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Caregivers’ perceptions towards oral healthcare services for elders living in Malaysian nursing homes—A qualitative study

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Abstract
Objective: To assess the perceptions of caregivers towards oral healthcare services received by elders in Malaysian nursing homes and to identify challenges and suggestions for improvement.

Background: Caregivers play an important role in the oral health care of elders in nursing homes.

Methods: This study employed a qualitative approach using the nominal group technique (NGT) to obtain caregivers’ feedback in nursing homes in Malaysia. Data were manually transcribed, summarised into keywords/key phrases, and ranked using weighted scores.

Results: In total, 36 caregivers (21 from government and 15 from private nursing homes) participated in the NGT sessions. Overall, caregivers were satisfied with the low treatment cost, the quality of treatment, and the availability of dental visits to nursing homes. Caregivers were dissatisfied with the frequency of dental visits, long waiting times at government dental clinics, and inadequate denture hygiene education for elders in nursing homes. The challenges faced by caregivers were elders’ poor oral health knowledge and attitude and lack of elders’ trust of caregivers to look after their oral health. Suggestions for improvement were to increase the frequency of dental visits to nursing homes, provide oral health education to elders and caregivers, and give treatment priority to elders at dental clinics.

Conclusion: Despite being satisfied with the basic oral healthcare services received by elders in Malaysian nursing homes, caregivers raised some issues that required further attention. Suggestions for improvement include policy changes in nursing home dental visits and treatment priority for elders at government dental clinics.

KEYWORDS
caregiver, institutionalised elders, Malaysia, nursing home, oral healthcare service
1 | INTRODUCTION

The world is undergoing a rapid demographic transition. It is estimated that by 2025, ~1.2 billion of the world population will become elders aged 60 years, up from 542 million in 1995.1 The increasing proportion of elders is attributed to longer life expectancy, low fertility rates, efficient public health policies, and improvements in medicine and health care. For the purpose of policy development for elders in Malaysia, elders are classified as those aged 60+ years. In 2014, it was estimated that 8.0% of the Malaysian population were elders; in 2015, this proportion had risen to 9.2%. By 2030, elders are expected to reach up to 15.0% of the Malaysian population.2

The impacts of ageing on health and well-being are well known. Elders are more vulnerable to chronic diseases such as cancer, cardiovascular disease, diabetes, infections and poor oral health, especially tooth loss and severe periodontal conditions.3 This scenario poses great challenges to the healthcare system, social services and the elder’s family members.4 In addition, poor oral health status among elders may also lead to other health complications that can impede activities in their daily life. It has been reported that oral health care often takes second place to chronic and life-threatening diseases in many aspects among elders.5

In general, elders have poorer oral health than younger people. Malaysian elders have lower proportions of standing teeth (9.8% vs 25.0%) and higher prevalence of edentulousness (34.5% vs 2.7%), with twice as many elders with periodontal conditions, that is gingivitis and periodontitis, than younger people.6 These conditions hinder elders from eating a balanced diet, resulting in poor nutritional intake and gradually exposing them to poor health, higher risk of disease, poorer self-esteem and lower quality of life.7-9

In Malaysia, nursing homes provide shelter and care for the needs of elders. They are managed by caregivers who assist the elders in their daily activities, including oral health care.10 However, there are several challenges caregivers have to overcome when providing their residents with oral health care. A systemic review conducted by Hobden et al (2017) found that among those challenges were elders resisting care, caregivers’ inadequate oral healthcare knowledge and training, high workload, lack of time, lack of staff, difficulties in providing oral care, and elders’ less responsive behaviours.11 There were also factors that facilitated oral health care, including caregivers with sufficient knowledge and skills, good communication skills, good cooperation and sufficient time for oral care.11 Studies indicate that the oral health status of elderly people in nursing homes tended to be poorer, including many with unhygienic dentures; they were also more likely to be edentulous, in part due to their unfavourable socio-demographic factors that they experienced prior to their entry to a nursing home.12,13

The Malaysian Oral Health Division, Ministry of Health, has developed guidelines on nursing home dental visits by government dentists.14 A routine dental visit to a nursing home by a government dentist involves an oral examination and the provision of simple treatments, such as extractions of loose teeth, placement of glass ionomer restorations, manual scaling and denture adjustments. More complex treatments, such as surgical extractions, large amalgam restorations, deep scaling and construction of dentures, are carried out off-site at a government dental clinic at minimum cost. Given the long waiting lists, a set of dentures often takes 6 to 24 months to be made.

However, <40.0% of government dentists in Peninsular Malaysia had experience in treating elders in nursing homes.15 Further, it is not known whether the oral healthcare services provided to elders in nursing homes are sufficient to address their oral health treatment needs, as no annual report on this subject has been published thus far. As such, feedback from nursing home caregivers is essential to assess the adequacy of oral healthcare services provided to elders living in Malaysian nursing homes.

The aim of this study was to assess caregivers’ perceptions of the oral healthcare services received by elders living in nursing homes in Malaysia. It also sought to determine the challenges they encounter and to explore their suggestions on how to improve oral healthcare delivery in nursing homes.

2 | MATERIALS AND METHODS

2.1 | Study design

This was a qualitative study using consensus methods for data collection.16 A number of techniques are available under consensus methods, including brainstorming, Delphi process, focus group discussion and nominal group technique (NGT).17 In this study, NGT was chosen. In this method, participants are required to provide information individually to the questions asked by a facilitator. The information gathered is then collated, and a list of unique items is created. The participants are then asked to prioritise these items after discussing them in the group. The NGT method has been widely used in studies in the areas of education, health, social service, industry and government organisations.18,19 NGT allows researchers to generate a large number of ideas in a short amount of time. In addition, the process is highly structured, allows feedback to be ranked based on its importance, and avoids quick decision-making.19 Furthermore, it prevents certain participants from dominating the discussion and the facilitators from influencing the work process.19 However, care must be taken to reduce the risk of facilitator bias, lack of representativeness, and limited time to reach consensus among participants.20

2.2 | Development of NGT questions and training of facilitators

A series of discussions among the researchers and officers from Oral Health Division, Ministry of Health, Malaysia, were held to develop the NGT questions. The questions developed were very specific and related to the existing dental care pathway for the elderly population in Malaysia.14 Following these discussions, training for NGT facilitators was conducted by dental public health experts to ensure
standardised ways of asking questions and probing for answers by facilitators were adopted. Prior to the actual data collection, two pilot NGT sessions were conducted to test the questions in terms of clarity and word appropriateness as well as the process implementation and time taken to complete the NGT session in field conditions. Some minor amendments were made to the questions based on the caregivers’ feedback.

2.3 Sampling and recruitment

The study population was caregivers working at government and private nursing homes in three states in Malaysia: two states, that is Selangor and Johor, representing the northern and southern parts of Peninsular Malaysia, respectively, and one state, that is Sabah, representing the Island of Borneo. The list of all government and private nursing homes was obtained from the Welfare Department of Malaysia. In terms of sample selection, initially, one nursing home in Selangor was randomly selected, and caregivers who fulfilled the inclusion criteria were invited to participate in the NGT. The inclusion criteria were caregivers aged 18 years and above, involved in the care of elders at the nursing homes, and accompanied the elders for dental treatment, either at government dental clinics or during dental visits at the nursing home. Next, a nursing home in Johor was randomly selected, and the NGT session was conducted with the caregivers. This was followed by a random selection of a nursing home in Sabah. The selection process was repeated until the data from the NGT sessions had reached saturation level; that is, no new information was generated.17

2.4 Conduct of the NGTs, data analysis and ethics

The NGT sessions were conducted according to the stepwise procedure as reported by Esa et al.17 Each NGT session comprised 5-8 caregivers and was conducted in a closed room equipped with a flip chart in the respective nursing home. The NGT session started with the facilitator welcoming the caregivers and explaining to them the importance of the study and the tasks expected of them. This was followed by the facilitator introducing the first question on the topic of discussion, that is "What are the factors that contributed to your dissatisfaction with the oral health care service received by the elders here?" The participants were given 5 minutes to write down their responses in worksheet A (Figure 1), and they were asked not to discuss their responses with the other participants.

Next, each of the participants was asked to select one item they perceived as the most important to the topic from the list of responses and to write it on the flip chart at the front of the room. Then, each of the items listed on the flip chart was discussed in detail. The aim was to clarify, elaborate and defend the items put forward by the participants until all of the items were well understood by them.

The participants were asked to copy the responses listed on the flip chart into worksheet B (Figure 2) and to rate each response from 0 (least important) to 9 (most important). Subsequently, the score for each item was weighted, and the weighted score of every participant for each item was added, the sum of which was compared for each item in the group to determine the final ratings.

The above steps were repeated for the subsequent questions, that is "What are the factors that contributed to your satisfaction with the oral health care service received by the elders here?", "What are the challenges you face in fulfilling the oral health treatment needs of the elders here?", and "What are your suggestions to improve the oral health care service made available to the elders here?" Each session was recorded using an audio-recording tape.

Data analysis consisted of two stages. In the first stage, the responses of the participants from the flip chart for each NGT were summarised into keywords or key phrases. For data accuracy, the responses or items mentioned by the participants were verified from the voice recording, which had been transcribed manually into a written text. In the second stage, all items derived from the NGT sessions were grouped together according to their respective keywords/key phrases, and the weighted scores were added to give the final weighted scores for all items. The items were further interpreted and grouped into categories and subcategories by the researchers and officers from Oral Health Division, Ministry of Health, Malaysia, in two series of workshops. Consensus on the grouping of items into respective categories and subcategories was reached through discussions among the workshop members. For the purpose of this article, only 10 items with the highest ranking were tabulated.

Ethical approval for the study was obtained from the Medical Ethics Committee, Faculty of Dentistry, University of Malaya (UM.C/TCN2/628/4/4), and the National Medical Research Register (KKM/NIHSEC/P16-1093). Permission to conduct the study was obtained from the Welfare Department of Malaysia and the respective nursing homes. A written informed consent was obtained from all caregivers prior to the NGT sessions. Participants were assured the information they provided was kept confidential.

3 RESULTS

In total, 36 caregivers, 21 (58.3%) from government and 15 (41.7%) from private nursing homes, participated in the study. The mean age was 32 (SD = 13.4) years. The majority of the caregivers were female (63.9%). The participants consisted of Malay (58.3%), other (22.2%), Chinese (13.9%) and Indian (5.6%) ethnicities.

Overall, the summarised keywords or key phrases of the items were categorised into 7 main factors, namely service factor, dental staff factor, clinic factor, dentist factor, resident factor, caregiver factor and nursing home factor. The finalised items for the four main questions, that is satisfaction, dissatisfaction, suggestions and challenges faced by caregivers in relation to oral healthcare services
made available to elders in nursing homes, were grouped together and tabulated. The items were further interpreted and sorted into subcategories to allow for accurate interpretation of the issues put forward by the caregivers.

The 10 highest-ranked items on caregivers’ satisfaction towards the oral healthcare services received by the elders according to their weighted scores are listed in Table 1. Service factor topped the rank at 70%, followed by clinic factor (20%) and dental staff factor (10%). Of the service factors, free/affordable dental service was ranked the highest (9.26), followed by the quality of dental treatment provided (5.73) and the availability of dental visits at the nursing homes (5.33). The only dental staff factor listed, ranked fourth in the overall list, was related to polite and caring dental staff (3.27). Items under clinic factor, which were ranked eighth and ninth, were improved infrastructure at government dental clinics (1.12) and clean toilets at government dental clinics (1.08), respectively.

The caregivers identified only 10 items related to the dental services with which they were dissatisfied (Table 2). These items were divided into two main categories, that is service factor (70%) and dentist factor (30%). Infrequent dental visits to nursing homes (13.39) was the most commonly cited item, followed by long waiting time at the government dental clinics (7.87), and inadequate denture hygiene education provided to the elders at the nursing homes (3.88). The most important dentist factor cited was the lack of communication between the dentist and the elders, which was ranked sixth (1.27).

Table 3 shows 10 of the 12 highest-ranked items related to challenges faced by the caregivers in fulfilling the oral health treatment needs of the elders in nursing homes. Resident factor accounted for 40% of the items, followed by service factor (20%), nursing home factor (20%), caregiver factor (10%) and dental staff factor (10%). The three most important challenges faced by the caregivers were all related to resident factor, that is the elders’ poor attitudes towards oral health (10.67), their poor oral health knowledge (3.08), and their lack of trust of caregivers compared to the dentist in taking care of their oral health (2.25). The caregivers also admitted that the nursing home staff had poor oral health knowledge (2.03), which ranked fourth in the list. Language barriers between nursing home elders and the dental staff also presented a significant challenge as perceived by the caregivers (1.81).
Table 4 presents 10 of the 15 items that were the most important suggestions to improve the oral healthcare services received by the elders, all of which were related to service factor. Increased frequency of dental visits to nursing home by dental staff featured most prominently, (12.29), followed by providing oral health education to elders and staff at nursing homes (3.41) and giving priority to elders to receive treatment at government dental clinics (3.38).

**Table 1** Ranking of factors affecting caregivers' satisfaction towards the delivery of oral healthcare services to the elders

<table>
<thead>
<tr>
<th>Ranking (total weighted scores)</th>
<th>Keywords or key phrases of item</th>
<th>Category</th>
<th>Subcategory</th>
<th>Explanation by respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (9.26)</td>
<td>Free/ affordable dental service</td>
<td>Service factor</td>
<td>Fee</td>
<td>It is a free dental service and no charges are asked from me</td>
</tr>
<tr>
<td>2 (5.73)</td>
<td>Quality of dental care</td>
<td>Service factor</td>
<td>Quality of dental treatment</td>
<td>Satisfied with the treatment provided</td>
</tr>
<tr>
<td>3 (5.33)</td>
<td>Available dental visit at nursing home</td>
<td>Service factor</td>
<td>Availability</td>
<td>Available dental visits at nursing home lessen caregiver’s burden to take elders to dental clinic</td>
</tr>
<tr>
<td>4 (3.27)</td>
<td>Good hospitality/ polite and caring dental staff</td>
<td>Dental staff factor</td>
<td>Caring dental staff</td>
<td>Dental staff who came were gentle and had good hospitality</td>
</tr>
<tr>
<td>5 (2.66)</td>
<td>Comprehensive coverage of dental care provided at the nursing home</td>
<td>Service factor</td>
<td>Coverage of dental care</td>
<td>During dental visit, all elders received treatment, even bedridden elders received oral examination</td>
</tr>
<tr>
<td>6 (1.16)</td>
<td>Improved treatment technique/ technology at clinic</td>
<td>Service factor</td>
<td>Treatment technology</td>
<td>Nowadays dentures made in government dental clinics are good. Tooth implant can also be done</td>
</tr>
<tr>
<td>7 (1.15)</td>
<td>Readable oral health education materials provided by dental team at nursing home is understandable</td>
<td>Service factor</td>
<td>Oral health education</td>
<td>During dental visit, dental staff bring along readable catalogue or posters on teeth. The elders who cannot read could learn from the pictures</td>
</tr>
<tr>
<td>8 (1.12)</td>
<td>Improved infrastructure at dental clinic</td>
<td>Clinic factor</td>
<td>Facility</td>
<td>The waiting area was comfortable compared to what it was in the past. Some clinics have elevators</td>
</tr>
<tr>
<td>9 (1.08)</td>
<td>Clean toilet at government dental clinic</td>
<td>Clinic factor</td>
<td>Facility</td>
<td>The toilet cleanliness is well taken care of</td>
</tr>
<tr>
<td>10 (0.96)</td>
<td>Oral health education provided by dental team at nursing home</td>
<td>Service factor</td>
<td>Oral health education</td>
<td>Dentists gave oral health education and tooth brushing technique at nursing home</td>
</tr>
</tbody>
</table>

4 | DISCUSSION

This study aimed to assess the perceptions of caregivers towards the oral healthcare services received by elders living in nursing homes in Malaysia in terms of caregivers’ satisfactions, dissatisfactions, challenges that they encountered, and suggestions to improve the service.

Caregivers in this study rated free and affordable dental service, quality dental care, availability of dental visit at nursing homes, polite and caring dental staff, and comprehensive coverage of dental care at nursing homes as the top five important factors that determined their satisfaction.

These findings are consistent with the initiatives taken by the Malaysian government to provide affordable and quality oral healthcare services for senior citizens. The provision of free dental care proposed in this study would alleviate the financial burdens faced by the elders to obtain dental care. Furthermore, Ministry of Health, Malaysia, in its guidelines on oral health care for elderly people, proposed that oral healthcare services for elders should be comprehensive, comprising promotive, preventive, curative treatment and rehabilitation, in both the government dental clinics and nursing homes. Mobile dental equipment and mobile dental clinics with elder-friendly features were also used during each visit to nursing homes. For the past few years, mobile dental laboratories with dental technologists have also been made available at selected nursing homes to process and repair dentures during dental visits. The implementation of the above guidelines and initiatives has resulted in improved oral healthcare services in nursing homes, enabling the elders to receive basic dental treatment regardless of their physical condition, even if they are bedridden.

The findings above are in line with the finding in a study by Borreani et al, which reported that mobility problems among elders could be addressed if a mobile dental team visited the nursing home, provided dental examinations and took elders to the government dental clinic for further treatment. In addition to oral healthcare services, findings from this current research also revealed that having good communication skills among dentists and dental staff is
TABLE 2  
Ranking of factors affecting caregivers’ dissatisfaction towards the delivery of oral healthcare services to the elders

<table>
<thead>
<tr>
<th>Ranking (total weighted scores)</th>
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<th>Category</th>
<th>Subcategory</th>
<th>Explanation by respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (13.39)</td>
<td>Infrequent dental visit to nursing home</td>
<td>Service factor</td>
<td>Dental visit to nursing home</td>
<td>Dental visit to nursing home is infrequent, only once a year</td>
</tr>
<tr>
<td>2 (7.87)</td>
<td>Long waiting time at the dental clinic</td>
<td>Service factor</td>
<td>Waiting time for treatment</td>
<td>Give priority to elders and do not make them wait long with other normal patients for treatment</td>
</tr>
<tr>
<td>3 (3.88)</td>
<td>Inadequate denture hygiene education to elders</td>
<td>Service factor</td>
<td>Oral hygiene education</td>
<td>Elders with dentures are not aware of how to clean their dentures and use polident</td>
</tr>
<tr>
<td>4 (1.92)</td>
<td>Inadequate treatment provided at nursing homes</td>
<td>Service factor</td>
<td>Dental care not comprehensive</td>
<td>Dental team only examine healthy elders, the bedridden ones are ignored</td>
</tr>
<tr>
<td>5 (1.29)</td>
<td>Insufficient dentists providing treatment at nursing home</td>
<td>Service factor</td>
<td>Man power</td>
<td>Only one dentist came to the nursing home once a year, not enough to cover all elders</td>
</tr>
<tr>
<td>6 (1.27)</td>
<td>Lack of communication from dentist</td>
<td>Dentist factor</td>
<td>Communication</td>
<td>No explanation was received from dentist about the elders’ dental status following dental check-up</td>
</tr>
<tr>
<td>7 (1.11)</td>
<td>Long waiting time for appointment/treatment</td>
<td>Service factor</td>
<td>Waiting time (between appointment)</td>
<td>Waiting time for getting the service is very long, long waiting time for registration, and appointment/treatment</td>
</tr>
<tr>
<td>8 (1.04)</td>
<td>Inadequate local anaesthetic before tooth extraction</td>
<td>Dentist factor</td>
<td>Clinical competency</td>
<td>Sometimes, the local anaesthetic was inadequate and the tooth was still painful when the dentist attempted to extract it</td>
</tr>
<tr>
<td>9 (1.00)</td>
<td>Inadequate medications after tooth extraction</td>
<td>Dentist factor</td>
<td>Clinical competency</td>
<td>There were inadequate medications given after extraction. Painkillers were not enough</td>
</tr>
<tr>
<td>10 (0.84)</td>
<td>Lack of oral health education materials for nursing home staff</td>
<td>Service factor</td>
<td>Oral health education</td>
<td>No oral pamphlets or references for caregivers to refer to in relation to elders’ oral health care</td>
</tr>
</tbody>
</table>

paramount in providing effective dental treatment to patients, particularly elders. This is supported by Marci et al and Hoben et al, whose studies stated that a good patient-dentist relationship was crucial for the management of elders, including those with dental anxiety.\(^{11,23}\) Furthermore, good communication skills will result in increased efficiency of treatment and improved patient satisfaction with the services provided.\(^{24}\)

Although the caregivers in this study were generally satisfied with the services provided to the elders under their care, they were dissatisfied with the infrequent dental visits to their nursing homes and the inadequate treatment provided at nursing homes, which they further claimed was due to the insufficient number of dentists present during dental visits. As elders are vulnerable to oral diseases, the usual once-a-year dental visit is considered insufficient.\(^{21}\) This is further supported by Caines et al,\(^{25}\) who reported that poor access to dental care would affect oral health, especially among high-risk populations. The findings of this study were also comparable with those of a research conducted in Saarland, Germany, where only 7.0% of nursing homes received regular dental examinations at least once a year, and 86.8% of the caregivers wanted a regular oral examination for the elders under their care.\(^{26}\) In recent years, a few strategies have been implemented by the Ministry of Health, Malaysia, including year-round well-planned dental visits to ensure regular dental visits to the nursing homes, training of dental officers with a special interest in geriatric dentistry, and establishing experienced mobile dental teams. However, no specific interval for the dental visits was stated in the current guidelines.\(^{14}\) In view of the insufficient number of dentists present during dental visits, one possible solution is for the dentists to treat only urgent cases while at the nursing homes, while non-urgent cases can be referred to the nearest government dental clinics for further treatment. However, the caregivers further rated the long waiting time in the government dental clinics as highly dissatisfactory. They felt dissatisfied, as the elders were not given priority at the dental clinics and had to wait longer together with other patients. Janes et al\(^{27}\) categorised the long waiting time as a structural obstacle for the elders to receive dental treatment. However, this perception contradicts the current initiative taken by the Ministry of Health, Malaysia, with the introduction of the green lane or priority lane and priority registration counters for senior citizens to ensure minimal waiting times at the dental clinics.\(^{14}\) A future study is needed to assess
that contributed to their poor attitude towards oral health. This
effect among the elders was further identified as another factor
which they would be prompted to seek treatment.28,29 Wårdh
as pain, chewing difficulties or social embarrassment, following
oral health to be important only in the presence of symptoms such
as poor attitudes towards oral health, assuming that it was not im-
study, the caregivers further explained that the elders were not
concerned about their oral health, assuming that it was not im-
important. According to the caregivers, the elders considered their
oral health to be important only in the presence of symptoms such
as pain, chewing difficulties or social embarrassment, following
which they would be prompted to seek treatment.28,29 Wårdh
et al30 also reported the same scenario. Poor oral health knowl-
edge among the elders was further identified as another factor
that contributed to their poor attitude towards oral health. This
lack of knowledge further complicates their oral health, as they lack
knowledge on ways to look after their teeth, mouth and den-
tures.31,32 This lack accentuates the need for oral health education
to be further emphasised among the elders in nursing homes. The
Oral Health Division, Ministry of Health, Malaysia, has released
various oral health education materials, such as pamphlets, post-
ers, exhibitions and oral health talks, for elders in nursing homes.
However, the impacts of such initiatives on the elders’ oral health
knowledge remain unclear.

The caregivers also highlighted the lack of trust among the elders
in seeking oral health care. Lastly, Malaysia is a multi-racial country, where
a range of spoken languages are used in daily communication. In a
situation where the elders are only able to speak in their native lan-
guages, the language barrier posed difficulties for them to explain

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>1 (10.67)</td>
<td>Poor attitude of elders at nursing homes towards oral health</td>
<td>Resident factor</td>
<td>Attitude</td>
<td>Elders do not want to look after their oral health as they have less/no teeth</td>
</tr>
<tr>
<td>2 (3.08)</td>
<td>Poor oral health knowledge</td>
<td>Resident factor</td>
<td>Oral health knowledge</td>
<td>Elders are very much dependent on caregivers for oral health care as they are old and some are demented</td>
</tr>
<tr>
<td>3 (2.25)</td>
<td>Lack of trust towards caregivers by elders</td>
<td>Resident factor</td>
<td>Trust</td>
<td>Elders tend to trust dentist more than caregivers in taking care of their oral health</td>
</tr>
<tr>
<td>4 (2.03)</td>
<td>Lack of oral health knowledge among nursing home staff</td>
<td>Caregiver factor</td>
<td>Oral health knowledge</td>
<td>There are no oral healthcare programmes conducted at nursing home</td>
</tr>
<tr>
<td>5 (1.81)</td>
<td>Language barrier</td>
<td>Dental staff factor</td>
<td>Communication</td>
<td>Elders do not understand other languages other than their mother tongue when communicating with dentist</td>
</tr>
<tr>
<td>6 (1.43)</td>
<td>Long waiting time</td>
<td>Service factor</td>
<td>Waiting time</td>
<td>Caregivers have to wait a long time for elders to get treatment at the dental clinic</td>
</tr>
<tr>
<td>6 (1.43)</td>
<td>Schedule for treatment in government clinic is not flexible</td>
<td>Service factor</td>
<td>Dental service</td>
<td>Specific date is allocated for extraction only which makes elders inconvenient</td>
</tr>
<tr>
<td>6 (1.43)</td>
<td>Transportation to dental clinic</td>
<td>Nursing home factor</td>
<td>Accessibility</td>
<td>Limited transportation for elders to go to the dental clinic</td>
</tr>
<tr>
<td>9 (1.37)</td>
<td>Ageing-related conditions</td>
<td>Resident factor</td>
<td>Communication</td>
<td>Elders have difficulties to express themselves with some having hearing impairment</td>
</tr>
<tr>
<td>10 (1.37)</td>
<td>Inadequate caregiver to accompany residents to clinic</td>
<td>Nursing home factor</td>
<td>Manpower</td>
<td>Inadequate nursing home staff to accompany residents to the hospital. Caregivers needed to lift elders and escort them</td>
</tr>
</tbody>
</table>
The inability of the dentist to communicate with elders in their mother tongue creates barriers in dentist-patient relationships. Flores et al. reported that language barriers posed greater impacts on patients, as they are less likely to receive appropriate medical care compared to others and to receive preventive services at reduced rates, with an increased risk of non-adherence to medication.

The suggestions given by the caregivers on ways to improve the current oral healthcare services provided to the elders were mostly derived from the dissatisfaction factors and the challenges encountered, as discussed previously. The most highly rated suggestions were to increase the number of dental visits to nursing homes and to provide oral health education to elders and caregivers during the same visit. This was to ensure that the elders would receive continuous oral health care throughout the year. This suggestion was further supported by findings from other studies where frequent dental visits to nursing homes would allow dental health professionals to provide preventive services, early diagnosis, and more effective treatment. Furthermore, regular dental treatment has been shown to substantially improve quality of life and function in activities of daily living (ADL) among elders in nursing homes.

The caregivers also look forward to the possibility of setting up a dental clinic at their respective nursing homes, as physical conditions of the elders confining them to wheel chairs and beds as well as frailty have been identified as barriers for them to access dental services and provision of care. At present, treatment offered during dental visits is restricted based on the equipment brought by the

### TABLE 4 Ranking of caregivers’ suggestions in improving the current oral healthcare services to the elders

<table>
<thead>
<tr>
<th>Ranking (total weighted scores)</th>
<th>Keywords or key phrases of item</th>
<th>Category</th>
<th>Subcategory</th>
<th>Explanation by respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (12.29) Dental visit to nursing home more than once a year</td>
<td>Service factor</td>
<td>Dental visit to nursing home</td>
<td>Dental team should visit nursing home frequently from 2 to 4 times a year, so that elders’ oral health is well taken care of</td>
<td></td>
</tr>
<tr>
<td>2 (3.41) Provide oral health education to elders and caregivers</td>
<td>Service factor</td>
<td>Oral health education</td>
<td>Dental team should give talks on oral health and ways to protect tooth to elders and caregivers</td>
<td></td>
</tr>
<tr>
<td>3 (3.38) Give priority to elders to receive treatment at the dental clinic</td>
<td>Service factor</td>
<td>Priority treatment</td>
<td>There is no priority for the elders to be seen early at the dental clinic</td>
<td></td>
</tr>
<tr>
<td>4 (2.32) Set up dental clinic at nursing home</td>
<td>Service factor</td>
<td>Dental clinic at nursing home</td>
<td>Set up a mini dental clinic at nursing home in order to provide adequate dental treatment to elders</td>
<td></td>
</tr>
<tr>
<td>5 (1.31) Shorten waiting time for denture appointment</td>
<td>Service factor</td>
<td>Waiting list</td>
<td>Appointment to do dentures for elders should be reduced from 3 months to ½ months</td>
<td></td>
</tr>
<tr>
<td>6 (1.07) Use of modern mobile dental clinic</td>
<td>Service factor</td>
<td>Modern technology</td>
<td>Mobile dental clinic equipped with modern computerised system</td>
<td></td>
</tr>
<tr>
<td>7 (1.03) Increase number of dentists at dental clinics</td>
<td>Service factor</td>
<td>Manpower</td>
<td>Dental clinics should employ more dentists. This will reduce waiting time and treatment can be provided faster</td>
<td></td>
</tr>
<tr>
<td>8 (1.02) Increase numbers of dental clinics</td>
<td>Service factor</td>
<td>Increase dental clinic</td>
<td>Increase the number of dental clinics. People already know where clinic is situated. More dental clinic should be made available, they become less crowded</td>
<td></td>
</tr>
<tr>
<td>9 (1.00) Provide comprehensive treatment at nursing home</td>
<td>Service factor</td>
<td>Comprehensive treatment at nursing home</td>
<td>Give comprehensive treatment at nursing home, eg tooth extraction, dentures, fillings and dispensary</td>
<td></td>
</tr>
<tr>
<td>10 (1.00) Use appropriate portable dental equipment to treat bedridden elders</td>
<td>Service factor</td>
<td>Appropriate equipment</td>
<td>The equipment brought by dentists are too big and difficult to carry to bedridden elders. Using portable equipment allow all elders to receive treatment</td>
<td></td>
</tr>
</tbody>
</table>
Müller et al.41 stated that elders in nursing homes have fewer teeth and thus eat less, which should be taken seriously by the relevant policy makers. The caregivers suggested that the waiting time for dental appointments be shortened, as the need for dentures among edentulous elders is crucial for function. This should be taken seriously by the relevant policy makers. Müller et al.41 stated that elders in nursing homes have fewer teeth compared to independent elders of the same age. As a result, most of them need dentures. Therefore, the provision of dentures to the elders will help them to improve their chewing ability, facial appearance and speech. This will increase their confidence socially and improve their quality of life and well-being.42

In terms of the oral health services in government dental clinics, the Ministry of Health has already provided guidelines for the implementation of a priority lane (green lane) and a priority registration counter for elders aimed at reducing their waiting time at the dental clinic.14 However, no study has been conducted to evaluate the effectiveness of this initiative thus far. Lastly, the caregivers suggested that the waiting time for dental appointments be shortened, as the need for dentures among edentulous elders is crucial for function. This should be taken seriously by the relevant policy makers.

Overall, our findings reflected caregivers’ concerns on the current services and their expectations for further improvements to be made. These findings were comparable with the previous literature on the barriers faced by caregivers in providing oral health care to nursing homes in other countries.11 Initiatives to continuously improve the quality and delivery of oral health care to the elders, especially in terms of a priority lane in dental clinics, regular dental visits, experienced mobile dental teams equipped with mobile dental equipment, and training of dental officers in geriatric dentistry, have taken place. However, assessments on their efficiency have yet to be reported and, therefore, are recommended. The caregivers strongly believed that a yearly dental visit and the number of dentists present during that visit were both inadequate. As such, the best mechanism to address this issue needs to be explored, and a policy on the minimum interval of dental visits to nursing homes in Malaysia must be established. In terms of oral health education, other than presentations and the distribution of educational materials during dental visits, the preparation of short videos on oral health and oral hygiene can be considered. In addition to playing these videos as a daily tutorial in the nursing homes, they may also be used as a reference tool to address the issues of poor attitude and oral health knowledge among the elders, lack of trust among elders towards caregivers regarding their oral health, and lack of oral health knowledge among the caregivers. The findings of this study should be considered in the development of the dental care pathway for the elders in Malaysia.

This study has several limitations. First, the duration, care experience and specific work areas of the caregivers who participated in the NGT sessions were not explored. These factors could have significant implications on the study findings. Second, although the nursing homes were notified in advance about our visit, the availability of caregivers was based on their work shift, and not all caregivers were included in the NGT during the visit. Third, this study did not explore the socio-demographics and oral health status of the elders under the caregivers’ care. This information could be useful in explaining the caregivers’ answers in the study. In terms of the conduct of the NGT, the sample size was based on the data reaching saturation; that is, no new information was generated. In our study, as our questions were highly focused on factors related to oral healthcare services for elders living in nursing homes, and the fact that the oral healthcare services provided in nursing homes are quite standardised throughout the country, we realised that the responses from the caregivers reached saturation level after six sessions. Therefore, no further NGT was conducted after this session.

5 | CONCLUSION

Despite being satisfied with the basic oral healthcare services received by elders in Malaysian nursing homes, caregivers raised some issues that required further attention. Suggestions for improvement include policy changes in nursing home dental visits and treatment priority for elders at government dental clinics. A tailored dental care pathway for the treatment and maintenance of elders’ oral health in Malaysia is recommended.

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AUTHORS’ CONTRIBUTIONS

All authors helped in designing the study and developing the NGT questions. DL, NMN, ZMY, IAR, NHAK, HY, SRR, DMA, LLA, NAA, ZS and FAI collected the data. DL and NMN performed the descriptive statistics. All authors involved in the data analysis. DL and NMN were involved in writing the manuscript. ZMY, IAR and NHAK revised the manuscript critically for important intellectual content. All authors read and approved the final manuscript.

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