



Utilization of Individual Birth Plan Among Women Attending Postnatal Clinic at Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu Kenya: A Hospital-Based Survey

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ABSTRACT

Background: Kenya has a maternal mortality rate (MMR) of 362 women per 100,000, partly attributed to inadequate or lack of birth and emergency preparedness, including the individual birth plan. Moreover, a paucity of data on determinants of individual birth plan use hampers its promotion and utility against MMR. This study assessed the determinants of individual birth plan use among women attending the postnatal clinic at Jaramogi Oginga Odinga Teaching and Referral Hospital in Kisumu, Kenya.

Methods: Hospital-based survey was conducted among 354 expectant women between November 2018 and February 2019. Data were collected using questionnaires and a Focus Group Discussion guide. A Logistic regression model was also used to determine factors associated with IBP utilization, where only p -value's <0.05 were considered significant. Textual data were analyzed thematically using NVIVO.

Results: Most mothers (68.6%) had an individual birth plan. Determinants for having birth plans included client factors such as education, OR 8.93, $p<0.001$, occupation, OR=2.40, $p=0.020$, and parity, AOR=3.29, $p=<0.034$; knowledge of danger signs, AOR 8.1, $p=0.001$. Health facility factors included birth plan counseling, OR=3.45, $p=0.013$, emergency preparedness, OR=2.06, $p=0.034$, access to motorized transport such as a car, OR=3.8, $p=0.035$ or motorcycle, OR=2.7, $p=0.006$ and attending a clinic in a referral hospital, OR=5.8, $p=0.003$

Conclusion: This study has demonstrated most women utilize individual birth plans. However, they were ill-prepared for an emergency. Determinants of IBP use included client factors such as education level, employment status, parity, knowledge of danger signs, maternal attitude; and facility factors including counseling, attending a clinic in a referral hospital, the use of an automobile to reach the hospital, and hostility by the health care providers. Therefore, we recommend that prenatal counseling should emphasize emergency preparedness among pregnant women. There is a need to empower women through education and employment to enhance IBP utilization.

KEY WORDS Individual birth plan, Emergency preparedness, maternal health

BACKGROUND

Approximately 333,000 women die due to pregnancy-related conditions in the world annually [1]. Nearly 85% of these deaths occur in Sub-Saharan Africa and Southern Asia [2]. Even though evidence shows maternal mortality is slowly dropping in these developing countries [3], the rate is still 14 times higher than in developed nations [4]. Kenya's Maternal Mortality Ratio (MMR) is estimated at 362 deaths per 100,000 live births [5], which is considered very high [6]. Direct causes of these maternal deaths include obstetric hemorrhage, hypertensive disorders, and unsafe abortions. Indirect causes include anemia, HIV/AIDS, and cardiovascular conditions [24]. Other factors responsible for high maternal mortality in Kenya include poor health-seeking behaviors, delay in seeking care, poor referral mechanisms, poor provider attitudes, and strained human resources. [25].

In Kisumu County of Kenya, the Maternal Mortality Ratio is estimated at 597 deaths per 100,000 live births [7]. This is nearly double the national average [5]. The vast majority of these deaths occur at the Kisumu County Referral Hospital and Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH). These are large referral facilities that provide tertiary medical services to a population of approximately 5 million people from Kisumu and other neighboring counties. The major causes of maternal deaths are classical; 27% are caused by hemorrhage accounts, 14% caused by hypertensive disorders, and 10% caused by sepsis. Other causes include HIV and AIDS, malaria, and unsafe abortions [6]. Moreover, these maternal deaths are aggravated by delays in access to care [8].

Most maternal deaths are a result of preventable causes and can be mitigated by the use of an Individual Birth Plan (IBP). IBP's were introduced to minimize delays encountered by pregnant women in accessing maternity care [8]. The IBP is a counseling package of care administered to pregnant women by nurses during antenatal care visits. It is one of the pillars of The Safe Motherhood Initiative, introduced by WHO in 1987, and adopted in Kenya in 2003. The WHO protocol for IBP requires pregnant women to formulate a written IBP that is discussed with the health care provider during antenatal clinic visits. The IBP package covers 2 main components namely 1) birth preparedness, which involves women identifying a birth companion, place of birth, means of transport, a compatible blood donor, arranging for funds to use in case of an emergency, knowing their expected date of delivery and 2) Knowledge of danger signs during pregnancy, delivery, and post-delivery. Knowledge of danger signs helps the mothers to note danger signals, make the right decisions, and take appropriate healthcare-seeking actions [9]. Antenatal women are offered an array of counseling services, including identifying, managing, and preventing certain pregnancy-related conditions, adopting healthy behaviors for instance on safety, diet and iron supplementation, and birth spacing. Counseling on IBP forms part of antenatal care counseling.

Despite the known benefit of IBP, several studies have shown that birth plan utilization remains low and pregnant women still have low knowledge on danger signs precipitating inadequate preparedness [10-13] in spite of good antenatal clinic attendance [14, 15]. This leads to delays in making timely decisions to seek professional help, consequently increasing the risks of maternal deaths.

The aim of this study was to determine factors associated with the utilization of the IBP among women attending the postnatal clinic in JOOTRH. It provides insights on birth plan utilization among women in an urban and peri-urban settlement of Kisumu County and adjoining areas. It further contributes to the body of knowledge regarding possible predictors of the utilization of IBP. Results may influence the adaption of guidelines to reinforce IBP uptake. Ultimately, this will contribute towards achieving the third Sustainable Development Goal to reduce the maternal mortality ratio.

METHODS

Study design

A facility-based survey was conducted at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kisumu County, Kenya.

Study site

JOOTRH is located in Kisumu East Sub County, Kisumu County, Kenya. It is a level 6 referral health facility. The Kenya healthcare system is structured in a stepwise manner, the highest level of health facilities being level 6. These facilities are national referral hospitals that also serve as teaching and research centers. JOOTRH has a

bed capacity of 467 and a catchment population of approximately 5 million people. The facility registers high antenatal care attendance, in 2017, the hospital registered 3115 new antenatal visits and 2532 deliveries. The selection of JOOTRH as a study site was because it is a high-volume ANC site which would enable an adequate sample size to sufficiently answer the research objectives.

Sample size determination

A minimum difference of 10% in the IBP indicator was considered significant. Given 95% significance and 80% power a minimum of 322 respondents was needed.

Inclusion criteria

To participate in the study, mothers had to have attended the antenatal care clinic during their past pregnancy, been able to give consent, and been residents of Kisumu in the past 1 year preceding the study.

Sampling procedure

Systematic sampling techniques were used to choose the study participants. Potential participants were sampled from the postnatal clinic. The first client was chosen randomly between one and the sampling interval meaning, the first person to come and the third person. Every third person arriving at the postnatal clinic was selected. In case a selected participant declined, the next one would be interviewed. Participants were asked questions about their most recent pregnancy. On average, 300 postnatal women attend postnatal care clinic in JOOTRH in a month. The study sample size was drawn from a sampling frame of approximately 1000 women who attended the clinic during the 3 months that data was collected.

To obtain information regarding the use of an IBP, participants were asked questions about their most recent pregnancy. The composition included younger women 18 to 25 years old and older women; 26 to 49 years old.

Data collection methods

Quantitative data were collected using a structured questionnaire administered by trained research assistants. The questionnaire covered socio-demographic characteristics, details on reproductive health behaviours, and their birth and emergency preparedness. Because the study needed to capture IBP utilization information throughout a pregnancy period, questions regarding their past pregnancy were asked.

Pre-Testing of data tools

Pre-testing of data tools was carried out in Kisumu County Hospital. A total of 35 women in the postnatal clinic were interviewed. This pre-test of study tools was done to test the quality, reliability, and efficiency of the data tools. The pre-tested questionnaires were evaluated, feedback from research assistants was sought, and changes were adapted accordingly.

Reliability and validity

To ensure reliability is achieved in this study, adequate training of research assistants and pretesting of data collection tools were done. The results of the pre-test informed changes to be made to the data tools. These changes included a change of wording and skip patterns. Validity was ensured by the use of a standardized pre-tested questionnaire. The principal investigator ensured that the questions included in the questionnaire are in line with the study objectives.

Data Management and Analysis

Questionnaires were checked for completeness and accuracy daily. Data were coded, validated, and entered into IBM Statistical Package for the Social Sciences (SPSS) version 21.0 (Armonk NY) for analysis. To determine the proportions of mothers who utilized an IBP, percentages were used. For women to qualify as having utilized an IBP, 1) they needed to have been counseled and 2) mentioned/prepared 9 of the 17 birth and emergency preparedness components. To determine the association between client-related factors, health facility-related factors, and IBP utilization. Logistic regression models were used. All independent variables were initially analyzed in a bivariate model, and those that were significantly associated with utilization of an IBP (dependent variable) were included in the multiple logistic regression model in order to identify confounding factors. P-value <0.05 was considered significant.

Ethical Consideration

Permission was sought from The School of Graduate Studies (SGS) of Maseno University. Ethical clearance was obtained from the Maseno University Ethical Review Committee (MUERC) (PG/MPH/00014/2013) and the Jaramogi Odinga Odinga Hospital Ethical Review Committee (ERC.IB/VOL.1/516). Written consent was sought from the participants. The identity of the respondents was kept confidential by using a random, anonymous number for identification purposes.

RESULTS

Characteristics of Study Participants

The mean age of the respondents was 25.9 ± 6.6 years with a range of 15-49 years. About 46% (161) of women were youths (15-24 years), and 81% (287) were married. Approximately 59% (210) had a secondary education, 146 (41%) had one living child, while 42% (149) were unemployed (housewives and students). Moreover, 80% (283) of women attended more than 3 ANC visits during their past pregnancy, as shown in Table 1.

Table 1: Demographic Characteristics of Respondents

Demographic characteristic	Frequency (n=354)	Percentage (%)
Marital Status		
Single	67	19.0
Married	287	81.0
Age category		
15-24	161	45.5
25-34	144	40.6
35-44	49	13.9
Education		
Primary Incomplete	24	6.8
Primary completion	120	33.9
Secondary completion & above	210	59.3
Number of Under 5 Living children		
1 living child	146	41.2
2 living children	81	22.9
3 living children	55	15.5
> 3 living children	72	20.3
Occupation		
Unemployed	149	42.0
Self employed	140	39.5
Employed	65	18.5
Number of Pregnancies		
First	127	35.9
Second	92	26.0
Third	53	15.0
> third	82	23.2
ANC visits attended		
1 - 3 visits	71	20.1
> 3 visits	283	79.9

Uptake of the Individual Birth Plan

The majority, 68.6% (243 people), of the respondents utilized the individual birth plan. About 12.4% of women had low knowledge of danger signs in pregnancy and delivery. Table 2 shows the distribution of uptake of an IBP. Among those who utilized an IBP, 105 (80.8%) were aged between 25-34 years, 169 (87.6%) had secondary and above education, 101 (82.1%) were self-employed, 98 (74.2%) had one living child, 85 (74.6%) had one previous pregnancy at the time of the survey, and 202 (79.8%) of them had attended more than three antenatal visits.

Table 2: Distribution of IBP Utilization by Different mothers

	IBP	
	Unprepared n (%)	Prepared n (%)
Age		
15-24	39 (24.8)	120 (75.2)
25-34	28 (19.2)	119 (80.8)
35-44	12 (25.6)	36 (74.4)
Education		
Below primary	12 (64.7)	7 (35.3)
Primary completion	342 (35.2)	76 (64.8)
Above secondary	27 (12.4)	190 (87.6)
Occupation		
Unemployed	49 (32.8)	99 (67.2)
Self-employed	25 (17.9)	114 (82.1)
Employed	7 (10.2)	60 (89.8)
1 living child	38 (25.8)	110 (74.2)
2 living children	6 (7.0)	74 (93.0)
3 living children	13 (25.0)	41 (75.0)
> 3 living children	24 (32.8)	48 (67.2)
First	33 (25.4)	95 (74.6)
Second	12 (13.3)	81 (86.7)
Third	10 (19.1)	43 (80.9)
> third	26 (32.4)	454 (67.6)
ANC visits		
1 - 3 visits	24 (33.9)	46 (66.1)
> 3 visits	57 (20.2)	227 (79.8)

Client related factors influencing utilization of the individual birth plan

Table 3 summarizes the association between client factors and utilization of the individual birth plan. Women with secondary and above education were 9 times more likely to use the IBP than women with incomplete primary education [AOR=8.93 (2.67 – 29.87), $p=0.001$]. Women who were employed [AOR = 2.39 (1.14–6.77), $p=0.03$] and self-employed [AOR = 2.40 (1.15 – 5.01), $p=0.02$] were more likely to use IBP than the unemployed.

Women with 2 living children had a greater odd of using the IBP [AOR=3.29 (1.21–7.67), $p=0.034$] compared to women with more than 3 children. Additionally, women who had good knowledge of danger signs were more likely to utilize IBP [AOR=8.13 (2.42 – 17.28), $p=0.001$]

Table 3: Association between Client Factors and Utilization of IBP

	IBP n=243 (%)	OR (95%CI)	<i>p</i> value	AOR (95%CI)	<i>p</i> value
Age					
15-24	106 (75.2)	1.04 (0.48 – 2.28)	0.920	-	-
25-34	105 (80.8)	1.44 (0.64 – 3.25)	0.375	-	-
35-44	32 (74.4)	1			
Education					
Primary Incomplete	6 (35.3)	1		1	
Primary completion	68 (64.8)	3.37 (1.15 – 9.85)	0.026	2.87 (0.90 – 9.22)	0.076
Secondary completion & above	169 (87.6)	12.91 (4.37 – 38.12)	< 0.001	8.93 (2.67 – 29.87)	< 0.001
Occupation					
Unemployed	88 (67.2)	1		1	
Self-employed	101 (82.1)	2.24 (1.25 – 4.04)	0.007	2.40 (1.15 – 5.01)	0.020
Employed	54 (89.8)	4.32 (1.72 – 10.83)	0.002	2.39 (1.14 – 6.77)	0.030
Number of under 5 living children					
1 living child	98 (74.2)	1.41 (0.73 – 2.70)	0.304	3.85 (0.35 – 42.36)	0.271
2 living children	66 (93.0)	6.45 (2.26 – 18.39)	< 0.001	3.29 (1.21 – 7.67)	0.034
3 living children	36 (75.0)	1.47 (0.64 – 3.38)	0.371	2.26 (0.34 – 14.99)	0.399
> 3 living children	43 (67.2)	1		1	
Pregnancies					
First	85 (74.6)	1.40 (0.73 – 2.70)	0.307	1.12 (0.37 – 3.43)	0.843
Second	72 (86.7)	3.14 (1.40 – 7.02)	0.005	1.98 (0.32 -12.11)	0.460
Third	38 (80.9)	2.02 (0.84 – 4.88)	0.117	2.28 (0.21 – 25.09)	0.501
> third	48 (67.6)	1		1	
ANC visits					
1 - 3 visits	41 (66.1)	1		1	
> 3 visits	202 (79.8)	2.03 (1.10 – 3.73)	0.023	1.61 (0.80 -3.23)	0.182
Knowledge on danger signs					
Poor knowledge	163 (70.3)	1		1	
Good knowledge	80 (96.4)	11.29 (3.45 – 26.98)	< 0.001	8.13 (2.42 – 17.28)	0.001

Health Facility Related Factors that Influence Utilization of the Individual Birth Plan

Table 4 below summarizes the association between health facility factors and utilization of the individual birth plan. Women who received counseling during the antenatal clinic visits were three times more likely to use the IBP [AOR= 3.45 (1.30 – 9.14), $p= 0.001$] compared to those who were not counseled. Women who were counseled on emergency preparedness (danger signs) were twice more likely to use the IBP compared to those not counseled [AOR=2.06 (1.06 – 4.02), $p=0.003$]. Receiving prenatal care at a referral hospital was associated

with utilization of the IBP, AOR=3.80 (1.10 – 13.14) $p=0.035$. In addition, the use of a motorbike, bicycle, or vehicle to reach the health facility had a significant association with the use of an IBP, AOR= 2.51 (1.23–5.11), $p=0.012$ and AOR=2.76 (1.35 – 5.67), and $p=0.006$ respectively.

Table 4: Association between Health Facility Related Factors and Utilization of IBP

	Prepared N=243 (%)	OR (95% CI)	<i>p</i> value	AOR (95% CI)	<i>p</i> value
Counsel on birth preparedness					
Yes	234 (79.3)	4.69 (1.86 – 11.82)	0.001*	3.45 (1.30 – 9.14)	0.013
No	9 (45.0)	1			
Counsel on emergency preparedness					
Yes	210 (80.5)	2.62 (1.40 – 4.91)	0.003*	2.06 (1.06 – 4.02)	0.034
No	33 (61.1)	1			
Health care workers overworked					
Yes	127 (79.4)	1.33 (0.779 – 2.26)	0.298	-	-
No	116 (74.3)	1			
Health care provider attitude					
Positive	47 (70.1)	0.62 (0.34 – 1.14)	0.127	-	-
Negative	196 (79.0)	1			
Type of Health Facilities					
Dispensary	6 (46.2)	1		1	
Health Center	17 (63.0)	1.98 (0.52 – 7.58)	0.317	1.32 (0.32 – 5.50)	0.700
Sub-county Hospital	16 (66.7)	2.33 (0.59 -9.29)	0.229	2.18 (0.49 – 9.65)	0.306
County Hospital	23 (67.6)	2.44 (0.66 – 9.00)	0.181	2.21 (0.55 – 8.92)	0.263
Referral	180 (83.3)	5.83 (1.85 – 18.38)	0.003	3.80 (1.10 – 13.14)	0.035
Time taken to Health Facility(N)					
< 1 hour	227 (79.6)	2.14 (0.76 – 5.98)	0.148	-	-
≥ 1 hour	15 (51.7)	1			
Mode of transport					
Walking	45 (60.0)	1		1	
Motor bike/bicycle	91 (81.2)	2.89 (1.49 – 5.60)	0.002	2.51 (1.23 – 5.11)	0.012
Motor Vehicle	107 (83.6)	3.40 (1.76 – 6.555)	<0.001	2.76 (1.35 – 5.67)	0.006
Easy access					
Yes	217 (80.1)	1.45 (0.60 – 3.55)	0.411	-	-
No	25 (59.5)				

DISCUSSION

This study identifies a number of factors valuable for understanding IBP usage in a Kenyan public health facility. The study also establishes possible areas for improving IBP intervention as part of ANC services. This study found that over two thirds of the women sampled utilize individual birth plan, which is similar to previous study in Bureti Sub-County, Kericho County, Kenya found that 71% were prepared for birth [16]. The observed high utilization of birth preparedness in this study could have been due to the large workforce at the study site, a large teaching and referral hospital. The hospital is a teaching hospital for nursing, clinical medicine and medical students that offers comprehensive antenatal care counselling. The availability of free maternity care in Kenya, could also be another contributing factor to high uptake of IBP.

Despite high utilization of birth preparedness counselling, a majority of women had not prepared for emergency during their pregnancy and delivery. This can be attributed to lack of knowledge of danger signs during pregnancy. Interestingly, only a handful of women had good knowledge despite having been counselled on danger signs. Similarly, low knowledge of danger signs has also been previously observed in Kenyan and Ethiopian studies [10, 12, 13]. The lack of knowledge and low emergency preparedness observed in this study identified issues with the quality of counseling provided at ANC. Moreover, it is evidenced from the FGD results that some women do not understand the language used in counselling. They preferred the health messages to be provided in their local dialect. Likewise, education has been shown to be key in empowering women to self-actualization and improving their ability to utilize healthcare services. This study established that women who received education beyond secondary school were more likely to use the IBP compared to women that only completed primary education. This was further confirmed by the FGD results which indicated that formal education is likely to prompt women to prepare an individual birth plan. It is expected that a better-informed person is in a better position to make informed decisions. Additionally, being employed is a proxy for a stable income. With a stable income, women are able to comfortably prepare for significant interventions, such as booking a birthing facility, buying babies items, and attending antenatal clinics. In this study, women who were employed were more likely to use the IBP compared to those who were not employed. Variations in income have been demonstrated to be predictive of ANC attendance [17]. Furthermore, women with formal employment are more likely to have knowledge of danger signs of pregnancy and labour [17]. In addition, financial constraints are shown to be a major obstacle for women seeking emergency referrals related to antenatal and delivery complications [9].

Parity is often an influencer of IBP; this study demonstrates that women who had two living children were more likely to prepare for births and emergencies compared to those who had more than three living children. Wijma & Wijma [18] found that most women who experienced complications during their first pregnancy/delivery were often worried about the outcomes of their second delivery, specifically the possibility experiencing similar complications. Therefore, they seemed to prepare for births and emergencies more. Lack of IBP among women of higher parity can be attributed to their belief that life-threatening emergencies are unlikely, since they have accumulated knowledge of experience and teachings from IBP during previous pregnancies. This can also be linked this to a negative attitude and complacency that discourages utilization of the IBP by pregnant women as revealed by FGD results. Marital status was found to have no influence on IBP. During the FGDs, it was clear that women have confidence in their husbands to make concrete decisions regarding their pregnancies and delivery. In the contrary, in a qualitative study in rural Tanzania, unmarried pregnant women were not prepared for births and emergencies due to stigma [19].

Counselling helps women making informed choice with regard to healthcare services. Counselling on IBP and emergency preparedness was shown to increase their use. This is in agreement with findings of studies from Rwanda, Ghana, and Ethiopia which indicate that a majority of women who had identified a skilled birth attendant were well counseled on preparedness and effectively used IBP [20]. Thus, counselling provided to pregnant women by health care providers during their ANC visits is paramount to enhancing IBP utilization. It is worth noting that women who attended the antenatal clinic in a referral hospital were more likely to utilize IBP compared to women who went to dispensaries. This is because referral hospitals tend to have sufficient staffing to handle the additional referrals. Additionally, the study site is a teaching hospital for nurses, clinical officers and medical officers. This may translate to a greater focus on teaching that may increase chances of women utilizing the IBP.

Automobile access increases access to health services, especially for patients who reside far from a health facility. Therefore, availability of means of transport would increase the use of IBP as demonstrated by this study. A previous study has also shown that a motorized transport system enhances health service utilization [21], since distance to the health facility may hinder use of IBP. Furthermore, a majority of women claimed to have missed health talks because they are held in the early morning hours. These talks are key, because they shape the decision to use IBP [22]. More importantly, a language barrier also stood out as a hindrance to IBP use in the FGD results. The nurses used English during the teachings, yet most attendees did not understand the language.

Limitation of the study

This study had some limitations; Firstly, it was a cross-sectional study in which temporal relations could not be assessed. Secondly, there could have been recall bias since the women were asked to recall events within the last one year prior to the survey; thirdly, the study site was a large referral and teaching hospital. Due to its mandate,

the hospital is fairly well equipped with adequate staffing. Moreover, being a training hospital, student nurses, clinical and medical students form part of the workforce and their presence may have enhanced chances of women benefiting from counseling. Finally, the study interviewed women who successfully went through childbirth; practices of mothers who had maternal deaths could have been different.

CONCLUSION AND RECOMMENDATIONS

Utilization of individual birth plan is way below ANC attendance among women attending postnatal clinic at JOOTRH. Moreover, emergency preparedness was noted to be low, despite counselling. Language barriers, women's education level, employment status, number of living children, maternal attitude, knowledge of danger signs, counselling on birth and emergency preparedness, attending clinic in a referral hospital, use of either a vehicle or motorcycle to reach the hospital, and hostility by the health care providers were found to predict IBP use.

In order to improve the utilization of individual birth plan (IBP) among women, it is important to: 1. Improve health education about danger signs to facilitate emergency preparedness among pregnant women. 2. Strengthen education on IBP among women with primary school and below levels of education, women who are unemployed, and women with more than 2 living children. 3. Educate mothers on securing emergency transport funds for a vehicle or motorcycle to access health facilities 5. Additional studies to be conducted in periphery health facilities where staffing and other resources may be constrained.

APPENDIX

List of abbreviations

ANC	Antenatal Care
FANC	Focused Antenatal Care
FGD	Focused Group Discussion
IBP	Individual Birth Plan
HIV/AIDS	Human Immune Deficiency Virus/Acquired Immune Deficiency Syndrome;
JOOTRH	Jaramogi Odinga Odinga Teaching and Referral Hospital
MMR	Maternal Mortality Ratio
MUERC	Maseno University Ethics and Regulatory Committee
SBA	Skilled Birth Attendants
SPSS	Statistical Package for Social Scientists

Author's contributions

IN was responsible for the conception of the problem, design, collection, analysis and interpretation of data and drafting the final article. COA, PO and JO were responsible for collection, analysis and interpretation of data, and drafting the final article. All authors read and approved the manuscript.

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Availability of data and materials

Datasets generated from this study will be available

Ethics approval and consent to participate

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Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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