SciForschen
Open HUB for Scientific Research

ISSN 2378-7090

International Journal of Dentistry and Oral Health

Research Article | Volume: 2.6 | Open Access

Knowledge, Attitudes, Beliefs and Training of Care Givers and Nursing Staff in Relation to Oral Care in Institutions for Older People in Trinidad

Amit Paryag[1], Reisha Rafeek[2]* and Debbie Lewis[3]

[1]*Lecturer, Fixed and Removable Prosthodontics, School of Dentistry, The University of the West Indies, Mount Hope, Trinidad and Tobago*
[2]*Senior Lecturer, Restorative Dentistry, School of Dentistry, The University of the West Indies, Mount Hope, Trinidad and Tobago*
[3]*Specialist in Special Care Dentistry, Dorset Healthcare University NHS Foundation Trust, Poole, UK*

***Corresponding author:** Reisha Rafeek, Senior Lecturer, Restorative Dentistry, School of Dentistry, The University of the West Indies, Mount Hope, Trinidad and Tobago, Tel: +868-682-4038; **E-mail:** reisha.rafeek@sta.uwi.edu

Received date: 11 May 2016; **Accepted date:** 03 Jun 2016; **Published date:** 08 Jun 2016.

Citation: Paryag A, Rafeek R, Lewis D (2016) Knowledge, Attitudes, Beliefs and Training of Care Givers and Nursing Staff in Relation to Oral Care in Institutions for Older People in Trinidad. Int J Dent Oral Health 2(6): doi http://dx.doi.org/10.16966/2378-7090.207

Abstract

Background: Previous investigations in the United Kingdom reveal that the attitudes or reasons why oral hygiene skills may not be practiced by caregivers in home for older people range from fear and psychological concerns to distaste when dealing with oral-hygiene. No similar research has been done in the Caribbean.

Objectives: To investigate the Knowledge, Attitudes, Beliefs and Education of Caregivers & Nursing Staff in relation to oral care in long term care institutions for older people, in Trinidad.

Materials and Methods: 42 questionnaires were couriered to the respective homes with prepaid return packages being enclosed. Completed questionnaires were returned via courier and the data entered into an excel spread sheet for analysis.

Results

- Response Rate - 69%.
- 27.6% of caregivers completed nursing education.
- 69.0% responded in the affirmative to having received basic education in oral care.
- 72.4% of respondents stated that they would like to receive education in oral care.
- 89.7% believed that brushing and flossing daily prevent gum disease.
- 79.3% agreed that dentures should be removed at night.
- 69.0% responded incorrectly that the statement “If the residents gums bleed when you are brushing their teeth, you should stop brushing”, was true.

Conclusion: Although the knowledge of caregivers is adequate in many aspects, there is room for improving their awareness of appropriate practices for oral-care of residents in long-term care institutions. While attitude toward oral care and the improving of knowledge is positive, erroneous beliefs need addressing. Education is inadequate and appears to be impacting upon knowledge, attitudes and beliefs negatively in certain key areas of oral care.

Keywords: Oral care; Caregivers; Older people

Introduction

Increasing longevity and declining fertility rates have been shifting the age distribution of populations in all industrialized countries toward older age groups. In all regions people are increasingly likely to survive to older ages. Although the highest proportions of older persons are found in the more developed regions, the rate of growth of this age group is more rapid in the less developed regions. As a consequence, the United Nations projects the older population will be increasingly concentrated in these regions [1].

Rawlins [2] noted that Caribbean populations have aged as a result of the demographic transition, i.e. significant decline in mortality resulting in population increase, fertility rate decline leading to decline of younger population and trend toward increased population of older age groups and increased life expectancy. In the Caribbean region the population of those over 65 has raised from 4 to 10 % over the period 1950 to 1990 [3]. The average life expectancy in Trinidad in 1999 was 74.2 while that in Barbados was 76.7 and Jamaica 75.2. The population over age 60 years as a percentage of the total population projected for 2025 is 20.0% for Trinidad, 21.55% for Barbados and 14.6% for Jamaica [3].

According to the Central Statistical Office in Trinidad and Tobago, a 13.9% increase in the number of persons over age 60 was expected to be observed between 1990 and 2000, with a further increase of 33.7% in this

age group, over the level observed in 2000, being seen by 2010 [4]. At the present time there is not in existence a detailed and integrated written policy on ageing for Trinidad and Tobago. The challenges faced by older people here however are not very different from older people around the world.

The prevalence of diseases in the older population has generally increased over time. An increased prevalence of chronic diseases, including heart disease, arthritis, and diabetes, was recorded in older people between the 1980s and 1990s in the USA [4,5]. An increase in disease and chronic conditions has been reported in people aged 65-69 years [6] in the UK for example, in arthritis and chronic airways obstructions. Not much is known of the lives of men and women over age 60 in the Caribbean. Globalization and lifestyle changes, unhealthy diets and little exercise have now become the causes for diseases, such as diabetes and cardiovascular disease, the major causes of morbidity and mortality in the region.

As emphasized in the World Oral Health Report 2003, the World Health Organization (WHO) sees oral health as integral to general health, as a determinant for quality of life, and essential for well-being [7]. Oral health inequalities related to age, race, ethnicity, gender, and socioeconomic status exist. Many general diseases manifest in the mouth, and oral disease may be the first indication of other life-threatening disease. The interrelationship between oral health and general good health are even more pronounced among older people, where the most common barriers are impaired mobility, transportation, financial hardship, and negative attitudes about oral health [7]. Oral health is one of the problems in long-term care (LTC) for the older people for which minimal intervention can result in maximum benefit for quality of life, psychological well-being, and life satisfaction [8,9]. Significant physiological and psychosocial consequences, as well as discomfort; have been attributed to untreated oral problems among older adults who are severely disabled [10,11].

The structural and functional health of the mouth and teeth represents an important constituent of overall quality of life, specifically influencing the ability of the individual to eat, smile, and socialize [12,13]. Good oral hygiene can dramatically affect the quality of a person's life, affecting such things as chewing, eating, swallowing, speaking, facial aesthetics, and social interaction. Good oral health in the LTC population can help protect residents from contracting potentially deadly diseases while poor oral care correlates with an increase in systemic diseases [14]. A significantly higher prevalence of cardiovascular complications, including stroke, transient ischemic attack, angina, and myocardial infarction, has also been noted in subjects with diabetes who had severe periodontal disease than in those who had minimal or no periodontal disease [15].

Good oral health has positive benefits for health, dignity and self-esteem, social integration and general nutrition, and the impact of oral ill-health on an individual's quality of life can be profound [16]. It is recognised that within long term care facilities, numerous problems militate against routine provision of oral care and encourage neglect. Barriers to care such as lack of availability of staff to undertake care, lack of appropriate staff education, the attitudes of older people and their caregivers are but a few. For older people there is a low perceived need for oral care. Anxiety and fear may be as influential as any physical disability resulting in an inability to articulate the need for treatment.

Oral care is a necessary but often underemphasized component of personal care provided to residents of long-term care facilities [17]. Nurses have a professional duty to ensure basic oral health care for patients [18]. Like bathing, toileting, and feeding, oral care, is essential to the holistic care that nurses and nursing assistants provide to long term care residents who cannot care for themselves. Maintenance of oral hygiene and provision of mouth care are considered basic but essential nursing interventions [19], especially for older institutionalized patients, who have higher levels of oral disease than those living at home [20-22]. Family members and care staff at residential homes for older people are often the only way residents can achieve proper oral hygiene. The ability of the caregivers may be influenced as much by education as by attitude.

Although nursing staff members are generally interested in improving the oral care of patients [23] it has been recognized that their knowledge in this area is insufficient [24,25]. Clearly defined or established policies for oral care or dental hygiene education are few [25,26], receiving little or no education in oral disease or mouth care, oral hygiene becomes perceived by the caregivers not as part of their role but as a task that has to be done [27]. Insufficient education in oral health and disease, as well as in dental hygiene, in both undergraduate and postgraduate nursing curriculums, has been recognized as a major barrier to providing adequate oral care for hospitalized and nursing home resident older people [19,23,28].

Nurses are frequently unaware of the importance of oral health care within holistic care, and are unable either to carry it out or to train auxiliary staff to do so [29]. Even when education in oral hygiene procedures is done, having such information does not guarantee that these skills will be practiced [30,31].

Weeks and Fiske [26] noted three main inhibiting factors were in provision of oral care to older patients. These were:

(ι) Time constraints and priorities,

(ιι) A lack of education and

(ιιι) A lack of understanding of the processes causing dental disease.

Nursing home staff members considered performing oral hygiene procedures on the residents to be an unpleasant task [23,32,33]. Another major barrier among the nursing staff was fear of damaging residents' removable dentures or their teeth during oral hygiene tasks [32,34].

In investigations previously conducted in the U.K. it was determined that the attitudes or reasons why oral hygiene skills may not be practiced by caregivers range from fear and psychological concerns to distaste when dealing with oral hygiene. With no similar research having been done in the Caribbean region an investigation was designed and carried out to achieve the objectives stated. The aim of the study was to investigate the knowledge, attitudes, beliefs and education of caregivers/nursing staff in relation to oral care in government funded long term care (LTC) institutions for older people, in Trinidad.

Materials and Methods

Long term care institutions for older people in Trinidad and Tobago are registered with the Ministries of Health and Social Development. All the institutions are privately run. Nine of these homes however receive a subvention from the government to assist with their expenses. It was decided that the homes receiving this subvention would provide the sample for the study. After receiving the approval of the Ministry of Social Development and the ethics committee of the university, telephone conversations were held with the management of eight of the nine homes receiving subventions. The ninth home could not be reached by telephone or e-mail. The eight homes agreed to participate in the study by having persons at the home responsible in any way for assisting with care of the residents answer the questionnaire. The questionnaire had been previously piloted in a private institution.

The number of respondents at each home was ascertained and questionnaires mailed to the respective homes with prepaid return packages being enclosed. Also included was a letter explaining the purpose of the study and contact details for the author in the event that clarification on any item was required? The total number of questionnaires sent out was forty two (42).The questionnaires were left with the homes for one week after which a follow up call was placed.

The completed questionnaires were delivered to the author via courier the following week and the data entered into an excel spreadsheet for analysis. The questionnaire was divided into four (4) sections to enable collection of demographic data and education as well as data on knowledge, attitudes and beliefs of caregivers. In assessing Knowledge of caregivers a 14 point checklist adapted from Caring for Smiles Guide for Trainers - Better Oral Care for Dependent Older People [35] was used. The questions used True / False responses. The attitudes and beliefs were assessed by 13 questions with responses on a Likert scale 1- 4 where 1 was strongly agree and 4 strongly disagree. There was also an open response section.

Results

Twenty nine (29) of the forty two (42) questionnaires sent out were completed and returned giving a response rate of 69%. This response as obtained from eight (8) of the nine (9) government Assisted Homes. Two (2) of the respondents were male and twenty six (26) female, and one person did not state their gender. The respondents were distributed in the following manner: Thirteen (13) caregivers, one (1) retired caregiver, one (1) assistant caregiver, four (4) matrons, one (1) assistant matron, two (2) geriatric nurses, two (2) nurses, one (1) trainee nurse, one (1) nurse's aide, one (1) Human Resource officer, one (1) manager and one (1) person who did not specify their position. A matron is a female nurse who is in charge of the other nurses in the institution. The age range of persons responsible for care giving was between 21 years and 58 years of age, with a mean age of 41.8 years and a modal age of 49 years.

Of the four (4) matrons, one (1) started and completed nurses education (and had 15 years' experience); two (2) did not have nurses education (but had 5 years' experience and 22 years' experience respectively); one (1) did not reply as to level of education (but had 8 years' experience). The age of matrons ranged between 42 and 75 years. About thirteen (13) caregivers, only two (2) completed nurses education. Similarly only 1 Geriatric Nurse, one (1) Nurse and 1 trainee nurse completed nurse's education. Of the other persons (Human Resource Officer (1), Manager (1), Assistant Matron (1), Assistant Caregiver (1) none had any nursing education.

The results of the various sections of the questionnaire are presented as tables 1, 2 and 3 respectively. The graphical representations of these data are seen in figures 1, 2 and 3 respectively. Table 4 represents the free response questions and answers.

Discussion

The responses to the questionnaires were obtained from eight (8) homes sampled. The response rate to questionnaires sent out in this study was 29 out of 42 (69%). While this is not as high as the response obtained by Frenkel [36] (95%) or Sumiet et al. [37] (78.8%), it is comparable to results obtained by Chung [38] (69.2%) and Jones [39] (64.5%) who also used questionnaires for similar surveys.

It was noted with some concern however that of 11 (eleven) persons holding some sort of rank as a nurse (Four (4) matrons, One (1) assistant matron, Two (2) geriatric nurses, Two (2) nurses, One (1) trainee nurse, One (1) nurse's aide) only four (4) had completed nursing education. Overall only 27.6% of respondents (8 persons) had completed nursing education. It is assumed that these persons received oral care as part of their education while other persons received such education on the job.

As stated previously, maintenance of oral hygiene and provision of mouth care are considered basic but essential nursing interventions [19], especially for older institutionalized patients, who have higher levels of oral disease than those living at home [20-22]. Although nursing staff members are generally interested in improving the oral care of patients [23] it has been recognized that their knowledge in this area is insufficient [24,25]. The findings of this study therefore seem to be in agreement with these previously recorded findings. While 69% of persons responded in

Sl No.	Level of education	Yes %	No %
1	Started secondary school	82.8	13.8
2	Completed secondary school	75.9	20.7
3	Started nursing education	34.5	62.1
4	Completed nursing education	27.6	69.0
5	Started University Degree	3.4	93.1
6	Completed University Degree	3.4	93.1
7	Have received no education in oral care	13.8	86.2
8	Have received basic education in oral care	69.0	31.0
9	Have received comprehensive education in oral care	13.8	86.2
10	Would like to receive education in oral care	72.4	27.6

Table 1: Level of education and education achieved by current caregivers

Sl No.	Questions	Correct Response	TRUE	FALSE
1	Care home staff have a responsibility to look after residents oral health	TRUE	89.7	10.3
2	An oral health risk assessment should be completed within 48hours of admission	TRUE	82.8	10.3
3	A care plan should be completed after the oral health risk assessment is carried out	TRUE	72.4	13.8
4	Dental referral is the responsibility of all staff	TRUE	69	20.7
5	It is the responsibility of staff to help brush residents teeth and help clean residents dentures if necessary	TRUE	79.3	20.7
6	If the residents gums bleed when you are brushing their teeth, you should stop brushing	FALSE	69	31
7	After brushing natural teeth with fluoride toothpaste, the mouth should be rinsed with water	FALSE	86.2	6.9
8	If a resident refuses oral care, it may be because they have dental pain	TRUE	51.7	44.8
9	Lack of saliva does not cause a problem for older people	FALSE	17.2	72.4
10	Teeth should be cleaned twice a day with a fluoride toothpaste	TRUE	89.7	10.3
11	A healthy mouth is important for general health	TRUE	96.6	0
12	Dentures should be taken out at night, cleaned and soaked.	TRUE	96.6	3.4
13	Disposable gloves should be worn when cleaning residents teeth	TRUE	96.6	3.4
14	Sugar does not affect the teeth of older people	FALSE	20.7	75.9

Table 2: Knowledge of caregivers with respect to oral care of the elderly

Sl No.	Questionnaires	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Oral care / cleaning the mouth is important	86.2	13.8	0	0
2	Brushing and flossing daily prevent gum disease	55.2	34.5	10.3	0
3	Health of the mouth is related to health of the body,	62.1	31	6.9	0
4	As people age, they naturally lose their teeth	27.6	24.1	44.8	3.4
5	Dentures should be removed at night.	44.8	34.5	10.3	3.4
6	Dentures should be removed and cleaned after every meal	51.7	37.9	10.3	0
7	People with teeth or dentures should try and clean them themselves.	24.1	51.7	17.2	6.9
8	The resident / patient is responsible for asking for assistance with dental care.	27.6	48.3	17.2	3.4
9	I am not responsible for oral care of the resident / patient	3.4	10.3	31	51.7
10	Cleaning the mouth is difficult because patients don't co-operate	10.3	55.2	31	3.4
11	Cleaning the mouth is difficult because of my lack of education in oral care	10.3	27.6	34.5	24.1
12	Cleaning the mouth is more difficult than personal hygiene	6.9	24.1	37.9	31
13	Cleaning the mouth is more unpleasant than personal hygiene e.g. changing diapers	3.4	13.8	41.4	41.4

Table 3: Attitudes and beliefs of caregivers with respect to oral care of the elderly

the affirmative to having received basic education in oral care, 72.4% (21 of 29) respondents stated that they would like to receive education in oral care.

It has also been observed that nurses are frequently unaware of the importance of oral health care within holistic care, and are unable either to carry it out or to train auxiliary staff to do so [28]. Although from the responses to the questions posed in this study it would appear that caregiver personnel are generally aware of the importance of oral health, deficiencies in existing knowledge and lack of adequate education gives rise to questions about whether those responsible for on the job education of auxiliary staff are able to do so adequately.

The knowledge of caregivers with respect to oral care of older people can be said to be adequate in many respects as seen in the responses to the questions in table 4. According to their responses, the respondents generally possessed adequate knowledge regarding the minimum amount of oral hygiene necessary older people in long term care institutions. 89.7 % felt that teeth should be cleaned twice daily with a fluoride toothpaste. They generally believed that brushing and flossing daily prevent gum disease: 89.7% Agreement. They also understood that oral and systemic healths were related with 93.1% Agreement. Knowledge regarding denture hygiene was also judge to be adequate with 79.3% Agreement that Dentures should be removed at night and 89.6% Agreement that dentures should be removed and cleaned after every meal. These results were similar to that reported by Jablonski et al. [40] and Pyle et al. [41]

There are however several key areas where the knowledge appears to be inadequate for example in response to questions 6 and 7 in table 4. 69% of caregivers said it was true for question 6 that if bleeding of the gums of the gums was observed during brushing that they should stop, but the correct response is that you should continue brushing. Also for question 7, 86.2% said it was true that you should rinse with water after brushing with fluoride toothpaste and this is false.

Upon comparison of the initial responses in table 4 with the attitudes and beliefs, other concerns arise. A few examples are noted: 89.7% of respondents understood that "Care home staff has a responsibility to look after residents' oral health" (Table 4). However, 75.9 % agreed that "The resident / patient is responsible for asking for assistance with dental care" (Table 4). Although 79.3% knew "It is the responsibility of staff to help brush residents teeth and help clean residents dentures if necessary", 75.8% agreed with the statement that "People with teeth or dentures should try and clean them themselves."

Although 89.7 % of respondents were in agreement with the statement "Brushing and flossing daily prevent gum disease", when asked "If the residents gums bleed when you are brushing their teeth, you should stop brushing", 69.0% responded that this statement was true.

Oral care is an essential, often underemphasized component of personal care provided to residents of long-term care facilities [17]. In other countries, nurses have a professional duty to ensure basic oral health care for patients [18]. It was also heartening to note that 69% of respondents feel that dental referral is the responsibility of all staff.

Question Number	Actual Question	Answers
1	Does your institution do an oral assessment for new residents upon admission?	No:14 Yes:7 Unsure:2
2	If so what are some of the things you look for?	Dentures, Swollen Gums, Cavities, Clean Tongue, Natural Teeth, General Cleanliness, Gum Disease, Number Of teeth, Condition Of Mucosa, Dental History, Caries, Ulcers, Odours, smell of breath, colour of teeth, decayed teeth, regularity of dentist visit, private/ public healthcare
3	Do you use fluoride toothpaste when brushing the teeth of residents?	No:4 Yes:17 Unsure:0
4	If so what is the concentration of fluoride in the toothpaste?	Unsure:8 Other concentrations: 0.24%: 2 0.76%: 2 0.32%: 2 0.15%: 2
5	Do you use fluoride or antibiotic mouthwash for residents?	No:3 Yes:18
6	If so what is it?	Listerine: 11 Unsure: 3 Oraldent: 1 Mintwash: 1 Antiseptic Mouthwash:1
7	What do you believe is the best way to clean dentures?	Remove, Brush (with toothpaste), Rinse, Soak (in mouthwash, water, fluoride tablet solution, polydent, denture cleanser)
8	What do you believe can be done to improve your ability to provide oral care to residential elderly patients	Complete Education, Visits by Dental Personnel, Establishing Patient Routines

Table 4: Answers to free response questions

Although these duties have not been formalized in any document from the government stating the role of caregivers, as is the case in other jurisdictions such as Scotland [35] such attitudes are positive and bode well for future endeavours to improve care of the older in long term care institutions.

It is interesting to observe that in this study 58.6% disagreed that a lack of education made cleaning the mouth difficult. On the other hand, 65.5% of respondents agreed that lack of patient co-operation made cleaning the mouth difficult (Table 4). It is a finding similar to that of Kulberget et al. [42].

This is however another cause for concern given the previously noted findings that 69% of persons responded in the affirmative to having received basic education in oral care and 72.4% (21 of 29) respondents stated that they would like to receive education in oral care although only 27.6% of respondents (8 persons) had completed nursing education. It may be that the caregiver personnel are unaware of the impact adequate education may have on their ability to provide proper oral care to the residents. This is in fact in concert with the findings of Weeks and Fiske [27] who noted three main inhibiting factors in provision of oral care to older patients. Two of these were a lack of education and a lack of understanding of the processes causing dental disease.

Previous studies have observed that one of the major barriers to oral care is that caregivers find it to be an unpleasant task [23,43]. Boyle noted that oral care is generally rated as more distasteful than incontinence [44]. This was not the case in this study since in response to the statement "Cleaning the mouth is more unpleasant than personal hygiene e.g. changing diapers" 82.8% disagreed. Respondents also did not view the task as being more difficult than personal. Reasons for this disparity between the studies may lie in education, or even cultural differences.

Overall, the methods for denture care were acceptable. It may be that further education can improve on the standard of denture care already being provided. Many of the respondents wished for further education, frequent visits by qualified dental personnel and even help in establishing patient routines. Since domiciliary care is not provided except on a voluntary basis by dental professionals, it would be necessary to devise strategies to properly address this valid concern. Hygienists are currently not recognised legally as dental personnel by the Dental Council of Trinidad And Tobago. Persons with such qualifications and Dental Nurses and Dentists employed by the Ministry Of Health and Regional Health Authorities would be invaluable assets in implementing strategies for support and continuing education of caregivers of older people.

Although the knowledge of caregivers is adequate in many aspects, there is still room for improving their awareness of appropriate practices for oral care of residents in long term care institutions. While for the most part the attitude toward oral care and the improvement of their knowledge is positive, some erroneous beliefs need to be addressed. Overall, the current level of education is inadequate and it appears to be impacting upon knowledge, attitudes and beliefs negatively in certain key areas or oral care. Intervention measures need to be devised and implemented, such as put protocols in place for oral care at these institutions, have implements and materials available for oral care delivery at these institutions and provide continuing education of caregivers at regular intervals with regard to oral care of older people at the respective institutions. This would also serve to improve the knowledge of caregivers who are employed who have not had formal education in nursing or care of the older people. Also introduce oral assessment within 48 hours of admission to include referral for regular dental treatment for persons requiring such treatment and provide domiciliary care for persons unable to leave the long term care institutions. Regular auditing must be instituted to ensure that the standard of oral care being delivered is appropriate and also evaluation of the success of oral health education. This is especially so given that even though previous studies have noted improvements in the oral hygiene of residents of long term care institutions after educational workshops or education sessions were conducted [45], other authors have noted that even after education, there is a need for analytical monitoring of the process of oral health care because of the reluctance of caregivers to perform these services [46]. With this in mind, it is possible to put forward recommendations to aid in improving the knowledge, attitudes, beliefs and education of caregivers / nursing staff and commencing the development of an effective oral health program in relation to oral care in Government Funded long term care institutions for older people in Trinidad.

Conclusion

Although the knowledge of caregivers is adequate in many aspects, there is still room for improving their awareness of appropriate practices for oral care of residents in long term care institutions. While for the most part the attitude toward oral care and the improvement of their knowledge is positive, some erroneous beliefs need to be addressed. Developing an understanding about the reasons why certain oral diseases occur, why teeth are lost and the impact of these processes on older people may aid in changing these beliefs.

Overall, the current level of education is inadequate and it appears to be impacting upon knowledge, attitudes and beliefs negatively in certain key areas or oral care. Should intervention measures be devised and implemented, the majority of persons would be willing to undergo this education with the hope of providing better oral care to their charges but continued monitoring of the strategies implemented is essential to determine their impact.

References

1. Population Division, DESA, United Nations World Population Ageing 1950-2050.
2. Rawlins JM (2004) Ageing and The Family: Confronting the challenges. The University of the West Indies, Mount Hope, Trinidad.
3. Williams D (2004) Policy on ageing in Trinidad and Tobago. From Ageing: Discussing the issues in Trinidad. School of Continuing Studies. The University of the West Indies, St. Augustine Trinidad.
4. Crimmins EM, Saito Y (2000) Change in the prevalence of diseases among older Americans: 1984-1994. Demogr Res 3: 9.
5. Freedman VA, Martin LG (2000) Contribution of chronic conditions to aggregate changes in old-age functioning. J Am Public Health Assoc 90: 1755-1760.
6. Jagger C, Matthews R, Matthews F, Spiers NA, Nickson J, et al. (2007) Cohort differences in disease and disability in the young old: findings from the MRC Cognitive Function and Ageing Study (MRC-CFAS). BMC Public Health 7: 156.
7. Kiyak HA, Mulligan K (1987) Studies of the relationship between oral health and psychological wellbeing. Gerodontics 3: 109-112.
8. Locker D (1988) Measuring oral health: a conceptual framework. Community Dent Health 5: 3-18.
9. Kayser-Jones J, Bird WF, Paul SM, Long L, Schell ES (1995) An instrument to assess the oral health status of nursing home residents. The Gerontologist 35: 814-824.
10. Lamy M, Mojon P, Kalykakis G, Legrand R, Butz-Jorgensen E (1999) Oral status and nutrition in the institutionalized elderly. J Dent 27: 443-448.
11. McGrath C, Bedi R (1998) A study of the impact of oral health on the quality of life of older people in the UK: findings from a national survey. Gerodontology 15: 93-98.
12. Winkler S, Garg AK, Mekayarajjananonth T, Bakaeen LG, Khan E (1999) Depressed taste and smell in geriatric patients. J Am Dent Assoc 130: 1759-1765.

13. Yoneyama T, Yoshida M, Ohrui T,Mukaima H, Okamoto H, et al. (2002) Oral care reduces pneumonia in older patients in nursing homes. J Am Geriatr Soc 50: 430-433.

14. Palloni A, McEniry M (2007) Aging and Health Status of Elderly in Latin America and the Caribbean: Preliminary Findings. J Cross Cult Gerontol 22: 263-285.

15. Thorstensson H,Kuylenstiema J, Hugoson A (1996) Medical status and complications in relation to periodontal disease experience in insulin dependent diabetics. J Clin Periodontol 23: 194-202.

16. Nunn J, Greening S, Wilson K, Gordon K, HyltonB, et al. (2004) Principles on Intervention For People Unable to Comply with Routine Dental Care. British Society of Disability and Oral Health April.

17. Coleman PR (2004) Promoting oral health in elder care: challenges and opportunities. J Gerontol Nurs 30: 3.

18. Logan HL, Ettinger R, McLeran H, Casko R, Dal Secco D (1991) Common misconceptions about oral health in the older adult: nursing practices. Spec Care Dentist 11: 243-247.

19. Nicol R, Petrina Sweeney M, McHugh S, Bagg J (2005) Effectiveness of health care worker trainingon the oral health of elderly residents of nursing homes. Community Dent Oral Epidemiol 33: 115-124.

20. Merelie DL, Heyman B (1992) Dental needs of the elderly in residential care in Newcastle-upon-Tyne and the role of formal caregivers. Community Dent Oral Epidemiol 20: 106-111.

21. Simons D, Kidd EAM, Beighton D (1999) Oral health of elderly occupants in residential homes. Lancet 353: 1761.

22. Jokstrad A, Ambjornsen E, Eide KE (1996) Oral health in institutionalised elderly people in 1993 compared with 1980. Acta Odontol Scand 54: 303-308.

23. Wardh I, Andersson L, Sorensen S (0997) Staff attitudes to oral health care. A comparative study of registered nurses, nursing assistants and home care aides. Gerodontology 14: 28-32.

24. Preston AJ, Punekar S, Gosney MA (2000) Oral care of elderly patients; nurses' knowledge and views. Postgrad Med J 76: 89-91.

25. Adams R (1996) Qualified nurses lack adequate knowledge related to oral health, resulting in inadequate oral care of patients on medical wards. J Adv Nurs 24: 552-560.

26. Cornejo-Ovalle M, Costa-de-Lima K, Pérez G, Borrell C, Casals-Peidro E (2013) Oral health care activities performed by caregivers for institutionalized elderly in Barcelona-Spain. Med Oral Patol Oral Cir Bucal 18: e641-e649.

27. Weeks JC, Fiske J (1994) Oral care of people with disability: a qualitative exploration of the views of nursing staff. Gerodontology 11: 13-17.

28. Longhurst RH (1998) A cross-sectional study of the oral healthcare instructions given to nurses during their basic training. Br Dent J 184: 453-457.

29. Gil-Montoya JA, Ferreira de Mello AL, Cardenas CB, Lopez IG (2006) Oral Health Protocol for the Dependent Institutionalized Elderly. Geriatr Nurs 27: 95-101.

30. Coleman P, Watson NM (2006) Oral care provided by certified nursing assistants in nursing homes. J Am Geriatr Soc 54: 138-143.

31. Goh CE, Guay MP, Lim MY, Lim SM, Loke SY, et al. (2016) Correlates of attitudes and perceived behavioural control towards oral care provision among trained and untrained nursing home caregivers in Singapore. J Clin Nurs 25: 1624-1633.

32. Frenkel H, Harvey I, Needs K (2002) Oral health care education and its effect on caregivers' knowledge and attitudes:a randomised controlled trial. Community Dent Oral Epidemiol 30: 91-100.

33. Forsell M, Sjögren P, Kullberg E, Johansson O, Wedel P, et al. (2011) Attitudes and perceptions towards oral hygiene tasks among geriatric nursing home staff. Int J Dent Hyg 9: 199-203.

34. Rak OS, Warren K (1990) An assessment of the level of dental and mouthcare knowledge amongst nurses working with elderly patients. Community Dent Health 7: 295-301.

35. Caring for Smiles Guide for Trainers (2010) Better Oral Care for Dependent Older People, National Health Service Scotland.

36. Frenkel HF (1999) Behind the screens: care staff observations on delivery of oral health care in nursing homes. Gerodontology 16: 75-80.

37. Sumi Y, Nakamura Y, Nagaosa S, Michiwaki Y, Nagaya M (2001) Attitudes to oral care among caregivers in Japanese nursing homes. Gerodontology 18: 2-6.

38. Chung JP, Mojon P, Budtz-Jorrgensen E (2000) Dental care of elderly in nursing homes: perceptions of managers, nurses, and physician. Spec Care Dentist 20: 12-17.

39. Jones H, Newton JT, Bower EJ (2004) A survey of the oral care practices of Intensive care nurses. Intensive Crit Care Nurs 20: 69-76.

40. Jablonski RA, Munro CL, Grap MJ, Schubert CM, Ligon M, et al. (2009) Mouth Care in Nursing Homes: Knowledge, Beliefs, and Practices of Nursing Assistants. Geriatr Nurs 30: 99-107.

41. Pyle MA, Jasinevicius RT, Sawyer DR, Madsen J (2005) Nursing home executive directors' perception of oral care in long-term care facilities Spec Care Dentist 25: 111-117.

42. Kullberg E,Forsell M, Wedel P, Sjogren P, Johansson O, et al. (2009) Dental Hygiene Education for Nursing Staff. Geriatr Nurs 30: 329-333.

43. Simons D, Baker P, Jones B, Kidd EA, Beighton D (2000) An evaluation of an oral health training programme for caregivers of the elderly in residential homes. Br Dent J 188: 206-210.

44. Boyle S (1992) Assessing mouth care. Nursing Times 88: 44-46.

45. de Lugt-Lustig KH, Vanobbergen JN, van der Putten GJ, De Visschere LM, Schols JM, et al. (2014) Effect of oral healthcare education on knowledge, attitude and skills of care home nurses: a systematic literature review. Community Dent Oral Epidemiol 42: 88-96.

46. Chami K, Debout C, Gavazzi G, Hajjar J, Bourigault C, et al. (2012) Reluctance of caregivers to perform oral care in long-stay elderly patients: the three interlocking gears grounded theory of the impediments. J Am Med Dir Assoc 13: e1-4.