

Factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district, Uganda. A cross-sectional study.

Omara Albert Martin*, Gerald Ssenyonga, Anthony Mawanda, Mayanja M. Magala.
International Paramedical Institute, Maya (IPI).

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Abstract

Background

Oral health is an important aspect of general health in the elderly and impacts the quality of life. The general purpose of the study was to determine the factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district.

Methodology

A cross-sectional study design utilized a quantitative research method. A sample of elderly people was determined by random sampling, and data were collected using structured questionnaires of a sample comprising 40 elderly participants residing in the study area. Data were analyzed and presented in the form of tables, graphs, and pie charts.

Results

The secondary school level had the highest number of respondents, 16(40%), with the lowest number, 5(12.5%), of respondents in primary, and the highest number, 14(35%), of respondents, were married; the majority lacked adequate oral hygiene knowledge. It highlighted that a significant portion, 70% of the older population, did not receive proper oral care guidance, leading to insufficient oral hygiene practices in later stages of life. Furthermore, socio-economic factors like financial constraints were a significant barrier, with 72.5% of the respondents affected. Lastly, social and cultural factors posed another critical challenge, where 70% of participants reported poor oral hygiene due to the consumption of sugary foods.

Conclusion

The study concluded that enhancing oral hygiene knowledge from an early age and addressing economic and social-cultural factors are crucial.

Recommendation

The MOH should increase collaboration efforts between dentists and caregivers to ensure elderly people receive optimal oral health, and a proper oral health needs assessment for the elderly people, among others.

Keywords: Oral Hygiene Practices, Elderly People, Nabiteete Village, Luweero District

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Corresponding Author

Omara Albert Martin

Email: omaraalbertmartin@gmail.com

International Paramedical Institute, Maya (IPI).

Background of the study

Oral health is an important aspect of general health in the elderly and impacts the quality of life. Oral health is the state of the mouth, teeth, and orofacial structures that enable individuals to perform essential functions such as eating, breathing, and speaking and encompasses psychosocial dimensions such as self-confidence, well-being, and the ability to socialize and work without pain and discomfort.

According to the WHO, an elderly person is someone aged 65 years or older. However, this definition can vary depending on the context and cultural norms.

The elderly are an age group that has decreased organ function and is susceptible to various diseases. The elderly also experience physical decline, which can affect personal hygiene and healthcare behavior.

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The high rates of dental diseases are a burden among the elderly worldwide, with the inability to carry out proper oral hygiene has been found to have an association with many oral health conditions, including risk factors like malnutrition, poor oral hygiene, accidents, and oral

cancer. Non-communicable oral conditions, such as dental diseases, are likely to be higher in the elderly. Togo, 2012)

Oral diseases are among the most prevalent diseases globally and have serious health and economic burdens, greatly reducing the quality of life for those affected. The most prevalent and consequential oral diseases globally are dental caries (tooth decay), periodontal diseases, tooth loss, and cancers of the lips and oral cavity (Marco, Lorna, & Wevant, 2019)

In Africa, a study conducted in South Africa about oral health indicated a caries experience of 46%, whilst 58% of participants suffered from periodontal conditions. 64% acknowledged the need to visit a dentist and only 28% had utilized health care in the past 12 months due to perceived barriers reported including that they were not able to afford dental treatment and lack of transport availability (Molet, Yengopal, & Moorman, Oral health needs and barriers to accessing care among the elderly in Johannesburg, 2014)

In East Africa, research conducted in Kenya indicated that from a total of 289 respondents who were interviewed, 19.7% were caries-free and 56.3% had missing teeth due to caries. This was attributed to limited access to finances, as reported by 58.5% of the respondents.

According to research conducted in the Nebbi district of Uganda, it was found that out of 400 respondents, 42.8% were smokers and consumed sugary foodstuffs, and this contributed to oral disease. The cost of treatment hinders people from accessing dental services. (Ocwia & Olum, p. 2021)

Despite the fact that oral hygiene in the elderly has been recommended by guidelines and institutions, in Nabiteete village of Luweero district, the oral hygiene in the elderly is still poor, and this has affected their speech, esthetics, and mastication of food. So, this

research seeks to find out the factors affecting oral hygiene practices among the elderly aged 65 and above in Nabiteete village in Luweero district.

Methodology

Research design

The study design was a cross-sectional descriptive study and employed quantitative data collection techniques. This design was used because it assisted the researcher in easily getting the required data for the study in the shortest time possible allowed for the study.

Study area

This study was conducted at Nabiteete village, one of the villages of the Luweero district in central Uganda.

Study population

The study comprised elderly people aged 65 and above living in Nabiteete village.

Sample size estimation

The sample size was determined using Mugenda's formula (1996). (Mugenda, 1999)

$$n = \frac{N}{1 + N(e)^2}$$

Where: -

N= study population

n= sample size of the study population

e= sample error (percentage error =0.05)

1= A constant

Then, N=45 (an estimated study population)

E=0.05

$$n = ? \quad n = 45 / (1 + 45(0.05)^2) = 40$$

Therefore, 40 participants were involved in the sample size

Sampling technique

Respondents were selected by a random sampling method such that everyone in the village had an equal chance of participation in the study.

Sampling procedure

A simple random purposive sampling technique was used to ensure each individual in the population had an equal chance of being chosen. The researcher wrote the words "YES" and "NO" on pieces of paper, placed them in a closed box, shook them, and allowed

respondents to pick a paper. Any respondents who picked a paper with the word YES written on it were requested to participate in the study, and this continued until a total of 45.

Data collection method

Data was collected using questionnaires since they gave the required information and were convenient to the researcher and respondents.

Data collection tools

The data was collected through questionnaires in order to capture both dimensions of the investigation.

Data collection procedure.

The researcher, through proper channels, asked for an introductory letter from the International Paramedical Institute, which was used to grant him permission from the chairperson of Nabiteete village. The researcher ensured the confidentiality of the respondents by using codes instead of names on questionnaires. Participants who received the questionnaires were given time to respond, and the researcher collected the questionnaires the next day.

The researcher took 8(eight) days to collect data and did not offer any incentives for participating in the research.

Quality control

To ensure that the right data was collected, the questionnaire was pre-tested on 10 respondents living at Nabiteete village so as to find out whether the questionnaire was easily understood and answered as required. Mistakes detected were corrected.

Also, research assistants were trained to help in data collection

Inclusion criteria

Elderly people living in Nabiteete village had consented to take part in the study.

Exclusion criteria

Uncooperative elderly people and those who didn't consent during the study were excluded.

Data analysis and presentation

This was done after data collection and categorization, where the data were summarized into representative themes. The related responses to particular questions were classified into meaningful patterns and summaries.

Answered questionnaires were assigned a unique code to avoid mixing up data. The collected data were fed into Microsoft Excel software for analysis. After the data analysis, the information obtained was presented in the form of tables, charts, and graphs, and narrations were given for each figure and table.

Ethical consideration

The Research Committee of the International Paramedical Institute (IPI) - Maya provided me with an introductory letter to the chairperson, of Nabiteete village for permission to carry out the study. Confidentiality was considered, the mode of participation was through random sampling, and after ensuring the safety of the participants, consent was sought.

Results

Demographic characteristics	Frequency(n)	Percentage (%)
Level of education		
None	12	30
Primary	5	12.5
Secondary	16	40
Tertiary	7	17.5
Total	40	100
Marital status		
Single	6	15
Married	14	35
Separated	8	20
Widow/Widower	12	30
Total	40	100

From Table 1, the secondary school level had the highest number of respondents, 16(40%), with the lowest number, 5(12.5%), of respondents in the primary. Furthermore, the highest number, 14(35%), of the respondents were married.

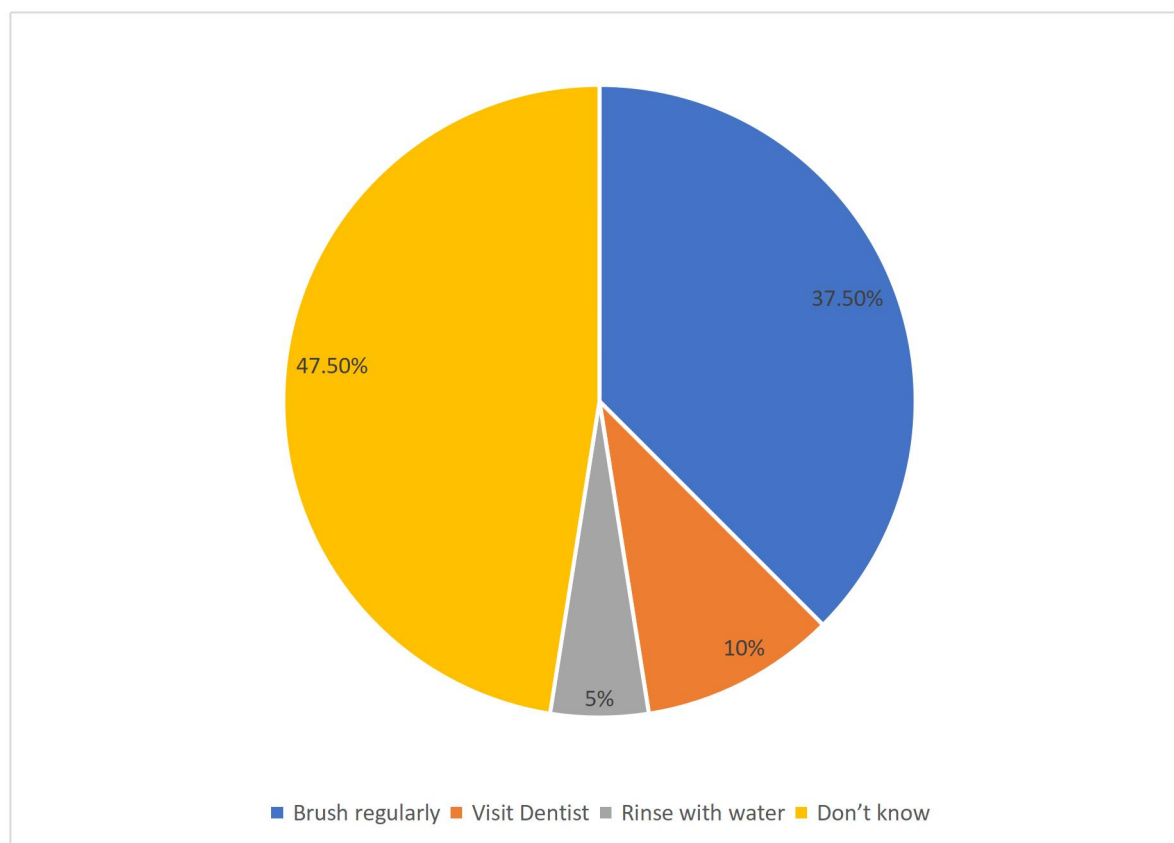
Knowledge concerning oral hygiene in the elderly

From figure 1, the highest number of respondents 19(47.5%) didn't know how to ensure oral health, 15(37.5%) ensured oral health by brushing regularly, 4(10%) visited a dentist and 2(5%) rinsed with water

According to table 1, the highest number of respondents 18(45%) brushed once a day then 8(20%) of the respondents brushed twice a day 7(17.5%) of the respondents did brush also similarly 7(17.5%) of the respondents did not know their daily frequency of brushing.

From Table 3, the highest number of respondents, 28(70%), did not have knowledge about oral hygiene, whereas 12(30%) of the respondents had knowledge about oral hygiene.

Figure 1. Showing assurance of oral health.



Primary source 2024

Table 2: Showing the number of times they brush their teeth in a day. (n=40)

No of times	Frequency	Percentage
Once a day	18	45
Twice a d	8	20
I don't brush	7	17.5
I don't know	7	17.5
TOTAL	40	100%

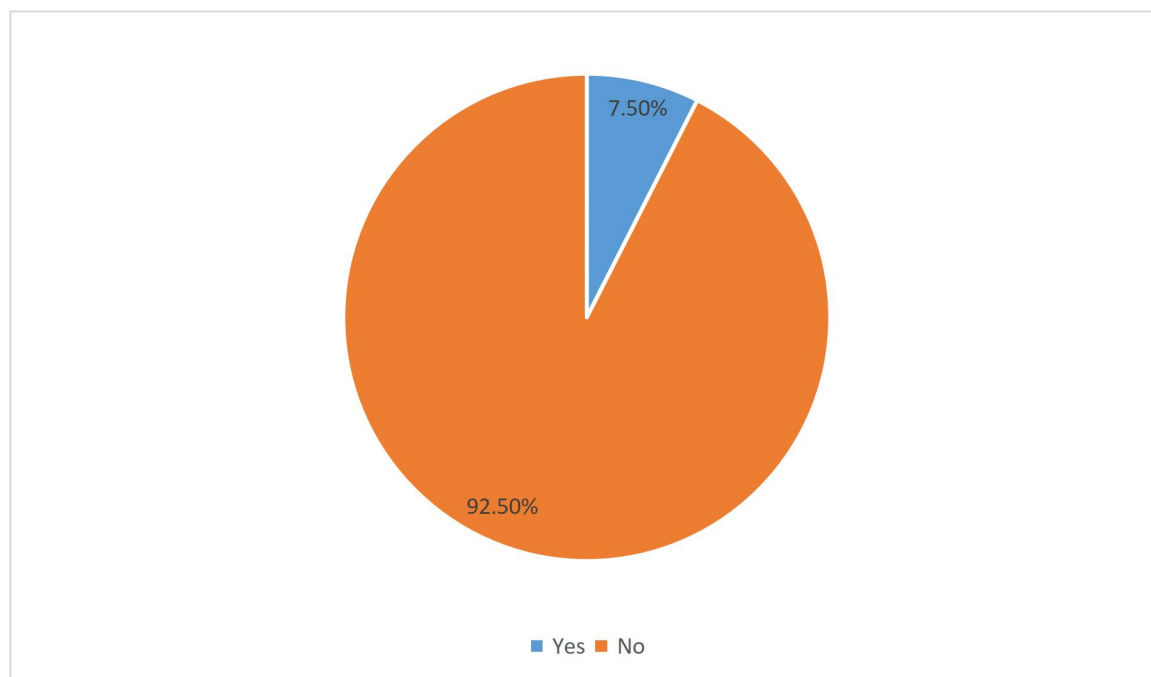
Primary source 2024

Table 3: Showing respondents' knowledge about oral hygiene/health. (n=40)

Variable	Frequency	Percentage
Knowledge about oral hygiene	12	30
Don't have knowledge	28	70
Total	40	100

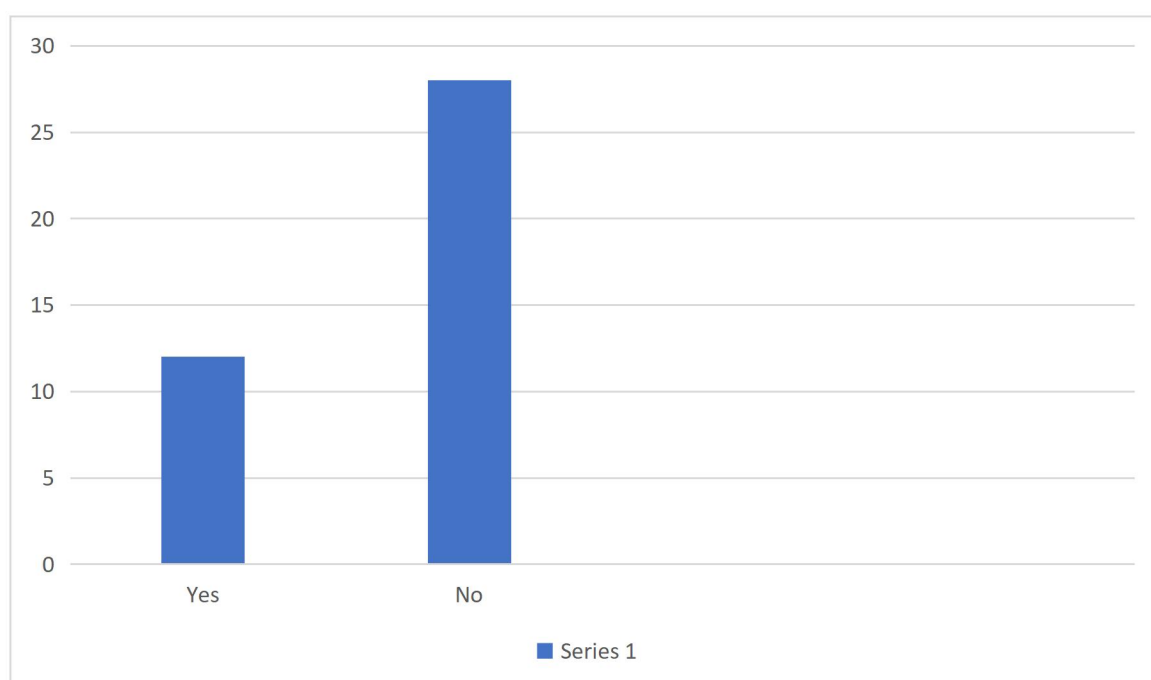
Primary source 2024

Figure 2: Pie-chart showing respondents' responses to oral health care insurance. (n=40)



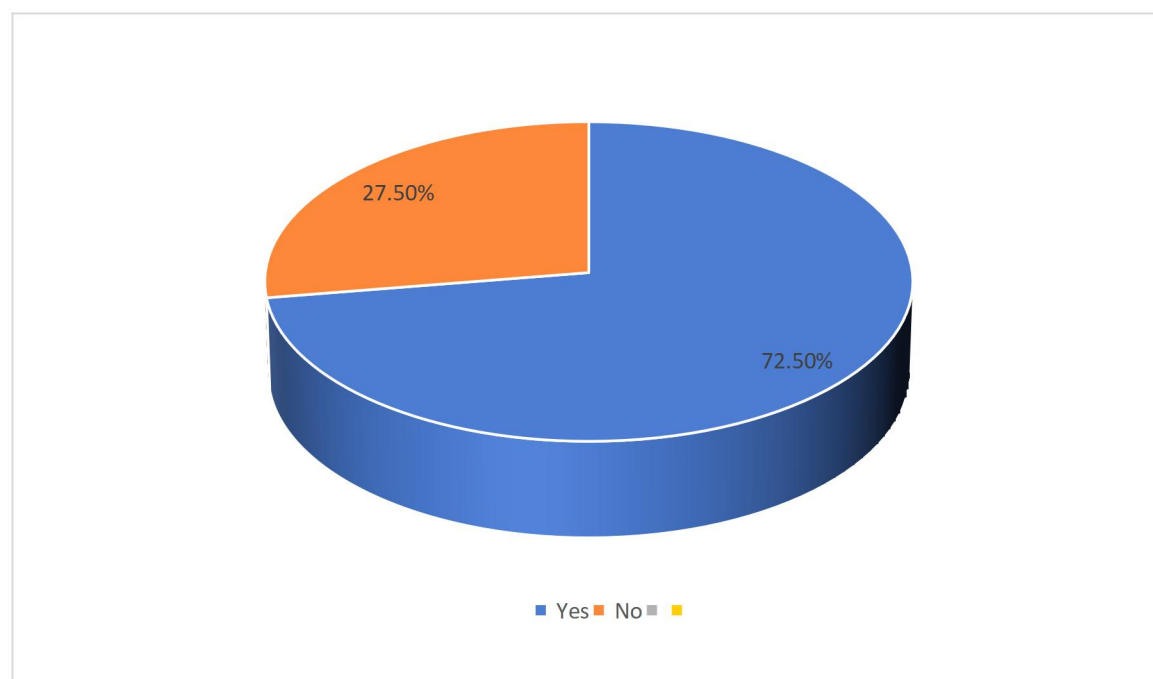
Primary source 2024

Figure 3 Showing respondents' responses to affordable dental care. (n=40)



Primary source 2024,

Figure 4 Showing respondents' responses to delayed dental care due to financial constraints. (n=40).



Primary source 2024

Socioeconomic factors affecting oral hygiene in elderly people.

From Figure 2, the highest number of respondents, 37(92.5%), did not have insurance for oral health care, while the lowest number, 3(7.5%), of the respondents had insurance for oral health care.

From Figure 3, the highest number of respondents, 28(70%), did not have access to affordable dental care, while only 12(30%) of the respondents had access to affordable dental care.

From Figure 4, the highest number of respondents, 29(72.5%), had delayed dental care due to financial constraints, and only 11(27.5%) of the respondents did not have delayed dental care due to financial constraints.

Table 2 Showing respondents' source of income? (n=40)

Source of income	Frequency	Percentage
From family members	12	30
Employment	6	15
Farming	20	50
Others	2	5
Total	40	100

Primary source 2024

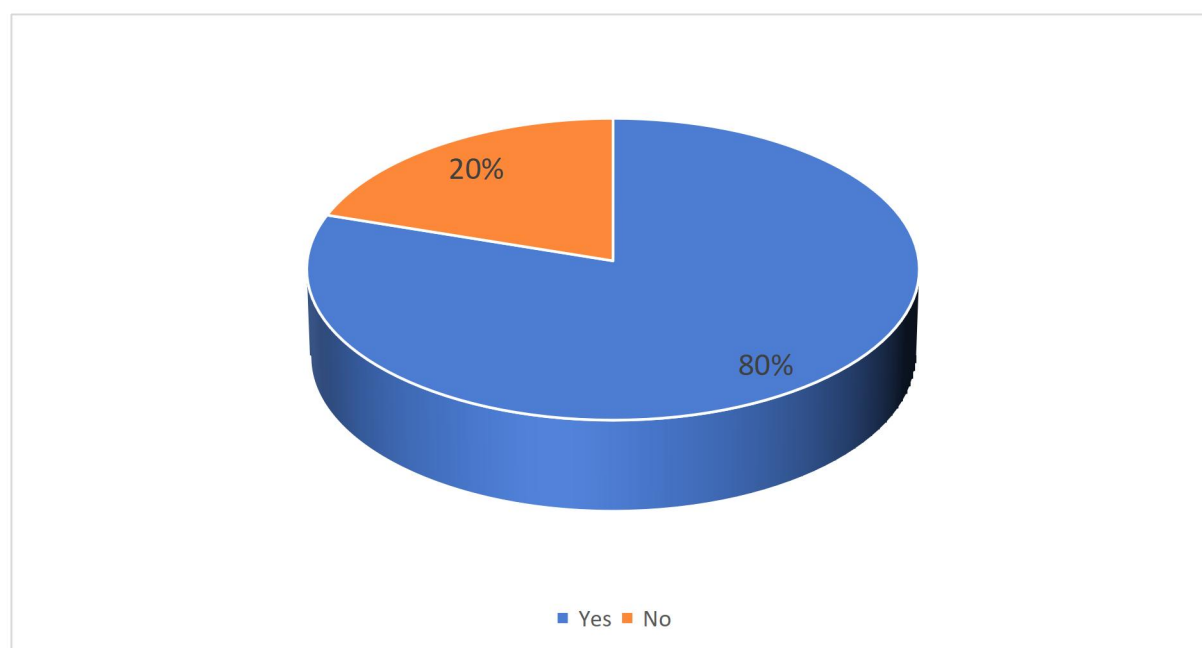
From table 4, the highest number of respondents, 20(50%) got income from farming, 12(30%) of the respondents received income from family members, 6(15%) of the respondents were employed and only 2(5%) of the respondents did other income generating activities.

Social and cultural factors affecting oral hygiene in elderly people aged 65 years and above in Nabiteete village, Luweero district.

From Figure 5, the highest number of respondents, 32(80%), had cultural restrictions and beliefs on oral health, and the lowest number, 8(20%), of the

respondents did not have cultural restrictions and beliefs on oral health.

Figure 5 Showing respondents` responses to cultural restrictions and beliefs on oral health. (n=40)



Primary source 2024

Table 3 Showing respondents` responses to the consumption of sugary foods, having a language barrier in the community, and having social support networks in the community. (n=40)

Variable	Category	Frequency	Percentage
Consume sugary foods	Yes	28	70
	No	12	30
Have a language barrier in the community	Yes	24	60
	No	16	40
Have social support networks in the community	No	26	65
	Yes	14	35

Primary source 2024

From Table 5, the highest number of the respondents 28(70%) consumed sugary foods 12(30%) of the respondents did not consume sugary foods, however the highest number of respondents 24(60%) had a language barrier in the community and 16(40%) of the respondents did not have a language barrier in community, 26(65%) of the respondents did not have social networks in

community and 14(35%) of the respondents had social networks in community.

Discussion

Knowledge concerning oral hygiene among elderly people.

The objective of this study was to determine factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village in Luweero district. Data analysis and presentation revealed the following major findings under this specific objective.

The study revealed that the greatest percentage of the respondents, 47.5%, did not know how to ensure oral health, 37.5% ensured oral health by brushing regularly, 10% visited a dentist, whereas the lowest percentage of the respondents, 5%, rinsed with water. These findings indicate that the majority of the respondents had a poor attitude towards oral self-care. This is probably due to insufficient oral health literacy. This study agrees with the findings of a similar study conducted in Busan and other areas of Gyeongsangnam-do among geriatric patients on the oral health knowledge level of oral care and elderly oral hygiene care, which were found to be associatively poor (Kim, Park, & Lee, 2014). This implies that there is a lack of awareness and knowledge among elderly people aged 65 years and above regarding the importance of taking care of their teeth. The significantly low percentage of respondents could be due to them already being aware of good oral hygiene practices.

The study also revealed that the majority 18(45%) of the elderly people 65 years and above brushed once a day, a low population 8(20%) of the respondents brushed twice a day whereas the least population of the respondents 7(17.5%) did not brush and the same portion 7(17.5%) of the respondents did not know. These findings indicate that only a few of the respondents practiced relatively good oral hygiene by brushing twice a day, whereas a significantly equal portion had oral health risks by not brushing, and others had knowledge gaps, evidenced by failing to know. This is probably due to some misconceptions and individual prioritization concerning oral health. This study agrees with the findings of a similar study conducted in Katate Health Centre IV in Kanungu district, Uganda, on factors affecting utilization of oral and dental services, in which oral hygiene practices such as brushing were found to be poor (Syrus Arineitwe, 2023). This implies that there is seriously inconsistent and inadequate brushing among elderly people aged 65 years and above due to key knowledge gaps.

The study findings also revealed that the majority, 28(70%) of the respondents did not have any knowledge regarding oral hygiene, while the minority of the respondents, 12(30%) had some knowledge regarding oral hygiene. These findings indicate that a significantly high population had very limited exposure to oral health education, whereas the low population had at least some

exposure to oral health education. This could probably be attributed to the differences in parental guidance during childhood. This study agrees with the findings of a similar study conducted at the University of Iowa College of Dentistry, United States of America, on oral health knowledge among elderly patients, which showed similar correlations with oral hygiene outcomes at a later age being predicted from childhood (McQuistan & Cho, 2015). This implies that there can be a significant knowledge gap and disparities manifesting at later ages of life, stemming right from childhood, about oral health.

Socio-economic factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district.

Under this objective, factors affecting oral hygiene in elderly people aged 65 years and above living in Nabiteete village, Luweero district. Data analysis and interpretation revealed the following major findings.

The study revealed that the highest number, 37(92.5%) of the respondents did not have oral health care insurance, compared to the lowest number, 3(7.5%) of the respondents who had. These findings indicate that a significantly high number of uninsured elderly people aged 65 years and above have limited access to routine dental check-ups and preventive oral care. This may be due to many of them having limited access to employer-sponsored oral health care insurance benefits during their employment years. This study agrees with the findings of research conducted in Tanzania, which showed that health insurance coverage was also a key predictor for ease of access to various health services in old age (Malale, Amani, & Anna-Karin, 2020). The implications for this large gap are significant since these elderly people are at an increased risk of many untreated oral health issues, such as pain, and loosening of teeth, among others.

The study also revealed that the greatest number, 28(70%) of the respondents did not have access to affordable dental care, while the lowest number, 12(30%), had access. These findings indicate that most of the elderly vulnerable population have significantly unmet oral health needs compared to the low number able to access affordable dental care. This is probably due to the limited availability of dental care affordable to them since most dental care costs are high nowadays. The findings align with those of a similar study conducted in the United States, which revealed that the elderly population had limited access even to affordable key specialized dental care, such as routine oral hygiene treatments (Moeller, Chen, & Manski, 2019). This

implies that people in this age category hurt the quality of oral health and general well-being.

Furthermore, the study findings revealed that the majority, 29(72.5%), of the respondents had their dental care delayed due to financial constraints, whereas financial constraints did not delay the minority, 11(27.5%), of the respondents. These findings indicate that most elderly people are facing widespread financial struggles that negatively influence their basic human needs, such as healthcare. This is probably because at their elderly age majority are subjected to either underemployment or unemployment, which becomes a key contributor to their financial constraints. This study agrees with the findings of research conducted in Nebbi District, Uganda, which also revealed that the cost of oral health treatment, together with an individual's financial standing, was key to attaining health services (Okullo & et al, 2018). This implies that financial hardships and vulnerability lead to potential struggles for basic needs like healthcare.

The study further revealed that the highest number, 20(50%) of the respondents had farming as their source of income, while the lowest number, 2(5%) had other sources of income-generating activities. These key findings indicate that half of the population has an over-dependence on a single income source, hence a limited diversification in income inflow. This is probably because farming is a key cultural tradition at the study location due to the availability of fertile land and government subsidies towards the support of small-scale agriculture. The findings align with those of a similar study carried out in Bangladesh, which showed that proper utilization of health services was directly related to the source of income (Zahid, Mohammad, & Sayem, 2022). This implies that the majority of this elderly population is vulnerable to seasonal fluctuations such as a drop in market prices, heavy rainfall, pests, and diseases, among others. These end up negatively affecting the net yields and profits acquired at the season end, and consequently, with reduced income, there are challenges to acquiring oral health services.

Social and cultural factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district.

The study revealed that the majority, 32(80%) of the respondents had cultural restrictions and beliefs on oral health 8(20%) of the respondents did not have cultural restrictions and beliefs. These findings indicate that there is a significantly high prevalence of cultural beliefs and restrictions among these elderly people, and this strongly

influences the way they try to keep up with their oral hygiene routine schedules. This is probably because of ignorance about oral hygiene. This study agrees with the findings of research conducted in Cameroon, which showed that there was a relationship between poor oral outcomes with cultural restrictions and beliefs in elderly people. (Agbor & Naidoo, 2015). This implies that there is a negative impact on overall oral hygiene that disables the study population from actively participating in day-to-day oral health routines such as timely brushing and flossing.

The study also revealed that the majority, 28(70%) of the respondents reported consuming sugary foods, while the minority, 12(30%) of the respondents did not. These findings indicate that there is a population of elderly people consuming sugary foods. This is probably because of a lack of awareness of the effects of sugary foods on teeth, thus predisposing them to cavities, loss of teeth, and halitosis. This study agrees with the findings of research conducted in America, which revealed that consumption of sugary foods leads to tooth loss among others (M & P, 2017). This implies that elderly individuals who consume sugary foods are most likely to experience poor oral health compared to their colleagues in the same category.

The study further revealed that the majority, 26(65%) of the respondents did not have social support in the community, whereas a significantly low minority, 14(35%) of the respondents had. These findings indicate that there is no social support within the study area, with some degree of need for intervention to continue supporting the high percentage who do not have social support. This is probably attributed to cultural structures and also the fact that elderly people are neglected in most of the programs and live in lonely homes, which thus affects their ability to manage oral hygiene. The findings align with those of a similar study carried out in rural areas of Uganda, which showed that a significant portion of elderly people did not have social support networks (Petersen, 2014). This therefore implies that there is improved quality of life from an oral health point of view among the elderly people who have social support networks in the community compared to the socially isolated ones.

Conclusion

The research aimed at identifying factors affecting oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district. Based on the findings, it is clear that several factors affect oral hygiene in elderly people.

The first objective was to assess the knowledge of elderly people concerning oral hygiene, which was found to be overall insufficient. The study therefore concludes that the biggest percentage, 70% of the elderly people aged 65 years and above, did not have any knowledge regarding oral hygiene since childhood, while the smallest percentage of the respondents, 30%, had some knowledge regarding oral hygiene since childhood.

The second objective was to identify socio-economic factors affecting oral hygiene practices among elderly people aged 65 and above living in the study area. Therefore, the study concludes that financial constraints were a key factor, as the highest percentage, 72.5% of the respondents, had their dental care delayed due to financial constraints, whereas financial constraints did not delay the lowest 27.5% of the respondents.

The third objective was to assess the social and cultural factors that affect oral hygiene practices among elderly people aged 65 and above living in the study area. The study therefore concludes that social culture was a hindering factor, with the highest percentage, 70% of the respondents, reporting they consumed sugary foods, thus the impact on oral health, while the smallest percentage, 30% of the respondents, did not.

Recommendations.

The study identified several factors that affect the oral hygiene practices among elderly people aged 65 years and above living in Nabiteete village, Luweero district. Thus, to suggest possible ways of improving oral hygiene among this study population, the study makes recommendations for various categories as follows:

To the Ministry of Health (MOH).

A collaboration of efforts between dentists and caregivers in terms of communication to ensure that the elderly people in the stated age category of 65 years and above receive optimal oral health care during the late stages of their lives to reduce complications that could negatively impact even their general health.

Legislation that can subsidize some treatment costs so that even a low-income earner can afford at least a basic preventive dental treatment since the study also established that the majority of the respondents were being affected by financial constraints.

Additionally, there is a need to improve access to dental treatment by the government, even in the areas such as the villages.

To the Community.

Dentists and other healthcare providers should work together with local area council leaders to understand the pending and seemingly unmet needs of their elderly population as far as oral health is concerned.

Upcoming parents and caregivers with children should endeavor to teach their children oral hygiene practices such as regular teeth brushing and flossing, such that the core values are instilled in their children till old age.

To Future Researchers.

They should use a larger sample space and also conduct the study in a government setting.

Acknowledgment

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List of Abbreviations

IPI:	International Paramedical Institute
PHDO:	Public Health Dental Officer
UAHEB:	Uganda Allied Health Board
WHO:	World Health Organization

Source of funding

The study was not funded.

Conflict of interest

The author declares no conflict of interest.

Author contributions

Ssenyonga Gerald was the principal investigator.

Omara Albert Martin, Mawanda Anthony, and Mayanja M. Magala supervised the research study.

Data availability

Data is available upon request.

Informed consent

The study participants consented to the study.

Author Biography

Ssenyonga Gerald holds a diploma in public health dentistry from the International Paramedical Institute, Maya (IPI).

Omara Albert Martin, Mawanda Anthony, and Mayanja M. Magala are medical tutors at the International Paramedical Institute, Maya (IPI).

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