Nursing Administrators' Views on Oral Health in Long-Term Care Facilities: An exploratory study

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Abstract

Purpose: To explore the knowledge, attitudes, and practices of supervising nurse administrators (SNAs) regarding the oral care provided to long-term care facility (LTCF) residents and the role of dental professionals in those facilities.

Methods: The investigators of this study partnered with the National Association of Nursing Administrators to send this cross-sectional study consisting of a 35-item electronic survey to its members whose email addresses were in their database. Online software tabulated responses and calculated frequencies (percentages) of responses for each survey item.

Results: Of the 2,359 potential participants, 171 (n=171) completed the survey for a 7% response rate. Only 25% of the respondents were familiar with the expertise of dental hygienists (DHs), however once informed, the majority were interested in having DHs perform oral health staff trainings, oral screenings, and dental referrals and initiate fluoride varnish programs. Most respondents correctly answered the oral health-related knowledge items, understood that oral health is important to general health, but reported that the LTCF residents' oral health was only "good" or "fair." Fewer than half, (48%) of the SNAs were "very satisfied" with the quality of oral care provided to the residents. While more than half reported that they had no dentist on staff or on-site dental equipment, 77% reported that they would consider on-site mobile oral care services. Oral health training for staff was provided primarily by registered nurses, however only 32% reported including identification of dental caries as part of the in-service training.

Conclusion: This exploratory study lays the foundation for more extensive research investigating various strategies to improve the oral health of LTCF residents, including increased collaboration between DHs and SNAs.

Keywords: access to care, dental hygienists, interprofessional collaboration, long-term care facilities, nursing administrators, oral care

This manuscript supports the NDHRA priority areas: **Professional development: Regulation** (Interprofessional collaboration) and **Population level: Access to care** (vulnerable populations).

Submitted for publication: 6/2/17; accepted 10/4/17

Introduction

Older adults living in long-term care facilities (LTCF) often depend on others to assist them in activities of daily living and personal care needs, including oral care.[1-3] For the context of this manuscript, oral care is defined as daily oral hygiene, denture care, periodic oral assessments for symptoms of oral pain, dry mouth, oral disease, and dental referral for periodic oral examination.

Oral care among residents living in long-term care facilities (LTCF) is essential not only to reduce the risk of oral diseases, but also to decrease the potential for other systemic health problems and to promote quality of life.[1, 4, 5] Studies report that only 16% of those living in LTCFs receive any oral care, and those receiving care report an average tooth brushing time of 16 seconds.[3, 4] Certified nurse's assistants (CNA) are most often responsible for assisting LTCF residents with activities of daily living, including bathing, oral care, dressing and feeding. Supervising nurse administrators (SNAs), consisting of directors of nursing, assistant directors of nursing and registered nurses, are responsible for supervising the CNAs.[6-8] While CNAs frequently acknowledge the importance of oral hygiene care for patients, in reality many CNAs report that minimal oral care, if any, is actually being done in practice.[2, 9] Studies suggest that SNAs have the authority to make critical policy and practice decisions in LTCFs and are in a key position to supervise and support the CNAs and the delivery of oral care through the provision of necessary equipment, training, advice, and the evaluations of the overall quality of oral care provided.[7, 8, 10-13]

Federally funded LTCFs require a comprehensive oral evaluation of a new resident within 14 days of admission, in addition to annually, and following any major change in health status, according to federal guidelines that include the Minimum Data Set (MDS).[14,15] The MDS is a standardized, primary screening and assessment tool of health status that forms the foundation of the comprehensive assessment for all residents in a Medicare and/or Medicaid-certified LTCFs. The MDS measures an individual's physical, psychological and psychosocial functioning in a wide range of categories, including oral/dental status.[15] However, the Agency for Healthcare Research and Quality indicates that the sections of the MDS pertaining to oral/dental status are minimal and may tend to overlook the health of oral tissues and including the presence of xerostomia.[16] Although the MDS assessment is used nationwide in every federally funded LTCF, the regulations do not provide consistent guidelines or training on how to conduct the oral assessments in the data set.[16]

A number of states have established special licensure categories to allow qualified dental hygienists (DHs) to treat homebound clients outside traditional dental practices, in alternative settings including private residences, residential care facilities and other institutions.[17,18] For example, in California, the legislature established the Registered Dental Hygienist in Alternative Practice (RDHAP) licensure category allowing specially trained and certified dental hygienists to provide specific oral health services without direct dental supervision in non-traditional community-based settings. RDHAPs are licensed to provide oral health care services including: dental prophylaxis, dental screening, fluoride varnish and preventive oral health education at the client's place of residence.[17,19]

While many other states allow for DHs to apply for direct access permits and licenses similar to the RDHAPs, little is known about the roles and overall presence of DHs in LTCFs. Moreover, little is known about SNAs' awareness and support of dental professionals in LTCFs, as well as their own knowledge base, attitudes, and involvement in the oral care of LTCF residents. It is also unknown as to what extent the SNA's responsibilities include the training, supervising, and evaluation of the oral care activities of the CNAs. The study was designed to explore the knowledge, attitudes, and practices of SNAs' regarding the oral care provided to their LTCF residents and the role of dental professionals in their facilities.

Methods

This descriptive, cross-sectional exploratory study was approved by the Institutional Review Board at the University of California, San Francisco, and was carried out via an anonymous electronic survey. The survey was pilot tested for feasibility, validity and acceptability with a convenience sample of 8 SNAs and 6 RDHAPs, and was refined for clarity based on sample participant feedback. Some SNA respondents expressed confusion with the dental language used in the pilot survey, and the survey items were changed accordingly to ensure content validity. Considered experts in the field, the SNA pilot testers were in agreement that the survey items were determinants of the knowledge, attitudes, and practices of SNAs. Study participants were recruited for the survey through the National Association of Directors of Nursing Administration (NADONA). The director of NADONA was contacted personally to explain the study and to ask for assistance with recruiting the NADONA members for the study. The director agreed to forward a link to the survey along with an informed consent-cover letter to the 2,398 members with an email address in the NADONA database. The cover letter explained the study purpose, risks and benefits and included the telephone numbers and email addresses of the researchers for potential participants to contact with any questions. Potential participants were informed they could opt out of the survey at any time. Informed consent was indicated when participants clicked the "next" button to begin the survey. Participants who completed the survey and submitted their email address were eligible for a drawing to receive one of four $50 Amazon gift cards selected at random as appreciation for participating in the study. One month after sending the original survey, NADONA administrators posted reminders on the social medial sites Facebook and LinkedIn as well as sending an emailed survey reminder in an attempt to capture non-respondents. A disclaimer on the reminder email stated that if the member had already completed the survey, to disregard the message.

Measurements

The 35-item survey consisted of close-ended questions divided into four sections. The first section contained 12 demographic questions pertaining to the SNA (gender, age, ethnicity, job title, educational background, highest level of education completed) and their practice setting (regional location, number of beds, type of funding received at facility, sector of long-term care, and primary population of residents at their facility). The second section contained three knowledge statements regarding the oral care of residents. Items related to the SNAs' perceptions of the types of preventive care practices, which could be offered by DHs were in the third section. Following the initial question probing the SNAs' awareness of the DH services, the allowable duties, supervision, and settings of the California RDHAP were described, with a reference to the fact that other states' practice acts also allow specific trained and licensed DHs to practice in non-traditional community-based settings without direct supervision. This section also included SNAs' perceived importance of oral health. Oral care practices in the LTCF were assessed in the fourth section, which also included an estimated percentage of the LTCF population requiring assistance with oral

care. Several survey items from previous, related studies were incorporated into the survey of this study, including questions on facility characteristics, SNAs' perceptions of DHs and future interests in having DHs providing oral care.[8, 20-22] Survey items needing minor alterations based on the SNA feedback from the pilot testing included adapting oral terms to better fit SNAs' vocabulary, such as substituting mouth/oral care for oral care.

Analysis of data

Respondents replied to the survey using Qualtrics, a research software program to tabulate the responses to each survey question and calculate the percentage of responses for each survey item. When reporting the levels of agreement, interest, or importance on the 5-point Likert scale, the bottom and top two categories of items were combined respectively to form two new categories. One survey item included a 6-point Likert scale ranging from "Good" to "Poor" and included an "Unknown."

Results

A total of 2398 email messages were sent to SNA members of the NADONA; 39 bounced back as invalid and a total of 425 were opened. Responses were received from 171 members (n=171) representing all four regions of the United States (U.S.) for a response rate of 7%. The majority of the respondents were Caucasian females between the ages of 50-59 years, held the title of Director of Nursing, reported a bachelor's degree as their highest level of education and came from the southern region of the U.S. (Table I). Almost all respondents worked in a facility that had both private and federal funding and focused on skilled nursing. Over half worked in facilities where the primary population consisted of older adult residents aged 60 years and older (Table II). As reported by 132 of the respondents, the percentage of residents at their facility requiring supervision or assistance with daily oral hygiene care, ranged between 11% and 100%, with a mean of 69%, $\pm$ a standard deviation of 18. In other words, the majority of SNAs reported that between 51% to 87% of their residents required assistance (data not shown).

Perceptions and practices related to dental professionals

About a quarter of SNAs reported being aware of the preventive oral care services RDHAPs or DHs holding direct access permits and licenses can provide in LTCFs (Table III). Thirty-five of the 38, reporting awareness, responded to the question as to whether a DH was currently working in their facility: 66% replied yes; 29% no; and 6% unsure. Once informed of the services DHs could provide in LTCFs, most SNAs were interested in DHs presenting oral health training for staff, performing oral health screenings, making dental referrals, and establishing fluoride varnish programs at their LTCF (Table III).

Table I. SNA Demographics (n=171)

Administrator	% (n)
Gender	
Female	96 (141)
Male	6 (6)
Age	
21-29	1 (2)
30-39	6 (9)
40-49	26 (37)
50-59	43 (62)
60-69	23 (33)
70+	1 (2)
Ethnicity	
White/Caucasian	84 (124)
African American	8 (12)
Hispanic	2 (3)
Asian	2 (3)
Native American	1 (1)
Pacific Islander	2 (3)
Other	2 (3)
Region of Employment*	
Northeast	18 (24)
Midwest	27 (35)
South	42 (56)
Western	13 (17)
Job Title	
Director of Nursing	72 (105)
Assistant Director of Nursing	5 (5)
Registered Nurse who oversees nursing staff	8 (11)
Other	17 (24)
Highest Level of Education	
Associate's Degree	32 (43)
Bachelor's Degree	49 (67)
Master's Degree	18 (25)
Doctoral Degree	<1% (1)

* Northeast: CT, ME, MA, NH, RI, VT, NJ, NY, and PA.
Midwest: IL, IN, MI, OH, WI, IA, KS, MN, MO, NE, ND, and SD.
South: DE, FL, GA, MD, NC, SC, VA, DC, AL, KY, MS, TN, AR, LA, OK, and TX.
Western: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, and WY.

Table II. LTCF Characteristics (n=171)

Facility Characteristic	% (n)
Funding 2ource	
Private Pay	3 (5)
Federal	4 (6)
Mix of private and federal funding	93 (155)
Number of beds in facility	
0-50	7 (11)
51-100	33 (55)
101-150	38 (62)
151-200	14 (23)
Greater than 200	8 (14)
Sector of long-term care	
Continuing Care Retirement Communities	7 (10)
Assisted Living Facility	1 (1)
Skilled Nursing	90 (132)
Other	2 (3)
Primary population of residents	
Temporary residents of any age undergoing rehabilitation	3 (4)
Younger persons with disabilities or illnesses requiring long-term care	1 (2)
Geriatric residents 60 years and older	62 (90)
All of the above	34 (50)

Knowledge

Almost all SNAs knew that daily tooth brushing is very important and that residents with dentures still need an annual dental examination. All respondents knew that residents can lose teeth, experience decay, or become physically ill from dental disease (Table IV). In addition, most agreed that hair brushing and getting dressed were very important daily activities (data not shown).

Attitudes

The majority of respondents agreed that oral health is an important part of general health and that dental care is extremely important for residents at their facility. Only about a quarter felt that although dental care is important, it fell below the priority of general medical care. Slightly less than half of the respondents felt the oral health of their residents was "Good," and reported that they were very satisfied with the quality of oral treatment provided and the way the residents' oral care needs were met at their facility (Table V).

Table III. SNAs' Awareness of Services offered by Dental Hygienists in LTCF (n=171)

Adminstrator	% (n)
Awareness of the practice of dental hygienists who can offer preventive services in LTC	
Yes	25 (38)
No	75 (116)
Present oral health training for staff (n=121)*	
Extremely Interested/Somewhat Interested	77 (93)
Neither Interested or Uninterested	7 (9)
Not at all interested/Somewhat Interested	16 (19)
Perform oral health screenings and referrals to dentists (n=120)*	
Extremely Interested/ Somewhat Interested	69 (83)
Neither Interested or Uninterested	13 (16)
Not at all interested/ Somewhat Interested	18 (21)
Perform oral prophylaxis or periodontal treatments, if legal in state (n=119)*	
Extremely Interested/Somewhat Interested	66 (79)
Neither Interested or Uninterested	18 (21)
Not at all interested/ Somewhat Interested	16 (19)
Institute fluoride varnish program (n=119)*	
Extremely Interested/ Somewhat Interested	51 (61)
Neither Interested or Uninterested	26 (31)
Not at all interested/ Somewhat Interested	23 (27)

*Items answered only by respondents answering no to first item.

Oral care practices

SNAs in this study reported that the oral/nutritional status and oral/dental status sections within the MDS were performed most often by "other staff" consisting of CNAs or designated MDS nurse/coordinators. Slightly over half reported having a written dental care plan for their residents' dental needs beyond daily tooth brushing, and that nurses in the LTCF provided oral care training for their staff (Table VI). The majority of respondents reported that this training covered the importance of oral care (90%), tooth brushing (85%), referral to a dentist (73%), identification of sores or infections in the

Table IV. Responses to Knowledge Statements Regarding Oral Care (n=171)

Administrator	% (n)
Each resident should have their teeth brushed daily	
True	99 (147)
Residents with dentures need annual dental examinations	
True	93 (137)
Residents can lose teeth, experience decay or become physically ill from dental disease	
True	100 (148)

Table V. SNAs' Attitudes Regarding Oral Care (n=171)

Administrator	% (n)
Oral health is an important part of general health	
Strongly Agree/Agree	93 (139)
Strongly Disagree/Disagree	7 (10)
Response to oral health perception statement (choose one you agree with most)	
Dental care is extremely important for residents at this facility	70 (103)
Dental care is important, but would fall below the priority of general medical care	27 (39)
If there is time, mouth care is a worthwhile service to provide	1 (1)
Overall, assuring oral health is a minor emphasis of the care provided to residents	3 (4)
I believe the oral health of residents at this facility is:	
Excellent	5 (8)
Good	47 (71)
Fair	39 (58)
Poor	7 (11)
Unknown	1 (2)
I am very satisfied with the *quality* of oral treatment provided to residents at our facility.	
Strongly Agree/Agree	48 (72)
Neither Agree nor Disagree	24 (40)
Strongly Disagree/Disagree	28 (41)
I am very satisfied with the *way oral care needs of residents are met* at this facility.	
Strongly Agree/Agree	45 (66)
Neither Agree nor Disagree	27 (40)
Strongly Disagree/Disagree	28 (42)

mouth (72%) and techniques to address barriers to oral care (69%). However only about one third (32%) of the respondents reported providing training on how to identify dental cavities (data not shown).

The majority of SNAs reported having neither a dentist on staff nor having on-site dental equipment. Of those who reported not having on-site dental equipment, over three quarters (77%) said they would consider offering on-site mobile oral care services provided that a dental professional would bring in the equipment and deliver the care.

Over half of the SNAs reported that mouth care is combined with other activities of daily living (ADLs) and charted as being completed together. Although almost all reported that their facility conducted periodic performance evaluations, only about half of these respondents reported that the quality of oral care is considered as part of the performance evaluation (Table VI).

Almost all SNAs reported that residents at their facilities received some form of daily oral care. Thirty-four percent reported that residents received oral health assessments or exams twice a year; only 25% reported that residents received oral health assessments or exams monthly. Twenty-eight percent reported that residents at their facility received referrals for dental evaluation twice a year, while 42% reported that residents received referrals only when there is a dental emergency (data not shown).

Discussion

This exploratory study investigated the knowledge, attitudes, and practices of a national sample of SNAs regarding the oral care provided to their LTCF residents and the role that dental professionals play in their facilities. Various resources and methods impacting the oral health of LTCF residents were examined. Several note-worthy findings have laid the foundation for more extensive additional studies surveying larger samples of SNAs.

SNA respondents in this study were largely unaware that DHs could offer oral disease prevention services in the LTCF setting. However, after reading an explanation of the many services that qualified direct access DHs, such as RDHAPs, could provide, more than half of the respondents were interested in utilizing DHs to provide a variety of important health-related functions, including oral health training of the facility staff, screenings for oral cancer and other oral conditions, the provision of oral prophylaxes and fluoride varnish applications, and to make dental referrals for their LTCF residents. Respondents' interest in DHs providing these services in LTCF mirrors the findings of other studies surveying

Table VI: Oral Care Practices as Reported by SNAs (n=171)

	% (n)
Who performs Minimum Data Set for Oral/ Nutritional Status (Section J)	
Unit charge nurse	19 (33)
Other staff (i.e. CNA, MDS nurse/ coordinator)	46 (78)
Dietician	33 (56)
Dentist	2 (3)
Dental hygienist	<1 (1)
Who performs Minimum Data Set for Oral/ Dental Status (Section K)	
Unit charge nurse	24 (39)
Other staff (i.e. CNA, MDS nurse/ coordinator)	58 (92)
Dietician	14 (23)
Dentist	2 (3)
Dental hygienist	2 (3)
Written plan for dental needs beyond daily toothbrushing	
Yes	51 (76)
No	49 (74)
Who provides oral care training for staff	
Nurse	58 (81)
Doctor	<1 (1)
Dentist or other oral health care professional	19 (26)
Other administrative staff	5 (7)
No one	1 (2)
Other	
Staff development	6 (9)
Educator	5 (7)
Miscellaneous	5 (7)
Dentist-on-staff	
Yes	41 (61)
No	59 (89)

	% (n)
Residents go out of facility for dental care	
Yes	72 (108)
No	28 (42)
On-site dental equipment	
Yes	29 (43)
No	71 (107)
Facility offer on-site dental services	
Yes	64 (69)
No	34 (36)
Unsure	2 (2)
Would you consider on-site mobile oral care services where a dental hygienist would bring in equipment to clean teeth and screen the mouth in the resident's room or somewhere else in the facility in the future, if available?*	
Yes	77 (27)
No	3 (1)
Unsure, more information is needed	20 (7)
With regard to basic categories of activities of daily living, mouth care is:	
Separately listed and check off when completed	39 (58)
Combined with other activities of daily living and marked together	52 (76)
Not accounted for	9 (13)
Does facility conduct periodic performance evaluations for those providing assistance with activities of daily living?	
Yes	93 (138)
Is the quality of oral care taken into consideration when conducting performance evaluations?	
Yes	58 (80)
No	25 (34)
Unsure	17 (24)

* Item was asked only if participant responded no to having on-site dental equipment

executive directors and mangers of LTCFs.[22,23] A larger, more in-depth study of SNAs would further support collaboration of DHs and SNAs to serve this population and provide an impetus for DHs who may be interested in providing oral health-related services to LTCF residents. Providing necessary oral health care to underserved older adult populations addresses the objectives of Health People 2020 by increasing the proportion of older adults who are up-to-date on a core set of clinical and preventive services while also increasing the proportion of the health care workforce with geriatric certification.[24] Further research with SNAs may also clarify the conflicting data in regards to the high value placed on oral health versus the reality of the oral health of the LTCF resident. In this study, SNA respondents reported being knowledgeable about the relationship of oral health to general health, the need for daily tooth brushing and annual dental exams for all residents, including those with dentures. They also had positive attitudes supporting the importance of oral health for residents in LTCF. In spite of their awareness of these factors, they rated their residents' oral health as only "good" or "fair." While these findings are consistent with those of Pyle et al.,[20] the opposite was found in two other studies, reporting that directors of nursing exhibited low knowledge of oral health-related issues concerning oral lesions, daily oral care and denture care.[25, 26]

Fewer than half of the respondents in this study agreed that they were "very satisfied" with the quality of dental treatment and the methods by which residents' oral care needs were met in their LTCF; this was in congruence with the response that their residents' oral health was only "fair" to "good". These findings were similar to the results of three other studies,[26-28] but contrary to those of others.[11] Nunez et al. study of directors of nursing indicated that their residents received quality dental services.[11] While these diverging results could be a result of differences in facilities, respondents' positions, or phrasing of the questions, further research needs to be conducted to resolve the differences in satisfaction with the quality of oral care provided and the actual oral health of the LTCF resident. LTCF administrators may be interested in data exploring the reasons for the lack of correlation between SNAs' positive attitudes toward the importance of oral hygiene and their apparent lack of satisfaction with the way oral care needs of LTCF residents were being met.

Fewer than half of the SNA respondents in this study reported having a dentist-on-staff and that the majority of their residents leave the facility for dental care illustrating some of the challenges related to access to care and a finding that is similar to a number of other studies.[11, 20, 21, 23, 31] Smith and colleagues reported that only 19% of their participants had a dentist-on-staff.[29] In contrast, the majority of the executive directors, Pyle et al. surveyed, reported having a dentist-on-staff.[17] This significant difference may be due to differing interpretations of the meaning of dentist-on-staff. Some respondents may interpret "on staff "to mean a dentist actually working within the facility with dental equipment, while others might have considered it to mean simply a dentist of record. One advantage to conducting exploratory studies, with a limited number of participants, is that ambiguities can be addressed and corrected before distributing the survey to a larger number of potential participants. A future survey should include a clear and concise definition of a dentist-on-staff and pose additional questions regarding the role of the dentist and other dental personnel. Because the majority of LTCFs apparently do not have a designated dentist-on-staff, future studies may address this issue by identifying barriers to transporting residents outside the facility and provide data affecting administrators' decisions on policies regarding residents' dental care and treatment.

Approximately three quarters of the respondents in this study reported that they would consider adding mobile oral care services to their facilities, a finding similar to Chung and colleagues.[23] In contrast, more than half of the respondents in a study by Johnson et al. stated uncertainty regarding implementing on-site mobile oral care services despite having sufficient space available to offer such services;[21] however cost may also have been a concern. It would be interesting to know whether DHs would consider encouraging LTCFs administrators to invest in mobile dental equipment, which both dentists and DHs could use, in order to offer on-site or in-bed oral care services. A large-scale study of DHs could survey the concept of dual use of space and equipment as well the DHs interest in providing preventive and therapeutic oral care at a LTCF.

The course content of staff oral care in-service training by nurses varies as well as the frequency of oral assessments which has been reported as ranging from monthly to annually.[8, 21, 23, 26] Only one third of the respondents in this study reported specific training on dental caries identification. Since caries detection was not included in most of the oral care trainings, nurses may be overlooking obvious carious lesions while performing oral assessments. Further research could explore the relationships between the frequency of oral assessments and course content of staff training with the LTCF residents' overall oral health.

A limitation of this study was the low response rate to the electronic survey. Recruiting sufficient respondents is inherent in internet surveys, particularly surveys of healthcare professionals, distributed using email addresses. Also, respondents in this study may have inherently had a greater interest in oral health at their LTCF with opinions differing from the non-responders, creating a response bias. Social bias may have also occurred in that respondents may have answered more

positively regarding the oral care services provided at their LTCF, knowing that certain practices must be followed in accordance with health and safety regulations. However, these limitations should not negate the results of these exploratory findings that may be instrumental in initiating larger scale studies that could potentially positively impact the oral health of LTCF residents.

Conclusion

Improving the oral health of LTCF residents requires both oral health care providers and LTCF personnel to assume greater responsibilities. SNAs play a pivotal role in influencing, coordinating and reinforcing the oral care services provided in LTCFs.[7, 8, 10-12, 31] This study's exploration of the knowledge, attitudes, and practices of a national sample of SNAs yielded data that can be valuable to the design of future studies to assess the validity of these initial findings.

Additional studies could probe for the basis for the SNAs' lack of awareness of the full range of oral health education and services that DHs can provide, as well as what role DHs may play in resolving the issues. According to the results of this study, only one quarter of the respondents were initially familiar that DHs were competent to provide preventive oral care services in a LTCF. However, once the respondents were informed of the skills and expertise possessed by DHs, they were interested in having DHs present staff oral health in-service trainings, perform oral screenings, institute fluoride varnish programs and make dental referrals. More research is needed to explore collaboration of DHs with nursing staff members and other health professionals who care for LTCF residents, in conjunction with more extensive studies addressing oral care in LTCF and various means of improving the oral health of LTCF residents. Optimal oral health not only contributes to overall systemic health, but also promotes a better quality of life.

Acknowledgements

The authors would like to thank The National Association of Directors of Nursing Administration for distributing the survey to their members; Dr. Benjamin Chaffee, DDS, MPH, PhD for his guidance with the manuscript and Cheryl Davis, RDH, MS, JD for her excellent writing skills.

Lastly, Dr. Margaret Walsh, passed away before this article was accepted for publication. The authors are grateful for her amazing mentorship throughout this entire study. Her legacy and contributions to dental hygiene research will continue to positively impact the profession for years to come. She is greatly missed.

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