczko F, McKeon S, Sturkie D. Long-term care and oral health knowledge. *J Am Med Dir Assoc*. 2009;10(3):204-206.

14. Gammack JK, Pulisetty S. Nursing education and improvement in oral care delivery in long term care. *J Am Med Dir Assoc*. 2009;10(9):658-661.

15. Dharamsi S, Jivani K, Dean C, Wyatt C. Oral care for frail elders: Knowledge, attitudes and practices of long term care staff. *J Dent Edu*. 2009;73(5):581-588.

16. Cook GA. Ensuring older residents retain their unique identity. *Nursing Residential Care*. 2010;12:290-293.

17. Jonas-Simpson C, Mitchell GJ, Fisher A, Jones G, Linscott J. The experience of being listened to: A qualitative study of older adults in long term care settings. *J Gerontol Nurs*. 2006;32(1):46-53.

18. Hwang HL, Lin HS. Perceived enactment of autonomy and related factors among elders. *J Res Nurs*. 2003;11(4):277-286.

19. Kahn DL. Making the best of it: Adapting to the ambivalence of a nursing home environment. *Qual Health Res*. 1999;9(1):119-132.

20. Walent RJ, Kayser-Jones J. Having a voice and being heard: Nursing home residents and in-house advocacy. *J Gerontol Nurs*. 2008;34(11):34-42.

21. White-Chu EF, Graves WJ, Godfrey SM, Bonner A, Sloane P. Beyond the medical model: the culture change revolution in long-term care. *J Am Med Dir Assoc*. 2009;10(6):370-378.

22. Marks D, ed. The health psychology reader. Second ed. Thousand Oaks (CA): SAGE. 2002. 50 p.

23. Rahman AN, Schnelle JF. The nursing home culture-change movement: Recent past, present and future directions for research. *Gerontologist*. 2008;48(2):142-148.

24. Grant LA, Norton L. A stage model of culture change in nursing facilities; Paper presented at the Symposium: Culture Change II: Theory and Practice, Vision and Reality. The 56th Annual Scientific Meeting of the Gerontological Society of America: 1-8.

25. Rabiq J, Thomas W, Kane RA, Cutler LJ, McAlilly S. Radical redesign of nursing homes: Applying the Green House Concept in Tupelo, Mississippi. *Gerontologist*. 2006;46(4):533-539.

26. Flesner MK. Person-centered care and organizational culture in long-term care. *J Nurs Care Qual*. 2009;24(4):273-276.

27. Healthy people.gov: 2020 Oral health topics and objectives [Internet]. Washington (DC): U.S. Department of Health and Human Services; [updated 2011 May 2; cited 2011 Oct 25]. Available from: http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=31

28. National Center for Chronic Disease Prevention and Health Promotion: Division of Oral Health. Centers for Disease Control and Prevention [Internet]. 2013 [cited 2014 February 7]. Available from: http://www.cdc.gov/oralhealth/

29. DeBaise CB, Austin SL. Oral health and older adults. *J Dent Hyg*. 2003;77(2):125-145.

30. Yoneyama T, Yoshida M, Ohrui T, et al. Oral care reduces pneumonia in older patients in nursing homes. *J Am Geriatr Soc*. 2002;50(3):430-433.

31. Haumschild MS, Haumschild RJ. The importance of oral health in long-term care. *J Am Med Dir Assoc*. 2009;10(9):667-671.

32. Sjogren P, Nilsson E, Forsell M, Johansson O, Hoogstraate J. A systematic review of the preventive effect of oral hygiene on pneumonia and respiratory tract infection in elderly people in hospitals and nursing homes: effect estimates and methodological quality of randomized controlled trails. *J Am Geriatr Soc*. 2008;56(11):2124-2130.

33. Sarin J, Balasubramaniam R, Corcoran AM, Laudenbach JM, Stoopler ET. Reducing the risk of aspiration pneumonia among elderly patients in long-term care facilities through oral health interventions. *J Am Med Dir Assoc*. 2008;9(2):128-135.

34. Simons D, Brailsford S, Kidd EA, Beighton D. Relationship between oral hygiene practices and oral status in dentate elderly people living in residential homes. *Community Dent Oral Epidemiol*. 2001;29(6):464-470.

35. Nitschke I, Ilgner A, Muller F. Barriers to provision of dental care in long-term care facilities: the confrontation with ageing and death. *Gerodontology*. 2005;22(3):123-129.

36. Bytheway B. Ageism and age categorization. *J Soc Issues*. 2005;61:361-374.

37. Johnson TE, Lange BM. Preferences for and influences on oral health prevention: perceptions of directors of nursing. *Spec Care Dentist*. 1999;19(4):173-180.

38. Fisher LT, Wallhagen MI. Day to day care; the interplay of CNAs' views of residents & nursing home environments. *J Gerontol Nurs*. 2008;34(11):26-33.

39. Wilson CB. Using relationships to develop practice that values the contribution of older people, families and, staff. *Int J Older People Nurs*. 2008;3(4):274-277.

40. Kennedy D, Sylvia E, Bani-Issa W, Khater W, Forbes-Thompson S. Beyond the rhythm and routine; adjusting to life in assisted living. *J Gerontol Nurs*. 2005;31(1):17-23.

41. Thorne S, Kazanjian A, MacEntee M. Oral health in long term care; the implications of organizational culture. *J Aging Studies*. 2001;15(3):271-283.

42. Pillemer K, Meador R, Henderson C Jr, et al. A facility specialist model for improving retention of nursing home staff: results from a randomized, controlled study. *Gerontologist*. 2008;48(1):80-89.

43. Lapane KL, Hughes CM. Considering the employee point of view: Perceptions of job satisfaction and stress among nursing staff in nursing homes. *J Am Med Dir Assoc*. 2007;8(1):8-13.

44. Nursing Home Compare. Medicare.gov [Internet]. [cited 2014 February 10]. Available from: http://www.medicare.gov/nursinghomecompare/profile.html#profTab=2&ID=675690&loc=SAN%20ANTONIO%2C%20TX&lat=29.4241219&lng=-98.4936282

45. MacEntee MI, Wyatt CC, Beattie BL, et al. Provision of mouth-care in long-term care facilities: an educational trial. Community Dent Oral Epidemiol. 2007;35(1):25-34.