

Factors Influencing the Choice of Dental Treatment among Pregnant Women Attending Private Dental Clinics in Gulu City, Gulu District

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Abstract

In Uganda, women continue to have the highest prevalence of oral illnesses (42.4%) compared to the general population, with periodontal disease affecting 67.0% of pregnant women and postpartum women (86.0%) having plaque deposits and also there is poor attendance of dental treatment (Muwazi, 2014). The general purpose of the study was to determine the factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district and the specific objectives were to assess the knowledge, socio-economic and cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district. A cross-sectional study design and a purposive sampling technique were used which employed both qualitative and quantitative method. A structured questionnaire was used for data collection from 40 pregnant women and the study was conducted at Family dental care clinics and Charity Medical Centre & Maternity Home. Data was analyzed and presented in form of tables and pie-charts.

The findings revealed that there was poor dental clinic attendance among pregnant women and these were greatly influenced by knowledge factors which included 80% attending dental clinic only when there was pain. Furthermore, socio-economic factors like lack of money at 75%, fear 52.5% and religious beliefs 72.5%. And lastly, cultural-related factors which were birth deformities 32.5%, exposure of children to bewitchment 25%, husband influence 10%, and miscarriages 25% were also identified as barriers to antenatal dental care treatment. The study concluded that there was insufficient knowledge regarding oral health among pregnant women evidenced by low attendance, socio-economic and cultural related factors influenced their choice of dental treatment. The study recommended that; the MOH should increase collaboration efforts between dentists and obstetricians to ensure pregnant women receive optimal oral health, dental clinics should frequently schedule community educational outreaches, among others.

Introduction

This chapter will discuss the background of the study, statement of the problem, general objective, specific objectives, and research questions, significance of the study and scope of the study.

Background of the Study

When a woman is pregnant, one or more children are growing inside her womb or uterus. It brings about various changes in the oral cavity and the body at large that call for proper dental care, timely treatment of teeth and gums. The changes not only affect the expectant mother's health but also the babies. Some dental treatment choices which can be undertaken include scaling and polishing, tooth extractions, tooth restorations, orthodontic treatments, endodontic treatment and prosthetic treatments all of which can either be interventional or preventive during pregnancy [1].

The necessity for better oral health care for pregnant women has been highlighted in various declarations and recommendations issued internationally because hormonal changes during pregnancy mixed with poor dental hygiene tend to increase the incidence of oral diseases including gingivitis [2].

In low and middle income countries, the prevalence of oral diseases continue to increase, with tooth decay rapidly increasing among adults pregnant women inclusive when proper dental care is not attended sought [3].

A study carried out in India revealed that dental care attendance among pregnant and six-month post-partum women were 60% and 75% respectively. However, only about 15% of the post-partum women reported to have sought dental care within the 6 months prior to the study. Women who had just given birth had the worst self-perceived oral health (SPOH), which was statistically significant. Pregnant women and women who had recently given birth were next. Compared to both pregnant women and women who had given birth six months prior, a considerably larger percentage of postpartum women reported having poor oral and overall health. Higher percentage of women reporting good oral and general health had sought dental care compared with those who had not sought any dental care. In addition, women with lower levels of education, poor self-perceived oral health and post-partum women were found to be less likely to seek regular dental care [4].

Oral health, coupled with its rising awareness on the impact of limited dental care attendance on oral health, general health and well-being, has received increased attention over the past few years [5].

In Sub-Saharan Africa, a study carried out in Tanzania reported that a substantial proportion of pregnant women experienced oral health problems during pregnancy. The majority of them, however, believed that these issues were typical of pregnancy and did not require dental care [6]. The prevalence of oral disorders among women was highest in Uganda, where it was 42.4% compared to the general population, with periodontal diseases affecting 67.0% of pregnant women and plaque deposits affecting 86.0% of postpartum women [7].

A study carried out in Northern Uganda stated that there is still a continued burden of oral and general health among pregnant women due to poor antenatal care during pregnancy which is a great public health concern hindering the sustainable development goals framework in the region [8].

Despite the fact that dental care attendance during pregnancy has been recommended by guidelines and institutions, in Gulu city especially at Gulu regional referral hospital the demand for dental treatment is still low among pregnant women with most of them opting for tooth extractions only. Therefore, for pregnant women, having the correct knowledge to prevent and control oral diseases during pregnancy and early childhood is of great importance because it affects both the mother and the child. So, this research seeks to find out the factors influencing the choice of dental treatments among pregnant women attending private dental clinics within Gulu city in Gulu district.

Statement of the Problem: Oral health is an essential component of overall health and its importance is even more emphasized during pregnancy. However, dental problems are prevalent among pregnant women due to hormonal changes and dietary habits, leading to the need for dental treatment.

In Uganda there are challenges with regards to inappropriate oral care training and education provided to pregnant women during antenatal visits in private and government settings which in turn influence their need to choose dental treatment [9].

According to a study report, only 8% of pregnant women in Uganda received oral antenatal care during pregnancy. Regionally only 20% of pregnant women in South western, 3% of pregnant women in Eastern, 2% of pregnant women in Karamoja and Northern Uganda were more likely to receive dental oral care during pregnancy. It was reported that women in Uganda tend to seek oral health antenatal care very late when conditions become worse [10].

In Gulu city, low attendance of dental care and the continued lack of clear knowledge and understanding of the need for dental treatment during pregnancy poses a significant challenge to dental professionals who provide the appropriate dental care services to this population.

Just like observed above, it is evident that attendance and choice of dental treatment among pregnant women within Gulu city still remains low. The reasons for the above state of affairs are still not clearly

known therefore this study aims at determining the factors that influence the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, thereby providing findings to district health policy makers, private dental clinics and dental practitioner's association of Gulu to incorporate frequent dental guidance towards the availability and the safety of dental treatment during pregnancy.

General Objective: To determine the factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district Uganda.

Specific Objectives:

- i. To assess the knowledge of pregnant women regarding oral health during pregnancy while attending private dental clinics in Gulu City, Gulu district.
- ii. To identify socio-economic factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district.
- iii. To identify the cultural-related factors influencing choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district.

Research Questions:

- i. What level of knowledge regarding oral health during pregnancy do pregnant women attending private dental clinics within Gulu City have?
- ii. What are the socio-economic factors influencing the choice of dental treatment among pregnant women attending private dental clinics within Gulu city, Gulu district?
- iii. What are the cultural-related factors influencing choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district?

Significance of the Study

The results of the study will provide detailed information on the factors affecting influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city in Gulu district. The policy makers, government and private dental clinic owners will benefit from the study as it will help them in planning effectively and allocating efforts in the various dental care needs for pregnant women attending dental clinic.

The dentists will also benefit as this will help them to effectively carry out oral health educational campaign on promoting good oral health during pregnancy.

The pregnant women will gain as this will reveal their actual oral health treatment needs thus furthering proper oral behaviors such that they can be adequately motivated and encouraged to develop better oral health practices.

The study will benefit the student as it is one of the academic requirements for the award of Diploma in Public Health Dentistry by the Uganda Allied Health Examination Board (UAHEB).

It will provide literature to those who are interested in carrying out further research in the field of oral care among pregnant women.

Scope of the Study

Content Scope

This study assessed the knowledge of the pregnant women regarding oral health during pregnancy, it also determined the socio-economic factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu City and it also established the cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city in Gulu district.

Geographical scope: The study was carried out at Family dental care clinics in Bardege-Layibi division and Charity Medical Centre & Maternity Home in Pece-Laroo division in Gulu city, Gulu district located in the Northern part of Uganda. Gulu is a city with two divisions located in Northern Uganda with the GPS coordinates of 2° 46' 20.6544" N and 32° 17' 17.0628" E.

Time scope: Data collection was done for a period of one month from 15th December 2022 to 15th January 2023.

Literature Review

Introduction

This chapter reviews other previous researchers' works related to factors influencing the choice of dental treatment among pregnant women attending private dental clinics with area of the study and are arranged in chronological order of the specific objectives.

Assessment of the knowledge of pregnant women with regards to dental interventional and preventive treatments during pregnancy.

A study conducted in Brunei, Darussalam on the knowledge, attitude and practice among pregnant women showed that personal brushing of teeth at least twice daily where only 31.2% did, 40.9% flossed daily, scaling and polishing, having dental check-ups at least twice a year was found to be poor [11].

In Africa, a study carried out in Egypt showed that pregnant women had knowledge about causes of dental related problems such as; gum problems, bad dental hygiene, eating much sweets and pregnancy hormones which were 52.3% while 41.6% didn't know about causes of dental related problems. As regards symptoms of dental and gum diseases during pregnancy; pain was the most commonly mentioned symptom by pregnant women at 63% [12].

A study also carried out in Sub-Saharan Africa among the pregnant women attending antenatal care at South Omo Zone public hospitals in Ethiopia showed that the respondents had only 34.1% regarding knowledge about oral health during pregnancy [13].

However, large proportion of pregnant women report oral health problems involving hard and soft tissues during pregnancy. Majority of them believe that such problems are normal to occur in pregnancy and would disappear after birth. As a result of this, most pregnant women either do not seek professional dental preventive and interventional treatments, others are reluctant to undergo certain

dental procedures during pregnancy [14].

Similarly, a study carried out in Nigeria showed that there was a high number of people choosing tooth extractions in developing countries with reasons for tooth extraction and the number of teeth extracted in a population have been linked to the oral hygiene of which most pregnant women choose due to the acute pain and emergency situation due to caries and gum disease at 54.1% [15].

In East Africa, a cross-section study conducted in rural northern Uganda revealed that inadequate knowledge was a major bottleneck where majority of the pregnant women especially the adolescents may not be having adequate knowledge regarding general body and oral health services to be received during pregnancy including inability to make independent decision were major barrier to health care services among pregnant women in the region [16].

Socio-economic factors influencing the choice of dental treatment among pregnant women attending private dental clinics during pregnancy:

This will cover income levels, fear, Religious beliefs, Peer influence, Availability of alternative treatment options.

Income levels

In many developing countries, access to oral health services is very limited, while developed countries, access to oral healthcare by pregnant women is much better. Using information gathered from the 2002 National Dental Telephone Interview Survey (NDTIS 2002), patterns of access to dental care are documented in Australia. The survey showed that 57.6% of the pregnant women had made a dental visit in the last year. Pregnant women with high income were more likely to have visited a dentist in the previous year. About 53% of the pregnant women reported that they visit a dentist for check-ups rather than for dental diseases or dental pain. Therefore, pregnant women with high income were more likely to visit for check-ups and had dental treatments [17].

Fear

A study carried out in Tehran in Iran stated that over 50% of pregnant women showed that fear and other underlying physiological factors had an influence in the choice of dental treatment during pregnancy [18].

Religious beliefs

Furthermore, religious beliefs also play a key role in affecting a pregnant woman's choice of dental treatments. Religious belief for example in Islamic religion Muslim pregnant women who give religious reasons for fear of breaking their fasting sessions in holy months of Ramadan, influence their choice for a particular dental treatment [19].

Availability of alternative treatment options: A study carried out among pregnant women in Alexandria, Egypt with respondents having mild to moderate dental pain revealed that the choice of dental

treatment among pregnant women were also influenced by the availability of alternative dental treatment options treatments which were major considerations in situations where significantly better alternatives existed over 75% of the participants who had less invasive treatments showed better oral health impact profile [20].

Peer influence

A qualitative study done in Sindh, Pakistan showed that general antenatal dental treatment inclusive by pregnant women was also greatly influenced by the peers within their communities where majority of them would attend or not attend general antenatal care services basing on the information, they receive from their fellow pregnant women [21].

Cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city.

This will cover, safety issues of dental instruments, husband roles, exposure of children to bewitchment and traditional herbal remedies.

Dental instruments are unsafe

A study carried out in Australia among Afghan pregnant women revealed that they visited a local dental service by themselves for prevention of oral diseases during pregnancy and not modern Western dental clinics. The cultural belief was that the dental clinic machines were unsafe for their unborn children and this caused fear of dental clinic attendance and therefore was significant barrier affecting the choice of dental treatment during pregnancy [22].

Husband roles

A study carried out in Nigeria revealed that dental care attendance by pregnant women were in most cases affected by the cultural belief that men had to have a final say before their pregnant women attended any oral and general health care. This greatly affects the choice and utilization of dental treatments among pregnant women [23].

Exposure of children to bewitchment: In Africa, a study carried out in South Africa revealed that culture plays an important role in determining how a society's health practices are shaped and contribute to the way how people from different cultures manage their health, including health-seeking behaviours. Among pregnant women, deciding whether or not to choose certain dental treatments are heavily influenced by cultural beliefs during pregnancy such as fear of bewitchment thereby affecting attendance of antenatal dental services. In addition, pregnant women tend to use herbs to preserve and protect their unborn infants from harm. Pregnant women from traditionally various backgrounds without any prior experience with the western healthcare system might find it difficult to understand the reasons for dental Antenatal Natal Care (ANC) visits, preventive and interventional treatments, and use of technology to incorporate proper dental treatments. Cultural beliefs therefore have the potential to influence how pregnant women respond towards available dental antenatal care treatments. Cultural factors must be taken into consideration in the planning and delivery of dental services as this is an

important step in reducing maternal mortality and providing an effective dental treatment alternative to pregnant women [24].

Traditional Herbal Remedies

In the 21st century more than 50% the pregnant women still depend on the cultural beliefs to meet their dental health problems. This is usually attributed to the fact that traditional herbal remedies are easily available and relieve teeth related pain quickly, also cleaning materials like charcoal are cost effective and are quick alternatives to attending dental clinics for treatments and are mostly considered in many developing countries around the world [25].

Research Methodology

Introduction

This chapter includes the study design, study area, study population, sample size determination, sampling technique, data collection method, data collection tools, research procedure, data presentation and interpretations, ethical consideration, quality assurance, and study limitations.

Study Design

The researcher used a cross-sectional study design. Cross-sectional study design involved the collection of data at one point in time and is more appropriate for describing the status of phenomena among phenomena at a fixed point in time. The study employed both qualitative and quantitative methods. Qualitative method employed use of questionnaires with open-ended questions which allowed pregnant women to give the researcher wide range of data since they were given chance to express themselves. While quantitatively questionnaires with closed ended questions were used to collect detailed information from the respondents.

Study Area

The study was conducted at Family dental care clinics and Charity Medical Centre and Maternity Home which have private dental clinics in the divisions of Bardege-Layibi division and Pece-Laroo division respectively located in Gulu city northern Uganda with the GPS coordinates of 2° 46' 20.6544" N and 32° 17' 17.0628" E.

Study Population

The study targeted pregnant women attending private dental clinics within Gulu city at private dental clinics who had consented to participate in the study.

Sample Size Determination

Sample size was determined using Mugenda formula (1996) as shown. (Mugenda, 1999)

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

Whereby:

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

n=40 Therefore 40 participants were involved in the sample size.

Sampling Technique

Purposive sampling technique was used since it specified the required target population who were pregnant women attending private dental clinics in Gulu city.

Sampling Procedure

The researcher collected data for eight days and on each day five respondents were selected by numbering of five small pieces of paper labelled one to ten (1-5), folding them with blank pieces to sum up the number of pregnant women available. The respondents who picked the number and were pregnant and had consented were allowed to participate in the study.

Data Collection Method

Research questionnaires were used to collect data and it involved both open and close ended questions. These were then collected from the respondents by the researcher and research assistants.

Data Collection Tools

The researcher used questionnaires which were filled in consistence with the researcher's specific objectives.

Data Collection Procedure

The researcher presented to the administration of the various private dental clinics within Gulu city an introductory letter from International Paramedical Institute (IPI)-Maya to permit him collect the necessary data. A copy of the research proposal was also handed over to the administration of different private dental clinics.

The in-charge of the private dental clinics then allowed the researcher to collect the data according to the research objectives. The researcher then identified and trained some research assistants who helped in the research exercise.

Study Variables

Independent variables

Independent variables are the factors influencing the choice of dental treatment among pregnant women attending private dental clinics within Gulu city;

- 1) The knowledge of pregnant women regarding oral health during pregnancy while attending private dental clinics.
- 2) The socio-economic and cultural-related factors that influence the choice of dental treatment

among pregnant women attending private dental clinics.

Dependent variables

The dependent variables are the pregnant women attending private dental clinics within Gulu city at the time of the study.

Quality Control

The researcher pre-tested the research tool. Mistakes detected were corrected. Also research assistants were trained to acquaint themselves with it and helped in data collection.

Inclusion Criteria: All pregnant women in Gulu city regardless of the age and trimester who were in attendance of dental clinic during the time of the study.

Exclusion Criteria

Pregnant women who had not consented during the study, pregnant women who were unwilling to participate in the study and those women who were not pregnant.

Data Analysis and Presentation: This was done after data collection and categorization where the data were summarised into representative forms. The related responses to particular questions were classified into meaningful patterns and summaries.

Answered questionnaires were assigned a unique code to avoid mixing up of data. Collected data were fed into Microsoft excel software version for analysis. After the data analysis, information obtained were presented inform of tables, charts, graphs and frequency tables and narrations were given for each figure and table.

Answers from open-ended questions were summarized and themes were developed and used to enter data into excel sheet to develop frequencies and percentages.

Ethical Considerations

In order to protect the respondents' confidentiality, privacy, and anonymity, ethical problems were taken into account when performing the study. They were proceeded as follows:

- a) Permissions were sought from the administration of private dental clinics within Gulu city.
- b) An introductory letter was requested and obtained from the Principal of (IPI) to conduct the study.
- c) Verbal or written consent was sought from the respondents after an explanation of the purpose of the study.
- d) Also, before the respondents participated in answering the questionnaires, the researcher assured them that the information collected were going to be kept confidential and that it was to be used for academic purposes only.

Study Limitations

- a) Women who were not pregnant.
- b) Uncooperative respondents.

- c) Time limitation as the study was cut short since it was time bound.
- d) Unfavourable weather conditions.

Dissemination of Findings

Three copies of the research findings were made and given to the various private dental clinics, International Paramedical Institute (IPI)-Maya and Uganda Allied Health Examinations Board (UAHEB).

Data Analysis and Presentation

Introduction

This chapter is concerned with presentation of the results according to the research findings. The results are presented in tables, pie charts, bar graphs and narrations. 40 respondents (n=40) were involved in the study. Information was obtained as filled in the questionnaires and through interview by the researcher.

Demographic Factors

Demographic characteristics	Frequency(n)	Percentage (%)
Trimester (1 st)	3	7.5
Trimester (2 nd)	14	35
Trimester (3 rd)	23	57.5
Total	40	100
Occupation, Doctor	1	2.5
Occupation, Secretary	2	5
Occupation, Market Vendor	1	2.5
Occupation, Peasant	34	85
Others (Mobile money agent, house wife, Artist)	2	5
Total	40	100
Education level, Degree	3	7.5
Higher Diploma	1	2.5
Diploma	9	22.5
Certificate	26	65
None of the above	1	2.5
Total	40	100

Table 1: Showing demographic characteristics according to the research findings; n=40.

From table above, the third trimester had the highest number of respondents 23 (57.5%) with the lowest number of respondents in the first trimester 3 (7.5%). Furthermore, the highest number of pregnant women 34 (85%) belonged to peasantry 1 (2.5%) and a doctor 1 (2.5%). Majority of the respondents 26 (65%) of the respondents had Certificate as their highest education level, while only 1 (2%) of the respondents had a Higher Diploma. Only 1 (2.5%) of the respondents had neither a

Certificate, Diploma, Higher Diploma, nor Degree as their level of education.

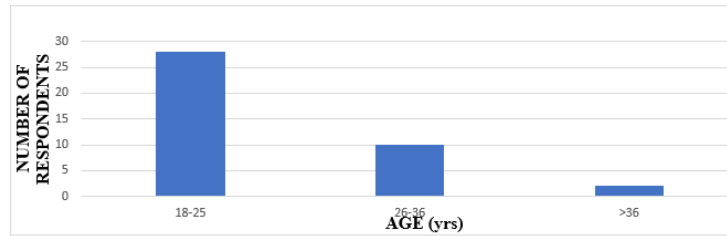


Figure 1: Showing the ages of the respondents. n=40. Primary Source 2023.

As indicated in the bar graph of figure 1 above, out of 40 respondents it was found that majority 28 (70%) of the respondents were aged 18-25 years while only 2 (5%) of the respondents were aged above 36 years.

Assessment of pregnant women’s knowledge regarding oral health during pregnancy.

Variable	Category	Frequency(n)	Percentage (%)
Brushing before and after meals	Yes	14	35
	No	26	65
Toothpaste containing fluoride	Yes	7	17.5
	No	21	52.5
	I don't know	12	30
Daily usage of Dental floss.	Yes	12	30
	No	28	70
Visits to dental clinic since start of pregnancy.	Once	8	20
	More than once	10	25
	Never	22	55
Knowing any dental problems that may affect an expectant mother.	Yes	16	40
	No	24	60
Dental treatment ever	Scaling & Polishing	1	2.5

received during pregnancy.	Tooth Extractions	22	55
	Tooth Restorations	1	2.5
	Braces	0	0
	Endodontics	8	20
	Prosthetics	1	2.5
	Others	7	17.5

Table 2: Showing respondents' knowledge regarding oral health during pregnancy according to the research findings. Primary Source 2023. n=40.

From the table 2 above, greatest percentage of the respondents, 65% expressed not brushing before and after meals while only 35% did. Also 52.5% knew their toothpaste contained no fluoride while only 17.5% knew it contained. Highest percentage of the respondents 70% did not use dental floss daily while only 30% used. 55% of the expectant women never visited the dental clinic since the start of pregnancy while 20% visited only once. Greatest percentage 60% also expressed that they did not know some dental problems that may affect an expectant mother while 40% knew of some.

Tooth extraction was the most preferred choice of dental treatment at 55% with braces at 0% not chosen.

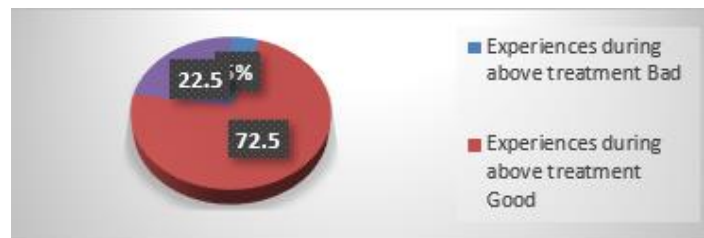


Figure 2: Showing respondents' experiences during dental treatment they had chosen. Primary Source 2023.

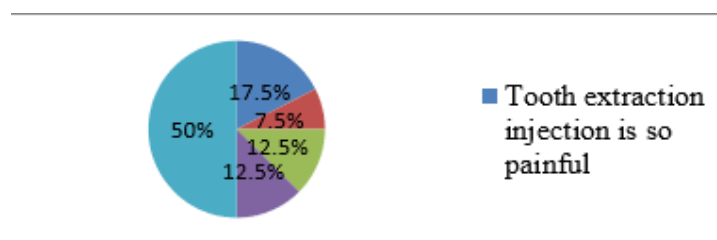


Figure 3: Showing respondents' reasons for particular dental treatment options. n=40

From the pie-chart figure above, highest reason for choosing a particular treatment option was tooth pain at 50%, with a significant percentage of 17.5% having painful tooth extraction injection as their reason, 12.5% gave reasons for fallen off teeth and dentist's giving of regular dental check-up for their

reasons and only 7.5% never wanted to extract their teeth.

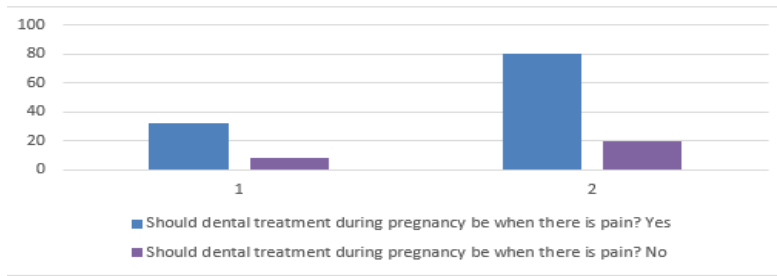


Figure 4: Showing respondents' response as to attending to dental treatment when there was pain.

Greatest percentage 80% of the expectant women knew that dental treatment during pregnancy should be when there was pain while 20% knew it was necessary even win absence of pain.

Socio-economic factors influencing the choice of dental treatment among pregnant attending private dental clinics in Gulu city in Gulu district during pregnancy.

Variable	Category	Frequency n (=40)	Percentage (%)
Does lack of money affect choice for a particular dental treatment?	Yes	30	75
	No	10	25
Do you fear getting dental procedures during pregnancy while at the dental clinic?	Yes	21	52.5
	No	19	47.5
Do you consider religious beliefs before getting a dental related treatment?	Yes	29	72.5
	No	11	27.5
Does availability of various dental procedures affect your choice of undertaking them?	Yes	21	52.5
	No	19	47.5

Table 3: Showing the socio-economic factors influencing choice of dental treatment among pregnant women according to the research findings.

According to the research findings in the table 3 above, greatest number 30 (75%) of the pregnant women were affected by lack of money compared to the lowest number 10 (25%) of the pregnant

women who were not affected by lack of money out of the total of 40 respondents. Also highest percentage 52.5% of the pregnant women attributed fear of dental procedures as an influencing factor while 47.5% did not have fear.

Highest number 29 (72.5%) of the respondents considered their religious beliefs first before getting dental treatment compared to lowest number 11 (27.5%) of the respondents who did not. Also the highest number of the respondents 21 (52.5%) expressed availability of various dental treatment as an influential factor whereas the least 19 (47.5%) of the respondents were not bothered by availability of various dental treatment options.

Cultural-related factors influencing the choice of dental treatment among pregnant attending private dental clinics in Gulu city in Gulu district during pregnancy.

Variable	Category	Frequency(n)	Percentage (%)
What cultural beliefs that you have regarding dental treatment during pregnancy?	Dental instruments are unsafe for unborn children.	1	2.5
	My husband does not allow.	4	10
	None.	2	10
	Miscarriages.	10	25
	Exposes children to bewitchment.	10	25
	Birth deformities.	13	32.5
Usage of traditional herbal remedies to relieve dental pain and diseases.	Yes	25	62.5
	No	15	37.5

Table 4: Showing the cultural-related factors influencing choice of dental treatment among pregnant women according to the research findings. n=40

From the above table 4, the cultural-related belief with the greater percentage of 32.5% was birth deformities, both miscarriages and exposure of children to bewitchment were at 25% each while the lowest 2.5% believed that dental instruments were unsafe for their unborn children.

Highest percentage (25) 62.5% of the respondents used traditional herbal remedies and lowest percentage (15) 37.5% of the respondents did not use them to relieve teeth related pain together with treating dental related diseases during pregnancy.

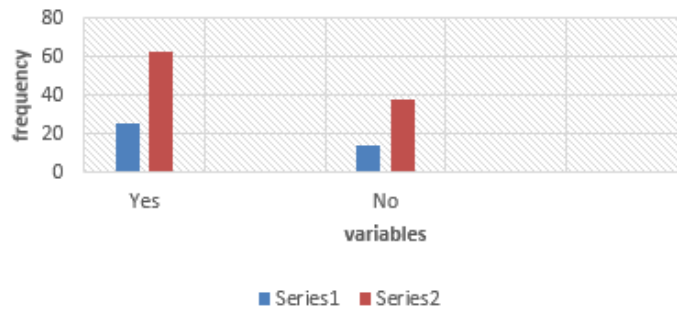


Figure 5: Showing effectiveness of traditional herbal remedies in managing dental related pain and diseases.

Also greatest number (26) 62.5% of the respondents said the traditional herbal remedies were effective in management of dental related problems whereas lower percentage of (14) 37.5% of the respondents said they were ineffective.

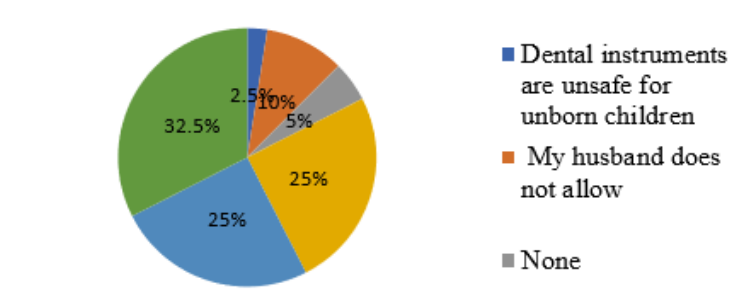


Figure 6: Showing respondents' cultural beliefs during pregnancy with regards to dental treatment.
Primary Source 2023 n=40

From the above pie-chart figure 4, the greatest portion of the expectant women at 32.5% believed dental treatments during pregnancy leads to birth deformities while the least portion at 2.5% also believed dental instruments were unsafe for their unborn children.

Result Discussions, Conclusion and Recommendations

Introduction

This chapter presents the discussion of results, conclusions and recommendations of the findings of this study about “Factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district” in relation to the specific objectives for the study.

Discussions

The discussion of the results is about the interpretation of the findings of this study about factors influencing the choice of dental treatment among pregnant women attending private dental clinics in

Gulu city in context to the literature review and provisions of the benefits and consequences of the findings.

Knowledge factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city.

The objective of this study was to determine the factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city, Gulu district in Uganda. Data analysis and presentation revealed the following major findings under this specific objective.

The study had majority 28 (70%) of the respondents aged 18-25 years while only 2 (5%) of the respondents were aged above 36 years.

The study revealed that majority of the respondents, (26) 65% expressed not brushing before and after meals while only (14) 35% of the respondents brushed. Similarly, highest number of respondents (28) 70% did not use dental floss daily while only (12) 30% used. These findings indicate that respondents aged (18-25) years do not practice good oral hygiene habits. This is probably because most of them are busy worrying about the pregnancy other than also their oral health. This study agrees with findings of a similar study conducted in Brunei, Darussalam on the knowledge, attitude and practice among pregnant women which were found to be associatively poor [11]. This implies that there is lack of awareness and knowledge among young adults regarding the importance of maintaining good oral hygiene. The low number of respondents above 36 years could be due to them already being aware of good oral hygiene practices.

This study also revealed that majority (32) 80% of the expectant women knew that dental during pregnancy should be when there was pain while minority (8) 20% of the pregnant women knew there should not be pain for them to seek dental care. These findings indicate a low level of knowledge and awareness regarding oral health during pregnancy. This is probably due to the lack of education and information on the importance of maintaining good oral hygiene during pregnancy, as well as the potential risks of untreated dental issues. The low knowledge and awareness levels among the expectant women in this study are consistent with the results of a similar study conducted in Ethiopia, [26] which indicated that this was a commonly encountered issue. The implications of these findings are significant, as poor oral hygiene during pregnancy can have adverse effects on the health of the mother and the baby.

The study findings also revealed that majority of the women (22) 55% chose tooth extraction treatment over other available options. These findings indicate that most of the pregnant women knew tooth extractions as the only necessary treatment during pregnancy. This may be due to several reasons such as a preference for quick relief from dental pain, fear of pain during other procedures, lack of awareness of other treatments. The study's finding agrees with those of a study conducted in Nigeria, [15] which showed a correlation between tooth extraction and poor oral hygiene. The implications of choosing tooth extraction are significant as it may lead to irreversible damage and loss of natural teeth which could negatively impact a pregnant woman's oral health in the long run.

Socio-economic factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city.

Under this objective, factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city. Data analysis and interpretation revealed the following major findings.

This study revealed a higher number (30) 75% of the pregnant women were affected by lack of money compared to only (10) 25% of the respondents who were not affected. These findings indicate that there is a financial burden that dental care can pose for many expectant women. This may be probably because of their job demographics where majority are low income earners thereby unable to afford some dental treatments. This finding is agrees with those of a study conducted in Tehran, Iran that identified cost as a significant factor influencing access to dental care for pregnant women [18]. The implications of lack of money for dental care during pregnancy are significant as, untreated oral health issues during pregnancy can have adverse effects on the health of both the mother and the baby and complications such as preterm birth, low birth weight, preeclampsia.

The study also revealed that a significant percentage of pregnant women (21) 52.5% gave fear of dental procedures as a key factor towards choosing a dental treatment while (19) 47.5% of the respondents did not fear. These findings indicate that fear is a limiting factor when choosing a dental procedure. This is probably because of being afraid of pain, adverse effects on the baby success rate of the treatment. The findings align with those of a similar study conducted in Tehran, Iran which revealed that fear and other physiological conditions may contribute to pregnant women's reluctance in choosing and receiving dental treatments [18]. The implications for fear of dental treatments among pregnant women may negatively impact their dental health, leading to complications that could affect both the mother and the baby.

Furthermore, the findings revealed that majority of the pregnant women (29) 72.5% of the considered their religious beliefs first before getting dental treatment compared to only (11) 27.5% of the respondents who did not. These findings indicate that religion plays a significant role in shaping the values, attitudes, and behaviours of individuals including pregnant women. This is probably because they perceive it as a way of pleasing their gods and seeking protection for their unborn child. These findings agree with those of a similar study conducted in India which showed the influence of religious sacred days such as Ramadan among the Muslims and the related fear of breaking fasting among the pregnant women [19]. Consequential implications of delaying or avoiding dental treatment on religious basis can lead to complications such as tooth decay, gum disease and other oral health issues which can affect both mother and the baby.

The study further revealed that majority (21) 52.5% of the expectant women considered the availability of alternative treatment options treatment while (19) 47.5% of the pregnant women did not. These findings indicate that offering alternative dental treatment options for pregnant women during

pregnancy becomes a key determining factor in choosing dental treatment. This could be due to a pregnant woman's individual desire to get her optimal individual needs and preferences. This finding agrees with the findings of a similar study done in Alexandria, Egypt which also revealed that presence of alternative treatment options was also a major factor among pregnant women since more of them opted for less invasive procedures [15].

These findings also imply that dentists need to be aware of the importance of alternative treatment options with their benefits and risks so as to integrate complementary and alternative medicine into their treatment plans for pregnant women.

Cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city.

Under this objective of the study, to determine cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in Gulu city in Gulu district. Data analysis and interpretation revealed the following findings:

Greater number of cultural belief by the respondents (13) 32.5% was birth deformities, both miscarriages and exposure of children to bewitchment were at (10) 25% of the respondents each while the lowest was (1) 2.5% of the respondent believed that dental instruments were unsafe for their unborn children. These findings indicate that cultural beliefs have a strong influence on the perceptions and behaviour of pregnant women within the cultural context. This is probably because majority of the pregnant women are deeply rooted in cultural beliefs which have been passed down through generations. The findings agree with a similar study conducted in South Africa which revealed a belief of fear with regards bewitchment [24]. In the healthcare sector this implies that dentists need to be aware of socio-cultural beliefs and practices so as to provide effective and socio-culturally sensitive care.

The study also revealed that the highest number (25) 62.5% of the respondents used traditional herbal remedies and lowest (15) 37.5% did not use them to relieve teeth related pain together with treating dental related diseases during pregnancy. These findings indicate that majority of the pregnant women using traditional herbal remedies suggests that such practices are quite prevalent in the study area and a cultural inclination towards using natural remedies for dental issues during pregnancy. This is probably because of limited access to conventional treatments or concerns about the potential risks associated with certain medications during pregnancy therefore opting for traditional remedies as a perceived safer alternative. These findings agree with those of a similar study conducted in India, among expectant women where traditional herbal remedies were most.

Conclusion

The research aimed at identifying the factors that influence the choice of dental treatment among pregnant women attending private dental clinics in Gulu city. Based on the findings, it is clear that several factors affect the choice of dental treatment among pregnant women.

The first objective was to assess the knowledge of pregnant women regarding oral health during pregnancy which were found to be overall insufficient. The study therefore, concludes that there were a bigger percentage 80% of the pregnant women knew dental clinic visits should be only when there was pain, 70% of the pregnant women did not floss their teeth, 65% of them did not brush before or after meals, 60% did not know of any dental problems that would affect them during pregnancy, 55% of the pregnant women had never visited the dental clinic since the start of their pregnancy.

The second objective was to identify the socio-economic factors influencing the choice of dental treatment among pregnant women in the study area. Therefore, the study concludes that income levels where majority of the respondents 75% attributed to lack of money, 72.5% of the respondents were influenced by religious beliefs, 52.5% of the respondents had treatment alternatives as an influential factor.

The third objective was to identify the cultural-related factors influencing the choice of dental treatment among pregnant women attending private dental clinics in the study area. Cultural affairs were most sought after prior to seeking dental treatment. Traditional herbal remedies were commonly used to relieve teeth-related pain, and cultural beliefs, including birth deformities and fear of bewitchment, also influenced dental treatment choices.

Recommendations

The study identified several factors that influence the choice of dental treatment among pregnant women attending private dental clinics in Gulu city. Thus in order to suggest possible ways of improving oral health, dental treatment among pregnant women in the study area, the study makes recommendations to various categories as follows:

To the Ministry of Health (MOH)

A collaboration of efforts between dentists and obstetricians in terms of communication to ensure that pregnant women receive optimal oral health care during pregnancy so as to reduce complications that could negatively impact both maternal and foetal health.

A legislation that can subsidize some treatment costs so that even a low-income earner can afford at least a basic preventive dental treatment option during pregnancy since the study also established that majority of the private dental clinics are so expensive for an average Ugandan expectant woman.

Additionally, there is a need to improve access to dental treatment by government and also the private dental clinics so as to increase the likelihood of pregnant women attending appointments and receiving necessary dental treatment.

To the study Areas

Dental clinics should schedule community educational outreaches to respond to knowledge gaps.

There is need to address fear and anxiety that some pregnant women have during pregnancy such as relaxation techniques to alleviate these fears prior to dental treatment.

Dental clinics should provide alternative treatment options such as nonpharmacological pain management or behavioural therapies options to prevent poor oral hygiene among the pregnant women.

The study also recommends that dental and antenatal care providers should improve access to dental care for pregnant women so as to improve their oral health outcomes and attitude towards dental care during pregnancy.

To the Community

Dentists and other healthcare providers should work together with local religious and cultural leaders to understand their practices and beliefs so as to provide religiously sensitive and culturally considerate care to pregnant women.

To Future Researchers

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

References

1. Amel. (2021, 04 13). Therapeutic Dentistry. *Dental treatment during pregnancy*.
2. Harnagea H, Lamothe L, Couturier Y, Esfandiari S, Voyer R, et al. (2018) From theoretical concepts to policies and applied programs:the landscape of integration of oral health in primary care. *BMC Oral Health*. 18(23):1-12.
3. WHO. (2015). "Prevention is better than treatment". *World Health Organization*.
4. Baskaradoss JK, Geevarghese A. (2020) Utilization of dental services among low and middle income pregnant, post-partum and six-month post-partum women. *BMC Oral Health*. 20(1):120.
5. Winkelman J, Rossi JG, Schwendicke F, Dimova A, Atanasova E et al. (2022) Exploring variation of coverage and access to dental care for adults in 11 European countries: a vignette approach. *BMC Oral Health*. 22(1):65.
6. Mwangosi I, Kiango MM. (2012) Oral health experience during pregnancy and dental service utilization in Bariadi District, Tanzania. *Tanzania J Health Res*. 14(2):146-51.
7. Muwazi L, Rwenyonyi CM, Nkamba M, Kutesa M, Kagawa M. (2014) Periodontal conditions, low birth weight and preterm birth among postpartum mothers in two tertiary health facilities in Uganda. *BMC Oral Health*. 14:42.
8. Uldbjerg CS, Schramm S, Kaducu FO, Ovuga E, Sodemann. (2020) Perceived barriers to utilization of antenatal care services in northern Uganda: A qualitative study. *Sex Reprod Healthc*. 23:100464.
9. Mwesigwa CL, Okumu BA, Kirabo-Nagemi C, Ejuu E, Kruger E, et al. (2019) Mapping the geographic availability of public dental services in Uganda relative to ruralization and poverty of the population. *Journal of Global oral health*. 2(2):86-92.

10. Kawungezi PC, AkiiBua D, Aleni C, Chitayi M, Niwaha A, et al. (2015). Attendance and Utilization of Antenatal Care (ANC) Services: Multi-Center Study in Upcountry Areas of Uganda. *Open J Prev Med.* 5(3):132-142.
11. Bamanika S, Kee LK. (2013) Knowledge, Attitude and Practice of Oral and Dental Healthcare in Pregnant Women. *Oman Med J.* 28(4): 288–291.
12. Khalaf S A, Osman SR, M. Abbas A, Abdul-Aziz M. Ismail T. (2018) Knowledge, attitude and practice of oral healthcare among pregnant. *International Journal of Community Medicine and Public Health.*
13. Wassihun B, Ayinalem A, Beyene K. (2022) Knowledge of oral health during pregnancy and associated factors among pregnant mothers attending antenatal care at South Omo Zone public hospitals, Southern Ethiopia. *PLoS One.* 17(8):0273795.
14. Leelavathi L, Merlin TH, Ramani V, Suja RA, R Chandran C. (2018) Knowledge, attitude, and practices related to the oral health among the pregnant women attending a government hospital, Chennai. *IJCD.* 6(1):16-20.
15. Abdurrazaq AA, Ibikunle AA, Braimah RO, Sulaiman OA, Gbotolorun OM. (2017) Tooth extraction: Pattern and etiology from extreme Northwestern Nigeria. *Eur J Dent.* 11(3):335-39.
16. <https://doi.org/10.1186/s12884-019-2674-z>
17. Suhair SR, Alsadi AG, Taani DS. (2014) Factors influencing dental care access in Jordanian adults. *BMC Oral Health.* 14:127.
18. Bahramian H, Mohebbi S, Khami MR, Quinonez RB. (2018) Qualitative exploration of barriers and facilitators of dental service utilization of pregnant women: A triangulation approach. *BMC pregnancy Childbirth.* 18(1):153.
19. Shaeesta KB, Prabhuji ML, Shruthi JR. (2015) Ramadan fasting and dental treatment considerations: a review. *Gen Dent.* 63(4):61-6.
20. Adham MM, EL Kashlan MK, Abdulaziz WE, Rashad AS. (2021) Comparison of two minimally invasive restorative techniques in improving the oral health related quality of life of pregnant women: a six months randomized controlled trial. *BMC Oral Health.* 21(1):221.
21. Qureshi RN, Sheik S, Khowaja AR, Hoodbhoy Z, Zaidi S et al. (2016) Health care seeking behaviours in pregnancy in rural Sindh, Pakistan: a qualitative study. *Reprod Health.* 13(1):34.
22. Riggs E, Yelland J, Shankumar R, Kilpatrick N. (2016) We are all scared for the baby': promoting access to dental services for refugee background women during pregnancy. *BMC Pregnancy ChildBirth.* 16: 12.
23. Azuh D, Famoyi O, Ajayi L. (2015) Socio-Cultural Factors of Gender Roles in Women's Healthcare Utilization in Southwest Nigeria. *Open Journal of Social Sciences.*
24. **Drigo** L, Makhado L, Lebesse RT, Chueng MJ. (2021) Influence of Cultural and Religious Practices on the Management of Pregnancy at Mbombela Municipality, South Africa: An Explorative Study. *Open Nursing Journal.* 15:130-35.
25. Kochhar S, Singh K, Anandani C, Pani P, Preet R, et al. (2014) Occurrence of oral health beliefs and misconceptions among Indian population. *JDHODT.* 1(5).

26. Wassihun B, Ayinalem A, Beyene K. (2022) Knowledge of oral health during pregnancy and associated factors among pregnant mothers attending antenatal care at South Omo Zone public hospitals, Southern Ethiopia, 2021. *PLOS One*. 17(8):0273795.
27. Mugenda OM, Mugenda AG. (1999) *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.