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Knowledge and Practices towards the Use of Treated Mosquito Net among Pregnant Mothers attending Antenatal Care at Katakwi Hospital, Katakwi District

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ABSTRACT

Malaria especially during pregnancy continues to be a leading cause of morbidity and mortality in many tropical regions of the world, despite global efforts to eradicate the disease while the disease is easily preventable, curable, and treatable. To explore the Knowledge and Practices of the treated mosquito net use among pregnant mothers attending Antenatal Care at Katakwi Hospital, Katakwi District. A health facility-based descriptive cross-sectional study was designed among 70 pregnant mothers from the ANC of Katakwi Hospital using a simple random sampling method from ANC. The data was collected by using a pretested interviewer semi-structured questionnaire. Out of 70 respondents, 52(74.3%) had good knowledge 18(25.7%) had poor knowledge about the use of mosquito nets. 55(77.1%) showed good practice whereas 16(22.9%) showed poor practices towards the use of mosquito nets. Several factors were found to be significantly associated with the knowledge score of treated mosquito net uses: respondent's age (X^2=10.075, p-value=0.029*), religious status (X^2=6.067, p-value=0.029*), respondent's age (X^2=8.754, p-value=0.033*), respondent's average monthly income (X^2=3.867, p-value=0.049. Conclusion: The present study concludes that the knowledge (74.3%) and practices (77.1%) of pregnant women concerning ITN use were good. The provision of mass education, and health education campaigns should still be highly emphasized especially regarding tucking the mosquito nets when it's late evening, creating awareness about retreating the mosquito nets, and the duration of the effectiveness of the mosquito net. This will improve the use of ITNs in pregnancy and help to win the war against malaria.

Keywords: Knowledge, practices, treated mosquito net, pregnant mothers, antenatal care

INTRODUCTION

Malaria especially during pregnancy continues to be a leading cause of morbidity and mortality in many tropical regions of the world, despite global efforts to eradicate the disease. While the disease is easily preventable, curable and treatable[1–3]. Different methods have been designed to control the scourge of malaria among which include the use of Insecticide-treated bed nets (Treated mosquito nets) [4]. However, the use of Treated mosquito nets in pregnancy has remained poor despite the increased health education and awareness campaigns mounted by government agencies.[5, 6]. Despite improved global coverage of Insecticide Treated Nets (Treated mosquito nets), their use has remained low at 40 % [7] and this has rendered vulnerable groups at risk of serious complications, especially pregnant mothers.[8]. Sub-Saharan Africa is worst affected with 80-90% of world malaria cases, 1924 million pregnant mothers were not using the mosquito net and 11 % died of it. [9]. Pregnant women, their unborn babies, and children under five years of age are most at risk of infection and adverse outcomes due to weakened and immature immunity and inadequate use of Treated mosquito nets [1]. The World Health Organization (WHO) recommends using insecticide-treated nets (Treated mosquito nets) in addition to preventive antimalarial medicines [7]. An Insecticide Treated Net (ITN) is a designed bed net with a drug to protect against mosquitos that cause diseases example malaria[2]. Insecticide-treated nets (Treated mosquito nets) are known to be highly effective in protecting and an important tool in the prevention of malaria[10, 11]. Treated mosquito nets can reduce malaria transmission by at least 60% especially when properly used [7]. Malaria prevention and its control still poses a challenge to public health systems at the global, national, subnational, and community scores, [4]. Its maternal and foetal effects such as maternal anaemia, frequent febrile episodes, abortions, stillbirths, pre-term deliveries, intra-uterine growth retardation, and low birth weights.[12, 13]. Uganda has the third-largest malaria burden in Africa attributed at 20%, and malaria accounts for 23% of deaths among pregnant mothers and children under five. [2].

Ugandan household ITN possession rate rose from 47% in 2009 to 60% in 2011 and 90% in 2014. [14]. However, In Uganda, ITN usage increased from 16% in 2006 to 47% in 2009, 60% in 2011, and 90% in 2014-15 before declining to 78% in 2016. Treated mosquito net usage stands at 23% in the Karamoja region where the study area is situated and this includes pregnant women[15]. Since no studies have been done on the Knowledge and Practices of treated mosquito net use among pregnant mothers attending Antenatal Care at Katakwi Hospital, Katakwi District concerning Katakwi hospital. This study therefore aimed to assess the Knowledge and Practices towards the use of treated mosquito nets among pregnant mothers attending Antenatal Care at Katakwi Hospital, Katakwi District.

METHODOLOGY

Study Design and Rationale

A health facility-based descriptive cross-sectional study design employing the quantitative method of data collection was used to assess knowledge and practices towards the use of treated mosquito nets among pregnant mothers attending antenatal care at Katakwi Hospital, Katakwi District. This design was used because both the independent variable and outcome variables were measured at the same time in point.

Study Setting and Rationale

This research study was conducted at the ANC of Katakwi Hospital, Katakwi District, Eastern region of Uganda. It's a government health facility serving an approximate population of more than 1000 monthly according to the HIMS. Katakwi General Hospital was established in 2004, as Katakwi Health Centre IV. In 2011, it was elevated to a full-fledged hospital, serving patients from Katakwi District and the neighboring districts of Amuria, Kapelebyong, Kumi, Nakapiripirit and Napak. The hospital is located in the central business district of the town of Katakwi, in Katakwi District, in the Teso sub-region, in Uganda's Eastern Region. This is approximately 52 kilometers (32 mi), North-East of Soroti Regional Referral Hospital, in the city of Soroti. This is about 118 kilometers (73 mi) southwest of Moroto Regional Referral Hospital, in the city of Moroto. The coordinates of Katakwi General Hospital are: 01°55'03.0"N, 33°57'44.0"E (Latitude:1.917511; Longitude:33.962214) It offers both inpatient and outpatient services. The ANC services run from Monday to Friday (8:00 am to 5: 00 pm) daily. The facility will be considered based on the increased malaria rate (30 %) among pregnant mothers Health Information Management System 2022 and it's a referral in point for the Eastern Teso subregion. [16].

Study Population and Rationale

This study targeted all pregnant mothers attending ANC at Katakwi Hospital during the study period. These participants were chosen because they are the most vulnerable to malaria according to their low immunity and the increased rate of diagnosis according to the health center record.

Sample Size Determination

The sample size was determined by Yamane's 1999 formula given by the expression below [17]

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

Where n=sample size
e=error margin
N= total population of the target population
N=50 since the hospital receives approximately 100 pregnant mothers in a week. To obtain the required number of participants, the researcher will collect the data for two (2) weeks
e= 5% score of precision at 95 % confidence interval =0.05

$$\boldsymbol{n} = \frac{100}{1 + 100(0.05)^2}$$

N=66.67

N=70

Therefore, a total of 70 participants were enrolled for this study

Sample Size Determination

The participants were sampled using a simple random sampling test where all participants had an equal chance of being selected. Here, a researcher wrote on a sheet of paper letter YES or NO, rolled it, and threw it to be picked at random by the participants. Whoever picked YES was included in the study and whoever picked NO was not included in the study, were thanked and allowed to go home. This method was used until the required sample size was reached.

Inclusion Criteria

The study included all pregnant mothers seeking antenatal care services at Katakwi hospital during the time of data collection and consented.

Exclusion Criteria

The study excluded pregnant mothers who were not feeling well or were mentally interrupted.

Dependent Variables

Knowledge and practice score on the use of treated mosquito net

Independent Variables

The sociodemographic factors such as; age, marital status, education score, occupation, religion, area of residence, number of children, and average monthly income.

Study Instruments

Data were collected using an interviewer-administered semi-structured questionnaire which was adapted from existing literature and was modified to suit the study objectives. The questionnaire was structured for the specific objectives into four sections: Section A: Sociodemographic data of the participants; Section B: knowledge of Treated mosquito nets; Section C: use of Treated mosquito nets; and Section D: practices regarding the use of Treated mosquito nets.

Pretesting of Instrument

Five pregnant mothers from a community similar to the study area were interviewed during pretesting. This helped in restructuring the questionnaire to elicit the right response for the specific objective.

Data Collection Procedure

After approval of the research proposal the researcher obtained an introductory letter from KIU-SON and then presented it to the in-charge of Katakwi Hospital and written permission to carry out the study at Katakwi Hospital was obtained from the in-charge of Katakwi Hospital. Participants who consented to participate in the study were interviewed using the interviewer-administered questionnaire which was written in English but was well translated by the researcher into local language to favor those who don't understand English. After completing, the participants were thanked for participating in the study and they were reassured that all the information provided would be kept confidential and safe. The process of data collection lasted for two weeks.

Data Management

Each questionnaire was checked immediately after the interview for completeness by the researcher. At the end of data collection, the questionnaires were entered into SPSS software version 22.0. Data cleaning was done and the computer was passworded to avoid the breach of confidentiality.

Data Analysis Plan

Data were analyzed using SPSS version 23.0. Data were presented using descriptive statistics such as frequency and percentage in tables, charts, and figures. The knowledge score was regarded as Good if the participants answered 50 % and above correctly and the practice score was regarded as Good if the participant scored 50 % and above correct answer. Any score of less than 50% was graded as Poor knowledge and practice respectively. Each correct answer was given a score of 1 point and 0 points for a wrong answer. Chi-square analysis was used to determine the statistical association between sociodemographic characteristics and knowledge score and practice score regarding the use of ITN. All statistics were performed at a 95% confidence score, and $p<0.05$ was considered significant. All the variables were presented as frequency and percentage in a table, figures, and charts.

Ethical Consideration

The study proposal was presented to the KIU-SONS Research and Ethics Committee and approval letters were obtained after the proposal defense which was then presented to the in-charge of Katakwi Hospital who granted the written Permission. The consent was obtained from the participants. The participant's name was not included anywhere in the questionnaire; they only used serial numbers to keep their identities. All the information that was obtained from the participants was kept confidential and privacy was also ensured during the data collection moment. The participant had the right to withdraw at any moment if she felt uncomfortable

RESULTS

Sociodemographic characteristics of the Respondents

Table 1: Showing sociodemographic characteristics of the respondents (N=70)

Variable	Description	Frequency (N)	Percentage (%)
Age group (years)	<20	27	38.6
	20-25	19	27.1
	26-34	12	17.1
	35 and above	12	17.1
	Total	**70**	**100.0**
Marital status	Divorced/separated	4	5.7
		17	24.3
	Cohabiting	49	70.0
	Married	**70**	**100.0**
	Total		
Education score	Non-formal	2	2.9
	Primary	44	62.9
	Secondary	7	10.0
	Tertiary	17	24.3
	Total	**70**	**100.0**
Occupation	Non-employed	63	90.0
	Employed	7	10.0
	Total	**70**	**100.0**
Religion	Catholic	46	65.7
	Protestant	18	25.7
	Born again	6	8.6
	Total	**70**	**100.0**
Area of residence	Urban	19	27.1
	Rural	51	72.9
	Total	70	100.0
Number of children	<4	57	81.4
	≥ 4	13	18.6
	Total	**70**	**100.0**
Income score	<100,000=	59	84.3
	≥ 100,000=	11	15.7
	Total	**70**	**100.0**

This study found that the majority 27(38.6 %) of the respondents are less than 20 years of age whereas 12 (17.1 %) are within the age group of 26-34 years and above respectively. Nearly half 49 (70.0%) of the participants were married meanwhile only 4(5.7%) were separated and others had a divorce after conceiving. The majority 44(62.9%) of the respondents had attained a primary score of education whereas only 2 (2.9%) had no formal education. More than half 63 (90.0%) of the respondents were not employed that's mainly depends on peasant farming as compared to only 7 (10.0%) were employed. About half 46(65.7%) of the respondents were catholic whereas only 6 (8.6%) were born again. On the other hand, the majority of the respondents 51(72.9%) were rural dwellers, and only 19(27.1%)

were residing in urban areas. With majority 57(81.4%) had less than 4 children which correspond to their age group whereas only 13 (18.6%) had 4 children and above. With very few respondents employed implies that the majority 59(84.3%) had an average monthly income of less than 100,000= whereas only 11 (15.7%) reported having an average monthly income of 100,000= and above.

Knowledge of The Respondents Towards the Use of Treated Mosquito Nets

Table 2: Showing the Knowledge of the respondents towards the use of treated mosquito nets (N=70)

Variables	Yes		No	
	N	%	N	%
Ever heard about Treated mosquito nets	60	85.7	10	14.3
Ever seen/handled Treated mosquito nets	63	90.0	7	10.0
Know the use of Treated mosquito nets	60	85.7	10	14.3
Know the duration of effectiveness of Treated mosquito nets	26	37.1	44	62.9
Know what is done before using Treated mosquito nets	57	81.4	13	18.6
Can ITN be retreated	24	34.3	46	65.7

According to Table 2. The study indicated that 60 (85.7%) had ever heard about Treated mosquito nets whereas only 10(14.3%) never heard about Treated mosquito nets. Nearly a hundred percent 63(90.0%) had ever seen/handled Treated mosquito nets whereas only 7(10.0%) had never seen/handled Treated mosquito nets. More than half 60(85.7%) knew the use of Treated mosquito nets and only 10(14.3%) didn't know the use of Treated mosquito nets. The majority of the respondents 44(62.9%) never knew the duration of the effectiveness of Treated mosquito nets whereas only 26(37.1%) knew the duration of the effectiveness of Treated mosquito nets. About 57 (81.4%) of the respondents knew what should be done before using Treated mosquito nets while 13(18.6%) didn't know what should be done before using Treated mosquito nets. About 46(65.7%) never knew that Treated mosquito nets could be retreated while only 24 (34.3%) knew that Treated mosquito nets could be retreated.

Respondents' Score of Knowledge Towards the Use of Mosquito Nets (N=70)

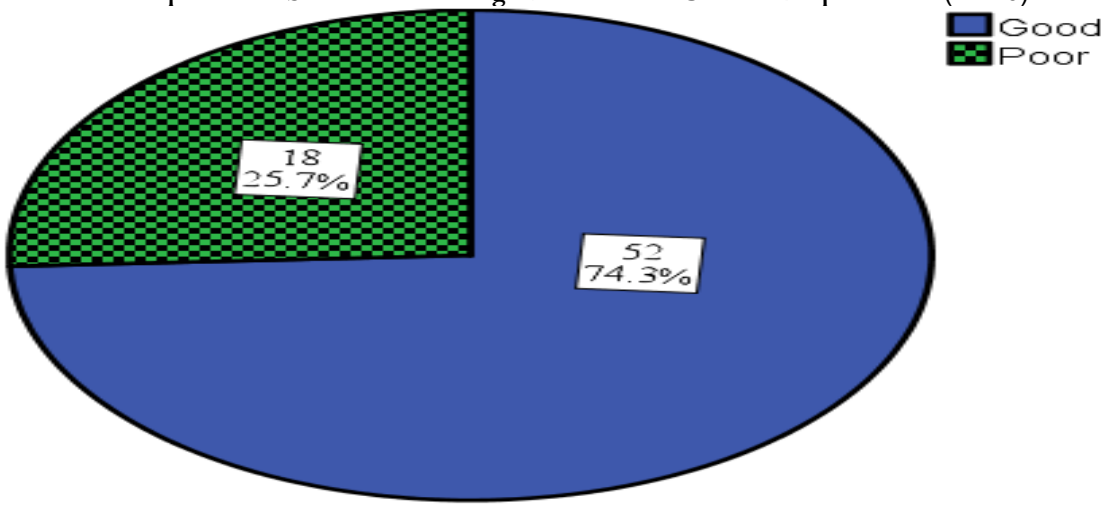

Figure 1: Showing the Participant's score of knowledge towards the use of mosquito nets

According to this figure, the study findings indicated that the majority of the respondents 52(74.3%) had good knowledge of the use of mosquito nets whereas 18(25.7%) had poor knowledge of the use of mosquito nets.

Practices of the Respondents Regarding the Use of Treated Mosquito Nets

Table 3: Showing the practices of the respondents regarding the use of treated mosquito nets (N=70)

Variables	Yes		No	
	N	%	N	%
Always sleep under a mosquito net	62	88.6	8	11.4
Always hang a new mosquito net before using it	60	85.7	10	14.3
Always tuck the mosquito net under the mattress before sleeping	62	88.6	8	11.4
Always fold the mosquito net every morning	63	90.0	7	10.0
Always tuck the mosquito net when it's late evening	27	38.6	43	61.4

According to Table 3. The findings indicated that 62 (88.6%) of the respondents reported to have always slept under a mosquito net whereas only 8(11.4%) do not sleep under a mosquito net. More than three-quarters 60(85.7%) always hung a new mosquito net before using it whereas only 10(14.3%) had never hung a new mosquito net before using it. More than half 62(88.6%) of the respondents always tuck the mosquito net under the mattress before sleeping and only 8(11.4%) don't tuck the mosquito net under the mattress before sleeping. The majority of the respondents 43(61.4%) of the respondents reported not always tucking the mosquito net when it's late evening whereas only 27(38.6%) always tucked the mosquito net when it's late evening.

Respondents' practices scores towards the use of mosquito nets (N=70)

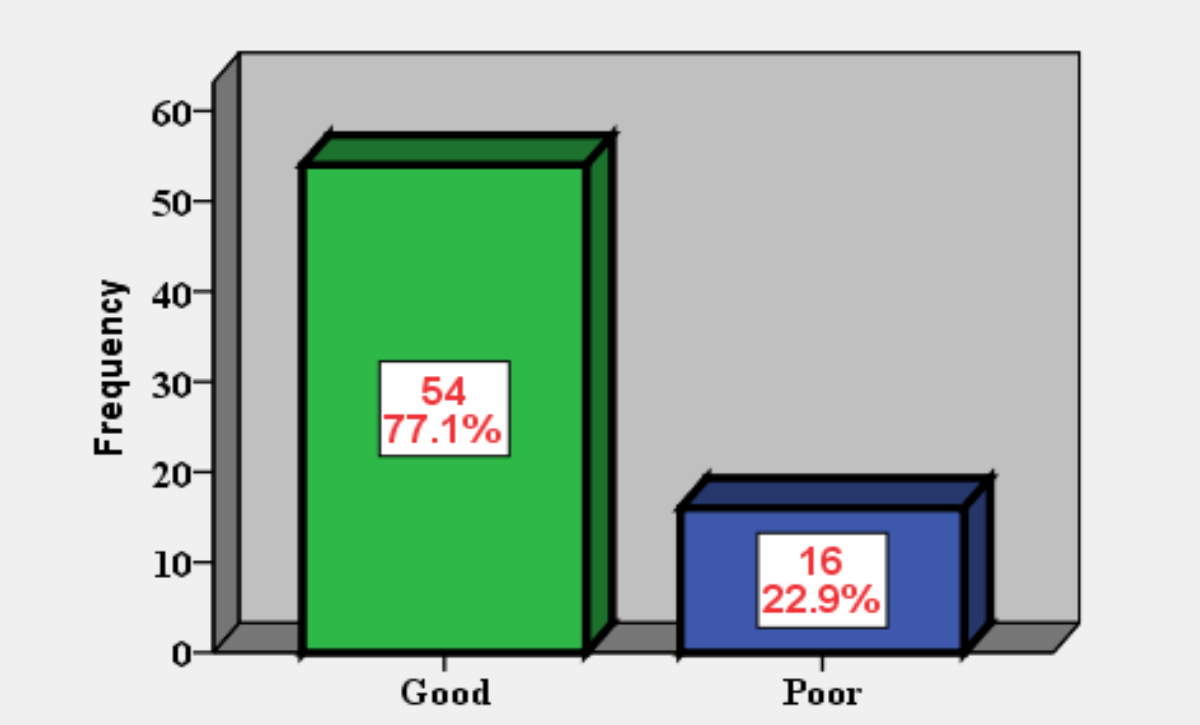

Figure 2: Respondents' score of practices towards the use of mosquito nets

Figure 2. The study findings indicated that the majority of the respondents 55(77.1%) showed good practices towards the use of mosquito nets whereas 16(22.9%) showed poor practices towards the use of mosquito nets.

Bivariate Analysis Showing the Association between the Respondent's Sociodemographic Characteristics and the Knowledge

Table 4: Showing bivariate analysis showing the association between the respondent's sociodemographic characteristics and the knowledge score

Variables	Knowledge score		df	X^2 (P-value)
	Good N (%)	Poor N (%)		
Age group (years)				
<20	22(81.5)	5(18.5)	3	10.075**(0.029*)**
20-25	17(89.5)	2(10.5)		
26-34	5(41.5)	7(58.3)		
≥35	8(66.7)	4(25.7)		
Marital status				
Married	35(71.4)	14(28.6)	2	0.790(0.871)
Divorced/separated	3(75.0)	1(25.0)		
Cohabiting	52(74.3)	18(25.7)		
Education score				
Non-formal	2(100.0)	0(0.0)	3	3.575(0.229)
Primary	31(70.5)	13(29.5)		
Secondary	7(100.0)	0(0.0)		
Tertiary	12(70.5)	5(29.4)		
Occupational status				
Employed	5(71.4)	2(28.6)	1	0.33(0.855)
Non-employed	47(74.6)	16(25.4)		
Religious status				
Catholic	30(65.2)	16(34.8)	2	6.067**(0.029*)**
Protestant	17(94.4)	1(5.6)		
Born again	5(83.3)	1(16.7)		
Area of residence				
Urban	15(78.9)	4(21.1)	1	0.297(0.586)
Rural	37(72.5)	14(27.5)		
Number of children				
<4	15(78.9)	4(21.1)	1	0.297(0.586)
≥4	37(72.5)	14(27.5)		
Respondent's average monthly income				
<100,000=	42(71.2)	17(28.8)	1	1.888(0.169)
≥100,000=	10(90.9)	1(9.1)		

***Significant variable, X2= Chi-square value, p-value**

Bivariate analysis was performed to generate a Chi-square. The confidence interval was set at 95% and a P-value of <0.05 was considered to be statistically significant as shown in Table 4 below.

Several factors were found to be significantly associated with the knowledge score of Treated mosquito net uses: respondent's age (X^2=10.075, p-value=**0.029***), and religious status (X^2=6.067, p-value=**0.029***). Other variables were not statistically significantly associated with significantly associated with the knowledge score of Treated mosquito net uses: respondent's age.

Bivariate Analysis Showing the Association between the Respondent's Sociodemographic Characteristics and the Practice Score

Table 5: Showing bivariate analysis showing the association between the respondent's sociodemographic characteristics and the practice score

Variables	Practice score		df	X^2 (P-value)
	Good N (%)	Poor N (%)		
Age group (years)				
<20	20(74.1)	7(25.9)	3	8.754(**0.033***)
20-25	18(94.7)	1(5.3)		
26-34	6(50.0)	6(50.0)		
≥35	10(83.3)	2(16.7)		
Marital status				
Married	38(77.6)	11(22.4)	2	1.604(0.448)
Divorced/separated	4(100.0)	0(0.0)		
Cohabiting	12(70.6)	5(29.4)		
Education score				
Non-formal	2(100.0)	0(0.0)	3	2.395(0.495)
Primary	32(72.7)	12(27.3)		
Secondary	5(71.4)	2(28.6)		
Tertiary	16(88.2)	2(11.8)		
Occupational status				
Employed	7(100.0)	0(0.0)	1	2.305(0.129)
Non-employed	47(74.6)	16(25.4)		
Religious status				
Catholic	32(69.6)	14(30.4)	2	4.684(0.096)
Protestant	16(88.9)	2(11.1)		
Born again	6(100.0)	0(0.0)		
Area of residence				
Urban	15(78.9)	4(21.1)	1	0.48(0.826)
Rural	39(76.5)	12(23.5)		
Number of children				
<4	42(73.7)	15(26.3)	1	2.082(0.149)
≥4	12(92.3)	1(7.7)		
Respondent's average monthly income				
<100,000=	43(72.9)	16(27.1)	1	3.867(**0.049***)
≥100,000=	11(100.0)	0(0.0)		

***Significant variable, X2= Chi square value, p-value**

Bivariate analysis was performed to generate a Chi-square. The confidence interval was set at 95% and a P-value of <0.05 was considered to be statistically significant as shown in Table 5 below.

Several factors were found to be significantly associated with the place score of Treated mosquito net uses: respondent's age (X^2=8.754, p-value=**0.033***), and respondent's average monthly income (X^2=3.867, p-value=**0.049***). Other variables were not statistically significantly associated with significantly associated with the practice score of Treated mosquito net uses: respondent's age.

DISCUSSION

The mean age of the participants was 24.61 (SD ±7.22). This study also highlighted that the majority 74.3% of the participants had good knowledge regarding the use of mosquito nets whereas only 25.7% had poor knowledge and 77.1% of the respondents showed good practices towards the use of mosquito nets whereas only 22.9 % had poor practices regarding the use of mosquito nets according to figure 1 and 2 respectively. This study's findings showed a significant improvement in the knowledge and practices among pregnant mothers toward the use of mosquito nets. Despite this good knowledge and practice score among pregnant mothers the use of mosquito nets. Others still showed poor knowledge and practices towards the use of mosquito nets. This could be due to the report that the use of Treated mosquito nets causes excessive heat and makes sleeping uncomfortable. This study is in line with a study done by [18]. On the other hand, according to the HIMS 2021, Katakwi Hospital where 30 % of pregnant mothers who were diagnosed reported no use of a treated mosquito net and this could be due to poor knowledge and poor practices regarding the use of Treated mosquito nets. This finding is in line with a study done by [19]. However,

knowledge and practice scores were significantly associated with age group, religious status, and average monthly income (Table 4 and Table 5). The majority of the respondents who were aged less than 20 years portrayed good knowledge and practices regarding the use of treated mosquito nets. This could be due to the high rate of concentration and being aware of vulnerability regarding malaria amongst their age group made this age bracket show good knowledge and practices regarding the use of treated mosquito nets as a preventive measure against malaria. This study is in line with a study done by [18]. This study also indicated that respondents who had an average monthly income of less than 100,000= showed practices than their counterparts which didn't cooperate with a study done by Akello et al [20] where respondents of high-income levels had good practices and knowledge regarding the use of a mosquito net. According to this study, it was found that respondents who were catholic were likely to have good knowledge regarding the use of mosquito nets. This could be because most of the churches within the study areas are catholic churches. This study is in line with a study done by [21].

According to (Table 2), the majority of the respondents 85.7% had never heard about Treated mosquito nets and knew the use of Treated mosquito nets respectively. This could be due to health education talks on radios, and televisions as well as from health workers and the village health teams which might have increased their awareness about the use of Treated mosquito nets. This finding collaborates with a study done by Dun-Der et al [22]among pregnant women in the upper east region of Ghana where the level of utilization of a mosquito net was at 60.0%. Meanwhile [23] their study carried out among burn cultivators in Rangamati Hill tracts of Bangladesh found that the majority 89% had heard about malaria which is in line with this study's finding where 85.7% had ever heard about Treated mosquito nets use This study also found that 90.0 % of the respondents have ever seen or handled a mosquito net though might have used or not which could be due to door-to-door distribution of nets campaigns by the village health teams through the support of MoH. The poor knowledge and other factors such as allergy and fear of heat could have contributed negatively to its use. This study however is supported by a study done by Andrew et al [24] carried out in rural Northwestern Uganda. This study also found poor knowledge regarding the respondent's awareness of whether they knew the duration of effectiveness of Treated mosquito nets and whether can be retreated only 37.1% and 34.3% respectively were aware. This could be attributed to insufficient health talk about the appropriate management of Treated mosquito nets and the constant and frequent distribution of nets. This finding is in disagreement with the findings by [21] in his study on the use of Insecticide Treated Mosquito Nets Among Pregnant Women in Lukolo Health Center III Jinja District. Where the majority of the participants knew the duration of effectiveness of Treated mosquito nets and whether could be retreated. On the other hand, a study done by [21] in his study on the use of Insecticide Treated Mosquito Nets Among Pregnant Women in Lukolo Health Center III Jinja District indicated that the majority of the respondents 67% knew what should be done before using Treated mosquito nets. This study corresponds with this study finding which indicated that over 81.4% of the respondents knew what to do before using Treated mosquito nets. This could be due to high concern awareness and health education talks which always focus on the indication and contraindication regarding the use of new Treated mosquito nets and the leaflet which is always provided by the manufacturer regarding the use of Treated mosquito nets.From Table 3. The study findings indicated that 88.6% of the respondents always sleep under a mosquito net and tuck the mosquito net under the mattress when sleeping although only 38.6% always tuck it in the late evening before sleeping. This could be due to insufficient knowledge regarding appropriate use and the timing of tucking in. This study is in line with a study done by Andrew et al [24]which also confirms the majority of participants slept under a mosquito net.. Another study's findings show that majority 90.0% of the respondents reported that they always fold in their mosquito net every morning. This could be due to the advice and education that frequently be run on social media, gatherings, and radio which highly can create awareness among respondents. This study is supported by a study done by Perkins et al [25] on the knowledge, attitudes, and practices regarding malaria: a cross-sectional study in pregnant women attending antenatal care in the New-Bell district hospital, Douala, Cameroon which highlighted a high majority of respondents and another similar study done by Okafor and Ogbonnaya [26].

CONCLUSION

The present study concludes that whereas the knowledge (74.3%) and practices (77.1%) of pregnant women concerning ITN use were good. The provision of mass education, and health education campaigns should still be highly emphasized especially regarding tucking the mosquito nets when it is late evening, creating awareness about retreating the mosquito nets, and the duration of the effectiveness of the mosquito net. This will improve the use of ITNs in pregnancy and help to win the war against malaria.

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