

Factors Associated with Utilization of Preconception Care among Women of Reproductive Age

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Abstract: Preconception care (PCC) is the care provided to all male and female who have not conceived before, whether planning or not to have a baby for they are potential parents. The aim of this study was to find out factors that are associated with preconception care utilization among women in Kapsabet referral hospital in Nandi County, Kenya. A cross-sectional study design comprising of 200 women participants was carried out using a questionnaire. The zero-inflation Poisson regression analysis was employed to explore the factors associated with utilization of preconception care using the 'zip' command in STATA version 13.1. The unadjusted and adjusted incidence rate ratios (IRRs) with a 95% confidence intervals (CIs) were then presented in the tables for further interpretation. After adjusting for all variables, the study found the following variables to be associated with utilization of preconception care among women: marital status, religion, family size, ethnicity, residence, education, pesticide use, alcohol use, previous delivery, having ever lost pregnancy, and the number of current pregnancy. Those who were SDAs (IRR = 1.52; 95% CI: 1.31 - 1.76; $p \leq 0.001$), had more than 4 household members (IRR = 1.24; 95% CI: 1.11 - 1.39; $p \leq 0.001$), had tertiary education (IRR = 1.42; 95% CI: 1.20 - 1.67; $p \leq 0.001$), were using pesticides (IRR = 2.22; 95% CI: 2.00 - 2.46; $p \leq 0.001$) and were in their fourth pregnancy (IRR = 1.42; 95% CI: 1.16 - 1.73; $p \leq 0.001$) were more likely to use PCC than the reference groups. In conclusion, several variables were associated with the utilization of PCC. Public health education and promotion is therefore necessary to improve maternal, new-born and child health in the county.

Keywords: Preconception, Maternal deaths, Utilisation, Congenital disorder, Biomedical, Behavioural, Developing countries, Birth outcomes

1. Introduction

In the world today, nearly all deaths among women are pregnancy-related problems (Chorongo D. O., Kinda F. M., Kariuki E. J., Mulewaet, al., 2016). Thus, preconception care is the most essential maternal health care service that reduces maternal and child death and morbidity rate by identifying and treating any risks early enough, promoting wellbeing, and preventing illness (Lassi et al., 2014). The preconception care is defined as the provision of biomedical, behavioural and social health interventions to women and couples' prior conception, to improve their health condition and between conceptions (Ayelaw et al., 2017). Preconception care is not a single day clinical visit, but rather ongoing care that is integrated into primary health care to address the needs of women during the different stages of reproductive life (Lassi et al., 2014).

About 90-95% of the maternal deaths are from low-and middle-income countries and currently close to 500 deaths per 100, 000 live births are reported and out of this, over 11% deaths are caused by avoidable causes a number of which can be prevented if preconception care is practiced (WHO, 2013).

PCC prevents smoking during pregnancy because it is associated with several adverse outcomes including low-birth-weight, small-for gestational-age neonates, placental abruption, premature rupture of membranes, an increase in sudden infant death syndrome, and neonatal respiratory problems (Marangoni et., al, 2016).

Screening of women and giving preconception care ought to be started at early adolescent stage for better outcome (Nowlse et al, 2017). This is because nowadays, there are many adolescent pregnancies which are very risky this is because the young adolescents are not fully developed, they still need similar requirements as the pregnancy they tend to carry.

Reports from the low-and middle-income countries indicate that there is poor infant, child and maternal health as well as inadequate information regarding the preconception care, consequently the high maternal death rates and neonatal deaths (Ayalew, et al., 2017).

Moreover, In Africa south of the Sahara, maternal health report indicates that there are poor preconception care practices due to poverty, inadequate personnel in health care, lack of knowledge and information given to women before conception (Mason, E. et al., 2014).

There are many areas that preconception care addresses such as, "what one eats before pregnancy, immunization-preventable diseases, genetic conditions, environmental health Infertility/sub fertility, Female genital disfigurement, early pregnancies, not needed and rapid consecutive pregnancies, Sexually transmitted infections, Human immunodeficiency virus (HIV), Interpersonal violence, Mental health Psychoactive, substance abuse and smoking, all these must be controlled or prevented for good pregnancy outcomes" (WHO, 2013).

Women have an important duty in the world of increasing or replacing the gone old generation, but it's unfortunate that

most of them die while in the process of delivery or shortly after. Women mortality rate is quite high, the greatest cause is pregnancy related complications, thus there are 287, 000 maternal and 2.9 million new-born deaths each year, with an additional 2.6 million stillbirths (Judith and Stephenson et al., 2014). It is evident that health problems, behavior problems and environmental risks contribute to poor maternal and child health outcomes (Mason et al., 2014; Asamoah et al., 2017; Schwartz et al., 2012; Wekesa & Coast, 2014; Col et al., 2017).

2. Methods

The Research Design

To meet the objective of the study where factors associated with utilization of preconception care were studied and described. A cross-sectional study design was utilized.

Target Population

The target population was women of reproductive age 15-45 years, who attended Kapsabet Referral Hospital. According to the Nandi county head office census report of 2009, the population of women who attended Kapsabet Referral Hospital were between 230-400 among the over 376, 477 women in the county, and only 24, 000 women in Nandi County delivered in hospitals. Kapsabet referral hospital is found in Kenya, in the Rift valley region, which is found Nandi county, it is located in central Nandi county it is a referral hospital for the whole Nandi county which has 12 sub counties Chesumei, Mosoriot etc.

Target Sample Size

The researcher used the RAOSOFT sample size calculator to calculate the sample size from a total population of 24, 000 women within Nandi County with 5% margin error and 95% confidence level, after calculation 200 women sample was determined.

Sampling Technique

This study used purposive random sampling technique (The researcher chooses the sample based on who they think would be appropriate for the study) to choose 200 women who participated in the study in Kapsabet referral hospital this is because in the purposive random sampling participants were only those who came to hospital within the period of one month. It did not include those who didn't attend.

Research Instruments

The study used self-administered questionnaires with questions given to respondents who answered by ticking their preference answers. The researcher also used oral questions (read what was on the questionnaire) to the respondents who never understood the questions on the questionnaire. The dependent variable was utilization of preconception care services among women of reproductive age. The independent variables included Socio-demographic variables (age, education level, occupation, residence,

marital status and religion of the woman), accessibility to preconception services, availability of preconception services, affordability of preconception care services, previous obstetric problems and the knowledge level on preconception care services.

Validity

The instrument used was a well validated questionnaire which was validated using content validity. Pre-testing of the study tools was done and their validity assessed through expert reviewers (my supervisors). In carrying out this study, the researcher paid very keen attention to the issues of the validity of the research instrument. The researcher worked closely with the supervisors who went through the tools and their suggestions and ideas incorporated.

Reliability

Pre-testing of the questionnaire was done at Pioneer Health Center in Uasin Gishu where 20 questionnaires were administered which was 10% of the sample size. Respondents were well reached and informed about the research. This pilot study was used to establish the reliability of the research instrument.

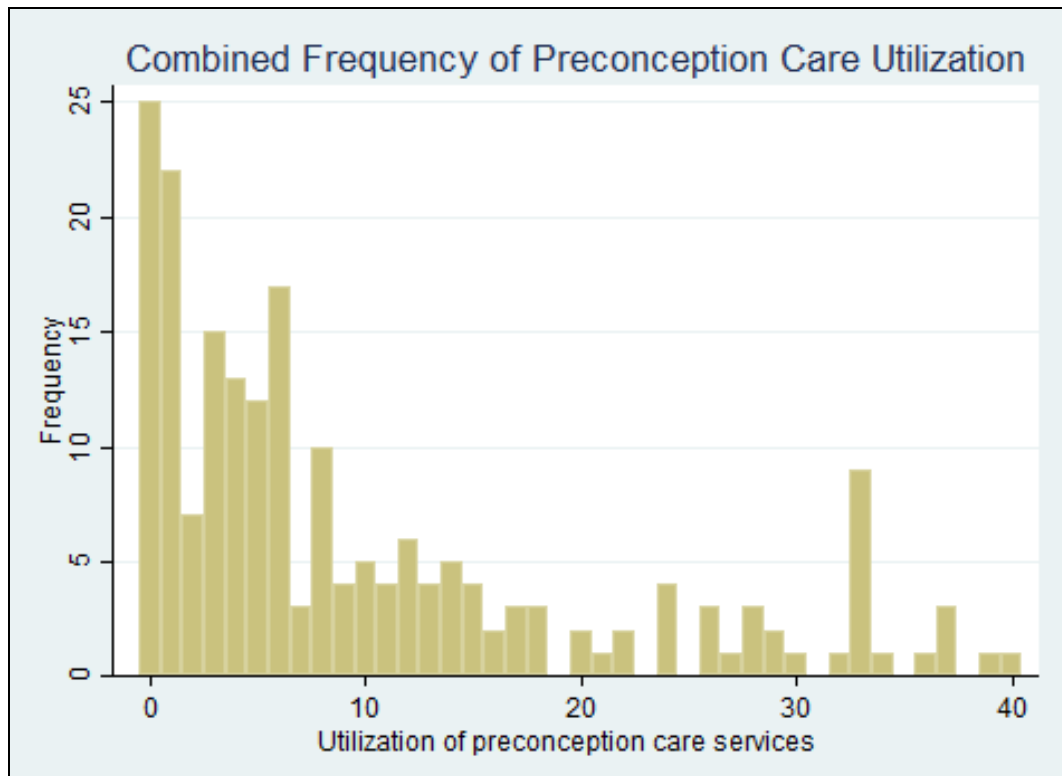
Data Gathering Procedures

The researcher presented the proposal paper to Ethical committee and got permission letter that enabled her to collect data, also was assisted by the university graduate (IREC) study committee who issued a letter of permission to apply research permit from NARCOSTI (National Commission for Science, Technology and Innovations), then proceeded on for data collection. After applying, the permit came after about four months. Permission from the Kapsabet hospital was gotten from the in charge, lastly permission from the willing participants at the clinic.

Two hundred (200) Questionnaires were prepared and administered to the respondents and the researcher distributed them herself and two trained assistants assisted. The study participants were interviewed and given questionnaires to fill and give them back to the researcher and the assistants, or drop them in a given box.

Statistical Treatment of Data

The analytical strategy had three steps. First, the descriptive statistics of preconception care services utilization were presented in the form of numbers and frequencies before combining all the indicators of each type of service (i. e., counselling, health screening, advice against environmental toxins, counselling on lifestyle changes, and vaccination). Second, the differences in preconception care utilization were assessed between the different groups of the participant's characteristics. The Pearson's Chi-Square test was used to assess the differences between these groups. Finally, all the components of utilization of preconception care were combined, and the distribution of the dependent variable was determined (Figure 5).



After the determination of the Poisson distribution, it was found to be skewed to the right with a zero inflation. Therefore, zero-inflation Poisson regression analysis was chosen to explore the factors associated with utilization of preconception care using the 'zip' command. The unadjusted and adjusted incidence rate ratios (IRRs) and the 95% confidence intervals (CIs) were then presented in the tables for further interpretation. All the analyses were performed using STATA version 13.1.

Ethical Considerations of the Study

The researcher got approval from the Institutional Research Ethics Committee (IREC) of the University of Eastern Africa, Baraton. After getting the clearance letter, the researcher applied for Research License from NACOSTI. Then The Medical Director and the Hospital Administrator of Kapsabet Referral Hospital were requested for permission to carry out the research in their Institution and it was granted.

The researcher also got consent of the women through the nurses in charge of Maternal Child Health Kapsabet County Referral Hospital by explaining to them the purpose of the study and asked them to give informed consent if they were willing to voluntarily participate in the study.

Two hundred (200) Questionnaires were prepared and were administered to the respondents and the researcher distributed them herself assisted by two research assistants. The exercise took 30 days (a month).

The study participants were interviewed and given questionnaires to fill and gave them back to the researcher and the assistants, or dropped them in a given box at their hospital clinic where the researcher and the assistants were waiting.

Each participant was allowed to make an informed consent before being involved in the study and was given a consent form each of them to fill by signing and writing the date after being explained to about the research and its purpose. They also had a right to withdraw from the study anytime without any penalty.

The informants were identified and objectively selected as the subjects who provided information for this study. The informants were kindly requested to provide the information needed for successful completion of the study. Any information given was kept strictly confidential and also anonymous and utilized only for the purpose for which was intended.

3. Results

Presentation of findings, analysis and interpretation

Introduction

This chapter presents the data analysis and presentation of the results which were done according to the study objectives. A total of 200 (100%) women of reproductive age participated in the study through researcher-administered questionnaire.

Level of Preconception Care Utilization

Table 1 presents the descriptive statistics of preconception care utilization. The majority of the participants indicated that they had planned pregnancy (61.0%), and yet the participants who indicated that they utilized preconception services were less than a half in all the indicators. In fact, the highest utilization frequency was experienced on counseling with regards to 'sexually transmitted infections and HIV' and family planning and birth spacing' each at 48.0%, respectively. Moreover, screening of HIV/AIDS was also at 47.5%, while screening for 'previous premature delivery'

and 'previous postpartum hemorrhage were the lowest at 9.0% and 6.0%, respectively.

Table 1: Descriptive statistics of the utilization of preconception care in Kapsabet County Referral Hospital

Preconception care services	No, n (%)	Yes, n (%)
Planned for pregnancy	78 (39.0)	122 (61.0)
Ever utilized preconception care	148 (74.0)	52 (26.0)
Counselling before pregnancy		
Smoking, alcohol & drug abuse	143 (71.5)	57 (28.5)
Folic acid supplementation	132 (66.0)	68 (34.0)
Sexually transmitted infections & HIV	104 (52.0)	96 (48.0)
Family planning & birth spacing	104 (52.0)	96 (48.0)
Healthy body weight and diet	129 (64.5)	71 (35.5)
Importance of oral health	139 (69.5)	61 (30.5)
Body piercings & risk of hepatitis C	156 (78.0)	44 (22.0)
Lead, environmental & occupational exposures	160 (80.0)	40 (20.0)
Genetic disorders (plus cystic fibrosis & sickle cell)	155 (77.5)	45 (22.5)
Health screening		
Genetic conditions (sickle cell, fibrosis, thalassemia)	160 (80.0)	40 (20.0)
Infectious diseases (e. g. syphilis, hepatitis C, HIV)	137 (68.5)	63 (31.5)
Blood pressure	110 (55.0)	90 (45.0)
Diabetes	151 (75.5)	49 (24.5)
Rh incompatibility	164 (82.0)	36 (18.0)
HIV/AIDS	105 (52.5)	95 (47.5)
Anaemia	132 (66.0)	68 (34.0)
Epilepsy	171 (85.5)	29 (14.5)
Asthma	161 (80.5)	39 (19.5)
Tuberculosis	132 (66.0)	68 (34.0)
Cystic fibrosis	179 (89.5)	21 (10.5)
Thalassemia	176 (88.0)	24 (12.0)
Previous caesarean section	168 (84.0)	32 (16.0)
Previous premature delivery	182 (91.0)	18 (9.0)
Previous postpartum haemorrhage	188 (94.0)	12 (6.0)
Advice against environmental toxins		
Smoking cessation	154 (77.0)	46 (23.0)
Alcoholism & illegal drugs	147 (73.5)	53 (26.5)
Household chemicals (paint thinners, solvents, pesticides)	158 (79.0)	42 (21.0)
Radiation exposure	154 (77.0)	46 (23.0)
Lifestyle changes		
Recommended regular moderate exercise	144 (72.0)	56 (28.0)
Avoid hyperthermia (hot tubs)	156 (78.0)	44 (22.0)
Caution against obesity & underweight	142 (71.0)	58 (29.0)
Risks of nutritional deficiencies	130 (65.0)	70 (35.0)
Avoid overuse of Vitamins A & D and Caffeine	149 (74.5)	51 (25.5)
Screen for domestic violence	149 (74.5)	51 (25.5)
Counsel on use of over-the-counter medications	155 (77.5)	45 (22.5)
Vaccination		
Rubella Seronegativity	177 (88.5)	23 (11.5)
Tetanus	106 (53.0)	94 (47.0)
Human Papilloma virus	186 (93.0)	14 (7.0)
Influenza	182 (91.0)	18 (9.0)
Varicella	189 (94.5)	11 (5.5)

Utilization of at least one preconception care service in different categories of services are presented in Table 2. Sixty-one percent of the participants indicated that they had utilized at least one counselling service. The majority of those who utilized at least counselling service were those above 30 years (72.1%, $p \leq 0.100$), those who were formerly married (68.2%, $p = 0.092$), those with 4 or more members in the family (70.7%), those who were using pesticides (74.1%), and those who were in their third or fourth pregnancy.

The results indicated that those who utilized at least one screening service were above 75% (Table 2). The majority of those above 30 years (86.9%), had more than 4 family

members (85.3%), were using pesticides (84.5%), and were in their third (88.3%) or fourth (83.3%) pregnancies were likely to use at least one screening service. However, utilization of at least one service against environmental toxins was the least (31.5%). Only two indicators were statistically significant - that is, those who had insurance (39.4%) and those who were using pesticides (51.7%).

With regard to counselling on lifestyle changes, those who were using pesticides (53.5%), those who were not smoking (45.0%), and those who had not lost any pregnancy (46.0%) were more likely to get at least one counselling on lifestyle changes. On the other hand, singles (56.1%), the Nandi ethnic group (63.2%), those who had insurance cover

(60.5%), those who used pesticides (70.7%), and those who vaccinated. had not lost any pregnancy (58.8%) were more likely to be

Table 2: Descriptive statistics of the utilization of at least one preconception care service, by different participant characteristics

Characteristics	Total	Utilized at least one preconception care service, n (%)				
		Counselling	Screening	Toxins	Lifestyle	Vaccination
Utilized at least one	200	122 (61.0)	153 (76.5)	63 (31.5)	87 (43.5)	104 (52.0)
Age group		p = 0.100	p = 0.069	p = 0.117	p = 0.745	p = 0.778
< 25	81	45 (55.6)	59 (72.8)	20 (24.7)	34 (42.0)	44 (54.3)
25 - 30	58	33 (56.9)	41 (70.7)	18 (31.0)	24 (41.4)	28 (48.3)
> 30	61	44 (72.1)	53 (86.9)	25 (41.0)	29 (47.5)	32 (52.5)
Marital status		p = 0.092	p = 0.137	p = 0.300	p = 0.885	p = 0.048
Single	41	19 (46.3)	27 (65.8)	17 (41.5)	19 (46.3)	23 (56.1)
Married	137	88 (64.2)	107 (78.1)	40 (29.2)	58 (42.3)	75 (54.7)
Formerly married	22	15 (68.2)	19 (86.4)	6 (27.3)	10 (45.5)	6 (27.3)
Religion		p = 0.958	p = 0.824	p = 0.996	p = 0.558	p = 0.130
Catholic	45	28 (62.2)	32 (71.1)	15 (33.3)	18 (40.0)	27 (60.0)
Anglican	44	25 (56.8)	36 (81.8)	13 (29.6)	16 (36.4)	24 (54.5)
SDA	45	27 (60.0)	35 (77.8)	14 (31.1)	24 (53.3)	17 (37.8)
Protestant	40	26 (65.0)	30 (75.0)	13 (32.5)	17 (42.5)	19 (47.5)
Other	26	16 (61.5)	20 (76.9)	8 (30.8)	12 (46.2)	17 (65.4)
Family size		p = 0.030	p = 0.022	p = 0.169	p = 0.484	p = 0.559
≤ 4	125	69 (55.2)	89 (71.2)	35 (28.0)	52 (41.6)	63 (50.4)
> 4	75	53 (70.7)	64 (85.3)	28 (37.3)	35 (46.7)	41 (54.7)
Ethnicity		p = 0.614	p = 0.627	p = 0.420	p = 0.467	p = 0.063
Kalenjin	76	50 (65.7)	58 (76.3)	29 (38.2)	35 (46.1)	48 (63.2)
Luhya	62	34 (54.8)	45 (72.6)	17 (27.4)	22 (35.5)	31 (50.0)
Luo	22	14 (63.6)	19 (86.4)	7 (31.8)	10 (45.5)	9 (40.9)
Other	40	24 (60.0)	31 (77.5)	10 (25.0)	20 (50.0)	16 (40.0)
Residence		p = 0.509	p = 0.340	p = 0.258	p = 0.194	p = 0.454
Urban	93	59 (63.4)	74 (79.6)	33 (35.5)	45 (48.4)	51 (54.8)
Rural	107	63 (58.9)	79 (73.8)	30 (28.0)	42 (39.3)	53 (49.5)
Education		p = 0.425	p = 0.160	p = 0.119	p = 0.114	p = 0.120
Primary and below	53	30 (56.6)	37 (69.8)	12 (22.6)	17 (32.1)	27 (50.9)
Secondary	88	52 (59.1)	66 (75.0)	27 (30.7)	44 (50.0)	40 (45.5)
Tertiary	59	40 (67.8)	50 (84.8)	24 (40.7)	26 (44.1)	37 (62.7)
Occupation		p = 0.724	p = 0.839	p = 0.455	p = 0.609	p = 0.970
Unemployed	55	35 (63.6)	43 (78.2)	16 (29.1)	24 (43.6)	30 (54.6)
Tech/prof/man	41	27 (65.9)	33 (80.5)	17 (41.5)	15 (36.6)	21 (51.2)
Sales/clerical	48	29 (60.4)	36 (75.0)	15 (31.3)	20 (41.7)	25 (52.1)
Other	56	31 (55.4)	41 (73.2)	15 (26.8)	28 (50.0)	28 (50.0)
Insurance cover		p = 0.289	p = 0.303	p = 0.044	p = 0.422	p = 0.047
No	119	69 (58.0)	88 (74.0)	31 (26.1)	49 (41.2)	55 (46.2)
Yes	81	53 (65.4)	65 (80.3)	32 (39.5)	38 (46.9)	49 (60.5)
Use pesticides		p = 0.015	p = 0.089	p < 0.001	p = 0.070	p < 0.001
No	142	79 (55.6)	104 (73.2)	33 (23.2)	56 (39.4)	63 (44.4)
Yes	58	43 (74.1)	49 (84.5)	30 (51.7)	31 (53.5)	41 (70.7)
Smoke cigarettes		p = 0.732	p = 0.926	p = 0.540	p = 0.045	p = 0.642
No	191	117 (61.3)	146 (76.4)	61 (31.9)	86 (45.0)	100 (52.4)
Yes	9	5 (55.6)	7 (77.8)	2 (22.2)	1 (11.1)	4 (44.4)
Drink alcohol		p = 0.743	p = 0.548	p = 0.846	p = 0.221	p = 0.149
No	183	111 (60.7)	141 (77.1)	58 (31.7)	82 (44.8)	98 (53.6)
Yes	17	11 (64.7)	12 (70.6)	5 (29.4)	5 (29.4)	6 (35.3)

Has previously delivered		p = 0.403	p = 0.102	p = 0.930	p = 0.934	p = 0.102
No	50	28 (56.0)	34 (68.0)	16 (32.0)	22 (44.0)	21 (42.0)
Yes	150	94 (62.7)	119 (79.3)	47 (31.3)	65 (43.3)	83 (55.3)
Has lost pregnancy		p = 0.775	p = 0.660	p = 0.488	p = 0.069	p = 0.078
No	166	102 (61.5)	126 (75.9)	54 (32.5)	77 (46.4)	91 (54.8)
Yes	34	20 (58.8)	27 (79.4)	9 (26.5)	10 (29.4)	13 (38.2)
Current pregnancy		p = 0.010	p = 0.010	p = 0.343	p = 0.388	p = 0.846
1 st	46	22 (47.8)	29 (63.0)	13 (28.3)	15 (32.6)	23 (50.0)
2 nd	58	30 (51.7)	41 (70.7)	14 (24.1)	27 (46.6)	32 (55.2)
3 rd	60	43 (71.7)	53 (88.3)	23 (38.3)	29 (48.3)	29 (48.3)
≥ 4 th	36	27 (75.0)	30 (83.3)	13 (36.1)	16 (44.4)	20 (55.6)

Factors Associated with Utilization of Preconception Care

Table 3 presents factors that are associated with utilization of preconception care services. Those who were above 30 years were at a higher rate of utilization of preconception care (IRR = 1.14; 95% CI: 1.03 - 1.27) than those who were less than 25 years before adjustment but after adjusting for all the variables, the difference attenuated. However, marital status was statistically significant before and after adjustment. Those who were married and those who were formerly married were at 32% and 29% less likely to utilize preconception care than the singles.

Nevertheless, the results indicate that those who were affiliated to SDA and protestant churches were 1.52 and 1.48 times at higher rate of utilization of preconception care than those who were affiliated to Roman Catholic church. Also, those who had more than 4 family members were 24% more likely to utilize preconception care than those who were less than or equal to 4 family members, before and after adjustment. All the other ethnic groups were found to be less likely to utilize preconception care than the Kalenjin ethnic group, with the Luhya, Luo and others being at 0.75, 0.82 and 0.70 times less likely, respectively.

The results also revealed that those who were dwelling in rural areas were at 22% lesser rate of preconception care utilization than their urban counterparts before and after adjusting for all the variables. The women who had high school education (IRR = 1.50; 95% CI: 1.30 - 1.73) and those with tertiary education (IRR = 1.42; 95% CI: 1.20 - 1.67) were more likely to utilize preconception care than those who had primary education and below. Yet, occupation and insurance cover were only statistically significant before adjusting for all the variables.

The women who were using pesticides were 2.14 times at higher rate of utilization than those who were not before adjustment, and after adjustment, the rate slightly increased to 2.22 times. However, those who were drinking alcohol (IRR = 0.83; 95% CI: 0.67 - 1.02), has delivered previously (IRR = 0.82; 95% CI: 0.71 - 0.96) and had lost a pregnancy (IRR = 0.87; 95% CI: 0.75 - 1.01) were less likely to utilize preconception care than those who were not drinking alcohol, had not delivered and had not lost pregnancy, respectively. The women who were in their second pregnancies and higher were at a higher rate of preconception care utilization than those who were in their first pregnancy.

4. Discussion

Level of utilization of preconception care

The finding of the study showed that the level of utilization of preconception care among women attending Kapsabet Mother and child health, was low since majority of women indicated that they had planned their pregnancy, but less than half of the participants had utilized all the preconception indicators (such indicators are counselling with regards to 'sexually transmitted infections and HIV, family planning and birth spacing' each at 48.0%, respectively. Moreover, screening of HIV/AIDS was also at 47.5%, while screening for 'previous premature delivery' and 'previous postpartum haemorrhage were the lowest at 9.0% and 6.0%, respectively.), this concurs with the study done by Sipkins and Voorst in 2019 that indicated that pregnancy and counselling with regards to sexually transmitted infection and HIV, family planning birth spacing, screening of HIV/AIDS was also at 47.5%, while screening for 'previous premature delivery' and 'previous postpartum haemorrhage lowest at 9.0% and 6.0%, respectively. Outcomes were still poor due to low utilization of preconception care due to lack of awareness.

Similarly, study done in Ethiopia by Arseu et al. found that there were still adverse outcomes on pregnancies thus the study revealed poor utilization PCC of only 18.2% which was a very small percentage.

Ayalew (2017) also in his study, he showed that the level of preconception utilization, in sub-Sahara-Africa was poor which was associated to low levels of economic status especially, in Zambia, Srilanka, Nigeria, Sudan are among the low-and middle-income countries showed the level of utilization was low which he associated to lack of knowledge likewise a study was done in Kenya by the Kenya Demographic Health Survey showed that 95% of women never utilized only they found themselves in MCH during a prenatal visit hence poor pregnancy outcomes (<https://www.cdc.gov/reproductivehealth/marternalhealth/severemater/morbidity.html>).

As seen in the study the highest utilization frequency was experienced on counselling with regards to 'sexually transmitted infections and HIV, this is because women contemplating conceptions are very thoughtful about the nature of the child to be delivered and the burden experienced during pregnancy thus women would want to know their status, most of them research on pregnancy hence

go for counselling and many women are already using family methods this brings the experience FP. A study done by Lassi et al states STI can affect the chances of getting pregnant, as well as the baby hence a women concern (Lassi et al., 2014), and family planning and birth spacing also high in these, these is because many women are already using family method thus they would go for counsel, also screening of HIV/AIDS was also at 47.5% many are aware of the seriousness of HIV/AIDS thus would want to prevent mother to child transmission. Women with special needs require much more preconception care as they affect pregnancy this would make want to their status (Women's Health. Gov.2012) while screening for 'previous premature delivery' and 'previous postpartum haemorrhage was the lowest. This is in contrast to a study done by Lassi et al. "Born Too Soon: Care before and between pregnancy to prevent preterm births: from evidence to action", states that people having experienced such would seek preconception care due to fear of repeat but it is not so in my study where they did not seek counsel.

Utilization of at least one preconception care service

Still in the utilization of Preconception care service, at least 61% utilized one PCC counselling services service, it showed that the most of the people who used counselling service were 30 years thus concurred with a study done and those formerly married followed these is a group of women who are lack enough support. Those who have more than four members in a family utilized at least one PCC service which probably family planning to ensure the number of members does not increase. The study also revealed that those who used pesticides had greater number who used of preconception care service these was similar to a study according to Thaila's study "Before the beginning: environmental exposures and reproductive and obstetrical outcomes" that stated there is an increased agreement that Preconception exposure to environmental toxins that can adversely affect fertility (Thaila n. d.).

Counselling with regards on lifestyle changes, those who were using pesticides those who were not smoking and those who had not lost any pregnancy were more likely to get at least one counselling on lifestyle changes these contrasts a study done by Joyce 2019 that states that those who had lost pregnancy sought for preconception care for better future pregnancy outcomes.

Factors Associated with Utilization of Preconception Care

The study found out that age was one of the demographic factors whereas people who were over 30years takes the lead in utilization of preconception care at IRR = 1.14 (95% CI: 1.03-1.27) this is in agreement with a study done by Lassi (2014) which state that they are at high risk associated with maternal age thus must seek. Marital status in this study was not significant a contrast with study done in Ruiru Joyce C., the study also reveals that those who were affiliated to SDA and protestant churches were 1.52 and 1.48 times at higher rate of utilization of preconception care that those who were affiliated to Roman Catholic church. i think the like using teaching about most biblical teaching such as PCC care were mother Samson was given instruction on what not to use during conception and even before (Judges 13: 3-5) those

who had more than 4 family members were 24% more likely to utilize preconception care than those who were less than or equal to 4 family members, before and after adjustment. This is due to the burden of life already experienced they wouldn't want to have more members.

5. Conclusion

The outcome of this study showed that women's utilization of preconception care is low. A woman's age, educational status (knowledge about preconception care services). It indicated that being married; having a high educational level, Therefore, establishing preconception care strategies which can address all the components of preconception care and understanding the views of reproductive age women's and care providers will be essential when designing effective implementation strategies for improving delivery and uptake of preconception.

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