Oral health assessment and staff perspectives following a student practicum in long-term care settings

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ABSTRACT

Introduction: Better methods and protocols must be developed to perform proper daily mouth care for geriatric residents in long-term care (LTC) facilities. A practicum was initiated in which senior dental hygiene students worked at 2 LTC facilities to provide daily mouth care for residents, conduct oral health (OH) assessments, and when possible, provide OH care instruction to health care aides (HCAs) and other staff. In-service educational sessions were also provided to LTC staff by two registered dental hygienists. This article provides results of the oral assessments and results from the interviews. **Methods:** Oral assessment data were collected from residents using a modified version of the Oral Health Assessment Tool (OHAT). At the end of the practicum, individual interviews were conducted with HCAs, RNs, education coordinators, and executive directors at the LTC facilities. **Results:** Residents had poor oral health: 20.4% had healthy oral cleanliness, 12% had healthy tongues, and 38% had healthy gums and tissues. Most residents had generalized plaque (63%) and generalized hard debris (50%). Sixty-three percent of residents required some or total assistance with mouth care. Analysis of interview transcripts identified the following themes: 1) minimal to no interaction between staff and dental hygiene students; 2) positive feedback for student presence; 3) minimal mouth care training of facility staff; 4) regular mouth care routine done twice daily; 5) problems with administering mouthcare to residents; 6) lack of awareness of new Edmonton Zone mouth care guidelines; 7) plans for administrative staff to address follow-up to student oral health recommendations. **Conclusion:** This study further confirmed that improvements must be made in the provision of daily mouth care in LTC and that ways to effectively incorporate and involve students with the daily routine in LTC facilities must be examined.

RÉSUMÉ

Introduction : De meilleures méthodes et protocoles doivent être élaborés afin d'offrir des soins buccodentaires quotidiens et adéquats aux personnes âgées vivant dans les centres de soins de longue durée (CSLD). Un stage a été mis en place et des étudiants séniors en hygiène dentaire ont travaillé dans 2 CSLD afin d'offrir des soins buccodentaires quotidiens aux résidents, de faire des évaluations de santé buccodentaire et, autant que possible, d'instruire les aides en soins de la santé et les autres membres du personnel du centre relativement aux soins d'hygiène buccodentaire. Des séances de formation ont été données sur les heures de travail au personnel du CSLD par 2 hygiénistes dentaires autorisées. Le présent article présente les résultats des évaluations de santé buccodentaire et des entrevues. **Méthodologie :** Les données des évaluations buccodentaires ont été recueillies auprès des résidents à l'aide d'une version modifiée de l'Outil d'évaluation de l'état de santé buccodentaire. À la fin du stage, des entrevues individuelles ont été réalisées auprès des aides en soins de la santé, des infirmières, des coordonnateurs de la formation et des directeurs administratifs des centres de soins de longue durée. **Résultats :** Les résidents avaient une mauvaise santé buccodentaire : 20.4 % des résidents avaient une bonne hygiène buccodentaire, 12 % avaient la langue en santé, et 38 % avaient les gencives et les muqueuses en santé. La plupart des résidents (63 %) avaient de la plaque généralisée et la moitié d'entre eux (50 %) avaient du tartre généralisé. Soixante-trois pour cent des résidents avaient besoin d'un peu d'aide pour leurs soins d'hygiène buccodentaires ou devaient recevoir des soins d'hygiène buccodentaires complets. Les observations suivantes ont été faites à partir de l'analyse des transcriptions d'entrevues : 1) il y avait peu, voire pas d'interaction entre le personnel et les étudiants en hygiène dentaire; 2) la réaction à la présence d'étudiants était positive; 3) le personnel avait une formation minimale en soins buccodentaires; 4) la routine régulière des soins buccodentaires était faite 2 fois par jour; 5) des difficultés existaient dans l'administration des soins buccodentaires auprès des résidents; 6) le personnel n'était pas au courant des nouvelles recommandations du guide de soins buccodentaires Edmonton Zone; 7) des plans ont été établis afin que le personnel administratif puisse faire un suivi d'après les recommandations des étudiants relativement aux soins buccodentaires. **Conclusion :** Cette recherche confirme en outre que des améliorations doivent être faites par les CSLD en matière de prestations de soins buccodentaires quotidiens. Il faut explorer comment les étudiants peuvent s'engager dans les CSLD et comment incorporer leurs services dans la routine quotidienne des soins buccodentaires des résidents.

Key words: aging; clinical practicum; dental hygiene students; long-term care; mouth care protocol; oral health; oral health assessment tool; oral health status; seniors

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BACKGROUND

Poor oral health care for elderly residents of long-term care (LTC) facilities and the resultant poor oral health among this population are widespread problems that have been documented in studies and reviews from researchers internationally.[1-23] These findings are particularly troubling considering that the size of the elderly population is growing,[24-26] with greater numbers entering LTC facilities and requiring care.[2,18,19,27-30] Most of the individuals who reside in LTC facilities are frail and have complex medical problems that result in their being dependent on others for personal care, including oral hygiene needs. The latter is particularly essential because individuals are retaining more of their natural teeth than in the past, and are experiencing more dental disease than their predecessors.[13] Compounding the problem is the fact that LTC residents are at increased risk for oral health complications due to their high-carbohydrate diets, medication-induced xerostomia, lack of access to dental or dental hygiene care, and inadequate daily mouth care.[7,31,32] There is a high prevalence in this population of dental caries,[21] oral pre-cancer lesions,[18] candidiasis, and periodontal disease,[12,31] which may be a direct result of the poor oral care they receive.[33] Chronic oral conditions can lead to problems with chewing, eating, swallowing, speaking, and facial aesthetics, all of which have a negative impact on quality of life.[4,33-47] Poor oral health can also negatively affect a person's general health. Many studies have provided evidence that poor oral health and an excess of oral bacteria are associated with an increased risk of heart disease,[48-50] stroke,[51,52] diabetes,[53] respiratory infections such as pneumonia and influenza,[54-64] and malnutrition.[65]

Despite the fact that poor oral health of elderly LTC residents has long been identified by health care providers and confirmed through many studies, there is a surprising lack of progress being made to improve this situation.[11,31,66,67] Multiple barriers that prevent positive changes from occurring have been identified,[11,28,29,31,68,69] including a significant lack of the following:

- understanding of the importance and value of good oral health
- institutional policy support and accountability
- proper education and training for health care providers
- availability of resources (funding and supplies for dental/hygiene care)
- appropriate oral health assessment tools

One study, which reported on a survey conducted to assess the oral care training in various educational institutions in Norway, revealed that most programs for health care professionals do, in fact, provide future LTC staff with the basic instruction for providing oral care.[70] These findings led the researchers to conclude that problems with proper oral health care delivery in LTC facilities may not be related to a lack of training.[70] For instance, it has been suggested[4,69,70] that, in order to improve the oral health (OH) care of LTC residents, the attitudes of LTC staff concerning OH care must be improved, the responsibility for daily OH care must be clearly allocated, and effective and mandatory OH care protocols should be established.

Establishment of these protocols may influence the level of OH care received by LTC residents.[69,70] A recent study (2009) of LTC facilities in Brazil noted a lack of protocols for oral health procedures, supporting the argument that, regardless of staff training and education, there are system failures within LTC facilities that lead to inadequate oral health care for residents.[6]

Complex medical conditions, physical limitations, and cognitive impairments such as dementia complicate oral health care. Residents often resist when a care provider attempts to perform OH care, making such care difficult to complete.[68] To address this problem, a study was undertaken in a LTC facility involving clinicians and students from both nursing and dental hygiene.[71] The aim of the study was to test the feasibility of a team approach in measuring specific oral health indices, including oral health assessments, scoring oral hygiene, and DMFT.[71] This study successfully demonstrated that nurses and nursing students could use their specific training to help minimize the resistive behaviours of residents, thereby making it possible for dental hygienists and dental hygiene students to work more effectively with the residents when conducting oral health assessments.[71] Other studies have indicated that involving dental professionals in the care of LTC residents is a desirable approach that may have a greater positive impact on the oral health of LTC residents than relying on health care aides and/or registered nurses exclusively.[30,34,58-64,72]

Clearly, better methods and protocols must be developed to perform OH care in LTC facilities in a manner that addresses the unique needs of the LTC population, the training and preparation of staff, and the involvement of dental professionals and/or students, so that proper oral health care becomes a higher priority.

In January 2011, the Dental Hygiene Program at the University of Alberta initiated a practicum called ElderSMILES (Strengthening Mouthcare In Long-term Eldercare Settings), in which senior dental hygiene students worked with residents at 2 LTC facilities. The primary objectives of the practicum were to socialize dental hygiene students to the long-term care environment, to assess resident's oral health, and to provide daily mouth care for residents. The first objective was discussed in a previous article relating to this study which presented a qualitative analysis of the perspectives of the students and their dental hygiene clinical instructors on the challenges they faced in the long-term care setting.[73]

This article reports on the remaining 2 objectives of the ElderSMILES practicum. First, it reports on the oral

assessments and daily oral care performed by the students. Results from an oral health assessment tool have been included to provide details on the LTC residents' oral health and to demonstrate the need for improved and continuing oral care among this population. Second, this article reviews the way the practicum and the students were incorporated into and involved with the daily routine at the LTC facilities. This analysis was based on data obtained from interviews conducted with LTC staff, including health care aides (HCAs), registered nurses (RNs), education coordinators, and the executive directors of the facilities.

METHODS

This study was approved by the Health Research Ethics Board at the University of Alberta. The ElderSMILES practicum was implemented at 2 LTC facilities in Edmonton, Alberta. Students, with supervision by an RDH clinical instructor, conducted oral health assessments of residents, using a modified version of Chalmer's[74] Oral Health Assessment Tool (OHAT) that was developed by the Edmonton Zone of Alberta Health Services and was recommended for regular use in the oral assessment of residents in LTC facilities.[75] Working with a partner, students completed the OHAT for 108 residents across the 2 locations. Using a disposable dental mouth mirror and a visual inspection, students assessed and recorded the amount of plaque and visible hard debris on the teeth. Demographic data and medical history were also recorded for each resident. Where possible, students provided oral health care instruction to HCAs.

Completion of the OHAT requires a visual inspection using 8 categories pertinent to oral health, classifying the findings as 1) healthy; 2) unusual/reportable observations; or 3) unhealthy and reportable. The 8 categories assessed are 1) lips; 2) tongue; 3) gums and tissues; 4) saliva; 5) natural teeth; 6) dentures; 7) oral cleanliness; and 8) pain. When an unusual observation is made in any category, intervention is required; when a category is assessed as unhealthy (reportable), a referral must be made to an appropriate health care clinician, such as a dentist, registered dental hygienist or physician, depending on the condition in question.

The amount of soft debris (plaque) and hard debris (calculus) was generally categorized as mild, moderate or heavy, and the distribution was classified as localized or generalized. A plaque and calculus index was not used as study investigators wanted the students to assess soft plaque and debris and hard deposits in a manner consistent with how LTC staff would conduct this assessment on their own. The level of assistance required by the resident to perform daily oral care was recorded using the LTC facility's categories: 1) independent; 2) some assistance; or 3) fully dependent.

Four staff in-service sessions were provided. At each facility, there was an in-service scheduled for the day shift staff and repeated again for the evening shift. Staff in-service sessions, led by 2 dental hygienists, were 30 minutes each and included a description and the management of oral health issues common to older adults, and a demonstration of how to perform daily mouth care and denture care for residents. In addition, at one facility, a one-hour presentation was made at the monthly meeting of the Resident Family Council by the 2 dental hygienists. Components of the family council presentation included 1) a description of the ElderSMILES program; 2) an explanation of the aging mouth and common concerns; 3) expectations of daily mouth care; and 4) oral health concerns to be reported if observed.

Following the 4-month practicum, individual interviews with a random sample of HCAs from the LTC facilities were conducted by the primary researcher. Individual interviews were also conducted with registered nurses, education coordinators, and executive directors of each facility. Interview guides were developed for each group in order to focus the interviews and to ensure the collection of the same information from each person interviewed (Appendix A). Additional follow-up questions and comments also materialized depending on the conversation, allowing individual perspectives and experiences to emerge, in keeping with recommended qualitative interviewing practices.[76]

All interviews were tape recorded, and an administrative staff member transcribed them verbatim. Full transcriptions of interviews are considered most desirable because they are "enormously useful in data analysis and later in replications or independent analyses of the data."[76] The transcriptions were then independently reviewed by 2 researchers to identify themes for qualitative analysis, which were compared and discussed. It is recommended that more than one person code the data—in this case, to derive themes from interview transcripts—because "important insights can emerge from the different ways in which two people look at the same set of data."[76]

RESULTS

Oral health status and demographics

The OHAT data revealed that very few residents had good oral health: 20.4% of residents had healthy oral cleanliness; 12% had healthy tongues; and 38% had healthy gums and tissues (Table 1). Categories on the OHAT in which a majority of residents were deemed healthy were lips (51.9% healthy); saliva (58.3% healthy); and pain (75.9% healthy) (Table 1). Most residents had generalized plaque (63%) (Table 2), and 57.4% had moderate to heavy amounts (Table 3). Generalized hard debris was found among 50% of residents (Table 4), with 47.2% having moderate to heavy amounts (Table 5). The average age of LTC residents in this study was 80.4 years; females comprised 72% of the residents (Table 6). The majority (62%) of residents in the study population required some or total assistance with daily mouth care (Table 7).

Table 1. OHAT results summary

	Number of residents/percentage									
Category	**Healthy**		**Unusual**		**Unhealthy**		**No response**		**Total**	
Lips	56	51.9%	47	43.5%	2	1.9%	3	2.8%	108	100%
Tongue	13	12.0%	84	77.8%	8	7.4%	3	2.8%	108	100%
Gums and tissues	41	38.0%	54	50.0%	10	9.3%	3	2.8%	108	100%
Saliva	63	58.3%	37	34.3%	3	2.8%	5	4.6%	108	100%
Natural teeth	20	18.5%	29	26.9%	14	13.0%	45	41.7%	108	100%
Dentures	24	22.2%	11	10.2%	9	8.3%	64	59.3%	108	100%
Oral cleanliness	22	20.4%	38	35.2%	41	38.0%	7	6.5%	108	100%
Pain	82	75.9%	10	9.3%	6	5.6%	10	9.3%	108	100%

	Number of residents/percentage							
Category	**Yes**		**No**		**No response**		**Total**	
Natural teeth	56	51.9%	36	33.3%	16	14.8%	108	100%
Dentures	56	51.9%	41	38.0%	11	10.2%	108	100%

Table 2. Distribution of plaque

Distribution of plaque	Frequency	Percent
Generalized	68	63.0%
Localized	16	14.8%
No response	23	21.3%
None	1	0.9%
Total	108	100%

Table 3. Amount of plaque

Distribution of plaque	Frequency	Percent
Heavy	22	20.4%
Moderate	40	37.0%
Mild	22	20.4%
No response	23	21.3%
None	1	0.9%
Total	108	100%

Table 4. Distribution of hard debris

Distribution of hard debris	Frequency	Percent
Generalized	54	50.0%
Localized	15	13.9%
No response	38	35.2%
None	1	1.9%
Total	108	100%

Table 5. Amount of hard debris

Hard debris amount	Frequency	Percent
Heavy	17	15.7%
Moderate	34	31.5%
Mild	17	15.7%
No response	38	35.2%
None	2	1.9%
Total	108	100%

Table 6. Gender results

Gender	Number	Percent
Male	29	26.9%
Female	78	72.2%
Missing data	1	0.9%
Total	108	100%

Table 7. Level of assistance required by resident for mouth care

Level of assistance	Number	Percent
Fully dependent	31	28.7%
Some assistance	36	33.3%
Independent	35	32.4%
No response	6	5.6%
Total	108	100%

Interview data: health care aides

The interviews conducted with the HCAs at the LTC facilities were designed to gather information about their experiences and interactions with the students in the practicum. They were also designed to collect information and insight into the mouth care training and educational preparation of the HCAs, and of the daily mouth care routines followed with LTC residents, enabling the identification of possible barriers, inadequacies, strengths, etc., and a determination of whether or not the practicum effectively addressed the needs of LTC residents and staff. Six main themes emerged from the interview data:

- Minimal to no interaction between facility staff and dental hygiene students
- Positive feedback for student presence
- Minimal mouth care training
- Regular mouth care routine carried out twice daily
- Problems with administering mouth care to residents
- Lack of awareness of new Edmonton Zone mouth care guidelines

Minimal to no interaction between facility staff and dental hygiene students

One of the objectives of the practicum was for students to provide training in daily mouth care techniques to the HCAs. However, this did not occur, with HCAs stating, "I never worked with any of them"; "I did not experience [working with the students], but I saw the students here"; and "I just saw, but never talked to them." Some of the HCAs indicated that they only talked to students in the hallways, but they did not interact with them nor did they receive any instruction on mouth care: "Usually [the students] just asked where somebody's room was, so I just kind of directed them there and that was it."

Positive feedback for student presence

Despite not having any oral health care related interaction with the students in the practicum, some of the HCAs said that the student presence provided an extra incentive for them to clean residents' mouths better, noting that residents' mouths were cleaner than before: "I think some [HCAs] are doing a better job with helping others brush their teeth." In general, the HCAs were very positive about the student presence, saying, "[It is] very helpful [to have] the students around actually" and recognizing that "[the students] have a knowledge for the procedure, how to [do things] much better."

Minimal mouth care training

Analysis of the interview transcripts revealed that the HCAs only had minimal mouth care training, usually consisting of a course lecture and on-the-job training at the LTC facility: "We did some [mouth care] training when I took my schooling, and had hands-on during my practicum. Other than that, it has just been pretty much here [at the facility], just working with our residents." One HCA noted that, both in her training course and when she began work at the LTC facility, she was taught "how to do proper mouth care, and how to use some [mouthcare products] that are good to use." Another noted, "I learned from here and also just retook my [HCA] course." One HCA commented that "some part" of the HCA/Nurse Attendant course is about mouth care.

Regular mouth care routine done twice daily

Study investigators learned that there is a regular mouth care routine at the LTC facilities that is meant to be performed twice daily, first by the day shift either before or after breakfast ("or sometimes after lunch if we have time," noted one HCA), and then again by the evening shift. One HCA said they sometimes perform mouth care when a resident asks to have it done. The mouth care routine includes denture brushing and soaking; gum/mouth cleaning; some tooth brushing; use of toothettes; mouth rinsing; checking for stored food (pocketing); and, checking for sores in mouth. One HCA remarked that, while doing mouth care, they can look around in the residents' mouths to see "if they have red gums or cold sores...cankers... You never know, they might have a sore in there that is why they become sometimes aggressive."

Some HCAs commented that, for some residents who have their own teeth, "We prefer them to try and do [mouthcare] on their own, and then we will check and see how they did"; and "I would encourage the residents if they are able to brush their own [teeth]." However, the HCAs interviewed explained that, if the residents had trouble or asked for help with brushing their teeth, then the HCA would assist them. For residents with dentures, the HCAs generally responded that the residents would be asked to remove them, and then the HCAs would brush and rinse the dentures. One HCA added that she would also "brush their gums and tongue, and then make them gargle and spit if they can." For residents with dry mouths, one HCA stated, "We have little swabs, a special swab with some type of...menthol liquids."

Problems with administering mouth care to residents

Some of the common problems with administering mouth care to residents noted by the HCAs included resistive behaviours; residents who bite down on the toothbrush or toothette; and/or residents who cannot or will not open their mouth wide enough. The HCAs commented frequently that "I noticed these people [residents] are resistive"; "Sometimes people [residents] are refusing. It is hard to open the mouth. But sometimes it depends on you to motivate them"; and "they sure do not like their tongue brushed." Biting down on the toothbrush/toothette was frequently reported: "I have one lady that bites down on the brush...and I just tell her 'Open up wide' and keep cueing her..."; "They will bite down on the toothette or toothbrush, and then it's kind of difficult to brush their teeth properly." One HCA recognized the potential hazard of these latter behaviours, and said, "If they bite on [the toothette] hard enough and will not let go, and you try to take it out of their mouth like that, it just rips off. So, they are going to end up choking on it if you cannot get it out of their mouth."

Lack of awareness of new Edmonton Zone mouthcare guidelines

When asked if they were aware of the new guidelines for mouth care practices in the LTC facilities, most HCAs responded "No." One HCA said, "they just mentioned it is in a binder or something like that. Communication book, something like that." But none of the HCAs who were interviewed knew any details. One important new recommendation in the guideline (of which the HCAs interviewed were unaware) is the discontinuation of the use of toothettes, partially because of the potential choking hazard.

Interview data: Registered nurses, education coordinators, and executive directors

The interviews conducted with the registered nurses, education coordinators, and executive directors at the LTC facilities were designed to gather information about their experiences and interactions with the students in the practicum, as well as to gather their feedback on the practicum in general. Qualitative analysis of the transcripts identified 3 main themes:

- No specific interactions with dental hygiene students
- Positive and encouraging feedback for student presence
- Plans to address issue of follow-up to student recommendations for oral health care

No specific interactions with dental hygiene students

When asked about the students' ability to interact with residents and staff, interviewees commented, "I did not hear anything [about it], so I can only assume that it went well...because if there had been problems, I would have heard about it"; "I did not actually go and see [the students] actually give the oral care part [although] I may have saw [sic] them standing together with a resident..."; "I did not see a lot of interactions" between students and staff/residents; and "At this time and during this time, no I did not" observe any interactions between students and staff/residents. As for their own interaction with the students, it was noted by one that, "other than me speaking to them in the halls," she had no interaction. Recognizing that part of the practicum was meant to include students working with the HCAs, some suggested that "I would probably like to see [in future] ... a little bit more integration [of the students] with the health care aides. I feel like it was like your students kind of doing their thing and our [staff] kind of doing [their own thing]."

Positive and encouraging feedback for student presence

Overall, the education coordinators and executive directors were pleased that the students had been at their facilities, noting that "the residents get a really good assessment from people who study mouths"; "I think [oral care] is one area that is not often looked at in long-term care, and so it was very refreshing to have it"; "the residents who had participated in having an oral examination I think appreciated it"; and when their families learned of it, "they were very pleased about that." No negative comments on the practicum and/or on the students were reported, with remarks such as "Definitely no negative feedback, but I always think that when things are going well that must be good... If there are problems, then yes we hear about them for sure"; and "I have not heard to my knowledge any negative comments [about the dental hygiene practicum] whatsoever."

Plans to address issue of follow-up to student recommendations for oral health care

While the interviewees recognized the importance of follow-up to student recommendations for oral health care, they remarked, "Somehow we must come up with a better way to communicate between the disciplines so that

that information [about student recommendations, and thus follow-up to them] get taken further and it is not lost for the resident"; and "If [the student recommendations] are not flagged somehow for [the RN], she is not going to necessarily take a look at those notes." One education coordinator said, "I know [the RNs] did follow up" on the student recommendations, because "I did not see any of the forms around, so when the forms are done they are followed up with."

DISCUSSION

The oral assessment data provide evidence that daily mouth care received by residents is inadequate. These results are consistent with the poor oral health care in long-term care that has been demonstrated in numerous studies.[1-23]

A lesson learned was in regards to the recommendations made by the RDH and students for any follow-up and referrals needed for the residents to address their oral health. It was not clear from the facilities if there were specific protocols for oral care referrals, which was also noted by the education coordinators and executive directors who were interviewed. There was no way to determine if follow-up to the recommendations and referrals had occurred. This is an important element of resident care that will require further assessment and cooperation by all parties.

Qualitative analysis of the interview data revealed that almost none of the LTC staff interacted with the students in any beneficial capacity. Students were therefore not a part of "the team," and although they were a welcome addition to the workings of the facility, they were an independent addition to the daily routines of staff, rather than an integral one. This finding highlights the importance of promoting the acceptance and incorporation of dental hygienists and dental hygiene students into the regular care routine at LTC facilities, promoting teamwork and positive rapport with LTC staff. A series of reports about a dental hygiene student practicum in residential aged care facilities (RACF) in Australia revealed that, although minimal at first, rapport between students and RACF staff, as well as acceptance of students in the facilities, improved significantly the longer the students were at the RACFs.[77-79] In addition, when the students developed a more integral working relationship with RACF staff, the students' abilities to understand and deal with the medical complexities of the residents improved, as did the ability of the staff to provide oral care to the residents, as each group learned from the other.[77-79]

In order to provide the best care for residents, staff and students should work together so they can learn from each other, as in the Australian example. Some studies have suggested that LTC staff are not able to provide proper daily mouth care to residents because they lack the necessary education and training to adequately carry it out.[11,12,57,68,80,81] This theory is supported by comments from the LTC staff who were interviewed during this study. Because it has been recommended that health care staff at LTC facilities be provided with specialized training so that they are better able to provide appropriate daily oral health care for residents,[31,82] this study incorporated the provision of hands-on training to the HCAs, recognizing that they are the ones who provide daily mouth care. However, this aspect of the practicum was not successful as there was minimal interaction between students and LTC staff. This experience was similar to other studies in which researchers attempted to provide mouth care training to LTC staff (HCAs and RNs), but were also unsuccessful.[12,27] However, some studies obtained positive results after providing training to HCAs and/or RNs to perform oral health care, and afterwards the oral health of LTC residents did improve, demonstrating that such training efforts can be successful.[82-88]

The ElderSMILES practicum was designed to incorporate hands-on demonstrations of mouth care onsite with facility staff, as well as to provide in-service educational sessions. The 30-minute in-service sessions for LTC staff—which consisted of a mostly passive seminar format—did not result in the desired outcome of LTC staff being more involved with the students, thus staff did not obtain essential hands-on training. Several studies in LTC where there have been significant post-training improvements in knowledge, attitude, and, most importantly, behaviour of LTC staff, involved both in-service educational lectures as well as interactive and hands-on training.[82,83,86-88] The in-service session in these studies ranged from 1 to 3 hours in length, [82,83,86-88] and another successful LTC study, which only used in-service education, had a 4-hour long session.[84,85] Therefore, in future applications of this practicum, it will be necessary to change the design and increase the duration of the in-service sessions to include more hands-on and interactive learning.

CONCLUSION

This study demonstrated the poor oral health of residents in long-term care and the need to improve oral health care in these facilities. There is a need for students to be incorporated into and involved with the daily routine at the LTC facilities, in order to develop working relationships with other health care staff to ultimately provide the best possible care for the residents.

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APPENDIX A
Interview Guides

Interview guide for health care aides

1. Describe your previous training in mouth care.
2. What do you do for resident mouth care?
3. Describe your experience working with the dental hygiene students.
4. Do you wear any personal protection such as gloves and mask when providing mouth care to residents? If so, describe.
5. Do you have any problems with administering mouth care to residents? If yes, what kinds of problems?
6. How many times have you had an individual demonstration in mouth care techniques from a dental hygiene student?
7. Have you been able to follow the mouth care plan set out by the dental hygiene students? If not, what are the challenges?
8. Have you noticed any changes or improvements in resident oral hygiene since this project began?
9. Is there anything that you can recommend to help improve mouth care for residents?
10. Are you aware of the new AHS guidelines for LTC facilities? It does not recommend the toothette but recommends that thee toothbrush be used daily? What are your thoughts on this change?
11. How are toothbrushes or other mouth care aids stored in resident's rooms?
12. Have you used a powered toothbrush with any residents? If so, how did you find the experience with using it compared to manual toothbrushing?

Interview guide for registered nurses

1. Describe your role in mouth care for the residents.
2. If involved with mouth care, have you noted any change in the residents' oral hygiene practice since the project began?
3. Have you had the opportunity to observe or work with the dental hygiene students?
    a. If so, what did you observe?
    b. Do you have any recommendations for change based on what you observed the students doing?
4. What is your perception of how the dental hygiene students are managing with the residents?
5. What is you perception of how the dental hygiene students are managing with the HCAs?
6. Do you have any recommendations for change to the overall project?

Interview guide for education coordinators and executive directors

1. How do you feel the project worked with the dental hygiene students?
2. Were you able to observe any interactions between the dental hygiene students and any staff and/or the residents?
   If so, can you share your thoughts on their interactions?
   Do you have any suggestions for their interactive style?
3. Have you received any feedback, positive or negative, about the students being here?
   If so, can you share some of the feedback with me?
4. If more direction is needed to train the HCAs to do something specific for daily mouth care for the residents, what is the best way for that to happen?
   Who would direct them to do this?
5. Do you have any recommendations for changes that you think may help improve the overall project?
6. Would you like to see the project continue?
7. Have you implemented the new AHS guidelines? What are your thoughts on the discontinuation of the toothette and implementation of the toothbrush for daily care?

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