Knowledge, Attitude and Practices towards Oral Hygiene among Adults (18-45yrs) in Lira Regional Referral Hospital, Lira City. A Cross-sectional Study.

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Abstract

Background:
Oral hygiene is maintaining the cleanliness of the mouth and taking care of teeth and gum. The purpose of the study was to assess the knowledge, attitude, and practices toward oral hygiene among patients aged 18-45 years in Lira Regional Referral Hospital, Lira district.

Methodology:
The study employed a cross-section design to address the specific objectives of the study on a sample of 50 respondents using the simple random technique. A semi-structured questionnaire was designed and used as a data collection tool.

Results:
From the study findings, the majority (86%) of the respondents knew about oral health, most (40%) of the respondents reported dentists as their source of information about oral hygiene, and the majority (92%) went for dental checkups to dentists, the majority (86%) knew about dental caries and most (68.9%) gave the correct response about what dental caries are, the majority (92%) reported that they knew the causes of dental caries and more than half (60%) gave the correct response about the cause of dental caries.

Conclusion:
Even though the respondents had good knowledge and positive attitudes toward oral hygiene, surprisingly they were at risk of contracting dental caries and other periodontal conditions because their oral hygiene practices were below the global recommendations and most of them used only toothbrushes to clean their teeth.

Recommendation:
The ministry of health should emphasize oral and dental care health education in health facilities and hospitals or carry out health camps and community outreaches. This would at least ensure that the general public gets access to basic knowledge about oral health and hygiene practices and can identify the signs and symptoms of oral health conditions as well as prevent them.

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1 Background of the study

Oral hygiene is maintaining the cleanliness of the mouth and taking care of teeth and gum. Good oral hygiene promotes better oral health and the general health of a person. Poor oral hygiene is associated with dental caries, gingivitis, periodontal diseases, bad breath, respiratory diseases, cardiovascular diseases, and chronic kidney disease. Moreover, poor oral health has a psychological impact that diminishes the quality of life and restricts activities in schools, at work, and home (Bavaresca *et al,* 2021).

Oral health is a state of being free from mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal(gum) disease, tooth decay, and tooth loss (WHO, 2017). Worldwide, in low- and middle-income countries with increasing urbanization and changes in living conditions, the prevalence of oral diseases continues to increase. This is primarily due to inadequate exposure to fluoride (in water supply and oral hygiene products such as toothpaste) and poor access to oral health care services in the community (WHO, 2022). Oral conditions like dental caries and periodontal (gum) diseases continue to plague humanity. Nearly all adults have existing tooth decay and severe gum disease occurs in 15 to 20% of middle-aged adults.

Poor oral health has been associated with the main Non-communicable diseases (NCDs) such as cardiovascular diseases and diabetes mellitus. In addition to the association of oral hygiene with chronic illness, poor oral hygiene has been found to have a role in the etiology of oral cancer. In general, adults are at a higher risk for dental infection and associated complex complications (Duangporn *et al,* 2020).

In a study carried out in Ibadan, Nigeria to assess oral health knowledge and practice in adults, results showed that less than half (42.8%) of the participants had the correct knowledge of plaque removal while 29.5% of them did not know how to remove them. The same study also found that fewer participants knew that dental caries was associated with sugar-containing foods. Furthermore, fewer individuals in this survey cleaned their teeth and attributed it to poor educational background and lack of information (Akinyamoju *et al,* 2018). In a study carried out in Dar es Salam, Tanzania, a significantly higher percentage reported having behaviors that are not conducive to oral and general health, including the use of tobacco products and never attending to a dentist (Minja *et al,* 2016). The specific objectives of the study were to assess the knowledge, attitude, and practices toward oral hygiene among patients aged 18-45 years.

2 Methodology

Study area

The study was conducted at Lira regional referral hospital in Lira city. The hospital was established by the government of Uganda and is in full operation. The hospital has departments and clinics which include OPD, dental clinic, eye clinic, orthopedic department, and laboratory. There are also medical and surgical wards which include minor and main operating theatre, male medical ward, male surgical ward, female surgical ward, female medical ward, Pediatric ward, obstetrics, and gynecology ward.

Study design

The study was descriptive and cross-sectional. This is because the study was done in a short time and did not involve follow-up of respondents.

Study population

The study population was adults aged 18 to 45 years attending the dental clinic in Lira regional referral hospital since the prevalence of periodontal diseases is more common in that age group.

Sample size determination

The sample size was determined using Burton's formula (1965)

Sample size (n) =QR/O

Where,

Total number of days taken for data collection

A maximum number of respondents who were interviewed per day O- Maximum time took on each respondent per day.

Values: Q= 10 days R=5 respondents.

O=1 hour

Therefore, n= QR/O

N= (10x5)/1 =50 Respondents

Therefore, 50 respondents were used in the study.

Sampling technique

A simple random sampling technique was used to choose the participants for the study. Simple random sampling is a non-biased probability sampling technique and ensured that everyone had an equal opportunity of participating in the study.

Definition of variables

The dependent variable was oral hygiene while the independent variables were knowledge, attitude, and practices.

Data collection tool

Data were collected using structured questionnaires. These were predetermined, written lists of questions that were answered by the respondents without supervision and minimal or no explanation from the interviewer. This, therefore, helped to reduce bias from the respondents and researcher; it also enabled the researcher to collect data from a large number of respondents within a short period.

Data collection procedure

An introduction letter was obtained from Kampala School of Health Sciences and then taken to the Medical super intendant of Lira Regional Referral Hospital. The researcher was then granted permission to collect data from the facility. The researcher was assisted by a trained research assistant who was knowledgeable in the local language. After data collection, the participants were thanked and the researcher checked the data filled before the respondents left the study area.

Pre-testing of questionnaires

The questionnaires were pre-tested at Adyel health Centre III in Lira city to evaluate the reliability and validity of the study tool.

Data management procedure

After data had been collected, it was checked for completeness and accuracy. The questionnaires that were not complete or correctly filled had to be completed before the respondents left the facility. The forms were then kept in a locked cupboard to maximize confidentiality and ensure access to the research team only.

Data analysis

Data was tallied using a pen and A4 sheets of paper. It was then entered into Microsoft Excel to generate tables, graphs, and pie charts for easy analysis.

Ethical considerations

The researcher introduced the topic, purpose, and significance of the study to the respondents. The respondents were assured of confidentiality in the study as no names were used and thereafter asked to sign a consent form. No respondent was forced to participate in the study. Each respondent was interviewed alone and information got from any respondent was not shared with other colleagues. The data collected was kept in a locked cupboard.

Findings

Demographic data

From the table 1 and 2 , the majority (60%) of the respondents were within the age bracket of 1829years of age whereas a minority (16%) were within the age bracket of 40-45 years of age.

From the table 1 and 2 most (58%) of the respondents were females whereas the least (42%) were males.

From table 1 above, most (40%) of the respondents were Protestants whereas the least (12%) were Moslems.

From the table above, most (48%) of the respondents had attained a tertiary level of education and none of the respondents (0%) lacked formal education.

From the table above, most (42%) of the respondents were employed whereas the least (8%) were unemployed.

From the table above, more than half (52%) of the respondents were single whereas none of the respondents (0%) were widowed or separated.

Knowledge towards oral hygiene among patients aged 18-45 years

From the figure 1, the majority (86%) of the respondents knew about oral health whereas the minority (14%) didn't know about oral health.

From the table 3, most (40%) of the respondents obtained information about oral hygiene from dentists whereas the least (4%) reported that they obtained information from newspapers.

From the figure 4, the majority (92%) of the respondents went for dental checkups with dentists whereas none of the respondents went to herbalists.

From the figure above, the majority (86%) of the respondents knew about dental caries whereas the rest (14%) didn't know about it.

From the table 5, most (68.9%) of the respondents gave the correct response about what dental caries are while the least (8.9%) gave incorrect response about what dental caries are.

From the figure 3, majority (92%) of the respondents reported that they knew the causes of dental caries while the minority (8%) reported that they didn't know the causes of dental caries.

From the figure 4, most (60%) of the respondents reported that eating too many sugary foods is the cause of dental caries whereas the minority (6%) of respondents were not sure.

Attitudes towards oral hygiene among patients aged 18-45 years

From the table 6, almost all (98%) of the respondents reported that they felt that their oral hygiene was clean whereas the least (2%) reported that they didn't care about their oral hygiene.

From the figure 5, the majority (88%) of the respondents reported that they often felt like visiting a dentist whereas the minority (12%) reported that they didn't often feel like visiting a dentist.

From the figure 6, the majority (90%) of the respondents reported that they cared for their teeth as much as they cared about other parts of their

Table 1. Shows the demographic data of respondents. (N= 50)

Age	**Frequency (f)**	**Percentage (%)**
18-29 years	30	60
30-39years	12	24
40-45 years	8	16
Total	**50**	**100**
Sex	**Frequency (f)**	**Percentage (%)**
Female	29	58
Male	21	42
Total	**50**	**100**
Religion	**Frequency (f)**	**Percentage (%)**
Catholic	17	34

Table 2. Shows the demographic data of respondents. (N= 50)

Protestant	20	40
Moslem	6	12
Others	7	14
Total	**50**	**100**
Education level	**Frequency (F)**	**Percentage (%)**
Primary	4	8
High school	22	44
Tertiary institution/University	24	48
Never went to school	0	0
Total	**50**	**100**
Occupation	**Frequency (F)**	**Percentage (%)**
Peasant	7	14
Civil servant	8	16
Student	21	42
Unemployed	4	8
Others	10	20
Total	**50**	**100**
Marital status	**Frequency (f)**	**Percentage (%)**
Single	26	52
Married	23	46
Separated/ Divorced	0	0
Widowed	1	2
Total	**50**	**100**

Table 3. shows the distribution of respondents according to where they obtained information about oral hygiene. (N=50)

Response	**Frequency (f)**	**Percentage (%)**
Dentist	20	40
TV and Radio	6	12
School	17	34
Newspapers	2	4
Total	**50**	**100**

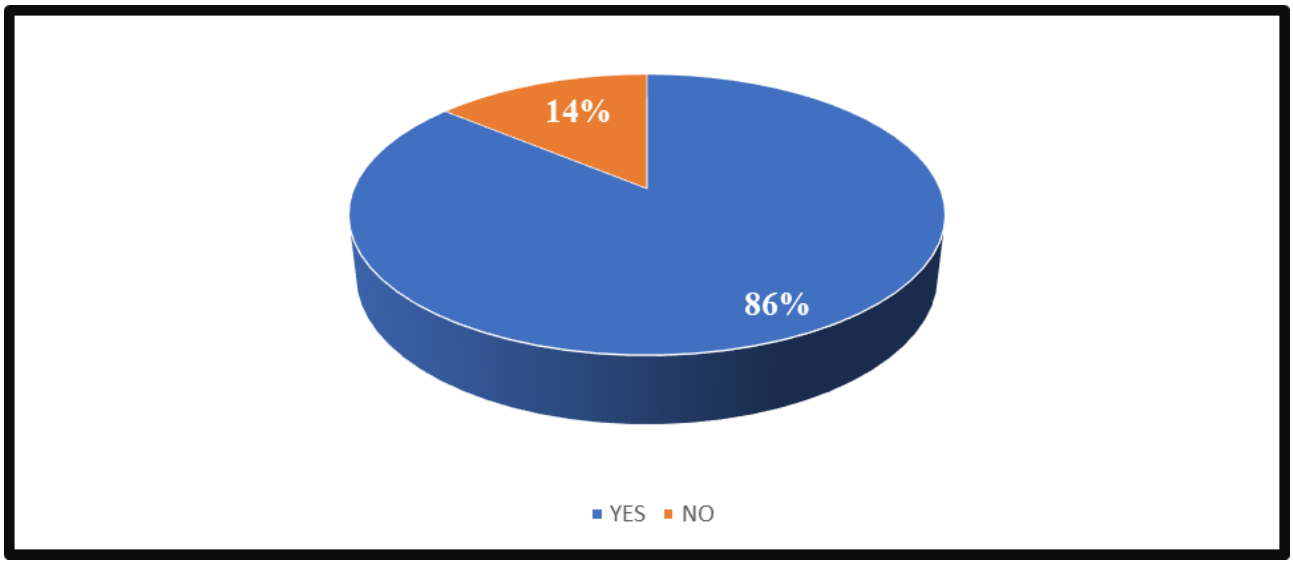

Figure 1. Shows distribution of respondents according to whether they knew about oral health. (N=50)

Table 4. Shows distribution of respondents according to where they went for dental checkups. (N=50)

Response	Frequency	Percentages(%)
DENTISTS	46	92%
HERBALISTS	0	0%
NEVER	4	8%
Total	**50**	**100%**

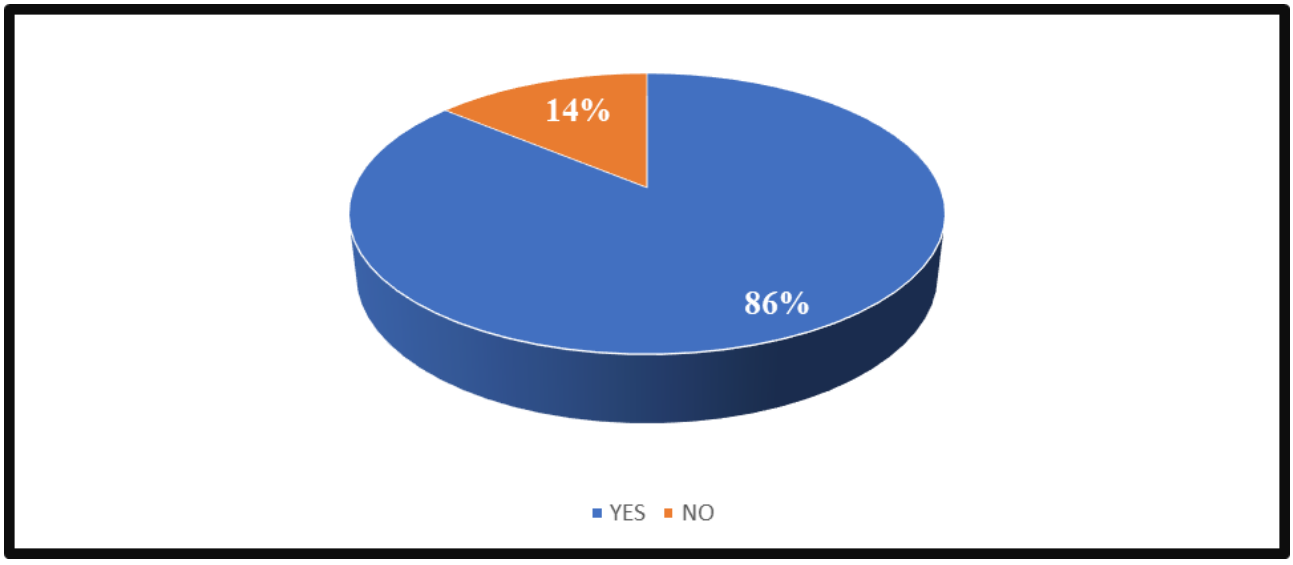

Figure 2. Shows the distribution of respondents according to whether they knew about dental caries (N=50)

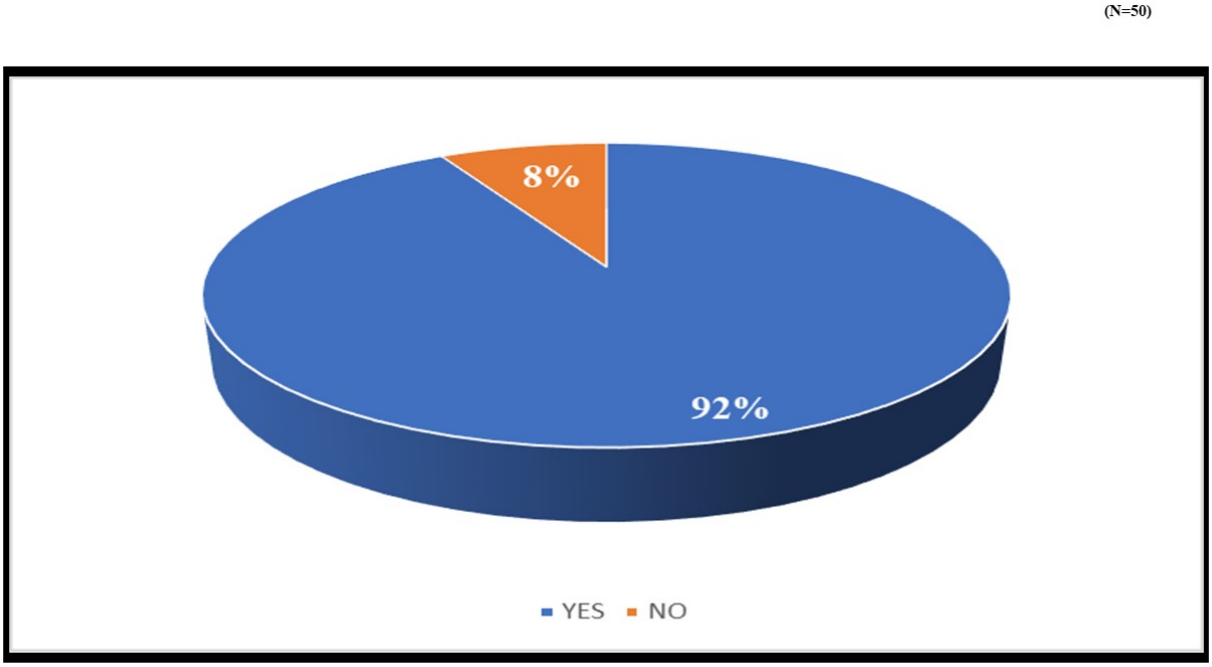

Figure 3. Shows the distribution of respondents according to whether they knew any cause of dental caries.

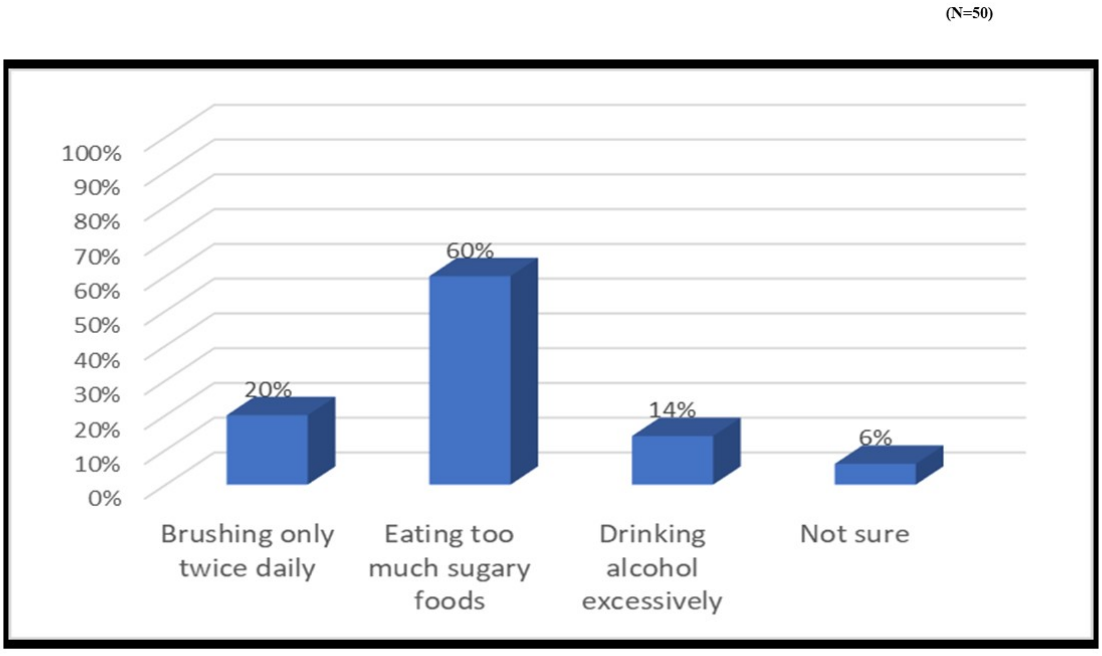

Figure 4. Shows the distribution of respondents according to their knowledge on what causes dental caries.

(N=50)

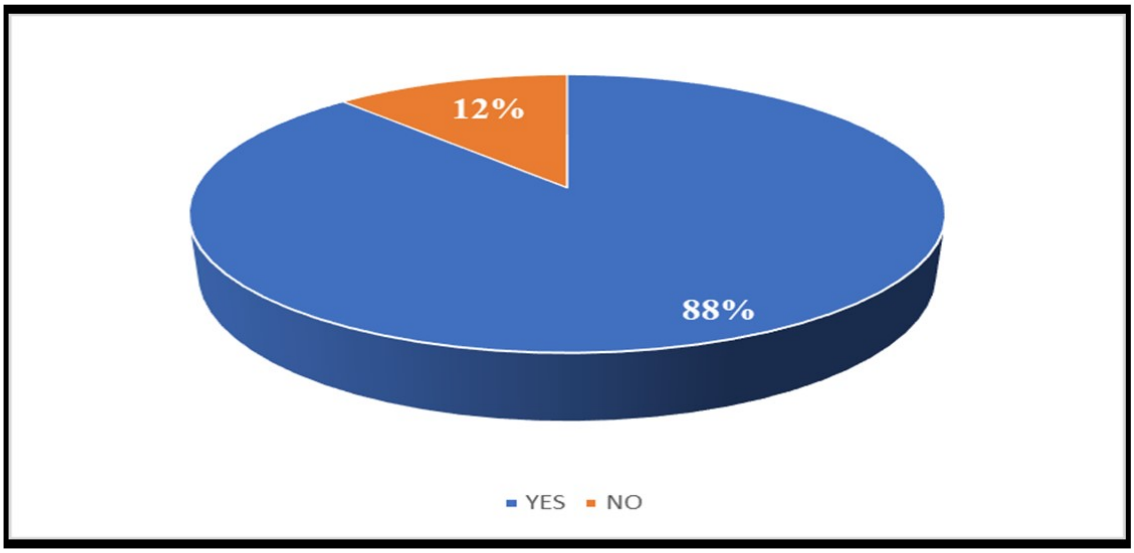

Figure 5. Shows the distribution of respondents according to whether they often felt like visiting a dentist.

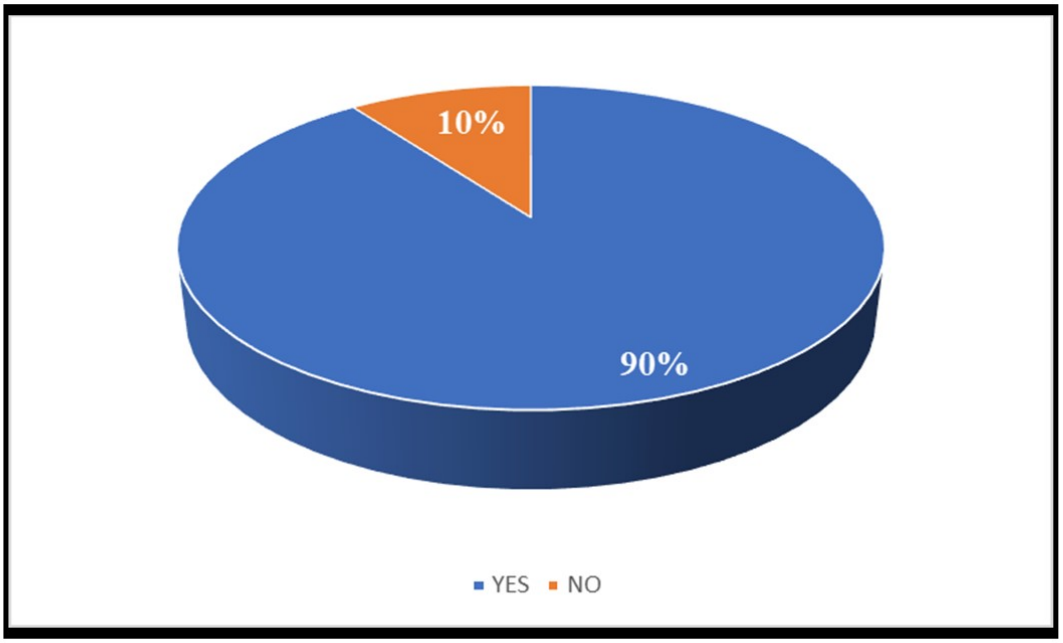

Figure 6. Shows the distribution of respondents according to whether they cared about their teeth as much as they cared about other parts of their body. (N=50)

Table 5. Shows the distribution of respondents who said "YES" about the definition of dental caries. (N= 45)

Response	Frequency (f)	Percentage (%)
Having few teeth in the mouth	4	8.9
Having cavities in the teeth	31	68.9
Having very yellow smelly teeth	10	22.2
Total	**45**	**100**

Table 6. Shows the distribution of respondents according to what they thought about the health and hygiene of their mouth. (N=50)

Response	Frequency	Percentages(%)
Its clean	49	98%
I don't care	1	2%
Total	**50**	**100%**

body whereas the minority (10%) reported that they didn't care about their teeth as much as they care about other parts of their body.

From the figure 7, the majority (76%) of the respondents thought that their oral hygiene and health are related to their systemic health whereas the minority (4%) didn't think that their oral hygiene and health are related to their systemic health.

From the table 7, the majority (92%) of the respondents reported that they needed to improve their oral health whereas the minority (12%) reported that they didn't need to improve their oral health.

From the figure 8, most (60%) of the respondents reported that their oral health was good whereas the least (40%) reported that their oral health was very good.

2.1 Practice oral hygiene among patients aged 18-45 years

From the table 8, most (58%) of the respondents reported that they cleaned their teeth twice daily whereas the least (16%) reported that they brushed only once a day.

From the 9, the majority (96%) of the respondents reported that they cleaned their teeth using toothbrushes whereas the minority (4%) reported that they used dental floss to clean their teeth.

From the figure 10, majority of respondents (52%) reported that they had last visited a dentist more than two years ago whereas the minority (8%) reported that they had never visited a dentist before.

3 Discussion:

Knowledge of oral hygiene among patients aged 18-45 years

From the above study, the majority (86%) of the respondents knew about oral health and this implied that awareness of oral hygiene was relatively good because oral and dental health is part of the health education talks which are offered in health centers, community levels, religious places, and schools. The study results were in disagreement with a study conducted in India by Daljit *et al* (2014) among patients visiting the Department of Periodontology at Gian Sagar Dental College and hospital, where results showed an acute lack of oral hygiene awareness and limited knowledge of oral hygiene practices as well as the effect of poor oral hygiene on systemic health.

In regards to sources of information, most (40%) of the respondents obtained information about oral health from dentists. This could be attributed to the health-seeking behaviors among the respondents and perhaps they got a chance to obtain information about oral hygiene from the health workers during the health education and talks at health facilities. The study results were consistent with a study which was conducted among adults in Ibadan in Nigeria by Akinyamoju *et al* (2018) where results concerning the sources of information about oral health revealed that dentists were the main source of oral health information for adult Nigerians.

The study showed that the majority (92%) of the respondents went for dental checkups with dentists whereas none of the respondents went to

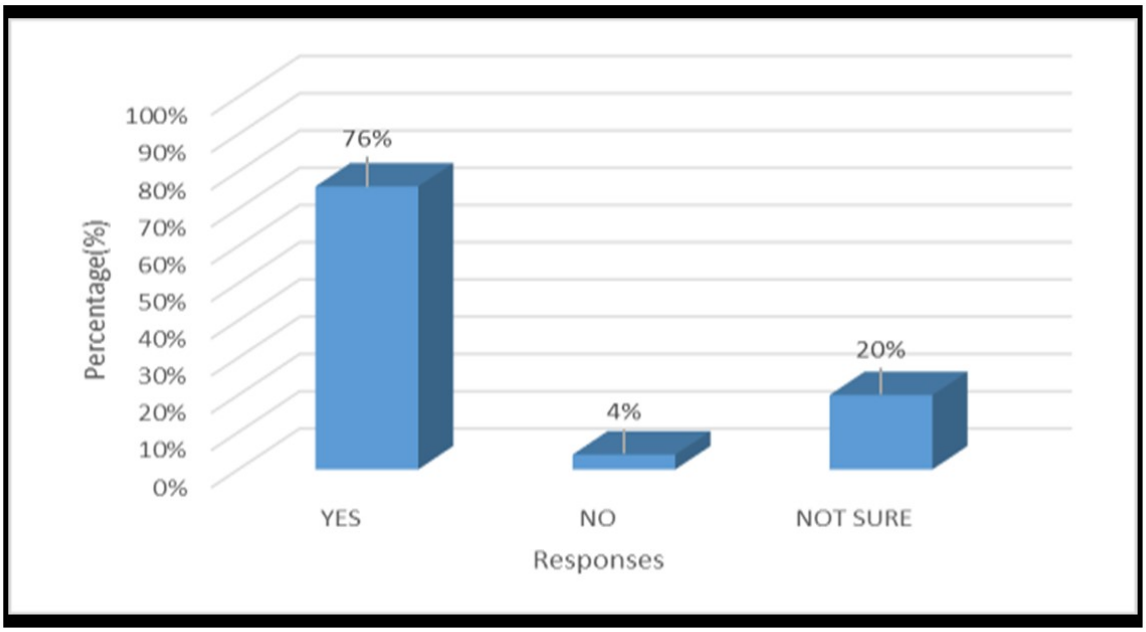

Figure 7. Shows the distribution of respondents according towhether they thought their oral hygiene and health is related to their systemichealth.

Table 7. Shows the distribution of respondents according to whether they needed to improve their oral health. (N=50)

Response	Frequency	Percentages (%)
Yes	38	76%
No	2	4%
Not sure	10	20%
Total	**50**	**100%**

Table 8. Shows the distribution of respondents according to the number of times they brushed their teeth daily. (N=50)

Response	Frequency (f)	Percentage (%)
Once	8	16
Twice	29	58
Three and above	13	26
None	0	0
Total	**50**	**100**

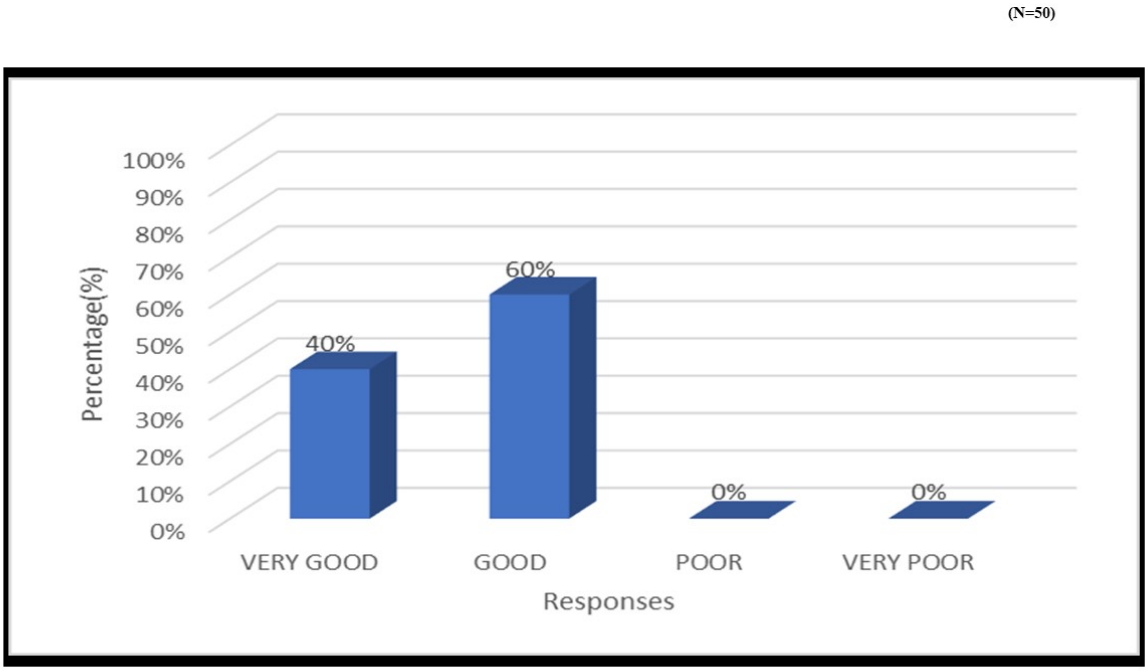

Figure 8. Shows the distribution of respondents according to how they would rate their oral health.

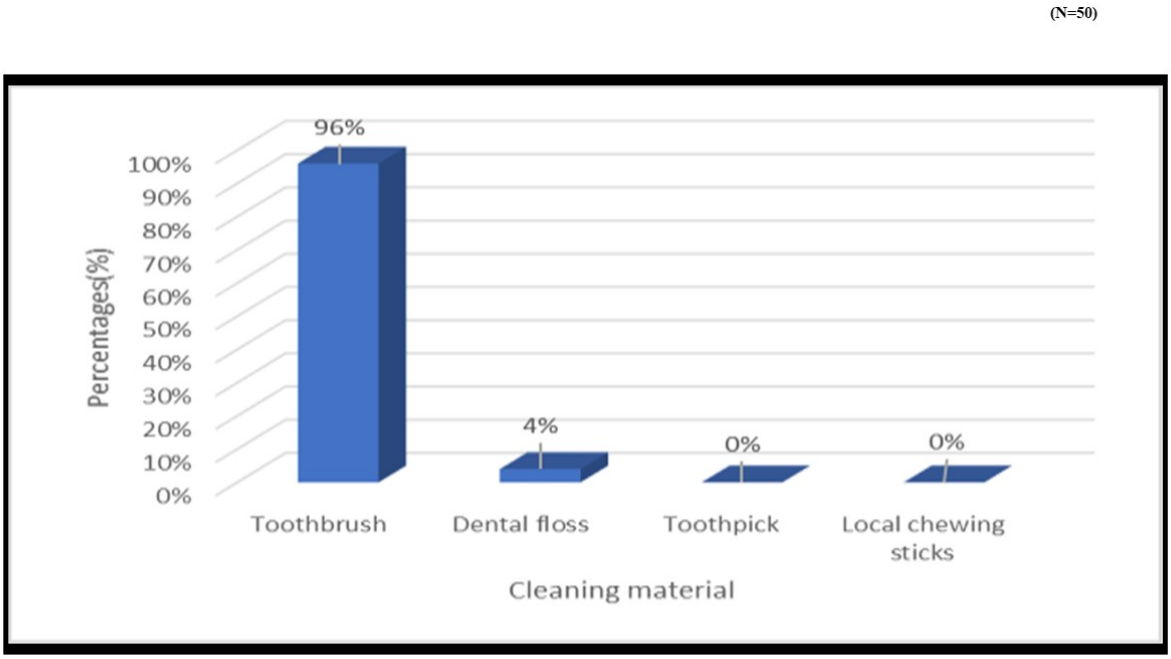

Figure 9. Shows the distribution of respondents according to what they use to clean their teeth

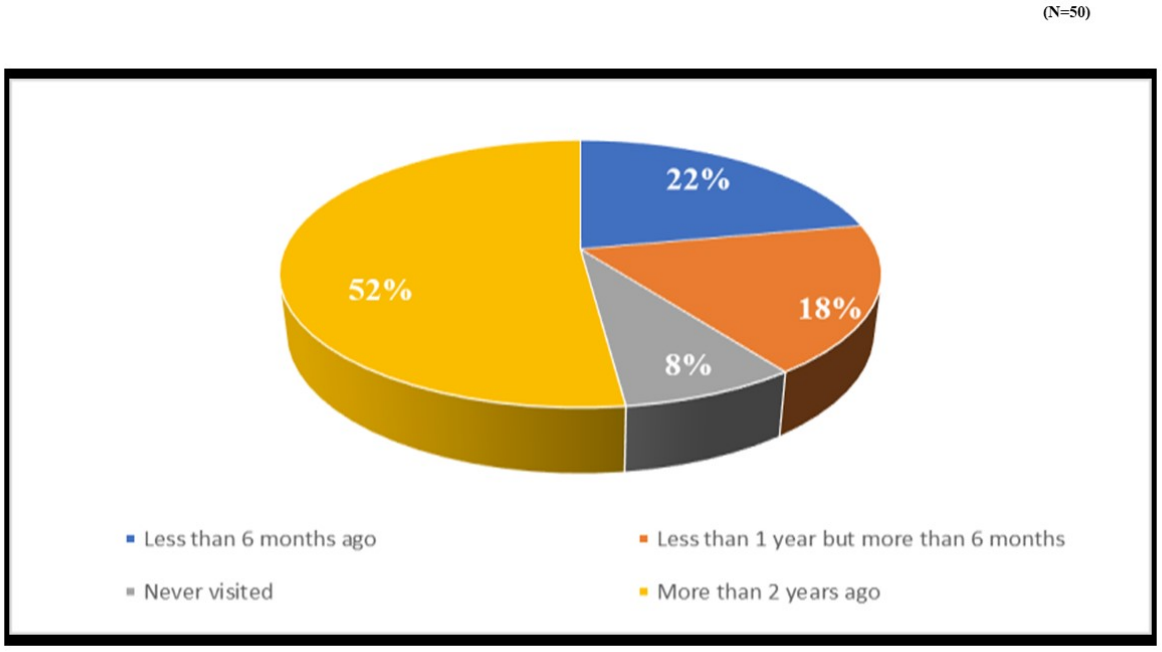

Figure 10. Shows the distribution of respondents according to the last time they visited the dentist

herbalists, this was probably due to their awareness of free oral and dental care services and the need to maintain their oral hygiene. The findings however are contrary to the findings in a study conducted in Ethiopia by Birke *et al* (2021) on dental caries experience and associated factors in adults, where results showed poor utilization of dental care services among 74.0% of the population. About the causes of dental caries, the majority (92%) of the respondents reported that they knew the causes. This showed that the respondents had good knowledge about the cause of dental caries. This is probably because most of the respondents had acquired some knowledge from various educational institutions and also from the health education given at the health facilities. The findings of this study were inconsistent with a study conducted in Nigeria by Akinyamoju *et al* (2018) among adults where participants were found to have poor knowledge of the etiology of common oral diseases and results showed that about 37.0% knew that sugar-containing food substances were associated with tooth decay.

Attitude towards oral hygiene among patients aged 18-45 years

Almost all (98%) of the respondents reported that they felt that their oral hygiene is good. This is attributed to the fact that the majority of the respondents had adequate knowledge about oral health responsible for practices leading to good oral hygiene and health. The study results were in disagreement with a study that was conducted by Nandini *et al,* 2017, where results of the study showed unsatisfactory attitudes towards oral health among respondents.

The study showed that the majority (88%) of the respondents often felt like visiting a dentist. This implied that respondents had a good attitude toward oral hygiene and the study results were not in agreement with a study conducted by Bala *et al* (2019) to assess the knowledge, attitude, and practice of oral health status among adults where overall results of the study showed adequate knowledge but poor attitude regarding oral health. Only 3% have visited for routine checkups while 73% of them are afraid of going to the dentist.

Furthermore, the study results showed that the majority (90%) of the respondents reported that they cared for their teeth as much as they care about other parts of their body and this showed that they had a positive attitude towards oral hygiene. The study results were not in line with a study conducted in Jodhpur by Nitika *et al.,*(2012) where it was observed that oral hygiene had mostly

remained an ignored and unrealized social problem as 44% of the people brushed their teeth occasionally, 33% of them were brushing once a day hence a poor attitude towards oral hygiene.

In regards to respondents' attitudes on whether they thought that their oral hygiene and health are related to their systemic health, the majority (76%) of the respondents thought that their oral hygiene and health are related to their systemic health. This is not in line with a study which was conducted in Udaipur by Nandini *et al,* 2017 where results of the study showed unsatisfactory attitudes towards oral health among patients, and findings showed that a higher proportion (66%) thought that oral health is not related to systemic health.

In the current study, the majority (92%) of the respondents reported that they needed to improve their oral health. This could probably be due to the continuous interest in a good health. This is inconsistent with a study which was conducted in Uganda by Ssemakula *et al.,* (2015) where results of the study showed that the prevalence of dental caries and periodontal diseases was relatively high yet only 48.9% said that they needed to improve their oral health.

The study also showed that most (60%) of the respondents reported that their oral health was good. This implied that the respondents had a positive attitude toward oral hygiene and health and the results from the study were inconsistent with a study which was conducted in Uganda by Ssemakula *et al.,* (2015) where results of the study showed that only 20.4% said their oral health was poor.

Practice oral hygiene among patients aged 18-45 years

From the study results, most (58%) of the respondents reported that they cleaned their teeth twice a day. These oral hygiene practices were appropriate to the respondents' knowledge and attitude towards oral hygiene regarding their socioeconomic status. The findings in this study are in agreement with a study that was conducted in Nigeria by Umanah *et al.,* (2017) where less than two-thirds of the sample (63.3%) cleaned their teeth at least twice daily and none of the participants used interdental cleaning aids.

Regarding the material used for cleaning their teeth, the majority (96%) of the respondents reported that they cleaned their teeth using toothbrushes. This was probably because they are the most available and affordable and these findings are indicative of good oral hygiene practice.

The results of the study were in line with a study that was conducted by Krina *et al.,* (2018) at Terna Dental College and Hospital, Navi, Mumbai, where results on respondents' practices and perceptions of oral health revealed that 100% of the sample used toothbrush as a method to clean their teeth.

Finally the study results in regards to the last time the respondents had visited the dentist, more than half (52%) reported that they had last visited a dentist more than two years ago. This showed an unsatisfactory practice toward oral health and hygiene. The findings were in line with Bala *et al.*, (2019), where results showed adequate knowledge but poor attitude regarding oral health as half of the study population never visited dental clinics and 31.5% have visited between 2 to 5 years, only 3% had visited for routine checkups while 73% of them were afraid of going to the dentist.

Conclusions

Based on the general results of the study the researcher concluded that;

The overall results on knowledge of oral health among the respondents were good as the majority (86%) of the respondents knew about oral health, about (40%) of the respondents reported dentists as their source of information about oral hygiene, and the majority (92%) went for dental checkups to dentists, the majority (86%) knew about dental caries and the majority (68.9%) gave the correct response about what dental caries are, the majority (92%) reported that they knew the causes of dental caries and (60%) gave the correct response about the cause of dental caries as eating too many sugary foods.

Regarding attitude, almost all (98%) of the respondents reported that they felt that their oral hygiene is good, and the majority (88%) reported that they often felt like visiting a dentist and this was evidenced by the fact that (90%) reported that they cared for their teeth as much as they cared about other parts of their body and the majority (76%) thought that their oral hygiene and health is related to their systemic health, the majority (92%) reported that they needed to improve their oral health although (60%) of the respondents reported that their oral health was good.

Regarding practices towards oral hygiene, it was observed that most (58%) of the respondents reported that they cleaned their teeth twice a day

with a majority (96%) of the respondents reporting that they cleaned their teeth using toothbrushes, more than half (52%) reported that they had last visited a dentist more than two years ago.

Therefore, the researcher generally concluded that, even though the overall knowledge of the respondents in regards to oral hygiene was good and had a positive attitude, their practices could expose them to periodontal diseases and poor oral health as most of the respondents used an only toothbrush to clean their teeth and only twice a day with poor techniques of brushing.

Recommendations

The ministry of health should emphasize and carry out community health education and radio health talk shows. This would at least ensure that there is an increase in awareness and basic knowledge of oral hygiene and are people can identify the signs and symptoms of various dental conditions as well as prevent their occurrences.

The government should also allocate nearby hospitals/health centers to increase the accessibility of health care services or cooperative oral and dental care services in the already existent ones without those services.

The hospital administration should sensitize the public about the increasing prevalence of periodontal diseases, the importance of routine dental checkups for early detection of various dental conditions, and early treatment of the dental conditions.

The NGOs within the Lira district should continue to carry out health education programs, workshops, conferences, and outreaches in health facilities and communities to emphasize the importance of oral hygiene.

4 Acknowledgement

First and foremost thanks to God, for bestowing me sounding healthy for the whole period of my pursuance of this study.

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Table 9. List of Abbreviations

ANUG	: Acute Necrotizing Ulcerative Gingivitis
LRRH	**:** Lira Regional Referral Hospital
DMFT	: Decayed, missing and filled teeth
MoH	: Ministry of health
NGO	**:** Non-Governmental Organization
OPD	: Out Patient Department
UNICEF	: United Nations International Children Emergency Fund
VDCH	: Vyas Dental College and Hospital
WHO	: World Health Organization

Table 10. Definition o f Terms

Attitude	**:** This is a complex mental state involving beliefs, feelings, values and disposition to act in a certain way.
Cancer	**:** This is any malignant growth or tumor caused by abnormal and uncontrolled cell division and may spread to other parts of the body through the lymphatic system or the blood stream.
Edentulous	**:** This is a condition of being toothless.
Health	: This is a state of complete physical, social, spiritual and economic wellbeing and not merely the absence of a disease or infirmity.
Knowledge	**:** This is the factual information that someone knows.
Practice	**:** This is a customary way of operation or behavior.
Oral Hygiene	: This is the practice of keeping one's mouth clean and free from disease and other problems by regular brushing and cleaning between teeth.
Oral Health	: This refers to the health of the teeth, gums, and the entire oral-facial

Table 11. Reference

1) Balo Kiran, Reecha Gupta, (2019), A KAP study of oral health status among adults in a rural area of Jammu District, International Journal of community medicine and public health, January 2019:Vol 6;Issue 1. https://doi.org/10.18203/2394-6040.ijcmph20185130

2) Birke Bagale, Fasikawit Engida, Jennifer E.Gallagher. Dental caries experience and associated factors in adults: A cross sectional community survey within Ethiopia. BMC public health21, 180(2021) https;//doi.org/10.1186/s 12889-021 -10199-9.https://doi.org/10.1186/s12889-021-10199-9PMid:33478460 PMCid:PMC7819221

3) C.A. Akinyamoju, J.O. Taiwo, E. Uwadia, JM. Agdogidi and A. Ambeko,(2018), Annals of Ibadan Post-graduate medicine, Dec 2018: 16(2);150-156.

4) Caren Bavaresco(2018), Oral hygiene practice and associated factors among patients visiting private dental clinics at Hawassa City, southern Ethiopia,2018.International journal of dentistry volume 2021https://doi.org/10.1155/2021/8868308PMid:33833806 PMCid:PMC8018861

5) Daljit Kapoor, Sanjeet Gill, Arshdeep Singh(2014), Oral hygiene awareness and practice among patients. Indian journal of dentistry, 2014 April-June 5(2):64-68.https://doi.org/10.4103/0975-962X.135262PMid:25565727 PMCid:PMC4184328

6) Duangthip, D., & Chu, C. H. (2020). Challenges in Oral Hygiene and Oral Health Policy. Frontiers in oral health, 1, 575428.https://doi.org/10.3389/froh.2020.575428PMid:35047981 PMCid:PMC8757757

7) Irene K. Minja1, Anne N. Astrom2 And Joyce R. Masalu1(2016) Prevalence and distribution of oral health knowledge according to sociodemographic, behavioural and clinical characteristics in selected coastal districts of Tanzania. Tanzania Journal of Health Research Doi: http://dx.doi.org/10.4314/thrb.v18i3.1Volume 18, Number 3, July 2016https://doi.org/10.4314/thrb.v18i3.1

8) Jain Nitika, Mitra D, Ashok K.P, Dundappa J, Sani S, Ahmed S(2012), Oral hygiene awareness and practice among patients attending OPD at Vyas Dental College and Hospital, Jodphur, Journal of Indian Society of Periodontology,2012;16:524-8. Jameshttps://doi.org/10.4103/0972-124X.106894PMid:23493177 PMCid:PMC3590720

9) Krina Shah, Shailesh Shenava, (2018), Evaluation of oral hygiene and perception of patients undergoing orthodontic treatment attending OPD at Terna Dental College, Mumbai, Maharashtra, International Dental Journal of Student's Research, June 2018:6(4); 81-84.https://doi.org/10.18231/2278-3784.2018.0022

10) Ssemakula Timothy, Knowledge, attitude and practices about oral health among people living on Kivunza landing site, Kalangala district,Uganda, http://hdl.handle.net/123456789/783.

11) Umanah A.U, Braimoh OB,(2017), Oral hygiene practice and factors influencing the choice of oral hygiene materials among undergraduate students at the university of Port Harcourt, River State, Nigeria, Journal of Dental and Allied Sciences, 2017;6:37.https://doi.org/10.4103/2277-4696.205440

12) WHO (2017) Oral Health. https://www.afro.who.int/health-topics/oral-health

13) WHO (2022) Oral Health. https://www.who.int/news-room/fact-sheets/detail/oral-health