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Prevalence of fear of childbirth in a sample of gravida women in Kenya

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ABSTRACT

Objective: The aim of the study was to determine the prevalence of fear of childbirth (FOC) using a sample of gravida women in Kenya, a developing country where it is not fully acknowledged.
Materials and methods: This were a cross-sectional study on gravida women visiting health facilities to receive routine antenatal care. The study applied multistage sampling to enrol eligible expectant women. A researcher-developed questionnaire was used alongside Wijma Delivery Expectancy/Experience Questionnaire (version A) to collect respondents' demographic characteristics and to measure their fear of childbirth levels, respectively.
Results: Approximately 29.5% had low, 40.4% moderate, 22.1% high, and 8% recorded severe FOC levels. Comparing by parity, the prevalence of severe FOC was higher on primigravida at 13.8% than multigravida, 8.0%. The results revealed a significant relationship between marital status ($p = 0.045$), parity ($p = 0.000$), literacy status ($p = 0.000$), regular check-up of pregnancy at health facilities ($p = 0.003$), having trust in healthcare providers ($p = 0.000$), and physical activity for gravida women with fear of childbirth ($p = 0.000$).
Conclusion: From the findings, special attention on the identified predictors of fear of childbirth during prenatal sessions would help in managing fear of childbirth before they give birth.

Introduction

Childbirth is a natural phenomenon that encompasses both physiological, emotional, and social factors. Most women at reproductive age (before the age of 45) become pregnant at least once, which draws both positive and negative implications in their lives [1–3]. A positive child-bearing experience is supplemented by a sense of personal gratification among the new mothers, which impacts their well-being and emotional relationship with their neonates. Similarly, it affects their interactions with their spouses and sexual desires in the future including the desire to sire more children [4,5]. On the other hand, a negative childbirth experience distorts such desires thus leading such women to choose caesarean section as a preferred mode of delivery [6–9]. From previous studies, countries such as Sweden and Denmark have reported varying prevalence of fear of childbirth [10–13]. In Sweden, the prevalence of fear of childbirth is between five (5) to 20%, and about six (6) to 10% of gravida women having severe fear of childbirth(FOC) levels in Denmark [8,14–16].

The available statistics from the five studies evaluated shows that gravidity is essential in fear of childbirth manifestation. Also, the studies indicate that primigravida women are more likely to experience FOC compared to multigravida, with such fears emanating from previous unsuccessful pregnancies. Similarly, it may occur among such women when they encounter numerous negative experiences after a successful pregnancy including prolonged labour, laceration and giving birth to a neonate with low birth weight, and postpartum depressive disorders [17–21].

Numerous studies have shown a clear association between sociodemographic characteristics and FOC among gravida women. Some of these characteristics include level of education [22], age [19], and current employment status [11]. Also among them, a negative history of successful pregnancies [23], operative delivery [24], and social support [25] mechanisms are crucial in prenatal FOC. Also, during labour, both psychological and social factors are points of concern. They include genetic background [26], personality traits of expectant women [27], radical myths on the conduct of midwives [8], fear of loneliness [28], fear of self-safety and the neonate, and inadequate social support [29].

Most studies on FOC reviewed during this study have been conducted in western countries, which have invoked universal concerns. However, within the scope of this study (Kenya and the African region), there were little or no substantive studies on FOC [29]. Therefore, there

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Table 1
Sampling framefor study respondents.

Sampling Unit	Sampled Population.	
Health facilities offering maternal health services in each Ward	Total population	Calculated sample
1. Angata	110	16
2. Baawa	79	12
3. Lodokejek	422	58
4. Loosuk	250	35
5. Maralal	1347	184
6. Porro	100	14
7. Suguta Marmar	439	66
Total	2747	385

was limited literature to guide the findings. The objective of study is to determine the prevalence of FOC in a sample of gravida women in Kenya.

Materials and methods

This study was part of a comprehensive study that was being conducted to test the influence of integrated prenatal education on fear of childbirth among women of reproductive age in Samburu County, Kenya. The Jaramogi Oginga Odinga Teaching and Referral Hospital Institutional Ethical Review Committee (ERC.IB/VOL.1/69) approved this study. The study population comprised of 376 gravida women that were coming for routine antenatal care visits within July 2019 obtained through multistage cluster sampling. The study region (Samburu County) had three sub-counties namely North, East, and Central. Through random sampling, the Central sub-county was selected. The sub-county had seven wards with 2747 deliveries annually. The sample size (n = 385) was divided by the total number of deliveries in the health facilities in the seven wards to obtain the required sample size in each ward, and the result multiplied by the population covered by each section as indicated in Table 1. Each ward has a health centre which has the capacity to offer maternal and child health services.

In each of the ward, the sample was obtained by selecting the health facility with the highest population of expectant women. The gravida women that visited these health facilities formed a research unit. We included gravida women (both primigravida and multigravida women), between the ages of 18 to 45 years, between 17 and 22 weeks of gestation; mentally sound. Expectant women who were below 16 weeks of gestation and above 23 weeks were excluded from the study. Also, to determine the relationship between the predictor variables and the FOC, the study included the following independent variables: marital status, literacy, age, gestation age, physical activity, regular pregnancy check-up, the trust of gravida women on the healthcare providers, preferred mode of delivery, and gravidity.

The study used Wijma Delivery Expectancy/Experience Questionnaire version A (WDEQ-A) and a self-developed demographic characteristic criterion to collect data from expectant women who met the inclusion study model outlined above and who had accepted to participate by consenting.

The English version of WDEQ-A was translated into Swahili language after receiving permission to use the tool from Professor Klaas Wijma. This was done by two bilingual obstetricians (forward translation) and was reviewed and discussed in the context of Kenyan culture by the first author. The Swahili version was translated back into English by an independent professor of linguistics. The two versions were compared for clarity and consistency to reach the consensus on the final version.

The WDEQ-A measure FOC by asking gravida women to rate the depth of their feelings against 33 items. Answers are given on a six-point scale starting from “not at all” (score is given as 0) to “extremely” (scores given as 5). The total minimum score is zero and the maximum is one hundred and sixty-five (1 6 5). A lower score indicates less FOC and vice versa. Scores are categorized into three: below a score of 37 is considered low FOC, 38–65 is moderate FOC, 66–84 is considered as high FOC, and above a score of 85 is severe FOC [21]. Internal consistency for this study was found to have a Cronbach Alpha coefficient of 0.916.

Statistical analysis

Descriptive and analytical statistics were conducted in all data using SPSS version 22. The mean, percentages, and frequencies were used to describe data. Chi-square and binary logistic regression were used to establish the association between the independent variables (maternal characteristics) and FOC measured as a binary variable (the four categories of fear of childbirth (low, moderate, high and severe FOC) were recoded into two categories; low and moderate FOC were recoded into a new category of no FOC; and high and severe FOC recorded into FOC). Logistic Regression was used to establish predictors to fear of childbirth among respondents. All estimates were reported with 95% confidence intervals (95%CI). Statistical significance was assumed with P-values < 0.05. The statistical package SPSS version 22.0 was used for the analyses.

Results

Demographic and obstetric characteristics of respondents

In the study, from a population of 385 gravida women, 98% (n = 376) participated and completed scoring individual W-DEQ (A) questionnaire. Most participants 76.6% (n = 288) were married. The respondents’ mean age was 27 years ± 5.43 SD with approximately 37.8% (n = 142) being between 25 and 29 years old. Among them, more than 50% (n = 198) had their pregnancies planned and approximately 84.8% (n = 273) preferred vaginal delivery. Also, 57.7% of the respondents (n = 217) were multigravida while primigravida were 42.3% (n = 159) of the total.

Comparing parity to socio-demographic characteristics, the results showed significant differences between parity; and age, education, marital status, and residence of respondents. However, there was no statistical significance between parity and employment status as shown in Table 2.

Prevalence of fear of childbirth

About 29.5% (n = 111) had low, 40.4% (n = 152) moderate, 22.1% (n = 83) high, and 8% (n = 30) had severe FOC; as indicated in Table 3. The computed fear of childbirth ranged from 19 to 119. The mean score was 51.8 (SD = 20.67) with the median being 47.0, skewness 0.785, and kurtosis 0.120. The majority of respondents were in the moderate fear of childbirth category (primigravida,39.6% (n = 86) and multigravida; 41.5% (n = 66).

The four categories of fear of childbirth were recoded into two categories. Low and moderate FOC were recoded into a new category of no FOC and high and severe FOC recoded into FOC. The results of Chi-square test revealed a statistically significant relationship between FOC and the following obstetric variables: having trust in healthcare providers (P = 0.000), literacy status (P = 0.000), regular check-up of pregnancy at health facility (P = 0.003), physical activity (P = 0.000), marital status (P = 0.045), and parity (P = 0.000). However, there was no significant statistical difference between preferred mode of delivery (P = 0.21), and planned pregnancy (P greater than 0.05)), as shown in Table 4.

Also, logistic Regression was carried out, where variables comprising of literacy level of participants, trusting healthcare providers by expectant women, attending childbirth preparation classes, participating in physical activity regular check-up of pregnancy, preferred

Table 2
Participants' psycho-socio-demographic and obstetrics characteristics by parity (N = 376).

	Socio-demographic characteristics	Total n (%)	Multigravida n (%)	Primigravida n (%)	Parity differences
1	**Age (mean ± SD)**	**27 ± 5.43**	**28.2 ± 5.48**	**25.7 ± 5.03**	χ^2 = 22.453
	18–24	122(32.4)	52(23.96)	70(44.3)	P = 0.000
	25–29	142(37.8)	83(38.25)	59(37.11)	
	30–34	85(22.6)	62(28.57)	23(14.47)	
	35–45	27(7.2)	20(9.22)	7(4.40)	
2	**Education**				χ^2 = 22.481
	None	118(31.4)	89(41.0)	29(18.2)	P = 0.000
	Primary	119(31.6)	61(28.1)	58(35.5)	
	Secondary	81(21.5)	38(17.5)	43(27.0)	
	Tertiary	58(15.4)	29(13.4)	29(18.2)	
3	**Marital status**				χ^2 = 23.806
	Single	85(22.6)	30(13.8)	55(34.6)	P = 0.000
	Married	288(76.6)	186(85.7)	102(64.2)	
	Divorced	3(0.8)	1(0.5)	2(1.3)	
4	**Residence**				χ^2 = 25.804
	Rural	212(56.4)	145(66.8)	67(42.1)	P = 0.000
	Peri-urban	104(27.7)	51(23.5)	53(33.3)	
	Urban	60(16.0)	21(9.7)	39(24.5)	
5	**Employment status**				χ^2 = 0.071
	Employed	92(24.3)	52(24.0)	40(25.2)	P = 0.809
	Not employed	284(75.5)	165(76.0)	119(74.8)	
	Obstetric characteristics				
6	**Gestation age**				χ^2 = 4.118
					P = 0.249
7	**Parity (Mean ± SD)**	**22.99 ± 1.03**	**22.97 ± 1.02**	**23.17 ± 1.06**	χ^2 = 367.850
	Multigravida	217(57.7)			P = 0.000
	primigravida	159(42.3)			
7	**Pregnancy status**				χ^2 = 15.333
	Planned	198(52.7)	133(61.3)	65(40.9)	P = 0.000
	Not planned	178(47.3)	84(38.7)	94(59.1)	
8	**Preferred Mode of delivery**				χ^2 = 8.130
	Vaginal	273(84.8)	163(84.0)	110(85.9)	*P = 0.02*
	Caesarean section	25(7.8)	11(5.7)	14(10.9)	
	undecided	24(7.5)	20(10.3)	4(3.1)	
9	**Last delivery experience (multigravida)**				χ^2 = 0.854
	Positive	187(85.4)			P = 0.355
	Negative	32(14.6)			
10	**Going for regular antenatal check-ups**				χ^2 = 51.448
	Yes	239(63.6)	171(78.8)	68(42.8)	P = 0.000
	No	127(36.4)	46(21.2)	91(57.2)	
11	**Attending child preparation classes**				χ^2 = 43.229
	Yes	220(58.5)	158(72.8)	62(39.0)	P = 0.000
	No	156(41.5)	59(27.2)	97(61.0)	
12	**Having trust in healthcare providers**				χ^2 = 35.536
	Yes	218(58.0)	154(71.0)	64(40.3)	P = 0.000
	No	158(42.0)	63(29.0)	95(59.7)	
13	**Participating in physical activity**				χ^2 = 5.297
	Yes	175(46.5)	90(41.5)	85(53.5)	P = 0.021
	No	201(53.3)	127(58.5)	74(46.5)	

Table 3
prevalence of fear of childbirth in nulliparous and multiparous women.

Level of fear of childbirth	Multigravida n(%)	Primigravida n(%)	Total n(%)
Low	83(38.2)	28(17.6)	111(29.5)
Moderate	86(39.6)	66(41.5)	152(40.4)
High	40(18.4)	43 (27.0)	83(22.1)
Severe	8(3.7)	22(13.8)	30(8.0)

mode of delivery and marital status as predictors of FOC were included. The odds of FOC in gravida women that had trust in the health care providers were 2% less than them that did not (p = 0.027). Similarly, the fear of gravida women who had participated in physical activity was 3% less than those who did not % (P = 0.000). The odds of FOC among literate women were 61% less than those of the illiterate women (P = 0.000). Finally, the level of fear among gravida women that went for regular check-up of their pregnancy were 42% less than those who did not (P = 0.001); as shown in Table 5.

Discussion

This was the first study conducted in a developing country to measure the prevalence of FOC within a sample from a population of gravida women. The main focus of this study was to determine the prevalence of FOC among gravida women in the Kenyan region. The Wijma Delivery Expectancy/Experience Questionnaire version A guided this study. The result indicated that the prevalence of severe FOC (13.8%, n = 22) was more on primigravida women than multigravida women who recorded a 3.7% (n = 8) of the total. Several author-guided studies have related a higher prevalence of FOC among primigravida women to their transition into motherhood, which is curbed by numerous anticipations and anxieties. These results agree with other studies conducted in other countries and regions.[15,26,29–32].

Also, compared to other countries such as Denmark and Sweden, the prevalence of FOC levels recorded in these countries were slightly higher than the current study findings values, 12% (95% CI 0.09–0.15) (I2 = 99.51%, p = 0.00). The findings from this study indicated a similar value on the prevalence of severe FOC across the rest of Europe at 8% (95% CI 0.04–0.13). Notably, the prevalence in the current study

Table 4
Relationship between obstetric characteristics and fear of childbirth in sample of Kenyan gravida women.

	Fear of childbirth/ obstetric characteristics	No FOC	FOC	Total	p - value
		n(%)	n(%)	n(%)	
1	**Trust on the health worker**				χ^2 = 12.50
	Yes	168 (63.9%)	50 (44.2%)	218 (58%)	p = 0.000
	No	95(36.1%)	63(55.8%)	158 (42%)	
2	**Literacy status**				χ^2 = 51.263
	Literate	147(55.9%)	18(15.9%)	165 (43.9%)	p = 0.000
	Illiterate	116 (44.1%)	95(84.1%)	211 (56.1%)	
3	**Planned pregnancy**				χ^2 = 2.859 p = 0.091
	Yes	146(55.5%)	52(46.0%)	198(52.7%)	
	No	117(44.5%)	61(54.0%)	178(47.3%)	
4	**Regular pregnancy check-up**				χ^2 = 8.988 p = 0.003
	Yes	180(68.4%)	59(52.2%)	239(63.6%)	
	No	83(31.6%)	54(47.8%)	137(36.4%)	
5	**Participating in physical activity**				χ^2 = 119.15 p = 0.000
	Yes	189(94.0%)	12(6.0%)	201(53.5%)	
	No	74(42.3%)	101(57.7%)	175(46.5%)	
6	**Preferred Mode of delivery**				χ^2 = 7.768 p = 0.21
	Vaginal delivery	195 (84.4%)	78 (85.7%)	273(84.8%)	
	Caesarean section	14 (6.1%)	11(12.1%)	25(7.7%)	
	Undecided	22(9.5%)	2(2.2%)	24(7.5%)	
7	**Marital status**				χ^2 = 4.026
	Single	54 (20.5%)	34 (30.1%)	88 (23.4%)	p = 0.045
	Married	209 (79.5%)	79 (69.9%)	288(76.6%)	
8	**Attending childbirth preparation classes**				χ^2 = 5.277 p = 0.024
	Yes	160 (60.8%)	60 (53.1%)	220 (58.5%)	
	No	103 (39.2%)	53 (46.9%)	156 (41.5%)	
9	**Parity**				χ^2 = 15.364
	Multigravida	169 (64.3%)	48(42.5%)	217(57.7%)	p = 0.000
	Primigravida	94(35.7%)	65(57.5)	159(42.3%)	

Table 5
Predictors for fear of childbirth in a sample of Kenyan gravida women.

Factors	Fear of childbirth F	R^2	B (95%CI)
Literacy level of participants	21.595	6.156	1.817** (2.86,13.249)
Trusting healthcare providers by expectant women	5.039	0.252	−1.378* (40.076,0.84)
Attending childbirth preparation classes	2.583	0.343	−1.071 (0.93,1.265)
Participating in physical activity	54.515	0.027	−3.595** (0.01,0.071)
Regular check-up of pregnancy	10.119	4.230	1.442* (1.74,10.28)
Constant	1.904	13.114	2.574

* P < 0.05.
** P < 0.01.

was lower than from similar studies conducted in Australia, for example 23% (95% CI 0.07–0.39) (I2 = 98.63%, p = 0.00). Also, compared to studies conducted in America, the prevalence of the current study was lower compared to 11% (95% CI 0.03–0.20) (I2 = 92.97%, p = 0.00). Finally, the prevalence levels retrieved from studies in Asia were the highest at 25% (95% CI 0.11–0.40) (I2 = 97.69%, p = 0.00) compared to the current study.

In addition, the study found that the literacy status of the respondents was associated with FOC, where those with no education were more fearful than them with education. These findings agree with other similar studies [33].

In the current study, parity was statistically significant (P = 0.000). This finding is in agreement with numerous studies conducted in other regions [11,34]. Although it has been documented that the preferred mode of delivery is significantly associated with FOC [35], this study did not find correlations between preferred mode of delivery and FOC. There is need to undertake qualitative study to have a clear understanding of the reason behind this significant finding from this study.

The findings from this study expressed no significant relationship between FOC and socio-demographic variables including age, gestation age, and employment status. These findings are in agreement with a study undertaken by Nilsson et al. and Akhlaghi et al. [8,36]. The current study was conducted in a public hospital and perhaps the employment status variable would be significant if data provisions for both the gravida women attending public hospitals and those preferring private hospital were available.

In the current study, several obstetric variables influencing fear of childbirth were used. Gravida women who went for a regular check-up of their pregnancy were less likely to have FOC relative to those that did not. Additionally, gravida women who participated in physical activity and childbirth preparation classes were less likely to develop FOC relative to those that did not. Also, having trust in healthcare providers was an indicator of FOC reduction. Therefore, when gravida women's awareness of childbirth increases, their fears of childbirth levels decrease. Connately, encouraging expectant women to attend childbirth preparation classes provide an excellent opportunity to create awareness about the entire process of childbirth. Therefore, these four variables are determining modifiers of childbirth fears [37,38]. This finding is in agreement with similar studies conducted in United States of America in 2003 [33].

Strengths and Limitation

This is the first comprehensive study done in East Africa examining FOC based on the WDEQ-A questionnaire. The study respondents consisted of gravida women that visited the health facility, where getting responses from gravida women who do not prefer going to health facilities for regular check-ups is not always a guarantee.

Conclusion

The findings from the study indicated higher FOC levels on primigravida women. The prevalence of severe FOC among Kenyan gravida women is in line with other countries and regions in the world. Physical activity, regular pregnancy check-up, having trust in healthcare providers, and attending childbirth preparation classes are the strongest predictors within this study's population. However, in this study, unlike studies from other regions, there was no correlation between preferred modes of delivery and fear of childbirth. This was the first comprehensive study undertaken in Est Africa to measure the prevalence of FOC in a sample of gravida women.

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None.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.srhc.2020.100510.

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