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Original Research Article

Accessibility factors associated with adherence to healthy timing and spacing of pregnancy among women of reproductive age in Kilifi County, Kenya

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ABSTRACT

Background: Globally, about 25% of births occur with shorter intervals annually with over 12 million underage pregnancies mostly from Sub-Saharan Africa. Kenya records about 20% teenage pregnancies while Kilifi County reported 28.9%. In Kilifi County, 19.6% of births do not adhere to the 24-month birth-interval. The study focused on establishing accessibility factors associated with adherence to healthy timing and spacing of pregnancy (HTSP) among reproductive age women in Kilifi County, Kenya.
Methods: A descriptive cross-sectional design was adopted with a sample of 293 respondents. All required approvals and consent were obtained. Quantitative data was collected using questionnaires. Descriptive data was analyzed using SPSS version 22.0 and inferential statistics computed through Chi-square tests.
Results: About 60.1% respondents adhered to heathy timing and spacing of pregnancy, 69.4% teenage pregnancies occurred and 67.1% of women adhered to the 24-month inter-birth interval. Availability of family planning (FP) services (p=0.008), experience with providers (p=0.005), cost of accessing FP (p=0.001) and source of information (p=0.002) were associated with HTSP.
Conclusions: About 4 out of 10 women of reproductive age in Kilifi County do not adhere to the recommended HTSP. Accessibility factors such as cost and availability of family planning services, source of information and experience with healthcare providers significantly influenced adherence to HTSP. The Ministry of Health and relevant stakeholders should scale up awareness activities, provide mobile clinics and concentrate on regular continuous medical education among healthcare providers to enhance their role in provision of reproductive health services.

Keywords: Accessibility, Adherence, Family planning, Health timing and spacing of pregnancy, Women of reproductive age

INTRODUCTION

Healthy timing and spacing of pregnancy (HTSP) are tactics of planning families to enable delay, limit or space pregnancies to improve health outcomes of newborns, children and mothers.[1] It empowers women to make free informed decisions about family size by controlling fertility. The World Health Organization (WHO) recommends that mothers delay getting pregnant for two years after delivering a live child, six months after abortion, and first pregnancy to at least 18 years to avoid adverse perinatal and maternal outcomes.[2,3] Observing HTSP ensures women deliver children when they are healthy. They are likely to survive and stay healthy with

enough time to physically, financially and emotionally prepare before another pregnancy.[4] This lowers risks of maternal deaths, induced abortions, pre-eclampsia, fistula, miscarriages, breast and ovarian cancer.[5] It also lowers risk of perinatal and neonatal deaths, preterm births and low birth weight, small for gestational age and increased benefits of extended breastfeeding.[6]

The United States Agency for International Development (USAID) analysis revealed that increasing pregnancy intervals to three years leads to prevention of 1.6 million deaths of under-fives yearly.[7] Despite spending more than forty in contraceptives by nations and donors, still unmet needs stand at 215 million women. This is even worse in sub-Saharan Africa accounting for the lowest contraceptive utilization rate at 23%.[8] Many women never exercise their right in deciding how many children to have thus bearing more than they could cater for. In most cultures, men predominantly influence the timing, spacing and number of children to have in a family.[9] Recent studies have associated rising awareness through counselling and education with increased demand and use for family planning (FP) services.[3] In some cultures, use of FP is prohibited leading to more cases of unplanned pregnancies hence poor HTSP.[10]

It is worth noting that 25% of births globally are still occurring with shorter intervals of less than 24 months. Most of these cases are reported in Asia and sub-Saharan Africa at 33% and 20% respectively while in Kenya it stands at 18%.[11] In Kilifi County, about 19.6% of births do not adhere to the 24 months interval of births. About 12 million young women aged 18 years and below gave birth yearly in developing countries which are preventable if first pregnancies were delayed. More than 90% of shorter intervals of birth occur in sub-Saharan Africa while in Kenya 2 out of 10 girls less than 18 years are either pregnant or given birth.[12] Kilifi County is among the counties with highest prevalence of teenage pregnancies as reported in 2020 at 28.6%.[13]

Kilifi County recorded a neonatal mortality of 24/1000 live births, infant mortality of 34/1000 live births and a child mortality of 40/1000 live births compared to the national average of 21/1000, 32/1000 and 41/1000 livebirths respectively.[14] The maternal mortality rate in the County stands at 289/100,000 livebirths while in Kenya it is 362/100000 livebirths.[15] Despite evidence that adherence to the recommended HTSP contributes to improve maternal and child outcomes, limited studies have been done in Kilifi County to ascertain the level of its adherence in a county where teenage pregnancy and early marriages are prevalent.[11] The current study sought to generate information and bridge the gaps in knowledge regarding the status of adherence to the recommended HTSP among women of reproductive age in Kilifi County, Kenya.

METHODS

The study adopted a descriptive cross-sectional study design using quantitative data collection techniques. The study recruited 293 women of reproductive with children less than 24 months of age selected systematically from households at an interval of 3. Those who consented and were residents of Kilifi County for a period exceeding 9 months were included for participation. The study excluded those who were sick and thus unable to participate. Ethical clearance was from Kenyatta University Ethics and Review Committee. The National Commission for Science Technology and Innovation (NACOSTI) authorized the study through provision of a research permit. Authorization for the study was also sought from Kilifi County and permission from the local administration before embarking on the actual study. Informed consent was sought from the study participants.

Data analysis

Quantitative data was collected using semi-structured questionnaires from respondents. The researcher ensured collected data was treated with confidentiality and privacy it deserved. Data was collected between April to August 2022. Descriptive data was analyzed using SPSS version 22.0. To determine the association between accessibility factors and adherence to healthy timing and spacing of pregnancy, the study used Chi-square tests at 95% confidence interval and an error of precision at 0.05 to conduct inferential statistics. The results were presented using percentages, frequency tables and charts.

RESULTS

Distribution of socio-demographic characteristics among respondents

In Table 1, results revealed that 112 (39.9%) respondents were aged between 30-39 years, 120 (42.7%) had secondary level of education and most 181 (64.4%) were married. Majority 202 (71.9%) were Christians, 129 (45.9%) were unemployed and 108 (38.4%) earned Kenya shillings 5,001-10,000 per month. Further about 144 (51.2%) had either 3 or 4 pregnancies.

Adherence to heathy timing and spacing of pregnancy

This was measured using a checklist capturing information on age at first pregnancy, inter-birth interval and pregnancy after a miscarriage. Those who had a first pregnancy more than 18 years, afterbirth interval of 24-59 months and after a miscarriage for at least 6 months (where applicable) were considered adherent to the recommended HTSP. Those who had missed out on any of these requirements were categorized to be non-adherent. The results showed that 169 (60.1%) respondents had adhered to HTSP (Figure 1).

Table 1: Socio-demographic characteristics among participants (n=281).

Variables	Respondents response	Frequency (%)
Age in years	≤19	49 (17.4)
	20-29	82 (29.2)
	30-39	112 (39.9)
	40-49	38 (13.5)
Highest level of education attained	No formal education	43 (15.3)
	Primary	84 (29.9)
	Secondary	120 (42.7
	Tertiary	34 (12.1)
Marital status	Married	181 (64.4)
	Single	61 (21.7)
	Divorced/widowed/separated	39 (13.9)
Religion	Christians	202 (71.9)
	Muslims	79 (28.1)
Occupation	Employed	56 (19.9)
	Self-employed	96 (34.2)
	Unemployed	129 (45.9)
Average monthly income (KShs)	≤5000	89 (31.7)
	5001-10000	108 (38.4)
	10001-15000	50 (17.8)
	>15000	34 (12.1)
Number of pregnancies	<2	84 (29.9)
	3 or 4	144 (51.2)
	>4	53 (18.9)

Table 2: Aspects of adherence to HTSP among participants.

Adherence aspects to HTSP	Participants response	Frequency	Percentage
First pregnancy (years)	≥18	195	69.4
	<18	86	30.6
Pregnancy after abortion or miscarriage (months)	≥6	33	58.9
	<6	23	41.1
Interbirth interval (months)	<24	53	24.2
	24-59	147	67.1
	>59	19	8.7

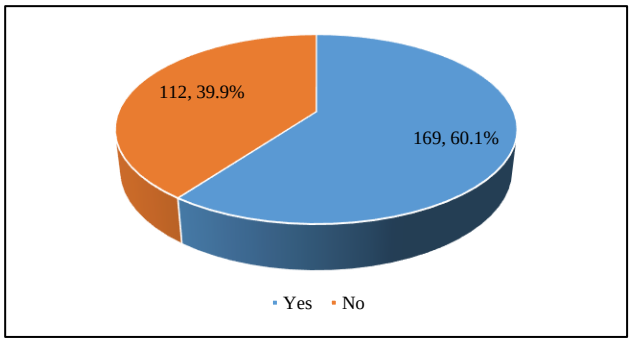

Figure 1: Adherence to HTSP among participants

Aspects of adherence to HTSP

The results in Table 2, revealed that 195 (69.4%) of respondents had their first pregnancy at 18 years or more, about 225 (80.1%) had never had a case of abortion or miscarriage while 33 (58.9%) of those who miscarried/ aborted had their next pregnancy after 6 or more months. Further, most 147 (67.1%) had an inter-birth interval of the recommended range of 24-59 months.

Responses on accessibility factors

In this study, 119 (42.3%) of respondents indicated that the distance to the nearest health facility was 4-5 km, 180 (64.1%) revealed convenient time for service provision and 134 (47.7%) indicating healthcare providers were sometimes available. Majority 187 (66.5%) noted availability of FP services, 157 (55.9%) perceived fair experience with healthcare providers and 143 (50.9%) indicating affordable cost of accessing FP services. About 123 (43.8%) revealed ambient buildings and physical structures made their accessibility easier while 101 (35.9%) got information on HTSP from health care providers (Table 3).

Table 3: Responses on accessibility factors among participants (n=281).

Independent variables	Respondents response	Frequency (%)
Distance to the nearest health facility (km)	≤1	33 (11.7)
	2-3	49 (17.4)
	4-5	119 (42.3)
	>5	80 (28.5)
Time for provision of services is convenient	Yes	180 (64.1)
	No	73 (26.0)
	Cannot tell	28 (10.0)
Availability of healthcare workers for service provision	Always	107 (38.1)
	Sometimes	134 (47.7)
	Never	40 (14.2)
Availability of family planning services	Yes	187 (66.5%)
	No	60 (21.4)
	Cannot tell	34 (12.1)
Experience with healthcare provider	Good	68 (24.2)
	Fair	157 (55.9)
	Poor	56 (19.9)
Cost of family planning services	Affordable	143 (50.9)
	Costly	67 (23.8)
	I don't know	71 (25.3)
Ambiance of buildings and physical structures in making accessibility easier	Yes	123 (43.8)
	No	107 (38.1)
	Cannot tell	51 (18.1)
Source of information on HTSP	Relatives/friends	90 (32.0)
	Healthcare provider	101 (35.9)
	Religious leaders	39 (13.9)
	Media	51 (18.1)

Table 4: Accessibility factors associated with adherence to HTSP (n=281).

Independent variable	Respondent response	Adherence to HTSP (%)		Statistical significance
		Yes (n=169)	No (n=112)	
Distance to the nearest health facility (km)	≤1	22 (13.0)	11 (9.8)	χ^2=5.792 df=3 p=0.122
	2-3	35 (20.7)	14 (12.5)	
	4-5	78 (46.2)	41 (36.6)	
	>5	34 (20.1)	46 (41.1)	
Time for provision of services is convenient	Yes	104 (61.5)	76 (67.9)	χ^2=4.567 df=2 p=0.102
	No	46 (27.2)	27 (24.1)	
	Cannot tell	19 (11.2)	9 (8.0)	
Availability of healthcare workers for service provision	Always	69 (40.8)	38 (33.9)	χ^2=4.761 df=2 p=0.092
	Sometimes	72 (42.6)	62 (55.4)	
	Never	28 (16.6)	12 (10.7)	
Availability of family planning services	Yes	122 (72.2)	65 (58.0)	χ^2=10.492 df=2 p=0.008
	No	29 (17.2)	31 (27.7)	
	Cannot tell	18 (10.7)	16 (14.3)	
Experience with healthcare provider	Good	42 (24.9)	26 (23.2)	χ^2=22.839 df=2 p=0.005
	Fair	101 (59.8)	56 (50.0)	
	Poor	26 (15.4)	30 (26.8)	
Cost of family planning services	Affordable	90 (53.3)	53 (47.3)	χ^2=34.302 df=2 p=0.001
	Costly	32 (18.9)	35 (31.3)	
	I don't know	47 (27.8)	24 (21.4)	
Buildings and physical structures in the facilities are ambient	Yes	51 (30.2)	72 (64.3)	χ^2=3.457 df=2 p=0.178
	No	79 (46.7)	28 (25.0)	
	Cannot tell	39 (23.1)	12 (10.7)	
Source of information on HTSP	Relatives/friends	48 (28.4)	42 (37.5)	χ^2=19.112 df=3 p=0.002
	Healthcare provider	77 (45.6)	24 (21.4)	
	Religious leaders	25 (14.8)	14 (12.5)	
	Media	19 (11.2)	32 (28.6)	

Association of accessibility factors on adherence to HTSP

In Table 4, 78 (46.2%) whose distance to the nearest facility was between 4-5 km had adhered to HTSP with no significant association (χ^2=5.792, p=0.122). 76 (67.9%) who indicated that time for provision of services was convenient had not adhered to HTSP indicating a non-significant statistical association (χ^2=4.567, p=0.102). About 62 (55.4%) who revealed that sometimes health care workers were available had not adhered to HTSP indicated insignificant statistical association (χ^2=4.761, p=0.092). Majority 122 (72.2%) who indicated that FP services were available had adhered to HTSP. This was significantly associated with adherence to HTSP (χ^2=10.492, p=0.008).

Majority 101 (59.8%) of those who perceived a fair experience with healthcare providers adhered to HTSP indicating significant statistical association (χ2=22.839, p=0.005). 90 (53.3%) who revealed affordable costs of accessing FP services adhered to HTSP with a significantly association (χ2=34.302, p=0.001). Most 72 (64.3%) of those who indicated that the facility's buildings and physical structures were ambient had not adhered to HTSP hence no significant associated (χ2=3.457, p=0.178). 77 (45.6%) of those who got information from health care providers had adhered to HTSP. This was significantly associated with adherence to HTSP (χ2=19.112, p=0.002).

DISCUSSION

Adherence to HTSP

The study sought to determine the level of adherence to HTSP among women of reproductive age in Kilifi County, Kenya. The results indicated that 39.9% of respondents did not adhere to the recommended healthy timing and spacing of pregnancy. Kenya is the best performing country in East Africa in terms of adherence to HTSP.[16] The study was done in the rural areas of Kilifi County, characterized by increased teenage pregnancies, early and forced marriages resulting to increased cases of non-adherence to HTSP. This contradicts findings from Kajiado County, Kenya with 33.6% non-adherence to the recommended HTSP.[17] However, the rates were lower than those recorded in Nigeria where 53.5% of women attending ANC did not adhere to HTSP.[18] Developed countries like Australia and New Zealand show high adherence rates to HTSP due to existence of post-partum contraceptive counselling program to all mothers.[19]

Pregnancy rates recorded below the age of 18 years was 30.6% probably due to the cultural practice of early and forced marriages. This is above Kenya's national average of teenage pregnancy standing at 15%; a great improvement from the 20% reported in the country.[12,14] Kilifi is among the counties with highest prevalence of teenage pregnancies as reported in 2020 at 28.6%.[13] This is almost like what was reported in Ghana, where approximately 30% of the pregnancies registered were underage.[20] Reports from South Africa reported that 19.9% experienced repeated pregnancies in adolescence.[4] High cases of teenage pregnancies were also reported in South Asian countries with Bangladesh, Nepal and India recording 35%, 21% and 21% respectively.[21] In southern Hungary, only 6.81% cases of under 18 pregnancies were reported.[22]

The results indicate that 41.1% of respondents did not adhere to healthy timing and spacing of pregnancy after a miscarriage or abortion since they conceived within less than 6 months after a miscarriage or abortion. The results were contrary to study conducted in Kajiado County in Kenya where 14.3% of respondents had unhealthy timing of pregnancy.[17] This concurs with findings from Ethiopia where majority of respondents who miscarried conceived within the first 6 months indicating high non-adherence rates.[23]

Further, the results revealed that 67.1% of the respondents had adhered to the recommended inter-birth interval of between 24-59 months. This is contrary to study findings from Eastern Africa where the rate of short birth intervals recorded in Kenya, Tanzania and Uganda were 18%, 19% and 25% respectively.[16] The findings of the current study were way better than the birth-to-pregnancy interval in Africa standing at approximately 20%.[11] In Ethiopia, findings reports that 50.0% of respondents adhere to the recommended inter-birth intervals.[24] Research findings from India shows shorter birth intervals leading to high cases of low birth weights.[25]

Accessibility factors associated with HTSP

The distance to the nearest health facility was reported to be between 4-5 km indicating a study done in a vast rural area with limited and inaccessible facilities. In Kenya's informal settlements, the distance to the nearest source of contraceptive products is less than 1 kilometer.[26] Distance to the nearest facility was not statistically associated with adherence to HTSP although in essence, distantly located facilities affect women access to family planning services which assists in observing HTSP. Findings from rural Ethiopia were contrary as physical inaccessibility to contraceptive commodities and increased distance to facilities was linked to short birth-intervals.[27] Further, longer distances to health facilities were associated with discontinuation of hormonal methods of FP in Tanzania.[28]

There was convenient for provision of services. Most facilities operate on a 24-hour timing thus convenient for those seeking services. In Mexico, availability of services at a convenient time made women comfortable seeking FP services.[29] However, this did not influence adherence to HTSP. Convenience of time and place for sexual and reproductive health services led to women seeking for long-term FP services hence adhering to the

recommended HTSP. Studies from Rwanda shows divergent views where uptake of FP improved mainly due to a policy on FP which advocated for provision of services at the convenience of the client hence adherence to HTSP.[30]

Family planning commodities and adequate healthcare workers were available for service provision. Availability of enough healthcare providers ensures clients get FP services within a short period of time hence their continued use. An assessment of 10 African countries reported availability of contraceptives in rural areas and public health facilities with no influence on adherence to HTSP.[31] Further, availability of healthcare workers was not associated with adherence to HTSP while availability of FP services significantly influenced observing HTSP. Similarly, in northern Ethiopia, modern methods of contraceptives were significantly associated with adherence to recommended birth-to-pregnancy intervals.[32] Use of contraceptives predicted duration of birth intervals among women. Study findings from India showed that availing long-lasting FP methods was the best solution to adherence to HTSP.[33]

A fair experience with healthcare providers was reported. A study done on perceptions of service users and providers in Palestine, noted that women were not using FP due to poor experience with healthcare providers previously.[34] Experience with health care providers was significantly associated with adherence to HTSP. Those respondents who had a poor experience with healthcare providers were less likely to adhere to HTSP. Several studies have shown that good experience and attitude from providers ensure women won't shy away from seeking FP services thus increased adherence to HTSP.[35]

There was affordable cost of accessing family planning services. In Cameroon, the government tackled the issues of low contraceptive uptake by setting up interventions to reduce the cost of accessing FP commodities through taking services to the people.[36] Cost was found to significantly influence women's adherence to HTSP hence assisting in delaying and spacing pregnancies. In India, increased contraceptive use involves reducing travel time, distance and costs to families.[33] A systematic review conducted in Africa concluded that introduction of FP vouchers led to delaying as well as pregnancy spacing.[37] Results from Democratic Republic of Congo and Burkina Faso revealed that low-cost FP commodities led to reduction of pregnancy intervals for a period not exceeding two years.[38]

Most respondents agreed that the ambiance of buildings and physical structures made accessibility to sexual and reproductive health services easier. Healthcare facilities should ensure privacy and comfortability of clients during service delivery. Appearance of physical structures in health settings attracts women to seek FP services thus adhering HTSP.[39] Statistically, ambience of buildings and physical structures in the facilities was not significantly associated with adherence to HTSP. In Ethiopia, a study conducted among married women revealed that the ambience of physical structures influenced the rate of FP services hence adherence to HTSP.[40]

The healthcare providers were the main source of information on HTSP. In Uganda, the main source of information on birth spacing among women who attended a young child clinic was a health facility.[11] Further, the source of information was significantly associated with adherence to HTSP. Provision of health information on HTSP and methods of adherence is beneficial to maternal health. The healthcare providers are trusted sources of information and women would belief them by using FP services, thus adherent to HTSP. Information empowers women with knowledge on reasons for observing the recommended birth intervals in relation to their health through FP counselling.[41] This concurs with results from Ethiopia where the odds of observing the recommended birth spacing were higher among women who had information on the same.[42]

The study encountered a few challenges such as inaccessibility due to poor road networks and hence accessing most interior parts was difficult, affecting data collection exercises. Language barrier, especially when collecting data from older mothers who were not able to understand English was the quality of data. The study was limited to conducting focused group discussions due to COVID-19 restrictions on social distancing and gatherings which was still effective.

CONCLUSION

About 4 out of 10 women of reproductive age in Kilifi County did not adhere to the recommended healthy timing and spacing of pregnancy with accessibility factors significantly influence its adherence. This was above the country's national average. The availability and cost of family planning services, sources of information on HTSP and experience with healthcare providers significantly influenced adherence to health timing and spacing of pregnancy. The Ministry of Health and relevant stakeholders should scale up health education and sensitization activities to empower community health workers, provide mobile clinics to reach more women and concentrate on regular continuous medical education sessions among care providers to enhance their role in provision of reproductive health services.

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