

BMJ Open Benefits of family planning: an assessment of women's knowledge in rural Western Kenya

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ABSTRACT

Background: The last two decades have seen an increase in literature reporting an increase in knowledge and use of contraceptives among individuals and couples in Kenya, as in the rest of Africa, but there is a dearth of information regarding knowledge about benefits of family planning (FP) in Kenya.

Objectives: To assess the factors associated with knowledge about the benefits of FP for women and children, among women in rural Western Kenya.

Methods: Data are drawn from the Packard Western Kenya Project Baseline Survey, which collected data from rural women (aged 15–49 years). Ordinal regression was used on 923 women to determine levels of knowledge and associated factors regarding benefits of FP.

Results: Women in rural Western Kenya have low levels of knowledge about benefits of FP and are more knowledgeable about benefits for the mother rather than for the child. Only age, spousal communication and type of contraceptive method used are significant.

Conclusions: Women's level of knowledge about benefits of FP is quite low and may be one of the reasons why fertility is still high in Western Kenya. Therefore, FP programmes need to focus on increasing women's knowledge about the benefits of FP in this region.

BACKGROUND

The last two decades have seen an increase in literature reporting an increase in knowledge and use of contraceptives among individuals and couples in Kenya, as in the rest of sub-Saharan Africa, but there is a dearth of information regarding knowledge about the benefits of family planning (FP) in Kenya. In Kenya, knowledge of FP is almost universal at 95% for women of reproductive age, with male condoms, injectable contraceptives and pills being the most commonly known methods.¹ FP use has in the last two decades also increased from 18% (1987) to 39% (2008/09).¹ However this increase has not been matched with a reduction in the unmet

Strengths and limitations of this study

- This study has affirmed the importance of information provision about the benefits of family planning and the potential role of involving men in up-scaling the uptake of family planning methods in Western Kenya.
- However, like any other quantitative study, the paper does not bring out the actual stories behind these statistics.

need for FP or reduction in fertility rates. The unmet need for FP in Kenya has stalled at around 25% and is highest among the less economically well-off women and those in rural areas.² Total fertility rate in rural areas has remained unchanged at 5.2. In addition, at the national level, only a slight decrease in fertility has been reported from 4.7 in 1998 to 4.6 in 2008/09.² There are regional variations in fertility trends in Kenya. Fertility is highest in Nyanza and Western provinces at 5.6 and 5.4, respectively.¹ Married women in the rural areas of Kenya use modern methods of FP (37%) less than women in urban areas (47%).¹

FP has several benefits, some of which are specific to the health of mothers and their children. Others include socioeconomic benefits; for example, women are able to advance their education and careers by delaying or limiting childbearing and this can bring better economic prospects to their household.^{3–4} FP serves to reduce child and maternal morbidity and mortality by preventing unintended pregnancies and unsafe abortions.⁵ The number of maternal deaths that could be averted during childbirth as a result of a reduction in the number of pregnancies and induced abortions would be significant.⁶ FP also enables birth spacing, ultimately reducing child mortality while enhancing the nutritional status of both mother and child.⁴ Moreland and Talbird's⁵ analysis of the role of contraception use to



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the Millennium Development Goals showed that fulfilling the unmet need for FP in Kenya will prevent maternal mortality and child mortality by 14 040 and 434 306 deaths, respectively, and reduce poverty.⁷ Consequently this could contribute to significantly empowering women, achieving universal education for all, and achieving long term environmental sustainability.⁸

Several studies have assessed women's and couples' knowledge about, and use of contraceptives, in addition to barriers to the uptake of FP services.^{9–11} A study conducted in Bondo District of Western Kenya found that few women knew that FP prevented conception, enabled child spacing, reduced the risk of acquiring and transmitting sexually transmitted infections and helped avoid high-risk pregnancies.⁹ Cultural beliefs, fear of side effects, disapproval by couples and inadequate knowledge about contraceptive methods and their benefits are major barriers to contraceptive uptake.^{9 12 13} Women with knowledge about contraceptives and the benefits of FP are more likely to use contraceptives.⁴ Knowledge enables women to make informed decisions about what contraceptives to use and when to use them.⁴

As noted earlier, the Western region of Kenya has poor reproductive health indicators. In response to this need, the Packard Western Kenya Project (PWKP) with financial support from the David and Lucile Packard Foundation, was launched in 2010 in line with the National Reproductive Health Strategy (2009–2015), which, among other aims, seeks to involve communities in enhancing the health of the population through interventions implemented at community level. The PWKP is being implemented in the region with an ultimate goal of reducing unwanted and mistimed pregnancies, lowering the incidence of unsafe, illegal abortion, reducing maternal morbidity and mortality, and decreasing fertility rates over time. These goals are to be met by increasing routine use of modern contraceptive methods among women of reproductive age in Western Kenya. In 2010, a baseline survey was designed to provide information on key programme elements for subsequent monitoring and evaluation of the performance of the PWKP. As part of the baseline, the women were asked what they perceived as the impacts of FP on both women and children. In this paper we analyse the factors associated with knowledge about the benefits of FP for women and children.

DATA AND METHODS

Data source and sample design

This was an exploratory study, which employed data from a cross-sectional baseline sample of the PWKP Baseline Survey (PWKPBS). The PWKPBS collected data from rural women aged 15–49 years. All study participants were required to give consent before taking part in the research. For women aged 15–18, interviewers sought further consent from the parents or guardian of the respondent. The face to face interviews were

conducted in a private place to protect the confidentiality of responses and enhance the comfort of respondents. The questionnaire used was translated into the commonly spoken languages in the study area. This study was approved by the Kenya Medical Research Institute (KEMRI) Ethics Review Committee. The African Population and Health Research Center implemented the 2010 household baseline survey for the PWKP, in collaboration with the Kenya National Bureau of Statistics (KNBS), and the Great Lakes University of Kisumu (GLUK), using 36 interviewers. A representative multi-stage sample of 2125 households from 60 enumeration areas distributed proportionally among four districts (Bondo, Busia, Siaya and Teso) was drawn for the survey using the frame of the 2008 KNBS. Data collection took approximately 2 weeks; a total of 1997 women were interviewed, representing a response rate of 86%. However, 54% of these women were excluded from analyses in this paper as they did not know a method of FP.

Some of the criteria considered for an individual to be included in the survey were age (15–29), the ability to communicate in the survey languages and availability to participate in the survey.

Variables

Two dependent variables are used in this paper: level of knowledge about FP benefits for the child; and level of knowledge about FP benefits for the mother, also referred to as Model I and Model II in [table 5](#), respectively. Since the ordered logit models used require the dependent variable to have three outcomes, the two dependent variables were recoded into trichotomous variables. These variables were constructed based on responses to a series of questions on the impact of FP on the mother and child (see [tables 1](#) and [2](#)). The information in [figure 1](#) was used to construct the first dependent variable. Each correct response was assigned a code of 1 while each incorrect response was assigned a code of 0. All respondents who scored 0 on all questions had the final score of 0 and were coded as having no knowledge or classified into the 'none' category. All respondents who scored 1 out of 7 were coded as having 'low' knowledge level. Scores 2–7 were coded as 'high' knowledge category. The categorisation of scores was based on relative scores and was also aimed at minimising skewness in the dependent variable as the majority of respondents had low scores (see [figure 1](#)). The scores ranged between 0 and 5 with a median score of 2. In the strict sense, for example, persons who scored 2 out of 7 had a low score but were categorised as high in order to distinguish them from those with 0 and 1 scores.

Information in [figure 2](#) was used to construct the second dependent variable. Similarly, in the construction of the second dependent variable, we assigned a code of 1 for each correct response. Each incorrect response was assigned a code of 0. All respondents who scored 0 on all questions had the final score of 0 and were coded as having no knowledge or classified into

the 'none' knowledge level category. All respondents who scored 1–3 out of 12 were coded as having 'low' knowledge level. Scores 4–12 were coded as 'high' knowledge category. The scores ranged between 0 and 8 out of 12 with a median score of 2.

A total of 12 independent variables were included in the analyses (see tables 1–3). Marital status was excluded from the analytical models as less than 20 women were not married. Women of ethnicities other than Luhya, Luo and Teso were also excluded from the analyses as they were very few (<30).

Data analysis

Frequencies, cross-tabulations and the ordered logit were used to analyse levels and differentials in knowledge levels among women (aged 15–49) in Western Kenya. Ordinal regression depends on the idea of the cumulative logit, which in turn relies on the idea of the cumulative probability.^{14 15} The cumulative probability can be thought of as the probability that the *i*th individual is in the *j*th or higher category. This can be expressed as:

$$C_{ij} = \Pr(y_i \leq j) = \sum_{k=1}^j \Pr(y_i = k)$$

where *y*=dependent variable (level of knowledge about impact of FP); and *k*=values of *y* (1., 2., 3.,...n).

The cumulative probability above can be transformed into the cumulative ordered logit:

$$\text{Logit}(C_{ij}) = \log[C_{ij}/(1 - C_{ij})] = \alpha_{ij} - \beta_{ij}$$

where: α_j =logit of the odds of being equal to or less than category *j* for the baseline group (also referred to as intercepts or cut-points); and β =the increase in the log-odds of being higher than category *j* per one-unit increase in the independent variable.

A negative β coefficient shows lower log-odds of having higher than lower knowledge about the impacts of FP on the child/mother compared with the reference

Table 1 Distribution of respondents by knowledge about the impact of family planning on the child

What is the impact on the child if the mother uses family planning?	Response (%)		
	Yes	No	Missing
Better growth	52.7	45.9	1.4
Better nutritional status	23.1	75.3	1.6
Better health	43.9	54.6	1.5
Better survival chance	8.5	89.8	1.7
Better attention by mother	39.3	59.3	1.5
Better educated	22.8	75.5	1.7
More opportunities	10.7	87.6	1.7

Table 2 Distribution of respondents by knowledge about the impact of family planning on the mother

What is the impact on the mother if she uses family planning?	Response (%)		
	Yes	No	Missing
Easy to space pregnancies/ children	45.2	53.4	1.4
Better nutritional status	16.5	82.2	1.3
Lower incidence of anaemia	2.3	96.1	1.7
Less pregnancy complications	5.3	93.2	1.5
Avoids STI/HIV	0.8	97.6	1.6
Reduces unwanted pregnancies	20.1	78.5	1.4
Better health	28.9	69.6	1.5
Spousal harmony/marital happiness	3.3	95.1	1.6
Fewer children to educate	23.3	75.2	1.5
She has more free time	38.2	60.3	1.5
Family has more money	6.8	91.6	1.6
Peace of mind	17.1	81.5	1.4

category (ie, lower knowledge than the reference category). On the other hand, a positive coefficient indicates higher log-odds of having higher than lower knowledge about the impacts of FP on the child/mother compared with the reference category (ie, higher knowledge than the reference category). Exponentiation of β coefficients yields ORs (not shown in tables).

RESULTS

Descriptive characteristics of respondents

Results from only 923 (46%) women (aged 15–49) out of the 1997 women interviewed were valid for the regression analyses; characteristics of the women are shown in table 3. The rest (54%) did not know a method of FP, hence their exclusion. Most (83%) women in this sample had access to the radio while a quarter had access to television and newspapers/magazines. By age, the majority (49%) of women were aged 25–39 years and the rest were aged 15–24 (30%) and 40–49 (21%). The frequency distributions in table 3 also confirm other observations about high fertility in this region of

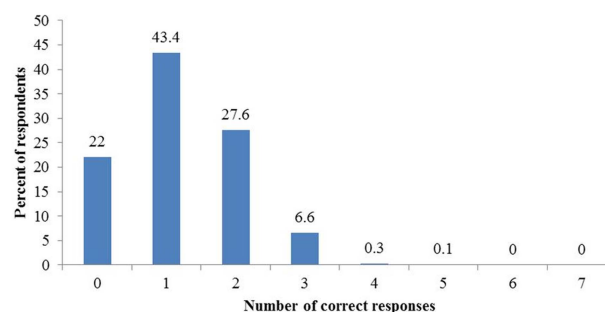


Figure 1 Percentage distribution of respondents according to number of correct responses to questions about the impact of family planning on the child (n=1965).

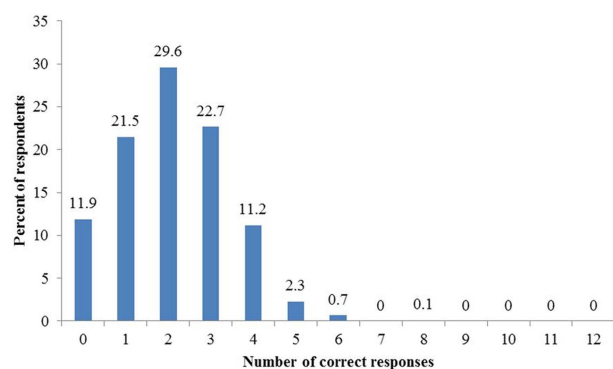


Figure 2 Percentage distribution of respondents according to number of correct responses to questions about the impact of family planning on the mother (n=1965).

Kenya as more than half the women had four or more children ever born.

Luo women were the majority (58%), followed by Luhya women who comprised a quarter of the entire sample size. Catholics were a minority when compared to non-Catholics; 32% vs 68%, respectively. Education levels are quite low among these women. Approximately 80% had not received education beyond primary education. A similar pattern is observed among their partners: less than 40% of the women had partners who had some post-primary education. Table 1, however, also shows that the majority (68%) of women reported discussing FP with their partner/husband even though almost half (49%) of the sample were not using a method of contraception at the time of the survey. Strikingly, the majority of women reporting current use of contraception were using a long-acting or permanent method of contraception. According to district, more than a third (38%) of the women surveyed were from Siaya district while the smallest sample was drawn from Bondo district (19%).

According to the level of knowledge about the impact of using FP on the child, which is one of the dependent variables for this paper, the majority of women had none or low level of knowledge. Less than 40% of women were in the high level knowledge category. Concerning the level of knowledge about the impact of using FP on the mother, data indicated some relatively higher knowledge for impact on the mother than on the child (see table 1).

Factors associated with knowledge about the impact of using FP methods on children and women

A higher proportion of women had some knowledge about the impact of using FP on the mother than on the child. Seventeen per cent of the women had no knowledge at all about the impact on the child while only 6% exhibited a total lack of knowledge about the impact of FP on the mother. The results in table 4 show some significant associations between the level of knowledge about the impact of FP and some characteristics.

Table 3 Distribution of women (aged 15–49 years) included in the analysis by selected characteristics in Nyanza and Western Regions of Kenya

Characteristics	%	n
Age (years)		
15–24	30.3	280
25–39	48.6	449
40–49	21.0	194
Parity		
<2	15.1	139
2–3	28.7	265
4–5	26.4	244
6+	29.8	275
Ethnicity		
Luhya	25.0	231
Luo	57.7	533
Teso	17.2	159
Religion		
Catholic	30.6	282
Other	69.4	641
Level of education		
<Secondary	79.8	737
Secondary+	20.2	186
Partner's level of education		
<Secondary	61.0	563
Secondary+	39.0	360
Reads newspapers or magazines		
Yes	25.4	234
No	74.6	689
Listens to radio		
Yes	83.7	773
No	16.3	150
Watches television		
Yes	23.0	212
No	77.0	711
Discussed use of FP with spouse		
Yes	68.9	636
No	31.1	287
Type of FP method being used		
None	49.4	456
Short-acting	16.1	149
Long-acting or permanent	34.5	318
District		
Bondo	19.2	177
Siaya	38.2	353
Busia	22.1	204
Teso	20.5	189
Level of knowledge about FP benefits for the child		
None	17.3	160
Low	46.4	428
High	36.3	335
Level of knowledge about FP benefits for the mother		
None	5.9	54
Low	78.5	724
High	15.7	145
Total	100.0	923

FP, family planning.

The variables age, parity, partner's level of education, discussion of FP with partner and contraceptive use have the strongest association with knowledge about the

impact of FP on the child. Age and level of knowledge regarding the impact of FP on the child have a positive linear correlation, that is, the older the woman, the higher the level of knowledge. Similarly, women with a higher number of children (>3) have a higher knowledge about the impact of FP on the child than women with a smaller number of children (<4). As expected, women who reported having partners with lower than secondary education level have a lower level of

knowledge than women whose partner had secondary or higher level of education. Interestingly, women's own level of education was less significant than partner's education level on their knowledge about the impact of using FP on the child, suggesting the influential role their partner's characteristics may pose on women. Women who reported that they discussed FP with their partners and those using a method of FP (either short or long term) exhibited higher knowledge about the

Table 4 Prevalence of knowledge about the impact of family planning (FP) on mother and child among women (aged 15–49 years) in Nyanza and Western Regions of Kenya

Characteristics of respondents	Knowledge about impact of FP on the child			Knowledge about impact of FP on the mother		
	None	Low	High	None	Low	High
Age (years)	p=0.000			p=0.000		
15–24	28.3	43.0	28.7	18.8	71.8	9.4
25–39	18.0	44.5	37.6	6.0	76.7	17.3
40–49*	16.7	42.0	41.3	8.6	72.7	18.7
Parity	p=0.000			p=0.000		
<2	29.1	42.4	28.5	21.0	68.5	10.4
2–3	22.4	46.8	30.9	8.7	79.4	11.9
4–5	15.8	41.4	42.7	5.3	74.7	20.1
6+*	17.3	43.1	39.6	8.0	75.1	16.9
Ethnicity	p=0.001			p=0.000		
Luhya	22.5	39.9	37.6	9.3	76.0	14.7
Luo	19.3	47.3	33.4	8.6	76.3	15.1
Teso*	27.0	38.1	34.9	21.8	65.8	12.4
Religion	p=0.191			p=0.035		
Catholic	24.1	40.8	35.1	14.6	71.5	13.9
Other*	21.1	44.6	34.4	10.6	75.0	14.4
Level of education	p=0.011			p=0.000		
<Secondary	23.1	43.8	33.1	13.2	73.2	13.6
Secondary+*	16.7	44.5	38.8	6.4	74.9	18.7
Partner's level of education	p=0.000			p=0.094		
<Secondary	19.2	45.0	35.8	8.1	77.8	14.1
Secondary+*	16.9	45.4	37.7	5.2	77.9	16.9
Reads newspapers or magazines	p=0.472			p=0.024		
Yes	23.2	41.2	35.6	12.8	69.8	17.4
No*	21.6	44.2	34.2	11.6	75.4	13.1
Listens to radio	p=0.228			p=0.004		
Yes	21.3	43.3	35.4	11.6	72.8	15.6
No*	24.6	43.7	31.6	13.0	77.8	9.2
Watches television	p=0.148			p=0.008		
Yes	21.9	39.8	38.2	10.9	70.4	18.8
No*	22.1	44.4	33.6	12.2	74.9	12.9
Discussed use of FP with spouse	p=0.000			p=0.000		
Yes	14.6	46.0	39.4	3.8	79.1	17.1
No*	26.9	43.7	29.4	14.7	74.4	10.9
Type of FP method being used	p=0.000			p=0.000		
None	24.3	44.9	30.8	14.8	73.2	12.1
Short-acting	17.6	40.4	42.0	7.1	74.5	18.4
Long-acting or permanent	12.6	46.4	41.0	1.1	80.9	17.9
District	p=0.001			p=0.000		
Bondo	20.7	44.6	34.7	9.6	74.6	15.9
Siaya	18.9	49.5	31.6	8.0	77.6	14.4
Busia	23.5	37.2	39.3	9.6	75.5	15.0
Teso*	25.6	40.5	33.9	20.6	67.1	12.3

*Reference category.

Table 5 Log-odds of having higher than lower knowledge about the impact of family planning (FP) on women (aged 15–49 years) in Nyanza and Western Regions of Kenya by selected characteristics

Characteristics of respondents	Model I		Model II	
	β	p Value	β	p Value
Age (years)				
15–24	–0.127	0.596	–0.925	0.003
25–39	–0.118	0.508	–0.231	0.306
40–49*	–	–	–	–
Parity				
<2	0.098	0.700	0.223	0.508
2–3	–0.117	0.567	0.053	0.842
4–5	0.107	0.547	0.373	0.099
6+*	–	–	–	–
Ethnicity				
Luhya	–0.159	0.561	–0.272	0.438
Luo	0.036	0.913	–0.149	0.726
Teso*	–	–	–	–
Religion				
Catholic	–0.022	0.876	–0.030	0.867
Other*	–	–	–	–
Level of education				
<Secondary	–0.153	0.371	–0.176	0.415
Secondary+*	–	–	–	–
Partner's level of education				
<Secondary	0.040	0.775	–0.120	0.505
Secondary+*	–	–	–	–
Reads newspapers or magazines				
Yes	0.172	0.289	0.297	0.151
No*	–	–	–	–
Listens to radio				
Yes	0.130	0.459	0.263	0.261
No*	–	–	–	–
Watches television				
Yes	–0.060	0.711	0.090	0.659
No*	–	–	–	–
Discussed use of FP with spouse				
Yes	0.393	0.006	0.627	0.001
No*	–	–	–	–
Type of FP method being used				
None	–0.357	0.016	–0.568	0.004
Short-acting	0.053	0.783	0.055	0.815
Long-acting or permanent*	–	–	–	–
District				
Bondo	–0.228	0.503	0.216	0.622
Siaya	–0.406	0.201	0.346	0.397
Busia	–0.158	0.551	0.262	0.441
Teso*	–	–	–	–
Intercept 1	–1.810	0.000	–2.885	0.000
Intercept 2	0.383	0.227	1.920	0.000
χ^2 value	37.756	0.006	65.236	0.000
df	19	–	19	–

*Reference category.
df, degrees of freedom.

impact of FP on the child than women who did not discuss FP with their partner and were not using a method of FP.

Although they did not have the strongest association, ethnicity and district were also significantly associated with knowledge about the impact of using FP on the

child. The Luhya women had the highest (38%) level of knowledge, followed by the Teso women (35%). By district, women from Busia district (39%) had the highest knowledge levels, followed by women from Bondo district (35%). Access to the media and religion had no significant effect on the knowledge about the impact of FP

on the child. Knowledge about the impact of FP on the mother was significantly associated with all independent variables except partner's education level. Religion and access to the media, which were of no significance on the knowledge regarding the impact of FP on the child, showed significance on the level of knowledge about the impact of FP on the mother.

Determinants of knowledge about the impact of using FP methods on the child

Results on the determinants of knowledge about the impact of using FP on the child are presented under Model I of the ordered logit in table 5. Only two variables are significant on knowledge about the benefits of FP for the child. These variables are 'discussed use of FP' ($p < 0.007$) and 'type of FP method' being used ($p < 0.02$). Women who discussed FP with their partner have higher knowledge about the benefits or impact of FP on the child than those who did not. Women who are not using a method of FP have lower knowledge about the impact of FP on the child than women using long-acting or permanent methods of FP. The model also shows that there are no significant differences in knowledge levels between women using short-acting methods of FP and women using long-acting or permanent methods of FP.

Determinants of knowledge about the impact of using FP methods on the mother

Model II in table 5 shows the determinants of knowledge about the impact of FP on the mother or woman. As in Model I, 'discussed use of FP' and 'type of FP method' being used are significant for a woman's level of knowledge about the impact of FP on the mother. These variables actually show stronger significance for knowledge about benefits for the mother than for the child. However, unlike Model I where age of the woman is insignificant, Model II shows that the age ($p < 0.002$) of a woman is a strong predictor of knowledge about the impact of FP on the mother. Young women (aged 15–24) are significantly less likely to have higher knowledge about the impact of FP on the mother than older women (aged 40–49). There is no significant difference in knowledge levels between middle aged women (aged 25–39) and older women (aged 40–49).

DISCUSSION

This paper has examined the level of knowledge regarding the benefits of FP and has also analysed factors associated with this knowledge. Knowledge levels about the impact of FP are generally low, as less than 40% of women in Western Kenya reported high knowledge about the impact of FP on the child, while approximately 16% were highly knowledgeable about the impact on the mother.

According to women's characteristics, only three out of the 12 variables examined are significant predictors of knowledge about the benefit of FP. The strongest predictor is the discussion of FP with the spouse. This

variable was significant for knowledge about the impact on both the child and mother. Discussion of FP with the spouse has been found to be critical in the use of FP methods elsewhere. Several studies have shown that women who discuss with their spouses about, and have their partner's approval for, FP are more inclined to use a modern method of contraception.^{13 16–18} For example, Ethiopian women who discussed FP with neither their husbands nor a health worker had the highest unmet need for FP.¹³ In this study, women not using contraceptive methods are less knowledgeable about the benefits of FP; this is expected as individuals are less likely to adopt behaviours for the sake of change without anticipating some benefits from such behaviour. Age was only significant on the knowledge about benefits for the mother. Younger women were less knowledgeable about the benefits of FP compared with older women (aged 40–49). Generally, older women are more experienced about reproductive health matters than younger women, hence this observation.

The interpretation of the findings in this study needs to be done with caution as the study uses cross-sectional survey data. To this end only associations, and not causal relationships between variables and outcomes, can be accounted for. This limitation is accentuated with a lack of qualitative information to complement the findings.

CONCLUSION

This study has demonstrated that women in the study area have low knowledge about the benefits of FP for themselves and their children. Therefore, FP interventions need to emphasise increasing knowledge about the benefits of FP among women in Western Kenya. These interventions should also involve men as they are critical in influencing women's decisions regarding FP.

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