

INTERVENTIONS FOR ORAL HEALTH IN ELDERLY.

Literature Review.

Abstract

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<p>Oral health is a state of being free from mouth pain and other oral related diseases. Oral health affects older peoples' quality of life, general health and wellbeing. Older people frequently experience oral conditions such as tooth loss, tooth decay, gum disease, dry mouth and oral cancers.</p> <p>The purpose of this study was to promote oral health among the elderly. The aim of this study was to explore on the developed interventions for inadequate oral health of the elderly in the nursing homes through caregivers, oral health professionals, other health professionals, and developed interventions.</p> <p>The research method was a descriptive literature review. The database used for this study was from EBSCO, PubMed and SAGE. A thematic analysis method was used for data analysis. The articles selected were scientific, written in English, full text and peer reviewed.</p> <p>Findings indicated that managing oral care in nursing homes was poor due to the barriers such as lack of time, workload, lack of motivation and interest to provide oral care, inaccessibility to services, lack of knowledge and cooperation from the residents. Healthy behavior like brushing of teeth daily, steady use of systematic and topical fluoride and restricted consumption of sugar are the most successful routines to prevent oral diseases and diminish poor oral health.</p>		
Keywords		
Oral hygiene, residents, nursing homes, elderly, interventions.		

Tiivistelmä

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Tiivistelmä		
<p>Suun hyvinvoinnilla tarkoitetaan tilaa, jossa ei esiinny suun kipua tai muita suun sairauksia. Suun hyvinvointi vaikuttaa ikääntyneen väestön elämänlaatuun, yleiseen terveyteen ja hyvinvointiin. Suun sairaudet ovat yleisiä vanhempien ihmisten keskuudessa. Yleisiä sairauksia ikääntyneiden keskuudessa ovat muun muassa hampaiden lähtö, niiden hajoaminen, erilaiset iensairaudet, suun kuivuus ja syöpäsairaudet.</p> <p>Tämän tutkimuksen tarkoituksena oli edistää suun terveyttä ikääntyneen väestön keskuudessa. Tutkimuksen tavoitteena oli tutkia niitä interventioita, joita on kehitetty suun hyvinvoinnin edistämiseksi etenkin ikääntyneelle väestölle hoitokodeissa hoitajien, suun terveydenhuollon ammattilaisten ja muiden terveydenhuollon ammattilaisten toimesta.</p> <p>Tutkimuksessa käytetty tutkimusmenetelmä oli kuvaileva kirjallisuuskatsaus, ja tutkimuksessa käytettyjä tietokantoja olivat EBSCO, PubMed ja SAGE. Tietojen analysoinnissa käytettiin hyväksi temaattista analyysia. Tutkimukseen valitut artikkelit olivat tieteellisiä, englanninkielisiä artikkeleita jotka vertaisarvioinnilla varmennettuja.</p> <p>Tutkimuksessa tehdyt havainnot osoittivat, että suun terveyden hoito oli paikoittain huonoa ja puutteellista muun muassa ajan puutteesta ja muusta työtaakasta johtuen. Myös motivaation ja kiinnostuksen puute vaikuttivat siihen, ettei suun hyvinvoinnista huolehdittu tarpeeksi. Myös palvelujen saatavuus, tiedon puute ja asukkaiden yhteistyön puute vaikuttivat huonoihin tuloksiin. Suun päivittäisestä hyvinvoinnista huolehtiminen, kuten säännöllinen ja päivittäinen hampaiden harjaus sekä fluoridin systemaattinen ja säännöllinen käyttö sekä liian sokerin käyttämisen välttäminen ovat merkityksellisimpiä, suun sairauksia ehkäiseviä arjen rutiineja, ja parantavat huomattavasti suun terveyttä.</p>		
Asiasanat		
Suuhygienia, asukkaat, hoitokodit, vanhukset, interventiot.		

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1 INTRODUCTION

According to WHO (2014), oral health is a condition of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal diseases, tooth decay, tooth loss, and other diseases and disorders that restrict an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing. Oral health affects older peoples' quality of life, general health and wellbeing. Older people frequently experience oral conditions such as tooth loss, tooth decay (dental caries), gum disease (periodontitis), dry mouth (xerostomia) and oral cancers. (SA Health 2017.) As stated by World Population Aging report (2017), the number of people aged 65 and above is expected to be doubled by the year 2050. This impending circumstance means that people of age 65 years and above will require special care. In addition, older people's health deteriorates as they age and one of the most prevalent problem of health deterioration manifest in oral health (Haumschild 2009).

There are numerous elements that affect oral health thus act as barriers to improving oral health of the elderly. It is the responsibility of health care professionals to understand the significance of oral health and its link to general health. Furthermore, the elderly require knowledge, understanding, ability, and ways to obtain oral health care and the multi-disciplinary team need to be accessible for provision of care. Aside from that, oral health among the elderly is influenced by social determinants such as income, living conditions, and working conditions. (Advancing oral Health in America 2011, 31.)

Also, the connection between oral infections and general health complications such as periodontal and cardiovascular diseases as well as aspiration pneumonia are solid among the elderly (Kullberg 2010). Not only does poor oral health deteriorate general health, but also weakens the ability to chew and eat as well as affecting nutritional intake. In recent studies conducted, it was shown that poor oral health status in the elderly hinders their self-esteem and social interactions, which eventually has a negative effect on their health status and well-being. (Petersen & Yamamoto 2005.) Further, functional, and cognitive impairment in elderly can contribute to poor oral hygiene.

As a result, there is a concern for sustaining healthy teeth which becomes critical later in life thus maintaining oral health among the elderly requires several approaches that focus on prevention. Although there is a wide availability of preventive measures for oral diseases, most elderly do not use the proven procedures and do not comprehend that oral diseases can be controlled. (Friedman 2014, 8.)

Generally, oral health of the elderly in nursing homes is poor. There is a need for initiating innovative strategies to improve oral health of the elderly and implementing guidelines. According to WHO (2005,87) Global Health Program, oral health programs are developed to improve the oral health status of the elderly in nursing homes. These programs provide oral examination, dental treatment, oral antibiotics, and instructions to multidisciplinary team and residents.

The idea for this thesis was promoted by the author's experiences from clinical placement in numerous institutions. The author noticed inadequate provision of oral hygiene among the elderly. Regular cleaning of teeth and gums decreases problems linked to oral hygiene. Nonetheless, poor oral health especially among the elderly leads to other health complications. The author felt motivated to address the role nurses play in providing oral care and bring out strategies that improve poor oral health. Therefore, the purpose of this study is to promote oral health in elderly. The aim of this study is to explore the developed interventions for inadequate oral health of the elderly in the nursing homes through caregivers, oral health professionals, other health professionals, and developed interventions.

2 ORAL HEALTH OF THE ELDERLY

2.1 Oral health and Aging

Aging comes with physiological changes like decreasing vigor and general metabolism reduces. Also, decrease in general body physiology together with organ functions such as diminished heart strength, decreased ventilatory capacity of the lungs, decelerated nerve transmission in the brain, reduced muscle mass and high risk of endocrine problems. Locomotive activities are weakened due to depletion of elasticity in supporting structures. (Kandelman, Petersen & Ueda 2008, 225.)

Oral health is a necessity for good chewing function which is influenced from the choices of food and nutritional wellbeing. Appropriate nutrition is a significant factor in promoting the health and well-being of the elderly. However, poor oral health is a destructive factor to nutritional status and general health. Poor eating habits contribute to oral cavity problems in elderly. Loose painful teeth or inappropriate dentures lead to decreased crave or capacity to eat. Adequate nutrition and diet are essential in the management of oral care in the elderly. (Razak, Richard, Thankachan, Hafiz, Kumar & Sameer 2014.)

The tooth enamel wears away with aging hence endangering the teeth to decay and destruction. Tooth loss is the main reason for insufficient nutrients among the elderly due to improper chewing. Tooth loss occurs when the jaw bone has incapacity of holding the teeth in place. (Sulyanto 2017.) The teeth of the elderly change in color, thickness, quality and result in loss of transparency. Insufficient oral hygiene contributes to change of tooth color. (Razak et al 2014.) The enamel becomes brittle, more vulnerable to chipping, cracking and fracture. Also, it becomes less permeable due to ionic exchange that happens between the oral environment and enamel throughout life. The enamel darkens and stains because of absorbing organic material. (McKenna 2010, 522.)

Xerostomia, dental caries and decreased saliva output are among the major oral health problems in aging. Saliva shields the oral cavity; the upper airway and digestive tract also enables various sensory motor incidence. (Razak et al 2014.) Xerostomia and other saliva disorders are mostly caused by use of prescription and over the counter medications. Majority of the medications are linked with salivary gland dysfunction as an adverse side effect. Since the elderly use medications frequently, they are endangered to their side-effects. (McKenna 2010, 521.) Other causes of dry mouth are due to chronic disorders, radiation therapy to the head and neck region. Chronic xerostomia has numerous oral and dental

impacts for instance periodontal disease, fungal infections, ill-fitting dentures, and taste alterations. Thus, this disease greatly affects the quality of life and changes speech, eating, and swallowing. (Ouanounou 2016.)

Periodontal disease is a disastrous disease of the gum and supporting structures lead by the long-term accumulation of bacteria due to poor oral care. The disease results to tooth loss among the elderly. (Sulyanto 2017.) Periodontal disease consists of gingivitis and periodontitis. Gingivitis is an infection of the gums caused by existence of bacterial plaque. The infection is reversible however, in the elderly, the infection manifests faster in response to the bacteria and recovers slowly. The ultimate treatment is improved oral hygiene. Periodontitis on the other hand, happens when the gingival bacterial infection elongates to the epithelial attachment into the bone. (Shay 2002.)

2.2 Barriers to effective oral health care

Not only does the management of elderly require understanding of the medical and dental aspects but also supply good oral health care services (Bharti, Chandra, Tikku, Arya & Gupta 2015). However, there are various barriers that hinder the effectiveness of oral health care. These challenges are faced among the patients or residents, dentists and care providers.

Access to dental services is a key barrier as this involves making foremost contact with dental practice to getting surgery and treatment. Most elderly have difficulty in seeking and receiving dental care. (Borreani, Wright, Scamble & Gallagher 2008.) Moreover, organizing visits, underestimating their dental problems, and being unaware of their needs are some of the difficulties the elderly experience (Gaszynka, Szatko, Godaala 2014).

The cost charged to elderly clients for their regular check-ups and dental treatments are highly priced hence irregular or non-attendance (Borreani et al 2008). Additionally, most of the elderly persons depend on low pensions (Bharti et al 2015). It is the responsibility of healthcare professionals to ensure clients are provided with cost treatment options, discussions about dental treatment and charges, also agree with the client on the course of treatment, favorable to circumstances for instance the time or period when the care is given. (Borreani et al 2008.)

Fear is an existent barrier to the receiving of care among the elderly. The greater the level of anxiety, the lower the rate of utilization of services. (Bharti et al 2015.) Fear of dental care includes the fear of the pain linked to dental treatment. There are three significant

factors that lead to the fear. The first is connected to bad personal experiences of dental treatment, often associated with treatments received in childhood. The second factor is linked to negative interpretation of dental treatment, sounds of the drill and build up anticipation developed by long waiting times. Nevertheless, healthcare professionals can take time to explain the treatment and relax the client. Also, providing the client with ear plugs or silent drills for minimizing. (Borreani et al 2008.)

Good holistic care practice for the elderly requires awareness of the oral health care among the caregivers (Bharti et al 2015). The society centers more on general health than oral health hence less attention to the importance of oral health care is given. This however leads to neglected oral care especially for the elderly. Further, care givers have inadequate knowledge and skills to execute oral hygiene for the clients. Also, caregivers tend to have lofty workloads, which includes having multiple roles hence work under stressful surroundings. (Prayoonwong, Wiwatkunupakan, Lasuka & Srisilapannan 2015.)

The attitude of the dentist influences the treatment. Some dentists have a negative perception towards the elderly thus are likely to give unsophisticated treatment options aside from dentists with positive perceptions. In most cases, previous dental visits impact treatment options. (Bhart et al 2015.) Also, the communication skills and confidence of the dentist as a practitioner, their knowledge in gerontology and drug interaction are the challenges they mostly come across. On the other hand, being professional, polite and friendly mannered, together with good information giving and expressing technical skills helps to build confidence in the client. The elderly embraces a mature professional approach from the dentists as well as good communication skills in a deliberate manner while considering the clients' desire on care deliverance. (Borreani et al 2008.)

2.3 Oral health Promotion

Oral health promotion is viewed as an organized attempt to make supportive public policies, promote supportive environments and re-establish health and social services striving towards oral health objectives. (Sprod 1996, as cited in Public Health England 2016, 3.) Promotion of oral health seeks to prevent tooth decay. Tooth decay causes destruction of the tooth surface hence promote holes, tooth loss, pain and infection. (Public Health England 2016, 3.) Oral health promotion is a general term that includes all kinds of oral health education. Not only does it highlight widely on political, social and behavioral actions that contribute to oral health, but also, preventive strategies provided by health professionals. (Binnie et.al 2015.) In addition, the principle to maintain and improve oral health care for the

elderly living in nursing homes is the use of interventions that center on dental characteristics, life characteristics of the elderly and their quality of life concerns (Chalmers 2003).

Oral health promotion activities include improved dental policies, additional fluoride intake, dental health information for the elderly, oral health education, nutrition guidance and preventive dental care (Chalmers 2003). Furthermore, the practice of evidence-based oral health promotion, needs high quality convenient evidence and accessibility to resources. Oral health care should incorporate initiatives aimed at promoting and supporting oral health selfcare practices within proper general health strategies. (Singh 2012.)

Generally, oral health promotion among the elderly should be increased. In the elderly, self-efficacy theory is useful in various areas of elderly's health. Through this theory, health professionals require to improve the elder people's control over their oral health, in contrast to them believing their oral health is biotically predestined because of aging. Additionally, this theory is beneficial to the carers as well as the elderly as it expands their authority over their oral care, hence increases their life span and quality of life therefore, attaining an outcome of oral health promotion. (Chalmers 2003.)

2.4 Oral care nursing interventions

Most nursing home residents are incapable of performing enough oral care such as ideal removal of dental plaque. Hence, constant preventive and restorative oral care provided by trained staff is highly important. Nursing staff and other health professionals play a vital role in provision of daily oral health care. Interventions aiming at nursing home staff strengthens their ability regarding oral care of the elderly. Additionally, enhanced knowledge about oral health, association between oral health and general health, changes in attitudes, oral care related behavior and improved health outcomes for the residents. Interventions pointing towards nursing home residents sets to improve oral hygiene skills training, support their ability to independently do dental care therefore reduce their need for assistance. (Albercht, Kupfter, Reismann, Haastert, Muhlhauser & Kopke 2013.)

The main objective of education strategies is to improve oral and dental health of the residents by increasing knowledge and skill level of nursing home staff and nursing home residents. Also, an encounter with oral health professional is viewed as an opportunity for educational work targeting to enhancement of oral health conditions of the elderly or population especially in places with limited access to a dental professional. (Menegaz, Silva & Cascaes 2018.) The WHO health programme advocates for public health care

administrators and decision makers to design effective strategies for better oral health and quality of life of the elderly. Illustration projects on oral disease control and enhancing quality of life need to be introduced and evaluated systematically to improve the oral health of the older people experiences across different countries. (Petersen & Yamamoto 2005.)

3 PURPOSE, AIM OF STUDY AND RESEARCH QUESTIONS

The purpose of this study is to promote oral health among the elderly. This study focuses on the elderly because the aging population is increasing and subsequently the demand of nursing care. To manage the need of nursing care, it is significant to improve oral health and prevent oral diseases. The aim of this study is to explore the developed interventions for poor oral health of the elderly in nursing homes through care givers, oral health professionals, other health professionals and developed interventions.

The outcome of this study is a descriptive literature review which will employ on recent information to increase the knowledge among the healthcare professionals who manage oral care of the elderly persons for a better quality of their life. This thesis will analyze previous written scientific articles from reviewed literature to obtain better results that answer the following questions;

1. What are the interventions to improve poor oral health of the elderly?
2. What are the nursing roles in providing oral care of the elderly?

4 LITERATURE REVIEW

4.1 Descriptive Literature Review

This study is based on descriptive literature review. This is done to understand scientific knowledge gathered concerning oral health interventions. In this type of review, the main objective is to examine previous written scientific articles with up-to-date information that discusses the topic of research and provides in-depth insight to the topic of interest (Alan & Colin 2013, 188). Descriptive review influences the study ideas by highlighting gaps in knowledge hence aiding the author to define their research question. Its aim is to give the reader a comprehensive framework for understanding present knowledge and identifying the importance of new research. (Cronin et al 2008, 38.) In healthcare, descriptive literature review enhances nursing knowledge and essentially improves patient care through evidence-based practice (Cronin et al 2008,43). Descriptive literature review is suitable for this thesis. It permits the author to come up with a summary and draw a conclusion that answers the research questions and fulfills the aim of the study.

4.2 Data Search and Collection Process

Data collection for this study was conducted using Electronic Scientific database sources. The databases used to collect the data of the study included academic search elite EBSCO, PubMed and SAGE. The articles were obtained from key words related to the topic and research questions. The terms used were such as oral health, oral hygiene, oral care, interventions, elderly, nursing roles and nursing home.

The first search was done using keywords like oral care 'AND' intervention 'AND' elderly. The second search produced several articles using keywords that link to the research topic such as oral hygiene 'AND' nursing roles 'AND' elderly and oral health 'AND' intervention 'AND' nursing home. Below is table 1 illustrating the data search process.

Table 1: Showing data search process

KEYWORDS	Database	Search results	Retrieved Articles	Chosen Articles
Oral care AND intervention AND elderly	EBSCO	9,908	1,006	2
	PubMed	18,837	107	1
	SAGE	3,557	129	
Oral hygiene AND nursing roles AND elderly	EBSCO	13,260	1,206	4
	PubMed	71	3	1
	SAGE	85	7	1
Oral health AND intervention AND nursing home	EBSCO	34	5	1
	PubMed	658	10	
	SAGE	121	8	

Inclusion and exclusion criteria are conducted to ensure that a study is categorized correctly, therefore, the guiding principle need to be described clearly (Meline 2006, 25; Colin et al 2008, 42). The search resulted to many articles in that case, irrelevant articles were eliminated using the exclusion criteria. All the articles in this study were scientifically written, peer reviewed, in full text, with free access, written in English and relevant to the research study. Also, identical articles found in other databases were excluded. Below is table 2 showing the illustration of inclusion/exclusion criteria.

Table 2: Inclusion/Exclusion criteria

INCLUSION	EXCLUSION
<p>Articles published between the year 2008-2018.</p> <p>Articles published in English.</p> <p>Articles that focus on elderly above age 65 and above.</p> <p>Articles on oral health interventions of the elderly.</p> <p>Elderly in nursing homes, long term facilities and service homes.</p>	<p>Duplicated articles.</p> <p>Articles on clients other than elderly.</p> <p>Articles with limited access.</p> <p>Irrelevant literature to the research topic.</p>

From the search engines used; EBSCO, PubMed and SAGE, 2,481 articles were retrieved. Nonetheless, the author chose 10 articles for this study which had an international background. The articles were from Sweden, Netherlands, Canada, U.K, Australia, Germany and various locations in U.S.A. For that reason, recommendations from this study can be used on international level. The articles were published between the year 2009 to 2018. A summarized table of the articles; the authors, publication years, titles, the aims and the results are showed in Appendix 1.

4.3 Thematic Analysis

Data analysis is done to answer the research questions. Therefore, it is a process conducted after the research plan and data collection is concluded and its purpose is to reduce the risk of inaccurate and deluding results. (Huebner, Vach & Cessie 2016.) In this thesis, the author uses a thematic analysis which is commonly used to implement data analysis for descriptive literature review. The analysis occurred in six steps following the guide provided by Braun and Clarke (2006).

The first step is to get familiarized with the data, that is involve with the data and become conversant with all aspects of the information. Reading and re-reading the data again before beginning the initial coding. It is important to note any analytical observations. The second

step is coding. It involves producing ideas that are related to the research questions regulating the analysis. Coding can be done manually or using a software program. Coding manually encompasses using colour pens, highlighters or sticky notes on the text being analyzed. All data should be coded systematically. This phase ends by combining the codes and related data extracts.(Braun & Clarke 2006.)

The third step is searching for the themes. A theme is an idea that secures something vital about the data connected to the research questions that characterizes a pattern in response. At this point, the researcher should have a long list of codes. This phase involves organizing the different codes into themes. Depending on the codes, some may produce main themes or sub-themes. The next process is reviewing the themes which is the fourth step. This involves revising the themes. The researcher contemplates on whether the themes tell a convincing account about the data. Consequently, some themes will subside into other themes whereas some themes may be collated and form one theme.(Braun & Clarke 2006.)

The fifth step is defining and naming the themes. At this point the themes are officially named. This phase requires the researcher to recognize the significance of each theme and establish what aspect of data each theme captures. Names should be brief and give the reader a clear image about the theme. The last phase is creating a written report of the final analysis. The final analysis should be concise, logical and tell a persuasive narrative about the data. In addition, it should provide sufficient evidence for each theme.(Braun & Clarke 2006.) Below is figure 3 illustration of the thematic analysis using Braun & Clarke (2006) guide.

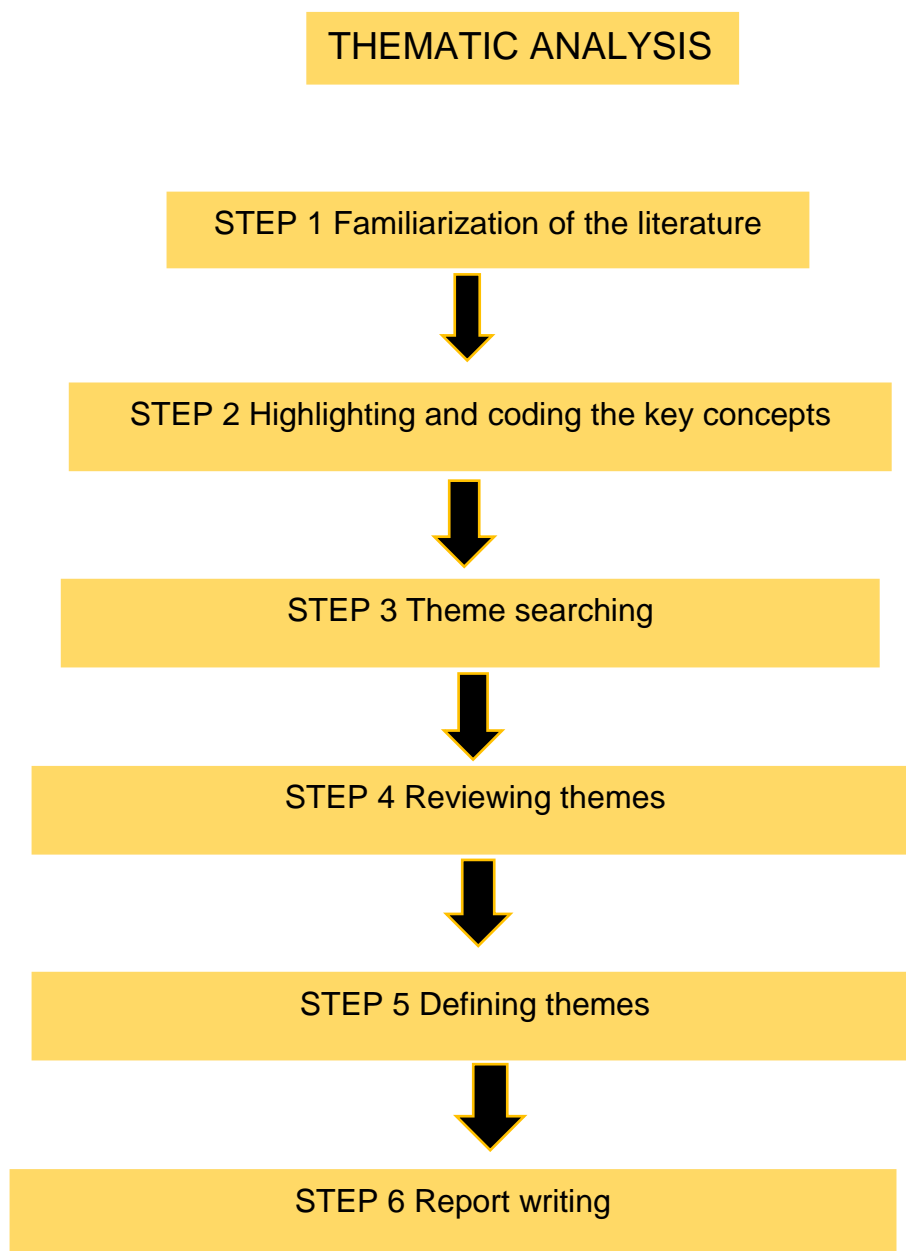


Figure 3: Using thematic analysis

For this study, the first step was reading thoroughly through the articles focusing on issues related to the research questions. Coding started by highlighting and noting down the main points from the literature. Highlighters of different colors were used respective of each research question 1 and 2. The research questions guided the coding phase. The codes were founded upon the study questions hence developing the themes was evidently clear. The codes were categorized as sub themes and main themes. Then the themes were accurately checked and reviewed. After the fourth phase, the main themes were already clear from the study questions. Lastly, a written report of the themes and sub-themes was produced that was relevant and easy for the reader to understand. An example of how the theme 'Oral health education and training' was developed is shown in Appendix 2.

5 RESULTS OF THE LITERATURE REVIEW

5.1 Interventions to improve poor oral health

Oral care assessments and planning

Most of the studies recognize that poor oral health is connected to systematic diseases. Hence, nurses should involve the mouth in their assessments (Jablonski, Swecker, Munro, Grap & Ligon 2009, 213). On the initial contact with an elderly person, it is proposed that nursing staff and health professionals should perform oral health assessment of the residents and observe their oral hygiene. Oral health assessment involves examining the lips, mouth and teeth. (Daly & Smith 2015, 433.) The purpose of carrying out oral assessment is stated to aid in examining older people's oral health, advice on oral health planning, examine oral hygiene and acts as a trigger for dental referral. Nurses and health professionals use Oral Health Assessment Tool (OHAT) in nursing homes during admissions of residents, on day to day basis when necessary. (Lewis, Wallace, Deutsch & King 2015, 97.) Another study mentioned another tool, revised oral assessment guide (ROAG). These tools permit documentation of existence of pathology, pain, natural teeth, dentures, extent of oral cleanliness, amount of saliva, admission to oral hygiene support, existence of a dentist and allows long-term examination of oral health. Also, it is reported to improve the carer's ability to approximate the health of the mouth and evaluate oral conditions. (Cabrera, Zenthofer, Rammelsberg, Hassel 2015; Daly & Smith 2015, 434.)

Oral health assessment tools are mentioned to enable oral care plan to be produced for the residents and guarantees that mouth care is closely monitored. (Daly & Smith 2015, 434.) Oral care planning is said to be tackled by nurses with nurse-practitioner and dentist. It is established on a basic preventive practice in consequence of oral health assessment. (Lewis et al 2015, 97.) Personalized care plan for each resident should be established and documented in the residents' record. In one of the studies, half of the interviewed nurses reported having a written oral care plan for their residents' oral needs beyond tooth brushing and that they gave oral guidance to the care givers (Urata, Couch, Walsh & Rowe 2018, 25).

Oral health education and training

The need for education and training of caregivers pertaining oral health practices and techniques has been acknowledged by numerous researchers in this study (Hoben et al 2017, Cabrera et al 2015, Cadet et al 2016, Zenthofer, Meyer-kuhling, Schroder, Cabrera, Baumgart, Rammelsberg & Hassel 2016, Jablonski et al 2009, & Lewis et al 2015). Educational program for caregivers was reported to bring more beneficial and appropriate interactions displayed by the residents (Cadet et al 2016). For knowledge purposes, PowerPoint presentation, videos, case discussions and handouts were used. Education was based on age related changes, pathologies of the oral cavity, tooth brushing techniques, handling of interdental space brushes, and mouth rinses. (Tarvena et al 2016, Cadet et al 2016, Zenthofer 2016, 1757.)

In one study, caregivers were trained on handling devices. Ultrasonic device was introduced to enhance denture hygiene. Care providers were advised to use soapy water as the cleaning agent. Another part of the training included evaluating oral hygiene and performing a care plan using a standardized care plan tool. In addition, demonstration models were used for training the care givers on removal of dentures, handling different kinds of dentures and using denture brushes for cleaning dentures mechanically. According to the researchers, ultrasonic devices are scarcely used for denture cleaning as they are costly and lack of consumer information however, highly recommended for nursing homes. (Cabrera et al 2015, 304.)

According to Zenthofer et al (2016, 1760), their study reported the advantages of dental education for care givers and execution of ultrasonic devices in order to improve oral health and denture hygiene of residents in nursing homes. In this precise study, it verified that the introduction of ultrasound baths is an effective measure for improving denture hygiene. This is seen by the decrease in dental plaque buildup among the residents in nursing home during the education period. Furthermore, this study resulted to improved knowledge in the care routine of the caregivers however, caregivers' attitudes concerning oral hygiene did not change.

Resistant behavior strategies

Nursing home care givers reported residents' declining oral hygiene practices as one of the difficulties in providing oral care. Promoting residents' self-care abilities boosts residents' quality of life and oral health. Also, a staff communication skills program enhances residents' physical and verbal behavior (Hoben et al 2017). Another study reported interventions that decreased mouth care resistive behaviors. Strategies reported included building rapport, maintaining eye contact, provide a quiet environment, and use gestures and signals. (Jablonski et al 2009, 207.) Engaging care givers in educational programs leads to more positive and encouraging interactions with the residents. Nevertheless, undertaking behavior management training, using motivational interviews and psychological interventions were mentioned to decrease responsive behaviors to oral hygiene by the residents. The researchers reported that these interventions enhanced tooth brushing and flossing and reduced plaque scores and gingival bleeding. (Hoben et al 2017.)

Preventive strategies

Dental health assessment was found to be effective. This was reported to be carried out by dental health professionals. Most of the older people are treated at the nursing homes however, a dental referral protocol can be generated which gives information to the caregivers on catering for dentist visiting. (Lewis et al 2015, 98.) It was found that toothbrushing mechanically eliminates dental plaque and avoids formation of dental caries and decrease gingival redness. Fluoride toothpaste and fluoridated mouth rinses protects the enamel and eradicates caries lesions formation. (Daly & Smith 2015, 435; Taverna et al 2016.) Additionally, most nursing homes lack dental rooms or chairs or equipment that assist in oral care delivery hence, provision of portable dental equipment and mobile service delivery basically supports basic and high-quality oral care of the elderly in nursing homes (Lewis et al 2015, 99).

5.2 Nursing roles in providing oral care

Oral hygiene routine guidelines

Professional routine guidelines provide suitable delivery of oral care although a study reported that routine guidelines were nonexistent in daily oral care. The caregivers scarcely use the correct instruments and nurses hardly perform oral inspections according to the report. (Sonde, Emami, Kiljunen, Nordenman 2011, 97.) Most elderly have natural teeth supported by prosthesis, like implants and bridges, thus need a great deal of care. However, those with natural teeth need inside the mouth care, that is brushing and flossing. As for dentures removing them and cleaning the oral cavity. (Hoben, Kent, Kobagi, Huynh, Clarke & Yoon 2017.) Additionally, a lot of care is required in preserving healthy gums and teeth for the nursing home residents. The lips and oral cavity need to be examined daily. The lips may be oiled to avoid cracking and discomfort. Also, encourage intake of water to reduce dry mouth and support hydration. Artificial saliva gels and sprays may be used to ease dry mouth symptoms. (Daly & Smith 2015, 435.)

Research suggested that elderly who wear prosthesis needed to visit the dentist once a year to observe the soft and hard tissues of the mouth and measure fit, as bones of the jaw change shape with weight loss. Furthermore, the dentist guarantees that food particles don't stick on the denture. It is recommended to brush the dentures over running water daily and overnight soak in denture cleaning solution. All dentures should be rinsed after the soak. The soft tissues of the oral cavity should be checked and cleansed with a moist gauze. Also, it is vital that the dentures have the residents name as they often get misplaced in nursing homes. (Taverna, Nguyen, Hicks 2016, 43; Daly & Smith 2015, 435.)

A study by Daly & Smith reported that teeth, if present, should be cleaned with fluoridated toothpaste, brushed twice after meals focusing on cleaning between the teeth to remove debris. Also, the use of hard textured brushes and scrubbing action should be avoided to minimize abrasion. To control formation of plaque, sprays and gels may be used when rinsing the mouth. Furthermore, powered toothbrushes are more beneficial compared to manual toothbrushes and decreases risk of abrasion. Nonetheless, if performed correctly, manual or powered toothbrushing are advantageous. (Daly & Smith 2015, 435.)

Caregiving

Nurses together with other health professionals are reported to play a major role in the oral health care of the elderly. For this reason, they contribute to curb oral diseases and deficient nutrition, facilitate early detection of oral disease and suitable recommendation to dental care services. (Daly & Smith 2015, 431.) In a study carried out by Sonde et al (2011, 93) concerning caregiving, caregivers described caregiving in the perception of residents' integrity and wellbeing. They reported that residents' integrity pertains viewing the patient/resident as a person and having a holistic interpretation of caregiving in oral hygiene and general. A healthy mouth, one of the pillars of caregiving, is good for residents' as it constitutes to the individual's wellbeing. Also, caregiving starts from the patient's autonomy and human value. Furthermore, the article reviewed on the significance of caregiver's and nurse's knowledge on illness such as dementia in a clinical situation and their adaptative actions towards the disease's symptoms. (Sonde et al 2011, 94.)

However, as much as caregiving is nurses and caregiver's role at times, they face challenges with the patients. Some study findings indicated that caregivers face barriers while providing care such as patient refusal to comply and care-resistant behavior common in patients with dementia (Hoben et al 2017). According to the participants in one of the studies, aiding patients who are slow and who do not fully comprehend what is going on takes time. Further the caregivers reported that the working situation in nursing homes is categorized by a time crunch hence rather than permitting a patient to carry oral hygiene by themselves, they take over as the task will go faster. In some instances, the patient declines to open their jaw and become aggressive and defensive. When the communication between a care provider and a patient goes wrong, it causes major difficulties. (Sonde et al 2011, 94.)

Support and Responsibility.

In Sonde et al (2011, 96) study it was mentioned that nursing teams and health care professionals had knowledge on the importance of good oral care for the health and well being of the elderly. It further stated that the staff were conversant about the problems that arise in subject to giving care for residents in nursing homes. In addition to that, nurses in the same study felt that care givers assisted out oral hygiene quite well and that this has promoted oral care today than many years ago. Nursing teams and health professionals are reported to facilitate oral care of the elderly by reminding and encouraging them to perform oral hygiene practices, carrying or aiding mouth care to those who are functionally dependent or cognitively impaired (Daly & Smith 2015, 434).

It was mentioned that identifying the origin of dental pain is difficult in dependent elderly who are cognitively impaired hence nursing teams and health care professionals have a duty to be keen on patient declining food, declining to wear dentures, or rubbing their face. Also, nurses need to advise the elderly on eating healthy and encourage them to register with a local dentist. (Daly & Smith 2015, 435.) Nurses reported responsible for patients diagnosed with oral illness or had a risk of acquiring oral disease. As for care providers, they were stated to report changes in patient's oral status to the nurses. On the other hand, nurses reported that if the patient did not have any oral illness it was the care providers duty to perform oral hygiene. Nursing teams are stated to manage care givers on performing appropriate oral hygiene and following oral care instructions to avert diseases. (Sonde et al 2011, 96; Hoben et al 2017.)

Nurses considered that each patients' care provider were accountable for notifying them about oral hygiene care and informing them when oral care products required to be ordered. It was reported that information concerning oral issues did not take place routinely adding that reports given during meetings were on weakening oral status of the patient. Also, nurses are revealed to provide information to residents on oral care benefits and routines for dental visits to the nursing home for oral examinations and oral advice. (Sonde et al 2011, 97.)

Knowledge and attitude.

One of the findings stated that most nurses recognized that daily tooth brushing was significant and residents with dentures required yearly dental examination. Furthermore, they were informed that residents could lose teeth, acquire tooth decay, or become physically ill from oral disease. (Urata et al 2018.) Another study mentioned that assistant nurses knew about the position of the toothbrush in the mouth and the frequency of tooth brushing (Cadet, Berrett-Abebe, Burke, Bakk, Kalenderian & Maramaldi 2016, 357).

In a study done by Urata et al (2018) majority of the care givers acknowledged that oral health is a vital part of general health and dental care is exceptionally significant for residents in nursing homes. A quarter of the caregivers felt that dental care was of less importance to general medical care. Less than half of the care givers reported that quality of oral care delivered in their nursing home was to their fulfilment. Two researches mentioned that nursing personnel attitude towards oral hygiene and health was improved after participating in training intervention (Cadet et al 2016, 356, Sonde et al 2011,98.)

Collaboration of health professionals

Working as a team of caregivers, nurses, dentists and healthcare providers prolongs oral and general health of the elderly. This is however achieved by identifying and understanding the signs and symptoms of potential oral health issues and providing care delivery methods in line with patients' abilities. (Tarvena et al 2016.) It was reported that association between the nurses and dental hygienists enabled the measuring of oral health status of the elderly hence determining oral diseases, dentures if available and state of natural dentition. (Jablonski et al 2009, 209.) Furthermore, the advantages of collaboration include combined knowledge, expertise and resources. This results to interventions that are good quality and innovation (Lewis et al 2015, 98).

6 DISCUSSION

6.1 Discussion of findings

With the destructive effects of poor oral health, promotion of oral health for elderly in nursing home is vital hence the purpose of this thesis. The results of this findings were selected from the appraised ten articles which highly answered the research questions. The study findings identified five themes for nursing roles in providing oral care and four themes for interventions to improve poor oral health. Managing oral hygiene in nursing homes is inadequate and has been recognized by numerous research studies. However, this is due to challenges such as lack of time, workload, lack of motivation and interest to provide oral care, inaccessibility to services, lack of knowledge and lack of cooperation from the residents. (Daly & Smith 2015, Hoben et al 2017 & Sonde et al 2011.)

Oral diseases can be prevented by daily tooth brushing, some residents may simply be by reminding and encouraging them in performing oral care. However, managing oral hygiene in residents with dementia is inadequate because of resisting to care that contributes to insufficient provision of oral care. Also, supporting residents' self-care skills promotes residents' quality of life and oral health. (Daly & Smith 2015.)

Training is significant to ensure that care providers implement oral care daily. The findings showed that nurses and caregivers are overburdened hence they put less priority to oral hygiene. This is a challenge because the daily oral hygiene of the elderly is not met. The use of tooth brushing, flossing and rinsing reduces risks for oral conditions. (Sonde et al 2011; Cadet et al 2016.) In addition, nurses and caregivers need to undertake their roles and responsibilities in order to improve oral health. Nurses influence, organize and support oral care practices in nursing homes. Use of oral assessment tools and care plan promotes oral health status by preventing oral health diseases also, deliver information on oral condition of the residents. (Cadet et al 2016.)

Effective interventions were mentioned in through the research that could be applied to improve oral care in nursing homes. Education equips care providers with knowledge and skills, enhances their attitude and perception towards oral care. (Sonde et al 2011; Jablonski et al 2009; Cabrera et al 2016; Zenthofer et al 2016.) In the theoretical background (Binnie et al 2015) oral health promotion supports and includes all kinds of oral health education which in turn enable health professionals to learn and improve oral care for the elderly. Furthermore, preventive and behavioral strategies need to be implemented

daily and put to practice this way, care providers will be able to manage and provide appropriate oral care to nursing home residents. As a result, improving the oral health of the residents besides their general health. (Hoben et al 2017.)

6.2 Ethical Considerations & Reliability and Validity

Ethics are standards for conduct that differentiate between right and wrong. Ethical standards avoid manipulating of data and encourage striving towards knowledge and truth which is the key goal of the research. (Center for innovation in Research and innovation, 2019.) In this study, articles selected were evidenced based, peer reviewed and systematically selected from academic databases. The materials were selected with the aim of answering the study questions. Integrity is maintained throughout the study process. References have been marked correctly in accordance to Lahti university of applied sciences guidelines to prevent plagiarism.

Joppe (2000) defines reliability as 'the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable.' (Golafshani 2003.) On the other hand, Joppe (2000) explains validity measures how truly the study method answers to the research questions (Golafshani 2003). Heale & Twycross (2015) give a simple example of validity and reliability using an alarm clock that rings at 7:00 every morning however set for 6:30. It is reliable as it consistently rings the same time every day but not valid since it does not ring at the anticipated time. When doing a research, it is significant to consider the reliability and validity of the data collection methods.

In this study all the methods used to find data are outlined clearly. The reader can easily find the keywords used for literature search and how the search process was conducted. Inclusion and exclusion criteria were strictly applied when choosing the relevant literature. Presenting all data adds validity to the research. The analysis process was clearly described to provide understanding to the reader. Ultimately, appropriate methods were chosen for this study that answered the research questions.

6.3 Conclusion and recommendation

The influence of poor oral health on quality of life, nutrition, self-esteem, social and economic wellbeing is a vital element of general health. The fact that oral diseases are highly preventable at the same time exceedingly occurring is alarming. Healthy behaviors like brushing of teeth daily, steady use of systematic and topical fluoride and restricted consumption of sugar are the most successful routines to prevent oral diseases and diminish poor oral health.

This study attained to answer the research questions. The findings showed that due to lack of enough time and overload of work there was inadequate knowledge and practices on oral care hence poor oral hygiene implementation for the elderly. None the less, the research articles provided experimental trainings and presented other strategies to the nurses and care providers to aid in implementation of oral care. This thesis may be used to provide education pertaining oral health of the elderly in nursing homes to future nurses or practical nurses and employees can use it as a guide to improve ways of oral care implementation.

A recommendation for further research would be to integrate training in oral health and diseases into both undergraduate and postgraduate nursing curriculum as well as dental professionals providing instructions on oral care. Furthermore, there is a need for more research on interventions to manage responsive behaviors by residents and to enhance care providers' oral care knowledge, as there is a wide gap concerning effective methods precisely on improving oral health in residents or patients with dementia.

REFERENCE

- Alan, G. Colin, R. 2013. How to write your nursing dissertation. John Wiley & Sons Limited.UK. Institute of Medicine. 2011. Advancing Oral Health in America. National Academies Press. Washington DC. [Accessed 16 August 2018] Available from: ProQuest Ebook Central.
- Albercht, M. Kupfer, R. Reissmann, D. Haastert, B. Muhlhauser, I. Kopke, S. 2013. Oral health educational interventions for nursing home staff and residents. Cochrane Database of systematic reviews. Issue 5. Art No: CD010535. [Accessed 25 April 2019] Available at <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010535/epdf/full>
- Aveyard, H. 2010, Doing A Literature Review in Health and Social Care: A Practical Guide, McGraw-Hill Education, Berkshire. [Accessed 25August 2018] Available from: ProQuest Ebook Central.
- Binnie, V. Bain, M. Chestnutt, I. Craig, N. Curnow, M. McCall, D. McCann, M. Robertson, M. 2015. Oral health Promotion. Oral health Network. Scottish Needs Assessment Programme. [Accessed 20 September 2018] Available at https://www.scotphn.net/wp-content/uploads/2015/11/Oral_Health_Promotion.pdf
- Bharti, R. Chandra, A. Tikku, P. A. Arya, D. Gupta, R. 2015. Oral care needs, barriers & challenges among elderly in India. The journal of Indian prosthodontic society. National institute of health. Jan-Mar 2015, Volume 15, Issue 1 [Accessed 3 September 2018] Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4762292/pdf/JIPS-15-17.pdf>
- Borreani, E. Wright, D. Scambler, S. Gallagher, E. J. 2008. Minimising barriers to dental care in older people. BMC Oral health. Volume 8, 2008, PMC2335092 [Accessed 3 September 2018] Available at <https://bmcoralhealth.biomedcentral.com/articles/10.1186/1472-6831-8-7>
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology. Pages 77-101. Volume 3, 2006, Issue 2. [Accessed 8 January 2019]
- Centre for innovation in research and innovation. 2019. Ethical Considerations. Grand Canyon University. Arizona. [Accessed 30 March 2019] Available at <https://cirt.gcu.edu/research/developmentresources/tutorials/ethics>
- Charlmers, J. M. 2003. Oral health promotion for ageing Australian population. Australian Dental Journal. Volume 48, Issue 1, March 2003, Pages 2-9. [Accessed 14 November 2018] Available at <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1834-7819.2003.tb00001.x>

Cronin, P. Ryan, F. Coughman, M. 2008. Undertaking Literature Review Step by Step Approach. *British journal of nursing*. Volume 17, Issue 1. Page 43. [Accessed 15 December 2018]

Daly, B. Smith, K. 2015. Promoting good dental health in older people: Role of community nurse. *British journal of community nursing*. September 2015, Volume 20, Number 9. Page 433.

Friedman, K. P. 2014. *Geriatric Dentistry; Caring of our Aging Population*. UK. John Wiley & Sons, Inc. Page 8-12. [Accessed 28 August 2018] Available from: ProQuest Ebook Central.

Gaszynka, E. Szatko, F. Godaala, M. Gaszynski, T. 2014. Oral health status, dental treatment needs, and barriers to dental care of elderly care home residents in Poland. *Clinical interventions journal*. Dovepress. 25 September 2014, Volume 9, Pages 1637-1644. [Accessed 3 September 2018] Available at <https://www.dovepress.com/oral-health-status-dental-treatment-needs-andnbspbarriers-to-dental-ca-peer-reviewed-fulltext-article-CIA>

Golafshani, N., 2003. Understanding reliability and validity in qualitative research. *The qualitative research*. 12 January 2003, Volume 8, Issue 3. [Accessed 15 April 2019] Available at <https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1870&context=tqr>

Haumschild Mary S. Haumschild Ryan J. 2009. The Importance of Oral Health in Long-Term Care, *Journal of the American Medical Directors Association*, Volume 10, Issue 9, 2009, Pages 667-671 WHO Presentation 2016 [Accessed 16 September 2018] Available at <http://www.euro.who.int/en/health-topics/disease-prevention/oralhealth/data-and-statistics>

Heale, R. Twycross, A. 2015. Validity & Reliability in qualitative study. *Cross Mark. Evidence based nursing*. Volume 18, Issue 3 [Access 15 April 2019] Available at <https://ebn.bmj.com/content/ebnurs/18/3/66.full.pdf>

Hoben, M. Kent, A. Kobagi, N. Huynh, T. K. Clarke, A. Yoon, N. M. 2017. Effective strategies to motivate nursing home residents in oral care and to prevent/reduce responsive behavior to oral care. A systematic Review. *PLoS ONE*. Page 2-3.

Huebner, M. Vach, W. Cessie, S. 2016. A systematic approach to initial data analysis is good research practice. *The journal of thoracic & cardiovascular Surgery*. January 2016, Volume 151, Issue 1, page 25-27. [Accessed 8 January 2019] Available at [https://www.jtcvs.org/article/S0022-5223\(15\)01794-8/pdf](https://www.jtcvs.org/article/S0022-5223(15)01794-8/pdf)

- Jablonski, A. R. Swecker, T. Munro, C. Grap, J. M. Ligon, M. 2009. Measuring the oral health of Nursing home Elders. *Clinical Research*. Volume 18, No. 3. Page 200-217.
- Kandelman, D. Petersen, E. P. Ueda, H. 2008. Oral health, General health and Quality of life in Older People. *Spec Care Dentist*. November/ December 2008, Volume 28, Issue 9, Page 225-236. [Accessed 3 September 2018]
- Kullberg, E. Sjögren, P. Forsell, M. Hoogsraate, J. Herbst, B. Johansson, O. 2010. Dental hygiene education for nursing staff in a nursing home for older people. *Journal of Advanced Nursing*. June 2010, Volume 66, Issue 6. Page 1273-1276. [Accessed 3 September 2018]
- Lewis, A. Wallace, J. Deutsch, A. King, P. 2015. Improving the oral health of frail and functionally dependent elderly. *Australian Dental Journal*. Volume 60, Issue 1 Page 95-105.
- McKenna, G. Burke, M. F. 2010. Age Related Oral Changes. *Gerodontology*. Dental update. Volume 37, Issue 8. Page 519- 523. [Accessed 18 September 2018] Available at https://www.researchgate.net/profile/Gerald_McKenna/publication/49664196_Age-Related_Oral_Changes/links/02bfe50fd273352594000000/Age-Related-Oral-Changes.pdf
- Meline, T. 2006. Selecting studies for Systematic Review: Inclusion/Exclusion Criteria. The university of Texas, Pan American. Spring 2006, Volume 33, Page 21-27. [Accessed 10 December 2018] Available at <https://pdfs.semanticscholar.org/a6b4/d6d01bd19a67e794db4b70207a45d47d82f3.pdf>
- Menegaz. M, A, Silva. R, E, A, Cascaes. M, A, 2018. Educational interventions in health services and oral health. Systematic review. Volume 52, Issue 52. [Accessed 25 April 2019] Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5953546/pdf/0034-8910-rsp-S1518-52-87872018052000109.pdf>
- Ouanounou, A. 2016. Xerostomia in the geriatric patient: Causes, Oral manifestations and Treatment. National institute of health. 2016 May, Volume 37, Issue 5, Page 306-311. [Accessed 10 August 2018]
- Petersen, P. E. Yamamoto, T. 2005. Improving the oral health of older people: the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2005, Volume 33, Page 81-92. [Accessed 8 August 2018]
- Prayoonwong, T. Wiwatkunupakan, T. Lasuka, D. Srisilapanan, P. 2015. Oral health care situation of dependent older people; Older health care stakeholders' perspectives. *Gerontology and geriatric research*. Research article. [Accessed 16 September 2018] Available at <https://www.omicsonline.org/open-access/oral-health-care-situation-of-dependent-older-people-older-health-carestakeholders-perspectives-2167-7182-S4-009>.

Public Health England. 2016. Oral Health Promotion Strategy 2016-21. West of England Public health partnership. Bristol City Council. [Accessed 14 August 2018] Available at https://democracy.bristol.gov.uk/documents/s6367/Oral_Health_Promotion_Strategy_Appendix%20B%20KC%201st%20Aug%202016.pdf

Razak, A. P. Richard, J. M. K. Thankachan, P. R. Hafiz, A. A. K. Kumar, N. K. Sameer, K. M. 2014. Geriatric Oral Health. A review Article. Journal of international Oral health. Volume 6, Issue 6, Page 110-116. [Accessed 3 September 2018] Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295446/>

SA Health. 2017. Oral health care for older people. Why oral health care is important for older people. Government of South Australia. National health service directory. [Accessed 5 April 2019] Available at <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+topics/oral+health+care+for+older+people/why+oral+health+care+is+important+for+older+people>

Singh, S. 2012. Evidence in oral health promotion- Implications for oral health planning. American public health association. American public health journal. September 2012, Volume 102, Issue 9, Page 15-18. [Accessed 3 September 2018] Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3482055/>

Shay, K. 2002. Infectious complications of dental and periodontal diseases in the elderly population. Clinical Infectious Diseases. Infectious Diseases Society of America. 1 May 2002, Volume 34, Issue 9, Page 1215-1223. [Accessed 11 September 2018] Available at <https://academic.oup.com/cid/article/34/9/1215/463157>

Sonde, L. Emami, A. Kiljunen, H. Nordenman, G. 2011. Care providers' perception of the importance of oral care and it's performance within everyday caregiving for nursing home residents with Dementia. Scandinavian journal of caring sciences. 1 March 2011, Volume 25, Page 92-99.

Sulyanto, R. 2017. Effects of Aging on the mouth and teeth. Merck Manual Consumer Version. [Accessed 18 September 2018] Available at <https://www.merckmanuals.com/home/mouth-and-dental-disorders/biology-of-the-mouth-and-teeth/effects-of-aging-on-the-mouth-and-teeth>

Taverna, V. M. Nguyen, A C. Hicks, M. B. 2016. Oral hygiene and selfcare in older adults with Dementia. Generations. Journal of American society of Aging. Fall 2016, Volume 40, Issue 3, Page 43-48.

Zenthöfer, A. Kiihling, M. I. Hufeland, L., A. Schröder, J. Cabrera, T. Baumgart, D. Ram-
melsberg, P. Hassel, J. A. 2016. Carers' education improves oral health of older people
suffering from dementia- Results of an intervention study. *Clinical interventions in Aging*.
US National Library of Medicine. November 2016, Volume 11, Page 1755-1762.

APPENDICES

Appendix 1.

NO	Author, Year, Place	Title	Aims of study	Results of the study	Keywords
1	Daly B & Smith K. 2015 London	Promoting good dental health in older people; Role of community nurse.	To support oral health of the elderly in community, nursing and residential care setting.	Nursing teams play a role in maintaining oral health by encouraging and supporting oral hygiene and adequate nutrition, preventing discomfort and detecting oral diseases.	Dental health education, older people, oral hygiene, dentures, mouth care.
2	Sonde L, Azita E, Kiljunen H & Nordenram G. 2010 Sweden	Care providers' perceptions of the importance of oral care and its performance within everyday caregiving for nursing.	To describe care providers' perception of and reasoning for the oral care for nursing home residents with dementia and to describe nurses' reasoning in relation to their responsibility for monitoring oral care interventions within the regular caregiving routines for nursing home residents with dementia.	The focus group discussion revealed three themes: Art of caregiving, Barriers and Treatment strategies. Themes related to the nurses' statements about oral hygiene within caregiving were Care, Responsibility for care and Information.	Dementia, care.
3	Cadet J T, Abebe B J, Burke L S, Bakk L, Kalendarian E & Maramaldi P. 2016 USA	Evidence-based health promotion in nursing homes; A pilot intervention to improve oral health.	To assess oral health and oral cancer screening training models for selection and adaptation.	Findings indicate increases in two areas of oral health knowledge: toothbrush position and frequency of brushing. Self-efficacy, however, did not significantly change.	Nurses aides, Oral hygiene, nursing homes, interventions.

4	Tarvena V M, Nguyen A C & Hicks M B 2016 USA	Oral hygiene and selfcare in older adults with dementia.	This article discusses the different types of dementia and how they impact oral care delivery; the caregiver role in administering dental hygiene and oral care; and lists resources for assistance with necessary oral care services	The responsibility of providing dental care for elders with dementia largely falls to certified or family caregivers but helpful resources exist.	Dementia, dental care of older adults, caregiving.
5	Hoben M, Kent A, Kobagi N, Huynh T K, Clarke A, Yoon N M. 2017 Netherlands	Effective strategies to motivate nursing home residents in oral care and to prevent or reduce responsive behaviors to oral care: A systematic review	To evaluate the effectiveness of strategies that nursing home care providers can apply to either prevent residents' responsive behaviors to oral care or motivate residents to perform their own oral care.	Potentially promising strategies are available that nursing home care providers can apply to prevent/overcome residents' responsive behaviors to oral care or to enable/motivate residents to perform their own oral care.	Nursing home, oral health, health care facility.
6	Urata Y J, Couch T E, Walsh M M, Rowe J D. 2018 USA	Nursing Administrators views in oral health in long term care facility: A systematic review.	To explore the knowledge, attitudes, and practices of supervising nurse administrators regarding the oral care provided to long-term care facility.	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	access to care, dental hygienists, interprofessional collaboration, long-term care facilities, nursing administrators, oral care
7	Cabrera T, Zenthöfer A, Rammelsberg P & Hassel J A. 2015.	Improving oral health of institutionalized older people with diagnosed dementia.	To evaluate the oral health and denture hygiene of older people with and without dementia, six months after the	Use of ultrasonic baths can be a successful means for improving denture hygiene among	Older people; dementia; oral health; oral hygiene; intervention

	Germany.		carer have followed a dental education programme.	older people in long-term care with and without dementia.	
8	Zenthöfer A, Kuhling M I, Hufeland L A, Schönder J, Cabrera T, Baumgart D, Rammelsberg P & Hassel J A. 2016 Germany.	Education for carers to improve oral hygiene, however, seems to be of minor significance and to be more effective for people with dementia.	To evaluate the effectiveness of carers' education on improvements in oral health and denture hygiene of care-dependent and cognitively impaired older people in nursing homes compared to those without intervention.	In the intervention group, plaque control record and dental hygiene index significantly improved during the study period. Oral health and denture hygiene improved likewise in subjects with and without dementia.	oral health, intervention, older people, nursing home, longitudinal
9	Lewis A, Wallace J, Deutsch A, King P. 2015 Australia.	Improving the oral health of frail and functionally dependent elderly.	To promote a multi-disciplinary approach with doctors, nurses, care workers and dental professionals sharing responsibility for the four key processes of oral health screening, oral health care planning, daily oral hygiene and access to dental treatment.	The range of products available to address the oral diseases common to the frail elderly is growing. The oral health care provider is required to establish a preventive regime that is tailored to the patient's needs, is realistic and under revision as the patient's needs change	Frail elderly, functionally dependent elderly, preventive strategies, residential aged care, restorative approaches.
10	Jablonski A R, Swecker T, Munro C, Grap J M, Ligon M.	Measuring the Oral Health of Nursing Home Elders.	To test the feasibility of a nursing and dental hygiene team to measure	Oral health indicators were collected safely and efficiently from	oral health, nursing homes, elderly, dental hygienists.

	2009 USA		specific oral health indices in a sample of older adults residing in nursing homes.	nursing home residents using a nursing and dental hygiene collaborative approach. Nursing and dental hygiene collaborations hold promise for improving the oral health in institutionalized elders.	
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Appendix 2. **Formation of 'oral education and training theme'** (Interventions to improve poor oral health)

Quote	Codes	Sub theme	Theme
<p>'It has been demonstrated that residents' education in teeth brushing techniques has a positive effect on oral hygiene. Further, studies have investigated the effects of carers' education and found improved oral hygiene, less gingivitis, a reduced prevalence of denture stomatitis and improved denture hygiene.' (Zenthofer et al 2016)</p>	<p>Brushing techniques Positive effect Carer education Oral diseases Improved oral hygiene Resident education</p>	<p>Knowledge of denture hygiene Carer and resident education</p>	<p>Oral education and training</p>
<p>'There is evidence that nursing staff and assistant's oral health knowledge and awareness of oral health can be raised through training and that residents' oral hygiene can be improved.' (Daly & Smith 2015)</p>	<p>Awareness Knowledge Staff training Improved oral hygiene</p>	<p>Knowledge through training Oral health awareness</p>	
<p>'National and international literature consistently describe the aged care workforce as lacking appropriate oral health knowledge and skills to be able to provide appropriate oral health for older people.' (Lewis et al 2015)</p>	<p>Unskilled labor Inadequate oral care Lack enough knowledge</p>	<p>Need for training Oral health education</p>	