KNOWLEDGE, ATTITUDES, AND PRACTICES OF PREGNANT MOTHERS TOWARDS DENTAL HEALTH CARE DURING GESTATION AT MPIGI HEALTH CENTRE IV MPIGI DISTRICT.A CROSS SECTIONAL STUDY.

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ABSTRACT

Background
According to WHO, worldwide up to 70% of pregnant mothers do not know the importance of dental health care during pregnancy and this has led to various severe outcomes in the context of maternal and child health and survival. The purpose of this study was to determine the knowledge, attitudes, and practices of pregnant mothers towards dental health care during gestation at Mpigi H/C IV Mpigi District.

Methods:
This was a descriptive cross-sectional study that employed quantitative methods of data collection where Multi-stage sampling and simple random sampling procedures were used to obtain a sample of 60 respondents.

Results:
The majority of the respondents, 70%, were unaware of the importance of dental health care during pregnancy. Most respondents 77% had a poor attitude towards dental health care during pregnancy. The majority of the respondents 70% had poor practices about dental health care during pregnancy and this has led to various severe negative outcomes to both the mother and the unborn child.

Conclusion:
Most respondents had adequate knowledge of the importance of dental health care during pregnancy. More than three quarters had a negative attitude towards utilization of dental health care during pregnancy and more than half had inappropriate practices towards dental health care during pregnancy.

Recommendations:
The Ministry of Health should strengthen health education on the importance of dental health care during pregnancy at all points of contact with mothers and clear sensitization should be done to the community, cultural leaders and religious leaders should use their influence to sensitize and encourage the community to embrace dental health care services during pregnancy at cultural and religious gatherings, community outreaches should be held and refresher training of health workers with an emphasis towards this aspect should be done.

Keywords: Dental Health Care, Mothers, Mpigi Health Centre IV.
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Background of the study

Pregnancy is a normal state that encompasses conception to birth, It involves multiple physiological changes, which can negatively affect oral health(Touriño et al., 2021). It is estimated that around 60% of pregnant women experience oral health problems during pregnancy (Kessler et al., 2016), with a growing prevalence as the pregnancy advances (Jain et al., 2015). Other oral diseases that have been associated with pregnancy are periodontal disease (manifested mainly as gingivitis, with a prevalence of 60–75% in pregnant women and as periodontitis to a lesser extent), perimolysis, and pyogenic granuloma. In this regard, good oral hygiene during pregnancy strongly contributes to the control of such diseases, of which pregnant women should be informed (Hilton, 2017).

According to the World Health Organization (WHO), Hormonal changes and changes in eating habits (for example, the regular consumption of sugary food to fulfill cravings), apart from other factors such as morning sickness, increase susceptibility to tooth decay. Studies from different countries worldwide indicate that up to 70% of mothers have inadequate knowledge, negative practices, and poor attitudes about dental health care during pregnancy and this is common in low-resource settings. In Spain, only 39% of pregnant mothers were found to have adequate knowledge of dental health care but only 17% had positive attitudes and appropriate practices (Da' Silva, 2015). While in the Utapradesh state of India, only 11% of the pregnant mothers were found to be both knowledgeable and compliant and in Venezuela, only 12% were found to be knowledgeable and compliant.

According to the Demographic Health Survey (DHS), studies in sub-Sahara Africa indicate that up to 85% of the mothers have inadequate knowledge, negative practices, and poor attitudes about dental health care during pregnancy and this is common in rural settings . A study in the Nigerian state of Kano found that only 13% of the mothers were knowledgeable and compliant, while a similar study carried out in the Ethiopian state of Asmara found that up to 29% were knowledgeable but only 12% were compliant.

In East Africa, studies in Nakuru province in Kenya only 11% of the pregnant mothers were knowledgeable about dental health care during their status and results showed that there was a correlation between knowledge, attitudes, and practices. A similar study in Tabora, Tanzania shared these results.

The utilization of Antenatal Care is key in promoting awareness of the importance of dental health care among pregnant mothers during the period of gestation. Emphasis is however attributed to how much the health workers at the ANC outlets appreciate this aspect and its outcomes.

Despite community outreach programs by Mpigi HC IV a significant number of pregnant mothers have continued to shun ANC services and this subjects them to inadequate knowledge of the benefits of dental health care during gestation, hence exposing them and their unborn babies to dental and other underlying health problems. It is therefore of appropriate need and demand justification that this study is done to promote maternal and child health and survival.

Purpose of the study

The purpose of the study was to assess the knowledge, attitude, and practices of pregnant mothers towards dental health care during gestation at Mpigi Health Centre IV, Mpigi district

Methodology

Study design and rationale

The study employed a descriptive cross-sectional design that employed quantitative data collection techniques and analysis. The rationale for using a quantitative cross-sectional design is that data was obtained only on first contact with the respondents and no follow-up was made since it requires a short period for data collection.

Study setting and rationale

The study was conducted at Mpigi Health Centre IV, Mpigi district, located in the Central part of Uganda. Mpigi district is approximately 38 kilometers from Kampala (Uganda's capital city). Mpigi borders the Wakiso district in the North and East, Kalangala in the South, Butambala in the West, and Mityana to the Northwest. Mpigi Health Center IV is a government health facility in Central Uganda offering several health care services including; family planning, immunization and child health services, reproductive health services, antenatal and postnatal care services, HIV and AIDS management and counseling, general patient care services, and elimination of mother to child transmission of HIV and others. It has several healthcare professionals including medical officers, clinical officers, nursing officers nursing and midwifery, laboratory personnel, enrolled nurses, midwives, and counselors. The study area was selected because the researcher noticed low uptake of routine immunization ANC services among pregnant mothers accounting for inadequate knowledge and poor utilization of dental health care services among them during the period of gestation. The area is also well known by the researcher and it was easy for the researcher to get the required number of respondents.

The study was conducted for a period of one month from December 2022 to January 2023.

Study population

The targeted population included pregnant mothers attending ANC at Mpigi Health Center IV Mpigi district between May and June 2022.

Sample size determination

The sample size was calculated using the formula N=Z2PQ/d2 by Kish and Leslie (1995).

Where N= desired sample size if the target population is greater than 10,000

Z= standard normal deviation corresponding to a 95% confidence interval which is 1.96, P=Proportional characteristics of the target population approximated as 50 %,

Q= 1-0.5=0.5, d= precision margin of error in this case 0.05.

N=Z2PQ/d2

N = 1.962 x 0.5 x 0.5/0.05x0.05

3.8416x0.25/0.0025

0.9604/0.0025

N= 384

Target population (N) = 80

Since the target population under study was less than 10,000 the formula is

N = n/1+ (n/N)

N = 384/1+384/80

N= 384/1/4.8

N= 80

Therefore, the desired sample size was 80. However, due to time constraints, a sample of 60 was considered.

Sampling procedure

Multi-stage sampling technique was employed where respondents were first grouped into 5 strata according to the ages of their children. Each stratum was selected and the total was obtained, from this, simple random sampling was employed whereby the researcher took an appropriate number of pieces of paper and marked them "1" and "2" and asked the participants to pick them at random. The ones that picked "2" participated in the study and this made each respondent have an equal chance of being selected without bias. This procedure continued until a sample of 80 respondents was achieved.

Inclusion criteria

Pregnant mothers who were at Mpigi Health Centre IV Mpigi district were present and willing to participate in the study.

Definition of variables
Independent variable
In this study, independent variables were; Knowledge, attitudes, and Practices of pregnant mothers

Dependent variable
The dependent variable was dental healthcare

Research instruments
Data was collected using a semi-structured researcher-administered questionnaire, which consisted of both open and closed-ended questions. The open-ended questions made it easy for the researcher to get the respondents' views while the closed-ended questions gave specific answers. The questionnaire was drawn in English and the researcher translated for all respondents who could not write and read in English. The questionnaire consisted of four sections namely; social demographic characteristics of respondents, Knowledge of, attitudes, and Practices of Mpigi Health Centre IV Mpigi district

Quality control
Validity
To ensure the validity of the instruments, the supervisor went through the instrument before administering it to ensure that content validity was appropriately addressed and the study instrument adjusted accordingly.

Reliability
To assess and verify the clarity and accuracy of the questionnaire, it was pretested among ten (10) pregnant women at Komamboga Health Centre IV since they had similar characteristics to the respondents in the study area.

Data collection procedure
Data was collected from respondents using a self-administered semi-structured questionnaire which engaged 80 Mpigi Health Centre IV Mpigi district ANC clinic. The researcher interviewed 10 respondents a day for eight days until a total of 80 (eighty) respondents were achieved.

Data management
The researcher ensured that confidentiality and security were maintained. This also includes data editing in the presence of respondents to ensure that no mistakes were made before leaving the area of study. The data collected was securely kept; soft copies were kept on private computers with password protection to only be accessed by the researcher to ensure confidentiality.

Data analysis and presentation
Data was edited to ensure that all the questionnaires were completed and filled. Then analyzed manually using manual means to generate frequencies. The statistical packages for Social Sciences (SPSS) Program version 20 and Microsoft Excel 2007 were presented in frequencies and percentages in the form of figures and tables.

Ethical considerations
An introductory letter from the Maya Institute of Health Sciences was presented to the Mpigi Health Centre IV Mpigi district seeking permission to conduct the study. The researcher upon being permitted introduced herself to the respondents and explained the purpose of the study to them to win their cooperation assured them of confidentiality and asked for their consent to meet the research ethics.

RESULTS

Background information of the respondents includes Age, level of formal education, marital status, occupation, Religion, and health condition.
Section A: Demographic information of the respondents.
Table 1: showing demographic information of respondents

Characteristics	Frequency (N=60)	Percentage (%)
Gender		
Male	24	40
Female	36	60
Age		
18-25 years	8	13
26-30 years	12	20
31-35 years	10	17
Above 35 years	30	50
Level of formal education		
None	18	30
Primary	24	40
Secondary	10	17
Tertiary	8	13
Marital status		
Single	18	30
Married	24	40
Divorced	12	20
Widowed	6	10
Occupation		
Peasant	22	37
Business	20	33
Civil servant	18	30
Religion		
Moslem	8	13
Catholic	30	50
Anglican	18	30
Others	4	7

Table 1 shows that the majority of respondents 30 (50%) were aged above 35 years, followed by 12 (20%) who were aged 26-30 years, while 10 (17%) were above 31-35 years and the minority 8(13%) Were 18-25 years.

Results showed that 24 (40%) had attained primary education, followed by 18 (30%) who had not been to school at all, while 10 (17%) had attained secondary education and minority 8(13%) had attained tertiary education.

Regarding marital status, 24 (40%) were married, followed by 18(30%) who were single, while 12(20%) had divorced and a minority 6(10%) were widows.

Most respondents 22 (37%) were peasants, 20(33%) were doing business, and 18 (30%) were civil servants.

Regarding religion, 30 (50%) were Catholics, followed by 18 (30%) were Anglicans, while 8 (13%) were Moslems and 4 (7%) belonged to other denominations.

Most respondents were active working age group and mature, hence most likely to seek dental health services during pregnancy according to various previous studies. On the contrary majority had attained low levels of education which is linked to poor utilization of dental health services during pregnancy. However, most of them were married which is linked to utilization of dental health care services during the gestation period. On the contrary majority were peasants which is linked to poor dental health care by many studies. However, more than three-quarters were Christians which is significantly linked to the utilization of health care services including dental care. Most findings in the demographics of respondents show that a significant number were likely to utilize dental health care services including regular checkups.

Knowledge of respondents towards dental health care during the gestation period.
Figure 1: Responses of correspondents as to whether they were aware of the importance of dental health care during pregnancy.
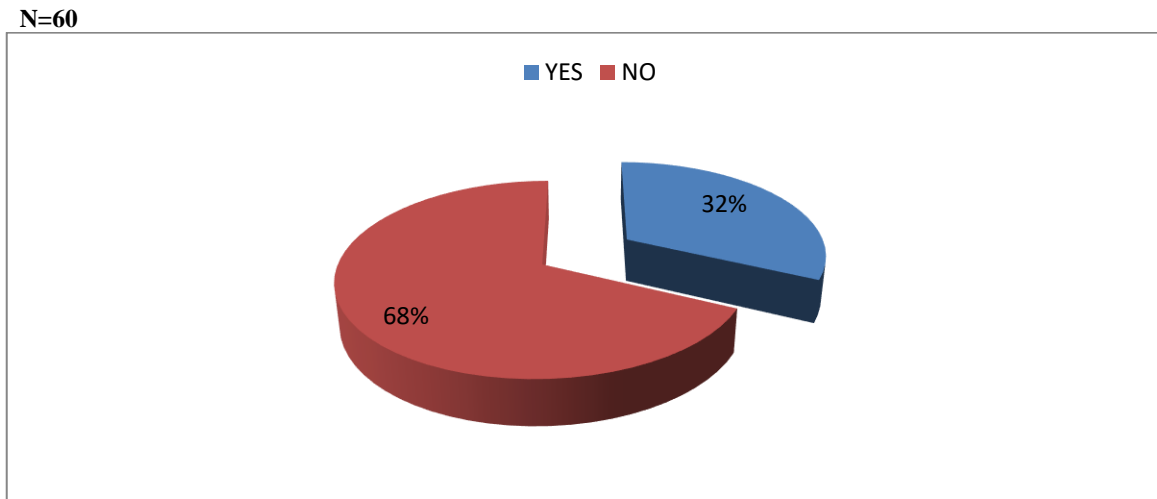
N=60

Figure 1 shows that most respondents 40(68%) said they were aware of the importance of dental health during pregnancy, while the rest 20 (32%) said they were not aware. Those who were aware mentioned that it was risky to uproot teeth during pregnancy.

Table 2: Responses on source of information about the importance of dental health care in pregnancy

N=60

Source of information	frequency	Percentage (%)
Health facility/ANC	24	40
Family and friends	6	10
VHTs	10	18
Not aware	20	32
Total	**60**	**100**

Results from Table 2 above show that most of the respondents 24 (40%) were informed about the importance of dental care during pregnancy by health workers during ANC, 20(32%) were not aware at all, while 10 (18%) mentioned VHTs as their source of information and minority 6(10%) mentioned family and friends.

Figure 2: Responses according to knowledge on how many times one should brush their teeth during pregnancy

N=60
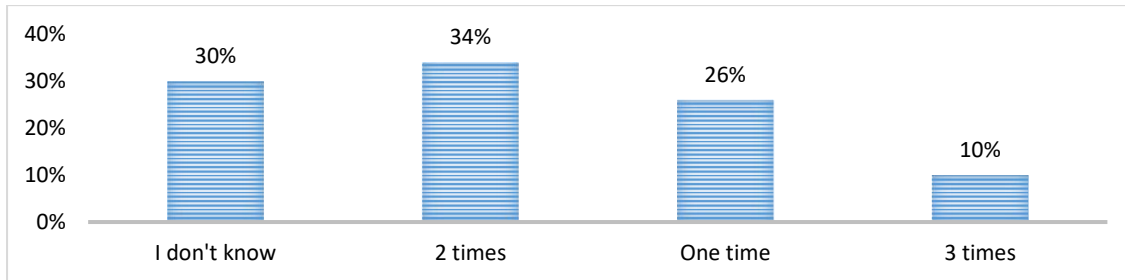
Results also show that most of the respondents 20 (34%) said people should brush their teeth 2 times a day, followed by 18 (30%) who said they did not know, while 16(26%) mentioned one time and minority 6(10%) mentioned 3 times.

**Table 3: Responses according to when one should brush their teeth**

N=60

Time to brush teeth	frequency	Percentage (%)
Before meals	24	40
After meals	6	10
In the morning	10	18
At night	20	32
Total	**60**	**100**

Results show that for most of the respondents, 24 (40%) the recommended time for brushing their teeth was before having meals, 20(32%) said at night, 10 (18%) mentioned in the morning, and the minority 6(10%) mentioned after every meal.

**Figure 3: Responses on what causes tooth decay and gum diseases**

N=60

Causes of tooth decay
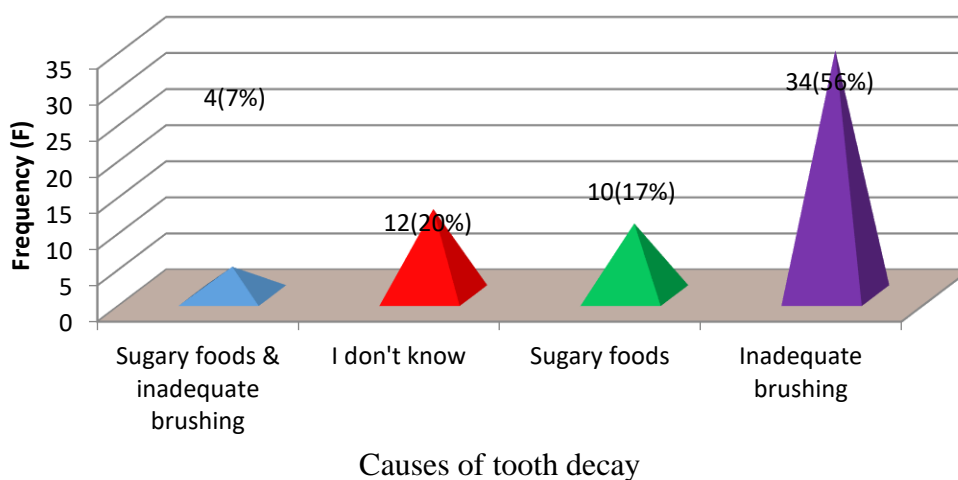
The majority of respondents 34(56%) said the major cause of tooth decay was inadequate brushing, while 12(20%) said they did not know, 10(17%) mentioned sugary foods and a minority 4(7%) mentioned both sugary foods and inadequate brushing.

Figure 4: Responses on knowledge of dental health effects on the unborn baby

N=60
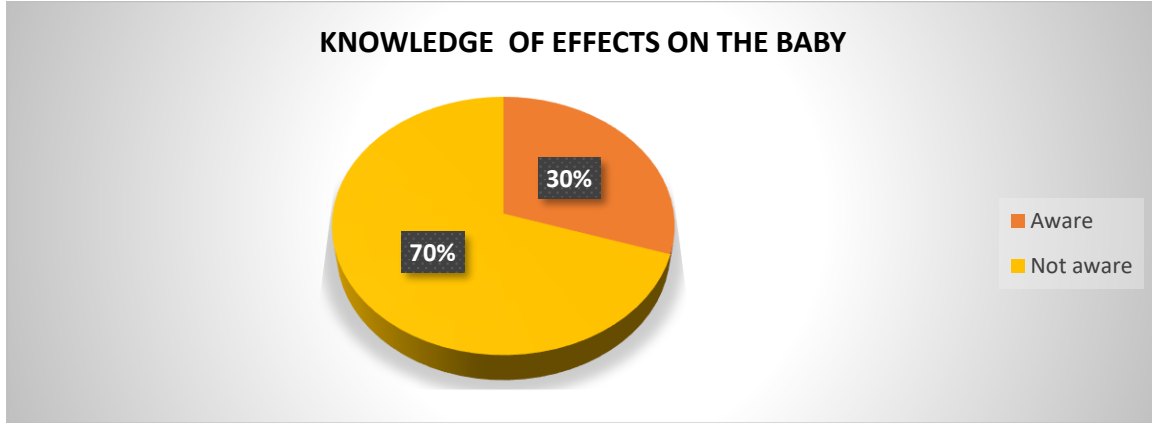
The majority of respondents 42 (70%) said they did not know that dental health problems of the mother can affect the unborn baby, while the minority 18(30%) said they were aware.

In conclusion, therefore, although most respondents 40(68%) said they were aware of the importance of dental health during pregnancy, while a minority 16(23%) said it was relevant. Only 10% knew how many times and when to brush their teeth each day. Only 7% knew the major causes of tooth decay. While 70% said they did not know that dental health problems of the mother can affect the unborn baby. This showed an overwhelming disparity in knowledge of dental health care during pregnancy.

Attitudes of respondents towards dental health care during the gestation period.

Figure 5: Showing attitudes toward the relevance of dental health care during pregnancy
N=60
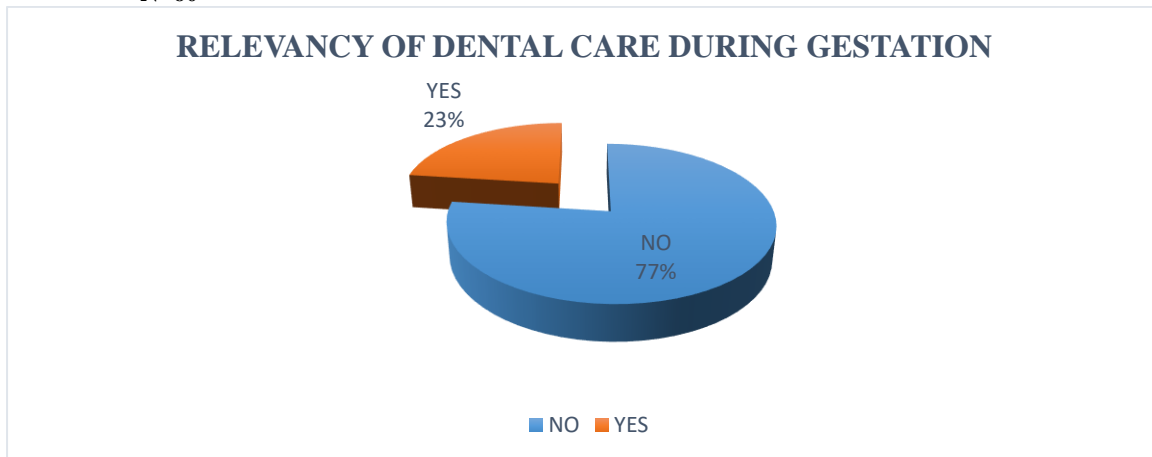
The majority of the respondents 44 (77%) said dental care was not that relevant during the gestation period, while the minority 16(23%) said it was relevant.
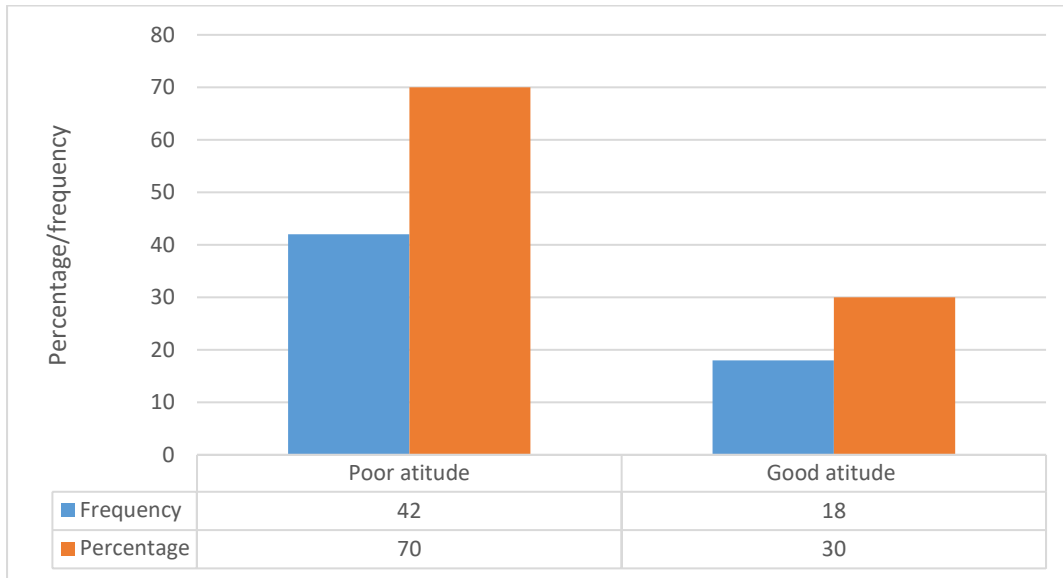
Table 4: Responses according to why respondents thought dental care was not relevant during pregnancy. N=44

Reasons why dental care is not relevant	frequency	Percentage (%)
Cultural beliefs	4	9
Religion	3	7
Personal beliefs and attitude	37	84

Results showed that most of the respondents 37(84%) said they held personal attitudes and beliefs towards dental care while 3(7%) said religion was the reason.

Figure 6: Responses on attitudes towards ANC attendance

N=60

	Poor atitude	Good atitude
Frequency	42	18
Percentage	70	30

The majority of respondents 42(70%) said they were negative about ANC services, while 18(30%) said they were positive.

Table 5: Responses according to who influenced their bad attitude towards health facility-based dental care in pregnancy   **N=42**

Influence of bad attitude		
Husband	20	48
Parents	3	9
Complaints from Friends	10	24
Self	9	21

Results showed that most of the respondents 20 (48%) said their husbands influenced their bad attitude towards dental care during pregnancy, 10 (24%) attributed their bad attitudes towards peers, 9(21%) said they had a bad attitude and minority 3(9%) mentioned parents.

Figure 7: Responses according to influencer's attitudes towards dental health during pregnancy

N=60
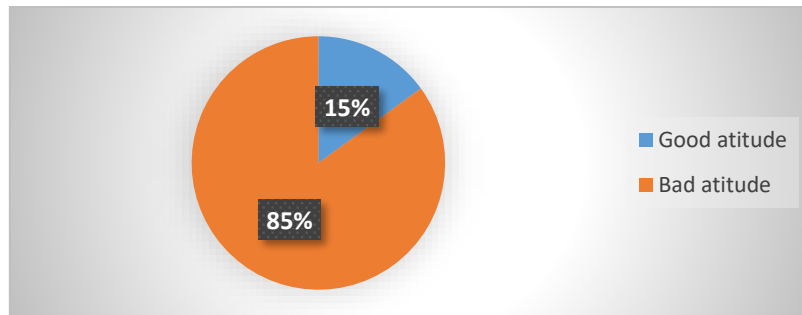
The majority of the respondents' influencers 51 (85%) had a negative/bad attitude towards dental health care during pregnancy, while a minority 9(15%) were positive towards dental health in pregnancy.

Practices of respondents towards dental health care during the gestation period.
Table 6: showing practices of respondents towards dental hygiene

N=60

Respondents practice towards utilization of ANC services according to the recommended times		
	Frequency	Percentage
No	51	85
Yes	9	15
Respondents practice consulting dentists for health services during pregnancy		
No	51	85
Yes	9	15
Respondent's practice towards eating sugary products during pregnancy		
No	36	60
Yes	24	40
Total	**60**	**100**

Results showed that most of the respondents 51 (85%) said they did not utilize ANC during pregnancy as recommended, while a minority 9(15%) said they did. Results showed that most of the respondents 51 (85%) said they did not consult dentists for health care during pregnancy as recommended, while a minority 9(15%) said they did. Results showed that most of the respondents 36 (60%) said they were eating sugary products during pregnancy contrary to recommended practices, while a minority 24(40%) said they did.

**Table 7: Responses according to lifestyles of respondents during pregnancy**

N=60

Drinking alcohol only		
	Frequency	Percentage
No	48	80
Yes	12	20

Cigarette smoking alone		
No	57	95
Yes	3	5
Both the above		
No	54	90
Yes	6	10
Total	**60**	**100**

Results showed that most of the respondents 48 (80%) said they did not consume alcohol alone, while a minority 12 (20%) said they consumed alcohol alone. Results showed that most of the respondents 57 (95%) said they did not smoke cigarettes alone, while a minority 3(5%) said they smoked cigarettes alone. Results showed that most of the respondents 54 (90%) said they did not smoke both cigarettes and alcohol, while the minority 6 (10%) said they did.

Figure 8: Responses according to how many times respondents brush their teeth

N=60
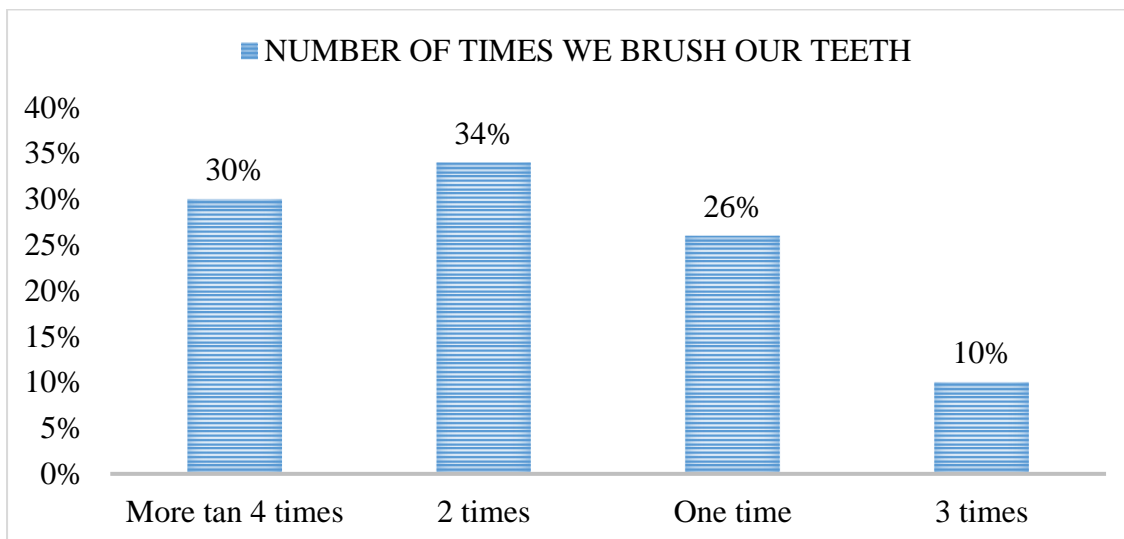
Results also showed that most of the respondents 20 (34%) said they brush their teeth 2 times a day, followed by 18 (30%) who said more than 4 times, while 16(26%) mentioned one time and a minority 6(10%) mentioned 3 times.

Table 8: Responses according to when they brush their teeth

N=60

The time when they brush their teeth		
	Frequency	Percentage
Before meals	6	10

After meals	10	18
In the morning	24	40
At night	20	32
Total	**60**	**100**

Results showed that most of the respondents 24 (40%) that they brushed their teeth in the morning 20(32%) said at night, while 10 (18%) mentioned after meals and a minority 6(10%) mentioned before meals.

In conclusion, therefore, most respondents' Results showed that most the respondents 70% said they did not utilize ANC during pregnancy as recommended, most of them70% did not consult dentists for health care during pregnancy as recommended. A significant number of 60% were eating sugary products during pregnancy. A significant number38% were substance addicts. Only 10% knew when they brush their teeth and how many times in a day minority 6(10%) mentioned 3 times. More than 70% of the participants exhibited bad dental care practices during pregnancy.

Discussion

Demographic findings of the respondents

The study findings show that most respondents (60%) were female, and the majority (50%) were aged above 35 years. Results showed that the majority (40%) had attained primary education, while 30% had not been to school at all. Up to (40%) were married, while (10%) were widowed. Regarding the occupation, most of them (37%) were peasants, while (33%) were doing business and (30%) were civil servants. Regarding religion, more than (50%) were Christians.

Most respondents were active working age group and mature, hence most likely to seek dental health services during pregnancy according to various previous studies. On the contrary majority had attained low levels of education which is linked to poor utilization of dental health services during pregnancy. However, most of them were married which is linked to utilization of dental health care services during the gestation period. On the contrary majority were peasants which is linked to poor dental health care by many studies. However, more than three-quarters were Christians which is significantly linked to the utilization of health care services including dental care. Most findings in the demographics of respondents show that a significant number were likely to utilize dental health care services including regular checkups.

Knowledge of respondents towards dental health care during the gestation period.

The first objective was to assess the knowledge of respondents regarding dental health during pregnancy and the findings established that study findings show that although most respondents 68% said they were aware of the importance of dental health during pregnancy, while a minority 32% were not aware. The main source of information was mostly (40%) health workers through health education talks. The findings also state that only (10%) knew how many times and when to brush their teeth each day when they stated that one should brush after meals. The findings also revealed that only 7% knew the major causes of tooth decay. While (70%) said they did not know that dental health problems of the mother can affect the unborn baby. This showed deficiencies in knowledge of dental health care during pregnancy among the mothers and this can sometimes be attributed to inadequate health education during ANC as well as cultural and social beliefs and norms that people hold.

Attitudes of respondents towards dental health care during the gestation period.

The second objective was to determine the attitudes of mothers towards dental health during pregnancy and the study established that most respondents (77%) said dental care was not that relevant during the gestation period. The findings indicate that (84%) had personal beliefs and (9%) had cultural beliefs about pregnancy and dental care in pregnancy.

The study findings also revealed that (70%) of respondents had poor attitudes toward ANC while (30%) had a positive attitude. The influencers of the mothers' attitudes towards ANC were mainly their husbands (48%). The findings also revealed that the majority of the respondents' attitudes towards dental health care during gestation were negative (70%) were negative. These findings reveal that the attitudes of pregnant women toward dental health during pregnancy were not good as many of them didn't see it as important. Attitudes in most cases influence practices and as such may put these mothers' likelihood of developing dental problems during pregnancy. These attitudes can also be attributed to the lack of enough health education given during ANC which some women don't see as necessary. These findings are in line with other studies where Poor attitudes towards the importance of dental health care among pregnant mothers during the period of gestation were brought about by inadequate or misinformation by peers in communities Silk, (2017). Other studies have indicated that health workers do not provide adequate information to pregnant mothers at ANC units about the importance of dental health care among pregnant mothers during the period of gestation and this brings about a negative attitude among them. to identify the barriers experienced by these

healthcare professionals in addressing oral health promotion during pregnancy (George et al; 2016).

Practices of respondents towards dental health care during the gestation period.

The third objective was to assess the practices of pregnant women towards dental health during pregnancy and the study established that most respondents (85%) said they did not utilize ANC during pregnancy as recommended, most of them 85% did not consult dentists for health care during pregnancy as recommended. A significant number (40%) were eating sugary products during pregnancy and (20%) were substance addicts. Only (10%) knew when they brush their teeth and how many times in a day i.e. 3 times a day. The majority (40%) said they brush their teeth in the morning and only (18%) said they brushed after meals. This means that the majority of the participants exhibited bad dental care practices during pregnancy which could put their babies in danger. This could be attributed to a lack of or inadequate health education on the importance of dental hygiene during pregnancy. These findings agree with other studies where Katz et al., (2019) sought to elucidate factors influencing the utilization of dental health care services among pregnant mothers during the period of gestation among a sample of low-income South African adolescents receiving the vaccine in Soweto found that uptake of immunization was driven by cultural factors.(Baker et al, (2016), investigated the practice of parents in California on barriers to dental health care among pregnant mothers during the period of gestation, the study explored factors that are associated with understanding among parents. The study found that culture played a significant role in a positive attitude towards the utilization of dental health care services among pregnant mothers during the period of gestation perception.

Conclusion

The study thought to assess the knowledge, attitude, and practices of pregnant mothers towards dental care during gestation and the study concluded that there was a knowledge deficiency among study participants towards the importance of dental health care as some were not aware of the importance of dental health, some didn't know how many times to brush and when to brush and the majority were not aware of the effects of dental problems to the unborn child.

Findings also suggest that the attitude among the study participants towards the importance of dental health care was extremely poor as the majority believed that it was not relevant to ensure dental care during pregnancy and the main influencers were their husbands.

Findings reveal that the practices of more than half of the study participants towards the importance of dental health care were extremely poor a majority didn't consult dentists at all, some continued to drink and smoke while pregnant and some brushed their teeth once a day.

Recommendations:
To MOH
There is a need for increased community mobilization and sensitization through community leaders, VHTs, and the media to sensitize communities and special vulnerable groups on the need for dental health care.

To the facility
There is a need to carry out community outreaches and health camps by health facilities to offer free services and sensitize people about dental health.

Increased training of health workers towards the promotion of dental health care during the gestation period.

To the dentistry practice:
If no intervention is done we shall continue to see poor outcomes in the promotion of maternal and child health and survival initiatives.

List of Abbreviations

ANC: Antenatal care
H/C IV: Health Center four
UAHEB: Uganda Allied Health Examinations Board
UDHS: Uganda demographic health survey
WHO: World Health Organisation

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