Oral health Knowledge and behavior among pregnant women in Kyela District, Mbeya, Tanzania

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Abstract

Aim: The present study was carried out to assess the level of oral health knowledge, behavior, experience and sources of oral health knowledge among pregnant women attending Kyela district hospital. **Study participants and Methods:** This was a hospital based Cross-sectional study among 380 pregnant women attending the Antenatal and child health clinics between August-September, 2006. Close ended structured questionnaire was used. The questionnaire gathered information on demographic variables, oral health knowledge, behavior, experiences, and sources of Oral Health Knowledge. The data was analyzed and processed by using SPSS program version 11.5. Frequency distribution and cross-tabulation were done. *Chi square* was used to test statistical significance with p-value set at 0.05. **Results:** Most (72.9%) of the pregnant women belonged to the age group 15-25 years. Only 16% of the pregnant women received oral health education, 40.9% of them knew the importance of dental checkup for their young children. In addition, only 3.7% of the women reported to have visited a dentist during pregnancy. Health facilities were the major sources of oral health education and that 97% of the women were brushing their teeth, and 14% experienced bleeding gums on brushing while 52% of the women knew that increased frequency of tooth brushing would reduce gum diseases. **Conclusion:** Most of the participants in this study had inadequate oral health knowledge although majority of them were brushing their teeth daily. Likewise, most of the participants had not received oral health education, and only few of them reported to have dental visits.

Key words: Oral health, knowledge, behaviour, pregnancy

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Introduction:

Hormonal changes during pregnancy particularly of Estrogen have been suggested to predispose women to gingivitis, affecting 25-100% of pregnant women. (1) The gums become red, puffy, and tender and they tend to bleed easily on brushing. These changes make it easier for plaque to develop in the teeth, which as a result will further enhance gingival inflammation. (2, 3) Furthermore, advanced periodontal infection in pregnant women may pose a threat to placenta and uterus and may increase the likelihood of preterm delivery and low birth weight babies. It has been estimated that periodontal diseases might cause more than 18% of all preterm births and low birth weight infants. (4, 5,6) Consequently, it is obvious that oral health and dental care of women during pregnancy are important for both the mother and the baby. Therefore, it has been recommended that all women should have a dental examination and appropriate dental hygiene care at least once during their pregnancy. In addition, it is important that, during pregnancy oral health knowledge on preventive care including information on oral hygiene, healthy nutrition as well as behavioral change towards good oral health practices is emphasized.

Lack of proper oral health knowledge may impair oral hygiene practices among the pregnant women and hence increases their risk to periodontal diseases. Goepel et al (7) showed that, 70.9% of pregnant women were not instructed regarding oral hygiene in the respective period. Similar findings were reported by else where (8). Likewise, 67.9% of these pregnant women had no knowledge on the importance of fluoride to their teeth. In addition, Al Awaeli et al (9), in his study reported that, 56% of the pregnant women were not aware that frequency of tooth brushing should be increased during pregnancy, although 88% of them knew that bleeding gums indicated the presence of periodontal diseases. Sarlat et al [(11)] revealed that the level of education of an individual has a

relationship with oral health knowledge one has, and that the plaque index decreased as the level of education increased. Similar findings were also reported by Radnai et al (12) who showed that the periodontal state of women with higher education was much better than that of the less educated.

Adequate knowledge on oral health may contribute to performance of favorable oral health behaviors, such as proper oral hygiene practices and dental visits. In his study, Honkala et al (8) showed that, 94% of the participants were brushing their teeth, whereas Goepel et al [8] showed that, only 45% of the pregnant women were brushing. Dental visits for checkup ensure early detection, and hence early treatment and or prevention of the disease. They also act as a good source of oral health information. But very few women would go to the dental clinic for check up during pregnancy. Honkala et al (8) showed that half of the women had visited a dentist during pregnancy, mostly for dental pain. Also Mangskau et al (12) showed that only 43.2% of the women had visited the dentist during pregnancy and those who did not visit thought that they did not have any problem.

The health sector is a major source of health information including Oral health education. Other sources include schools, and the media such as news papers, radio and television. Orenuga et al (13) showed that, 36.7% of the mothers had received information on oral health care from a dentist.

As regards perceptions, Murtomaa et al (14) showed that, 47% of the women were of the opinion that pregnancy as such is detrimental to their dental health. Whereas Al Awaeli et al (9) showed that, only 5.1% of pregnant women believed there might be a relationship between gum diseases and premature labor.

Pregnancy is associated with an increase in a risk of many different oral health problems, especially gingival inflammation. Many people especially in rural areas in Tanzania, including pregnant women have inadequate oral health knowledge and therefore unfavorable behavior and subsequent poor oral health. Therefore, there is a need for accurate oral health knowledge on prevention of oral diseases to be imparted to the women. Although different studies have been done in this field, none could be retrieved for Kyela district. The study will help to assess the oral health knowledge, behavior, experience and source of Oral health knowledge among pregnant women and the information will be used for planning of the control measures for oral diseases.

The aim of this study therefore was to assess the oral health knowledge, behavior, experience and source of Oral health knowledge among the pregnant women attending the Kyela district hospital.

Study population and Methods

This was a hospital based Cross-sectional study among pregnant women attending the Kyela district hospital Antenatal and child health clinics between August and September, 2006. Permission to conduct the study was sought from MUCHS and Kyela District Hospital. The respective authorities in the hospital were informed briefly about the study objectives.

The Nurse Officer in charge of the clinic asked the pregnant women to assemble. The objectives of the study were explained to the participants, and likewise clarification was given to all questions asked by the participants. Then all the pregnant women were requested to participate in the study. Only those willing to participate were involved in the study. A close- ended structured questionnaire in Kiswahili was used. The data collected included information on demographic variables, oral health knowledge, experiences, source of Oral Health Knowledge and oral health behavior. One author (MRO) interviewed the participants. All the information obtained from the participants was kept with confidentiality.

The data was analyzed and processed by using SPSS program version 11.5. Frequency distributions and cross-tabulations were done. *Chi square* was used to test statistical significance with p-value set at 0.05

Results:

Majority (38.3%) of the participants were in the age group of 21-25 while the smaller group was of 31-35 which was about 4.5% (Table 1). Eighty three percent of the women had primary school education and only 1% of the participants had no formal education. Almost fifty one percent of pregnant women were having their first pregnancy. Overall, only 16% of pregnant women had ever received oral health education. Among the women who were in the second and third pregnancy, 20% of them received health education while only 12% of those having their first pregnancy received health education. This

difference was statistically significant ($p < 0.05$).The results indicated that oral health education is not provided in a continuous basis. Most of the women (96.6 %) were brushing their teeth, and among these women, only 27% were brushing twice a day.

Majority (91%) of the women knew that Fluoride use would strengthen their teeth and protect them against decay (Table 2). In addition, 52% of the women knew that increased frequency of tooth brushing per day would reduce periodontal diseases and 53.3% knew that bleeding on brushing is a sign of periodontal diseases. Forty two percent of the pregnant women knew that pregnancy is associated with an increase in oral diseases. In addition, only 17.1% of them knew that periodontal diseases may be associated with delivery of a low birth weight babies. Sixteen percent of the pregnant women reported to have received Oral health education. The sources of Oral health education included; hospital (85.2%), school (3.11%), and friends (1.65%). Although only 3.7% of the women reported to have visited a dental clinic during pregnancy, 40.9% of them knew the importance of sending their young children to the dental clinic for the checkup. Fourteen point four percent of pregnant women reported to have experienced bleeding gums when brushing their teeth.

Table 1: Distribution of the study population by age group

Age group	Frequency	Percentage
15-20	133	34.9
21-25	146	38.3
26-30	85	22.3
31-35	17	4.50
Total	381	100

Table 3 shows significantly more women (72%) of those who had received oral health education knew that increased frequency of tooth brushing would reduce periodontal diseases, as compared to only 48% of those who had not received oral health education ($p < 0.05$).

Fifty seven percent of the pregnant women who had received oral health education knew the importance of dental checkup compared to only 37.8% of those who had not received oral health education who had that knowledge. The difference was statistically significant ($p < 0.05$).

Table 2: Distribution of the study population according to Oral health knowledge, Experience and behavior. (n = 381)

		Yes	
		n	%
Oral health Knowledge	Fluoride strengthens teeth.	346	90.81
	Pregnancy is associated with oral Diseases.	160	42
	Periodontal diseases are associated with preterm delivery.	49	12.9
	Periodontal diseases are associated with delivery of LBWB	65	17.1
	Frequent tooth brushing reduces gum diseases.	198	52
	Bleeding on brushing is a sign of gingivitis.	203	53.3
Oral health Behavior	Dental visit for checkup during pregnancy.	14	3.7
Oral health Experience	Bleeding of Gums on tooth brushing during pregnancy.	55	14.4

Discussion

The Tanzanian health delivery system puts pregnant women in the priority list of groups for receiving essential care. Health education is among the services provided to pregnant women through Antenatal and child health clinics. In line with the national policy, the study explored oral health knowledge in relation to oral health behavior among pregnant women attending reproductive and child health clinic at Kyela district hospital. Data obtained from the hospital may provide valuable information but are limited because they are gathered from only those who happened to come to the hospital. In this regard generalization to the parent population can not be made due to lack of representative-ness.

Therefore interpretation of these findings should be done with caution especially when one wishes to reflect the situation in the general community. The participants of this study group displayed low level of oral health related knowledge. Compared to the report by Murtomaa et al (14) in Finland, most of the women in Kyela had no

knowledge on the association between pregnancy and an increase in occurrence of oral diseases, especially periodontal diseases. Finland is a developed country whereby access to information is easy. In Tanzania, although health services in public institutions are provided free of charge to the pregnant women, still there are many stumbling blocks to receiving this care making it difficult for some women to receive the care. In these clinics, understandably more emphasis is directed to diseases that claim more lives of mothers and those of their children. Regular health education to pregnant mothers frequently would focus on Malaria, Anemia, diarrheas, respiratory tract infections, HIV/AIDS and related complexes; to mention only a few. Oral diseases causing less public outcry naturally receive less weight.

Table 3: Participants distribution by knowledge and whether one had received oral health education

Knowledge on oral health issues		Received Oral health education					
		Yes		No		Total	
		n	%	n	%	n	%
Brushing prevents gum disease	Yes	44	72.8	17	27.8	61	100
	No	154	48.2	166	51.8	320	100
Dental check-up is important	Yes	35	57.4	26	42.6	61	100
	No	121	37.8	199	62.2	320	100

Studies have shown that, the level of education an individual has a relationship with the oral health knowledge one had received. (10,11). Sarlat et al (10) showed that, the plaque index decreased as the level of education increased. On the same point Radnai et al (11) found that, the periodontal state of women with higher education was much better than that of the less educated patients and the manual workers. This showed that as the level of education increases an individual acquires more knowledge and skills on proper oral hygiene practices, and this helps to improve the oral hygiene of that individual. Contrary to that, most of the women in Kyela had primary school education and that the level of education in this group seemed to have no influence on the oral health knowledge of those individuals. Since almost all had the same level of education it explains why the effect of education on oral health could not be felt in this study group.

Most women in Kyela knew the importance of Fluoridated tooth paste. Contrary to that, Goepel et al (7) reported a much smaller proportion of women possessing this knowledge. Compared to the report by Al Awaeli et al., (9) majority of the women in Kyela had the knowledge on the importance of increased frequency of tooth brushing in order to reduce periodontal diseases. For the Jordanians who are supposedly brushing several times a day for various reasons and yet experienced periodontal diseases, this indicates inadequacy in plaque removal on their side despite their efforts of brushing, hence the effect of brushing to them is not felt by experiencing less periodontal diseases. Increased frequency of tooth brushing helps to prevent the accumulation and maturation of dental plaque which would later on lead to the inflammation of the gingivae, and calcify to form calculus

Few women knew that periodontal diseases during pregnancy would be associated with preterm delivery. However, Al Awaeli et al. (9) reported much fewer women who knew about this fact. Whereas Al Habashneh et al., (15) in USA, reported a much higher proportion than that was found in this study. USA is a developed country with well established health facilities, also there are several sources of health information including Radio, News papers and Televisions. In addition, most of the people in USA, including women are well educated. This enables them to have adequate knowledge, including oral health in relation to pregnancy.

Whereas the findings of this study and those from other developing countries (12) indicate that the major source of information is a health facility. To some individuals health facilities may not be easily accessible hence many women do not get adequate oral health information. During pregnancy infections including oral infections may lead to premature labor and delivery of LBWB. The plaque bacteria release secretions which resemble Oxytocin which then triggers the contraction of the uterus before the normal time. (1,2). Such information is rarely if at all provided in reproductive and child health

clinics, and probably a common man would never imagine that oral infections may be associated with low birth-weight babies. Primary schools also offer another avenue for health education; however issues related to pregnancy and oral health are out of scope of the primary school curriculum. Professionals and social groups from the Ministries of Health and Education have to set mechanisms that will ensure that these simple but very valuable facts reach the targeted people for the pursuit of health. While much of the health education is provided by non dental personnel, it is a moral obligation of the dentist to oversee that the required oral health messages reach the target audience. Dental personnel at different levels of health care delivery system should take an active role through the available health management teams and councils in planning and supervision of health education activities.

Although only a few women received oral health education, most of them were of the opinion that oral health education was important to them and to their expected babies. Similar views were also expressed elsewhere (9, 16). Time is due that life is viewed in terms of its quality and not just its longevity. In this regard oral health will receive its real value in contributing to the general wellbeing of individuals and hence be considered in the preventive package targeting mothers attending reproductive and child health clinics. Only one third of the women had the knowledge on the importance of dental visits for young children. Dental checkup for the young children enables early diagnosis of the common oral diseases as well as rare conditions such as congenital anomalies including cleft lip and or palate, and even tumors like Burkitt's lymphoma for possible early intervention.

Most of the women were brushing their teeth daily. This proportion was almost the same as what was reported by Honkala et al. (8) but was higher than that reported by Goepel et al, (7). Of those women who were brushing their teeth, only 20% were brushing twice per day. Honkala et al, (8) reported a much higher proportion of Kuwait women who brushed more than once a day. For the prevention of both periodontal diseases and dental caries it is emphasized that tooth brushing with fluoridated toothpaste is done twice a day. However, it appears common to most people that brushing is done once a day. With the growing trade liberalization and increased possibility of availability of sugary snacks and drinks our health education massages should stress on brushing twice a day with fluoridated tooth paste.

Very few women had visited the dental clinic, and among these, most of them did that because of tooth pain. This proportion was much less compared to the 49% reported by Al Habashneh et al (16), 43.3% by Monqskau et al (13) and 50% by Honkala et al (8). The health sector has to look into the factors that discourage clients from volunteering health check-ups.

Although only a few women knew that bleeding of gums is a sign of gum diseases, most of them had not experienced bleeding gums on brushing. But this was less compared to the report by Al Awaeli et al, (9) who in his study reported that, 88% of the women were aware that bleeding gums indicated the presence of periodontal diseases. Much is desired for the promotion of health through reproductive and child health services by using the integrated approach of the Ministry of health for a better future and better health.

Conclusion

Most of the participants in this study had inadequate oral health knowledge although majority of them were brushing their teeth daily. Only a few reported to experience bleeding on brushing. Most of the participants had not received oral health education, and only few of them reported to have dental visits.

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Looking into a blood sample through a microscope, a pathologist said, " That's great! The anti-bodies and the virus have come to an amicable settlement to co-exist peacefully in your body."

Your Physics exercise was bad John, so I told you to write out twenty times. You've only done it ten times." "Yes, teacher - my arithmetic is bad, too."