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Survey of health care personnel’s attitudes towards oral hygiene in long-term care facilities in Finland

Running title: Health care personnel’s attitudes

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Survey of health care personnel’s attitudes towards oral hygiene in long-term care facilities in Finland

Abstract

Aims: To survey long-term residences’ health care personnel’s opinions and attitudes towards maintenance of older adults’ daily oral hygiene.

Methods and results: The survey was directed to the health care personnel of three long-term care facilities in Helsinki, Finland. We analyzed the survey responses focusing on opinions and attitudes towards older adults’ daily oral hygiene. To measure this aspect a scoring system was developed. When the analysis was based on two specific statements, sixty percent of responding members of health care personnel had a negative attitude towards older adults’ oral hygiene. They tended to experience more refusals when assisting oral hygiene measures, more often experienced a lack of time, and were willing to get more training related to the task.

Conclusion: The health care personnel of long-term care facilities considered older adults’ oral health important. Members of the health care personnel who showed a negative attitude with our scoring system towards older adults’ daily oral hygiene indicated in their questionnaire responses the need for additional training and additional time for the task.

Keywords: Nursing home residents, oral hygiene, elders
Introduction

Practice and evidence have shown that older adults in long-term care facilities have poor oral health and daily oral care is often neglected.\(^1\) A comparison study in England among the vulnerable population living in nursing and residential homes confirmed that 66% needed help with tooth brushing, only 16% cleaned their own teeth regularly, and 8% completely refused to have their teeth brushed.\(^2\) In addition, a study concerning the status of oral health in residential homes for older adults in Wales concluded that oral status of residents was poor relative to their community-dwelling peers.\(^3\)

In long-term care, the role of nurses and nurses’ aides in daily oral healthcare of residents is essential.\(^4\) However, a preventive treatment strategy is mostly lacking.\(^5,6\) According to a comprehensive systematic review, each resident living in a long-term care facility should have a personalized care plan, including oral hygiene, since oral health deteriorates rapidly when daily oral healthcare by the resident him/herself is no longer possible.\(^7\) Unfortunately, the responsibilities of health care personnel in long-term care residences have grown considerably over the past decades. For instance, the care of an ever-rising proportion of residents with memory disorders is particularly stressful and time-consuming.\(^8\text{-}10\)

Certain barriers may prevent health care personnel from performing the residents’ daily oral hygiene care. Negative attitudes among health care personnel are an important barrier contributing to suboptimal care behavior.\(^11\) Health care personnel’s attitudes towards residents’ oral healthcare have been examined in several studies, and a gap between knowledge about oral health and subsequent behavior in daily work has been identified. Unwillingness of personnel to carry out older adults’
oral hygiene procedures is a general finding. The task is often considered unpleasant and it may be difficult to find time for performance of oral hygiene among the other nursing tasks.\textsuperscript{10,12-14} Also, it has been noticed that knowledge of the importance of oral health and attitudes towards it do not necessarily go hand in hand.\textsuperscript{15-17}

Health care personnel’s negative attitude towards residents’ oral health maintenance may reflect in the hygiene level of older adults who commonly need assistance in daily care. Using a survey, the aim of our study was to examine residential health care personnel’s opinions and attitudes towards older adults’ daily oral healthcare in long-term care facilities. Our hypothesis was that residential health care personnel acknowledge the importance of oral health but have a negative attitude towards daily oral hygiene in long-term care facilities.

**Materials and methods**

This study consisted of a survey targeted to residential health care personnel (n = 300) in different long-term care facilities in eastern Helsinki, Finland. Two of the facilities are Comprehensive Service Centers (Myllypuro and Roihuvuori) and one is a residential home-type Comprehensive Service Center in Laajasalo, where the residents do not need as much assistance and are more independent than in the first two residences. All three facilities are for people incapable of living in their own homes and are in need of assistance with daily living activities because of advanced age (most aged 65 years and older) or illness. Helsinki Social Services and Healthcare approved the study protocol.
The health care personnel comprised 300 individuals of differing levels of education. They were divided into subgroups accordingly: 1) nurses with 3.5 years of studies in a university of applied sciences, 2) practical nurses with 3 years of studies in a vocational education institution, and 3) others (nursing assistant, nurse student, deaconess, dental nurse, occupational therapist, physiotherapist, elder care professional, mental health nurse, social worker, homemaker).

The survey comprised 19 statements/questions with five response alternatives (Likert-type scale 1-5) and a space for free-hand comments. The question on job description (how often assistance with older adults’ oral hygiene is included in the job description) appears in Table 1 consisting of characteristics of the respondents.

Of the remaining 18 statements/questions of the survey, we included 10 (Q1-Q10) in this current study which is focused on the research theme: Health care personnel’s opinions and attitudes towards oral hygiene in older adults. Eight questions discarded from this current study dealt with recognizing and cleaning of prosthetic structures and will be reported later.

Questions Q1-Q4, Q7, and Q8 (Table 2) were modified from the questionnaire by Binkley et al., and other questions were developed by the research group. The questions from the questionnaire by Binkley were translated to Finnish. After a mutual understanding, a pilot was undertaken in which the questionnaire was answered by two oral geriatricians and three general dentists. Based on their feedback,
questions were removed that were regarded as not relevant, inaccurate or too self-evident for the major aims of the survey.

The questionnaires were delivered on paper to the long-term care facilities, allowing them to be filled out anonymously during working hours and were collected two weeks later. The timetable of the survey was clearly disclosed to the respondents. Those who were not at the workplace when the questionnaires were delivered were unable to participate. No rewards or incentives of any kind were offered to respondents.\textsuperscript{19}

Statistics
The statistical analyses were performed with the SPSS statistics software (version 24; IBM Corp, Armonk, NY, USA). The frequencies of response options to the survey questions/statements were calculated for all respondents. Independent-samples T-test was used to compare answer mean values between nurses and practical nurses. Answers to questions (Q) 1-2 were used for score calculation to create study groups with negative and positive attitude towards older adults' oral hygiene. The effect of positive/negative attitude on responses of questions/statements Q5-Q10 was analyzed via a univariate general linear model with education as categorized covariate (nurse/ practical nurse) and age as continuous covariate. The p-value for statistical significance was defined at 0.05.
Results

In 300 surveyed health care personnel, a total of 180 completed the questionnaire (60% of all; in Myllypuro 81% (107 out of 132), in Roihuvuori 43% (49 out of 115), and in Laajasalo 45% (24 out of 53)), but one answered questionnaire was rejected and excluded from analyses because of deficient responses (N = 179). Table 1 shows the characteristics of the survey respondents. The majority of respondents were female (83.3%) and by occupation practical nurses (66.5%), and the job description of most (N = 157, 87.7%) included older adults' daily oral hygiene. Eight of the respondents held positions other than nurses or practical nurses.

Table 2 displays the statements/questions included in the survey and the frequencies of the answers by the respondents. One of the 10 statements/questions was answered by all respondents; for the other 9, from 1 to 11 respondents (0.6-6.1%) failed to answer. The majority of all respondents (72.1%) agreed or strongly agreed that they recognize older adults’ need for professional oral healthcare or dental treatment (Q5). Also, the majority (65.9%) of respondents had received training to provide daily oral hygiene, i.e. tooth brushing and cleaning of dentures for institutionalized older adults (Q7: I have been given training in providing oral care for older adults). Most respondents (65.4%) agreed or strongly agreed that they would like to have more education in daily oral care implementation (Q8). Lack of time for assisting older adults with oral hygiene was a problem for 38.6% of respondents (disagreed or strongly disagreed with Q9 about sufficiency of time).
Response means of given answers to Q1-Q10 tested between two major groups of respondents, nurses and practical nurses, showed no statistically significant differences (Q1 p=0.527; Q2 p=0.782; Q3 p=0.923; Q4 p=0.179; Q5 p=0.061; Q6 p=0.290; Q7 p=0.140; Q8 p=0.089; Q9 p=0.918; Q10 p=0.387).

All respondents’ answer distributions to attitude-oriented statements Q1-Q4 when ‘no opinion’ was included in the negative view was calculated (Figure 1). The majority of respondents regarded oral hygiene as important for institutionalized residents (93.3%; Q3) and were of the opinion that good oral health has a significant influence on the general health and well-being of aged persons (91.6%; Q4; agreed or strongly agreed). However, the oral cavity of older adults was regarded as difficult to clean by most (71%; Q1), and the task was regarded as unpleasant by many respondents (36.3%; Q2) when the response options of agree strongly, agree, and no opinion indicating indifference were included. Because of general accordance in answers for Q3 and Q4, we discarded these and decided to include Q1 and Q2 in further analyses examining whether a negative attitude towards oral hygiene influenced answering the other survey questions/statements.

Further, from statements Q1 and Q2, showing a substantial percentage of negative views (Figure 1), we calculated a score for the 174 respondents who had answered both of these statements (nurses N=41, practical nurses N=116, other N=8, information of education missing N=9). Likert scale options were given points ranging from 1 (most positive answer option) to 5 (most negative option) for each statement. The points of these two statements were summed: points below the median level 6 (points 2-5) were considered to indicate having a positive attitude, and median points and
points above it (6-10 points) having a negative attitude towards older adults’ oral hygiene.

Of included respondents, 71 (40.8%) were regarded to have a positive and 103 (59.2%) a negative attitude towards older adults’ oral hygiene. Answers given to questions/statements Q5-Q10 by respondents with positive and negative attitude are shown in Table 3.

The effect of attitude on answers to questions/statements Q5-Q10 was further analyzed via a univariate general linear model with two major groups of respondents, nurses and practical nurses, and age as covariates. Answers to questions/statements Q5 and Q8-Q10 were statistically significantly influenced by attitude: on average, respondents with a negative attitude were more often willing to get more training (Q8, p=0.003), less often had enough time for older adults’ oral hygiene measures (Q9, p=0.014), more often encountered older adults in their responsibility who refused oral hygiene assistance (Q10, p=0.007), and had more often difficulties to recognize older adults’ need for professional oral healthcare/dental treatment (Q5, p=0.049). However, answering Q5 was influenced also by education. Practical nurses with positive attitude answered with borderline significance to recognize better those older adults who are in need of professional oral care than practical nurses with negative attitude (p=0.084). Answering Q7 (I have been given training in providing oral care for older adults) was not influenced by attitude in the univariate general linear model (p=0.081), but age as continuous variable significantly influenced responses (p=0.014; the increase in the age of respondents meant, on average, more training received). Neither attitude, education nor age influenced
answering Q6 [Dental professionals (dentists, oral hygienists, dental nurses) are readily available]. Figure 2 shows 5-point Likert scale mean-values with 95% confidence intervals of answers to Q5-Q10 for respondents regarded as positive and negative.

Discussion

Based on the findings of our study more than half of the members of the residential health care personnel who participated the survey had negative attitude towards daily oral hygiene of residents. Negative attitude had a significant effect on survey responses to question/statements. The negativity or unwillingness toward assisting with the oral hygiene of older adults may be a result of lack of self-efficacy defined as one’s belief in his or her innate ability to achieve goals.11

Those health care personnel members who were negative responded that they encountered a higher number of older adults who refused assistance in daily oral hygiene than those who were positive. Also, they were more likely to experience a lack of time for oral care tasks during the working day. At the same time, however, they showed greater willingness to receive more training in providing oral care for older adults than respondents who had a positive attitude towards older adults’ oral hygiene. Practical nurses with negative attitudes tended to recognize less well older adults in need of professional oral health care than their colleagues who were positively oriented.

According to the literature, reluctance to prioritize oral health of demented residents is a general finding among health care personnel. In
addition, health care personnel members have limited knowledge of working in another person’s mouth.\textsuperscript{14,20} Multiple studies have analyzed the opinions of nursing home health care personnel towards older adults’ oral hygiene maintenance and the effect of training.\textsuperscript{10,14,17} Our findings confirm these results and support the necessity to increase resources because those members of health care personnel, who had a negative attitude towards residents’ daily oral hygiene, did find difficulties with refusals and lack of time to carry out residents’ daily oral hygiene measures.

However, additional education or training may be insufficient alone; during a six-month learning process in the study by Janssens and coworkers\textsuperscript{16}, for instance, knowledge increased substantially, while changes in attitudes lagged behind. Knowledge, self-efficacy, and positive behavior facilitation are recognized as potential determinants for successful implementation of oral care strategies and improvement of older adults’ oral healthcare\textsuperscript{21,22}, while several individual studies have found no such improvement.\textsuperscript{23-25}

Lack of education or training may lead to uncertainty when handling the task. Further, insensitive manner is experienced as unpleasant by the older adult. An old person with a cognitive disorder may still be capable of sensing negative feelings and the harsh, unfriendly hands of a staff member, and in some cases the refusal may simply be due to fear of ungentle measures.\textsuperscript{8}

Our definition of health care personnel’s positive and negative attitude towards older adults’ oral hygiene was rather rough because it was based on only two statements (The oral cavity of older adults is difficult to
clean, and I find cleaning the oral cavity of older adults to be an unpleasant task). The attitude may reflect willingness to conduct the task, and an instrument able to recognize negative attitudes among health care personnel would be useful.

Limitations of the study
A limitation of the study is that the survey instrument was only pilot-tested and not properly validated. In addition, our definition of health care personnel’s positive and negative attitude towards older adults’ oral hygiene was based on only two statements. Responding to the survey was facilitated as much as possible, and questions could be answered during working hours. A weakness of this study is that the perceptions of non-respondents, 40% of the target population, might differ from those of respondents, leading to a potential bias in the results. It is known that non-respondents’ opinions and attitudes may differ significantly from respondents’ views\(^{19,26}\), which should be borne in mind when conclusions are made. Respondents might also have a more positive perception of their work effort than is warranted by their actual contribution, with the answers given accordingly\(^{7,32}\). On the other hand, we recognized with the present score a high percentage of negatively oriented respondents. In addition, we acknowledge the possibility that statements/questions may be understood differently by respondents, which may bias the survey results.

**Conclusions**

The health care personnel of long-term care facilities considered older adults’ oral health important. Members of the health care personnel with a negative attitude were willing to have more training, experienced having less time for the task, and more often encountered assistance
refusals in oral hygiene practices than those who had a positive attitude.

References


9. Vuorio S, Väyrynen R. Memory-impaired customers in social and health services 2009
   [Muistisairaat asiakkaat sosiaali- ja terveyspalveluissa 2009].


Figure legends

Figure 1. Health care personnel (N=179) answers to attitude-oriented survey statements with ‘no opinion’ included in the negative attitude.

Figure 2. Effect of positive and negative attitude towards older adults’ oral hygiene on survey responses to statements/questions Q5-10 (5-point Likert scale mean-values with 95% confidence intervals; p-values controlled for education and age). Note the different y-axis scale for Q10.
Table 1. Characteristics of health care personnel respondents of the survey.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Nurse</th>
<th>Practical nurse</th>
<th>Other †</th>
<th>Not reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>179</td>
<td>43</td>
<td>119</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td>41.8 (12.3)</td>
<td>45.2 (10.5)</td>
<td>40.3 (12.8)</td>
<td>42.4 (12.3)</td>
<td>55.3 (3.2)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>150 (83.3)</td>
<td>35 (81.4)</td>
<td>104 (87.4)</td>
<td>8 (100)</td>
<td>3 (33.3)</td>
</tr>
<tr>
<td>Male</td>
<td>6 (3.4)</td>
<td>2 (4.7)</td>
<td>3 (2.5)</td>
<td>-</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>Not reported</td>
<td>23 (12.8)</td>
<td>6 (14.0)</td>
<td>12 (10.1)</td>
<td>-</td>
<td>5 (55.6)</td>
</tr>
<tr>
<td>Older adults’ oral hygiene in the job description</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>157 (87.7)</td>
<td>35 (81.4)</td>
<td>112 (94.1)</td>
<td>4 (50)</td>
<td>6 (66.7)</td>
</tr>
<tr>
<td>Weekly</td>
<td>6 (3.4)</td>
<td>-</td>
<td>3 (2.5)</td>
<td>3 (37.5)</td>
<td>-</td>
</tr>
<tr>
<td>&lt; 1x/month</td>
<td>8 (4.5)</td>
<td>4 (9.3)</td>
<td>2 (1.7)</td>
<td>1 (12.5)</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>Not reported/missing</td>
<td>8 (4.5)</td>
<td>4 (9.3)</td>
<td>2 (1.7)</td>
<td>-</td>
<td>2 (22.2)</td>
</tr>
</tbody>
</table>

† nursing assistant, nurse student, deaconess, dental nurse, occupational therapist, physiotherapist, elder care professional, mental health nurse, social worker, homemaker
Table 2. Statements/questions of the survey addressed to health care personnel (N = 179) and the frequencies of answers on a 5-point Likert scale.

<table>
<thead>
<tr>
<th>Questions/statements</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>No opinion</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Missing responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: The oral cavity of older adult is difficult to clean</td>
<td>8 (4.4)</td>
<td>42 (23.5)</td>
<td>18 (10.1)</td>
<td>82 (45.8)</td>
<td>27 (15.1)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Q2: I find cleaning oral cavity of older adult to be an unpleasant task</td>
<td>47 (26.3)</td>
<td>65 (36.3)</td>
<td>26 (14.5)</td>
<td>35 (19.6)</td>
<td>4 (2.2)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Q3: I believe oral health is a high priority for older adults in long-term facilities Dental professionals (dentists, oral hygienists, dental nurses) are readily available</td>
<td>7 (3.9)</td>
<td>2 (1.1)</td>
<td>3 (1.7)</td>
<td>38 (21.2)</td>
<td>129 (72.1)</td>
<td>-</td>
</tr>
<tr>
<td>Q4: I believe that oral health has a significant impact on older adults’ general health and well-being</td>
<td>5 (2.8)</td>
<td>0</td>
<td>2 (1.1)</td>
<td>38 (21.2)</td>
<td>126 (70.4)</td>
<td>8 (4.5)</td>
</tr>
<tr>
<td>Q5: I recognize older adults’ need for professional oral healthcare/dental treatment</td>
<td>2 (1.1)</td>
<td>12 (6.7)</td>
<td>31 (17.3)</td>
<td>98 (54.8)</td>
<td>31 (17.3)</td>
<td>5 (2.8)</td>
</tr>
<tr>
<td>Q6: Dental professionals (dentists, oral hygienists, dental nurses) are readily available</td>
<td>37 (20.7)</td>
<td>45 (25.1)</td>
<td>44 (24.6)</td>
<td>31 (17.3)</td>
<td>17 (9.5)</td>
<td>5 (2.8)</td>
</tr>
<tr>
<td>Q7: I have been given training in providing oral care for older adults</td>
<td>18 (10.1)</td>
<td>30 (16.7)</td>
<td>12 (6.7)</td>
<td>85 (47.5)</td>
<td>33 (18.4)</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Q8: I would like to get more training in providing oral care for older adults</td>
<td>8 (4.4)</td>
<td>15 (8.4)</td>
<td>37 (20.7)</td>
<td>73 (40.8)</td>
<td>44 (24.6)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Q9: I have sufficient time during the working day to assist older adults in oral hygiene</td>
<td>13 (7.3)</td>
<td>56 (31.3)</td>
<td>21 (11.7)</td>
<td>74 (41.3)</td>
<td>13 (7.3)</td>
<td>2 (1.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions/statements</th>
<th>Some</th>
<th>Several</th>
<th>About half</th>
<th>More than half</th>
<th>Almost all</th>
<th>Missing responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10: How many older adults in my responsibility refuse assistance in oral hygiene?</td>
<td>100 (55.9)</td>
<td>43 (24.0)</td>
<td>9 (5.0)</td>
<td>5 (2.9)</td>
<td>11 (6.1)</td>
<td>11 (6.1)</td>
</tr>
</tbody>
</table>
Table 3. Frequencies of responses given by health care personnel with positive (N=71) and negative (N=103) attitude toward older adults’ oral hygiene.

<table>
<thead>
<tr>
<th>Questions/statements</th>
<th>Attitude</th>
<th>Disagree strongly</th>
<th>Disagree</th>
<th>No opinion</th>
<th>Agree</th>
<th>Agree strongly</th>
<th>Missing responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5: I recognize older adults’ need for professional oral health care/dental treatment</td>
<td>positive</td>
<td>1 (1.4)</td>
<td>2 (2.8)</td>
<td>11 (15.5)</td>
<td>40 (56.4)</td>
<td>14 (19.7)</td>
<td>3 (4.2)</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>1 (1)</td>
<td>10 (9.7)</td>
<td>20 (19.4)</td>
<td>55 (53.4)</td>
<td>15 (14.6)</td>
<td>2 (1.9)</td>
</tr>
<tr>
<td>Q6: Dental professionals (dentists, oral hygienists, dental nurses) are readily available</td>
<td>positive</td>
<td>13 (18.3)</td>
<td>17 (23.9)</td>
<td>21 (29.6)</td>
<td>15 (21.1)</td>
<td>3 (4.2)</td>
<td>2 (2.8)</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>24 (23.3)</td>
<td>28 (27.2)</td>
<td>22 (21.3)</td>
<td>14 (13.6)</td>
<td>12 (11.7)</td>
<td>3 (2.9)</td>
</tr>
<tr>
<td>Q7: I have been given training in providing oral care for older adults</td>
<td>positive</td>
<td>7 (9.8)</td>
<td>6 (8.5)</td>
<td>6 (8.5)</td>
<td>34 (47.9)</td>
<td>17 (23.9)</td>
<td>1 (1.4)</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>9 (8.7)</td>
<td>23 (22.3)</td>
<td>5 (4.9)</td>
<td>49 (47.6)</td>
<td>15 (15.5)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Q8: I would like to get more training in providing oral care for older adults</td>
<td>positive</td>
<td>5 (7)</td>
<td>8 (11.3)</td>
<td>21 (29.6)</td>
<td>22 (31)</td>
<td>14 (19.7)</td>
<td>1 (1.4)</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>2 (1.9)</td>
<td>7 (6.8)</td>
<td>14 (13.6)</td>
<td>51 (49.5)</td>
<td>27 (26.2)</td>
<td>2 (1.9)</td>
</tr>
<tr>
<td>Q9: I have sufficient time during the working day to assist older adults’ oral hygiene</td>
<td>positive</td>
<td>3 (4.2)</td>
<td>16 (22.5)</td>
<td>10 (14.1)</td>
<td>34 (47.9)</td>
<td>6 (8.5)</td>
<td>2 (2.8)</td>
</tr>
<tr>
<td></td>
<td>negative</td>
<td>10 (9.7)</td>
<td>39 (37.9)</td>
<td>10 (9.7)</td>
<td>38 (36.9)</td>
<td>6 (5.8)</td>
<td>-</td>
</tr>
<tr>
<td>Q10: How many older adults in my responsibility refuse assistance in oral hygiene?</td>
<td>positive</td>
<td>49 (69)</td>
<td>8 (11.3)</td>
<td>4 (5.6)</td>
<td>1 (1.4)</td>
<td>2 (2.8)</td>
<td>7 (9.9)</td>
</tr>
<tr>
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<td>negative</td>
<td>48 (46.6)</td>
<td>34 (33)</td>
<td>4 (3.9)</td>
<td>4 (3.9)</td>
<td>9 (8.7)</td>
<td>4 (3.9)</td>
</tr>
</tbody>
</table>
Q1 The oral cavity of older adult is difficult to clean

Q2 I find cleaning oral cavity of older adult to be an unpleasant task

Q3 I believe oral hygiene is a high priority for older adults in long-term facilities

Q4 I believe that oral health has a significant impact on older adults’ general health and well-being
I recognize older adults’ need for professional oral health care/dental treatment (Q5)

Dental professionals (dentists, oral hygienists, dental nurses) are readily available (Q6)

I have been given training in providing oral care for older adults (Q7)

I would like to get more training in providing oral care for older adults (Q8)

I have sufficient time during the working day to assist older adults’ oral hygiene (Q9)

How many older adults in my responsibility refuse assistance in oral hygiene? (Q10)

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean Value (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q5</td>
<td></td>
<td>0.049</td>
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<tr>
<td>Q6</td>
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<td>0.855</td>
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<tr>
<td>Q10</td>
<td></td>
<td>0.007</td>
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</tbody>
</table>

p-values indicate statistical significance of responses.