

Determinants of utilization of maternal health care services among mothers in Harare, Zimbabwe

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Abstract

Background: Provision of quality maternal health care services is an essential component in ensuring a healthy mother-baby dyad both pre- and post-delivery. In Africa, antenatal care, postnatal care, and skilled birth attendances are very low when compared to high-income countries. The continent has a high burden of maternal and infant morbidity as well as mortality rates. According to the Harare Annual Report of 2016, the number of women seeking maternal health care services was gradually declining from 2014 and pregnant women reported various challenges in accessing health care services.

Methods: A 1 to 1 case-control study was conducted in Harare West South Western District using pretested interviewer-administered questionnaires. The study was carried out at all three clinics in the district and a total of 73 cases and 73 controls were selected using a systematic random sampling method. Quantitative data were analyzed using Epi Info statistical package and qualitative data was analyzed thematically.

Results: The median ages for cases and controls were 29 and 24 years, respectively and the age-group 19 to 24 years constituted the majority of participants (41%). Predictors of utilization of services were young age (< 24 years), birth order of < 2, maternal and paternal occupation, and religion. Enabling factors included: asking for permission to seek care, absence of transport challenges, a shorter distance to the health facility, affordability of health services, and a higher household income. Besides the shortage of skilled staff at the clinics, mothers endured long waiting hours to be served. The majority of the cases (78.1 %) and controls (72.6%) preferred to be attended by male nurses. Mothers were required to pay a \$25 fee for booking and city medical staff rarely visited the clinics.

Conclusion: The utilization of maternal health care services in Harare is dependent on the individual, household, and system-related factors. There was a need to articulate policies and design maternal health care programs that target socially and economically marginalized women. Creating women-friendly health facilities with extended hours for the antenatal care, delivery care and post-natal care services for mothers can help to decongest the health facilities.

Background

The health care services received by a mother during pregnancy, labor and delivery, and the postnatal period are critical to the survival of both the infant and the mother. Although it is a complex behavioral phenomenon, maternal health care service utilization is both need driven and supply-induced. When the quality of care in a health center is perceived as good by the consumers, demand for the service increases and this can lead to positive maternal and neonatal outcomes which further strengthens service utilization [1]. Deficiencies in access to care are mainly due to poverty, distance from health centers, and lack of information, inadequate services as well as cultural practices [2]. Identification of these limiting factors can help in channeling attention towards realizing the gains in maternal health care utilization.

Key interventions like ensuring at least four antenatal care (ANC) clinic attendance, having a skilled birth attendant (SBA) at delivery, and three post-natal care (PNC) clinic visits are used to improve maternal and neonatal health in many developing countries [3]. Failure to book or late booking may result in the missing of high-risk pregnancies which can result in fatal complications for both the mother and the fetus [4]. Maternal health services are equally important during the post-partum period which is associated with life-threatening sepsis and severe hemorrhage. The majority of complications occur during the post-delivery period yet post-natal care is the worst underutilized of maternity care services [5].

In the developed world, skilled attendance at delivery is about 99.5% whilst that of the African region is a low 51% [6]. Africa was trailing well below the World Health Organization (WHO) target of 85% in 2010 and 90% by 2015 [7]. Approximately all maternal deaths (99%) occur in low resource settings [8]. In 2016, the maternal mortality rate in the developing world was averaging 242 per 100 000 live births which were 14 times higher when compared to that of high-income countries [9]. It is estimated that 74% of maternal deaths could be avoided if all women had access to maternal health care utilization [10]. Most of the common causes of maternal and neonatal morbidity and mortality are readily preventable, detectable and manageable [8].

High maternal mortality rates in the developing world reflects inequalities regarding the accessibility of health services. Globally more than 70 % of maternal deaths are due to key complications namely: hemorrhage (27.1 %), hypertensive disorders (14%), infection (10.7%) unsafe abortion (7.9 %), and embolism and other direct causes (12.8%) [9]. Such complications can occur at any point during antepartum, intrapartum or postpartum periods without any warning signs and the resultant demand for emergency obstetric care can be costly from individual to national levels. Both the mother and the neonate have susceptible immunity and non-institutional deliveries that are conducted under unsafe conditions expose them to infections. Non-institutional deliveries can cause neonatal mortality as a result of hypothermia [11].

According to the Zimbabwe Demographic Health Survey (ZDHS) 2015, 93% of women had at least one ANC visit while 76% had at least 4 visits [12]. Institutional deliveries were at 77% while maternal postnatal check-up in the first two days after birth was at 57%. Women are recommended to go for the first ANC visit in the first trimester however, the ZDHS 2015 cited that more than a third were four or five months pregnant when they had their first ANC visit and 17% delayed until the sixth or seventh month.

Improved utilization of maternal health care services could aid in achieving the Sustainable Development Goal number 3 which targets a global maternal mortality rate of not greater than 70 per 100 000 live births and neonatal mortality of at least 12 per 1000 live births by 2030 [13]. The Harare Annual Report of 2016 showed a gradual decline in the utilization of maternal health care services. Antenatal care coverages were at 55.2 % in 2015 but dropped to 50.8% in 2016. Booked deliveries dropped by 17% from 4887 in 2015 to 4171 in 2016 and the unbooked deliveries increased by 9% from 2015 to 2016. In spite of the interventions in place to improve utilization of maternal health care services through health educational and promotional activities, Harare West South West District (HWSWD) continued to have the

least utilization of maternal health services when compared to other districts covering high-density suburbs. Figure 1 shows the utilization of maternal health care services in HWSWD from 2014 to 2016.

[Insert Figure 1 here]

Figure 1. Maternal Health Care Utilization in the HWSWD 2014 to 2016. Source: The Harare Annual Report (2016).

The ZDHS 2015 also revealed that 45% of pregnant women in Harare reported at least one problem associated with accessing health care. This study sought to establish the determinants of utilization of maternal health care services among maternity clients in the HWSWD. Improving utilization of ANC services, institutional delivery services as well as PNC services is an integral approach to achieving greater reductions in maternal and neonatal morbidity and mortality as well as reduction of costs of associated complications to the health sector [14].

[Insert Figure 2. Here]

Figure 2. Conceptual framework: Andersen Model of Health Care Utilization Source [15].

Figure 2. shows the behavioral model in which the utilization of health services relies on a set of three functional characteristics which are: predisposing factors, enabling factors and need factors. The availability of predisposing and enabling factors may not be enough to compel a woman to seek health care. The pregnant or nursing mother needs to perceive the threat of complications and believe that the ANC, skilled birth attendance and PNC would provide the expected benefits [16, 17].

Methology

Study design

An institutional-based 1 to 1 unmatched case-control study design was carried out from March to April 2018.

Study setting

The city of Harare is divided into nine districts and the study was conducted in the West South West District covering Mufakose, Glen View and Budiro Polyclinics. The three clinics provide services to residents residing in the surrounding high-density suburbs and slums. The study was conducted at the three polyclinics which are urban public health institutions.

Study population

Mothers attending the day 42 of postnatal services in HWSWD and were 18 years or above made up the study population. Critically ill and mentally challenged mothers were excluded from the study. Postnatal care registers, maternity booklets, and stock cards were reviewed.

Cases were mothers who were presenting for the 42nd day of PNC services after failing to utilize the four ANC visits, mothers who had non-institutional delivery and mothers who missed the 3-day or the 7-day postnatal care service. Controls were mothers who attended the four ANC visits, had an institutional delivery, and came for all the three PNC visits.

Sample size determination

Fleiss formula embedded in Epi Info™ statistical software was used to calculate the sample size.

Number of cases = $[z\alpha/2\sqrt{((r+1)pq)} + z(1-\beta)\sqrt{(rp_1q_1 + p_2q_2)}] 2 \div r(p_1 - p_2)^2$ where:

$Z\alpha/2$ = z value for a two tailed test based on the desired confidence level,

r = ratio of cases to controls,

p = proportion of cases with the exposure,

q = 1- p and

Z (1-β) = power of the study.

According to a study conducted in Ethiopia on UMHCS, at 95% confidence interval, 80% power and 50% exposure to radio and television maternal health education in the control group and an odds ratio of 2.998; 66 cases and 66 controls were generated making a total of 132 respondents [3]. Expecting a 10% non-response rate, the sample was adjusted to 146 thus, 73 cases and 73 controls.

Sampling technique and procedure

According to the PNC Registers, an average of 200 mothers visited each of the Glen View and Budiriro Polyclinics seeking services offered on the 42nd-day post-delivery while the Mufakose Polyclinic had an average of 184 mothers. Using a systematic random sampling of 200 as the sampling frame from the PNC Registers at Glen view and Budiriro Polyclinics, divided by the sample size of 50, a sampling interval of 4 was used to recruit participants into cases and controls. The sampling frame for Mufakose was 184 which was divided by 46 to get the sampling interval of 4. A random sampling method was used to select the first cases and the first controls by tossing a six-sided die. After being tossed, the die displayed a 1 (first maternal case) was adopted for the cases and a 4 (fourth maternal control) for the controls marking the first participants and subsequent participants were recruited by adding an interval of 4.

Data Collection and Analysis

An interviewer-administered questionnaire was used to solicit information from mothers while a self-administered instrument was used for the key informants. The maternal questionnaire contained items to assess socio-demographic information, predisposing, enabling and need factors that are known to influence utilization of maternal health care services. To ensure consistency, the maternal questionnaire was translated to the local language- Shona, and back-translated into English by a language expert. The data collection tools were pretested on five mothers attending day 42 of PNC at a non-participating clinic (Kuwadzana Polyclinic) two weeks before the commencement of data collection.

The principal investigator collected the data and the interviews were carried over a period of three weeks. After obtaining written informed consent, participants were interviewed using a standard pretested questionnaire. Permission to conduct the study was sought from the Ministry of Health and Child Care through the Harare City Director of Health Services and ethical clearance was sought from Africa University Research Ethics Committee. Participation in the interviews was voluntary.

Quantitative data were coded and analyzed using Epi Info Version 7.2.1.0; calculating means, and frequencies, measures of association and Odds Ratios for the independent variables. Stratified analysis was carried out to assess for confounding and effect modification. Logistic regression analysis was performed to control for confounding. Qualitative data was analyzed thematically. Data from key informants and questionnaire open-ended questions were analyzed thematically.

Results

A total of 146 study participants (73 cases and 73 controls) were recruited and the sociodemographic characteristics and predisposing factors for the utilization of maternal health services are presented in Table 1. The age group 19–24 years made up the majority of respondents (41%) while only 8% were 18 years old. About 39% were aged between 25- 34 and 12% were more than 35 years old. Women who were more than 24 years were 41% less likely to utilize the maternal health care services than those who were under 25 years of age (OR: 0.41; 95%CI: 0.21–0.80; $p < 0.01$).

Predisposing factors affecting maternity care utilization in the HWSWD

Cases and controls were compared statistically to find out if there were differences with regards to socio-demographic characteristics. The characteristics under consideration included maternal education, religion, paternal occupation, marital status, maternal age, birth order, maternal occupation, and paternal education.

[Insert Table 1. Here]

[Insert Table 2. Here]

Need related factors associated with the utilization of maternal health care services in HWSWD.

About 59% of the cases and 84% of the controls reported having planned to become pregnant. Pregnant women who had a planned pregnancy were 60% more likely to utilize maternal child health services compared to those who did not (OR 0.4, 95% CI 0.2–0.8; $p = 0.01$). Mothers who received respectful and friendly maternal health services were 84% more likely to utilize maternal child health services compared to those who did not (OR 0.16, 95% CI 0.07–0.04; $p < 0.01$). Women who used a delivery plan were also likely to utilize maternal health services (OR 0.08, 95% CI 0.03–0.8; $p < 0.01$). Most of the respondents' husbands did not attend routine clinic visits. Only 4.1% of the cases and 37% of the controls had their husbands attending. Pregnant women whose husbands managed to attend ANC, labor or post-natal care were more likely to utilize maternal health services although the results were not statistically significant (OR 0.08, 95% CI 0.02–0.3; $p = 0.1$).

Upon using forward stepwise logistic regression to determine independent factors associated with utilization of maternal health care services, seeking permission to attend care (AOR: 11; $p < 0.01$), having a transport problem (AOR: 2.5; $p < 0.01$) and affordability of health services (AOR: 0.04; $p < 0.01$) were still significantly associated with utilization of maternal health services.

Qualitative data revealed that most women had to endure long waiting hours in the queue to access services and the facilities were short-staffed. Some women visited the clinic towards delivery time to reduce the ANC visits which were associated with long waiting hours. Some went to private doctors and pharmacies for the essential regular blood pressure checks while others were seen by faith healers. The women reported that faith healers were able to 'predict' the wellness of the growing fetus as well as the presentation. Women reported that delivery beds were not adequately cleaned after a procedure due to human resource constraints and this deterred some mothers who opted for home delivery. Mothers were asked to pay a once-off fee of \$25 to be booked for the three maternal services (ANC, labor and delivery, and PNC). The majority of the cases (78.1 %) and controls (72.6%) preferred to be attended by male nurses.

Midwives were annually trained on new information in emergency obstetric and neonatal care (EmNOC) to keep them updated on real-time information on maternal and child health care. Community Health Club committee members were recommended to help encourage mothers to book and report for delivery early to prevent complications associated with delays. The ANC average waiting time for the first booking was five hours and three hours for the subsequent visits. Medical care in maternal and child health care had diminished at Budiro and Glen View Polyclinics (some doctors came once a week) and non-existent at Mufakose Poly Clinic. The three polyclinics had above 60% of the supplies essential for use in maternal health service provision.

Discussion

The quality of maternal health service provision is one of the indicators of a vibrant health system. Over the years, the utilization of maternal health services in the city of Harare had gradually declined. This

study aimed to establish the determinants of utilization of maternal health care services among maternity clients in the HWSWD.

Approximately, half of the world's population is under 25 years and the young women in this age group are twice more likely to die in childbirth when compared to women over 25 years [18]. This study showed that the majority of the respondents were in the 19 to 24 and were 59% times more likely to utilize the maternal health care services than those above 25 years. A similar study conducted in Kenya and Bangladesh also revealed that younger women were more likely to utilize skilled birth attendance and maternal health care than older women [19, 20]. This is a good indication revealing that more young women are proactive towards ensuring a healthy mother and a healthy infant post-delivery.

Mothers who had fewer than two children (most likely young) were also more likely to utilize maternal health care services when compared to those who had more than two children. This was consistent with other studies which also found that maternal health care utilization was significantly associated with birth order of less than or equal to two [21- 23]. With increasing parity, mothers become more confident due to the cumulative experience of childbirth and they missed ANC and PNC visits which were detrimental to their health as well as the health of the developing or newly born baby. Many women in this study opted to visit the facility for the first booking after the recommended first trimester. This result was similar to those of an Indian study where most of the pregnancy registrations were done between 16 and 24 weeks [24]. Late registration can result in mothers missing fundamental health education opportunities.

Cultural background, norms, and beliefs can potentially influence one's decision to seek health care services or not. Apostolic faith which constitutes 33% of the Zimbabwean population is linked to the diminished use of modern health services due to their doctrine, teaching, and regulations [25]. In this study women from the apostolic sects were less likely to use the maternal health services. This may be due to a common belief among the congregants that prophets from these sects can be able to diagnose and address the health problems faced by both the mother and the developing baby. This can lead to complications since most of these women often seek services late. Cultural beliefs, women's autonomy, economic conditions, physical and financial accessibility are a major predictor of utilization of health services [26].

The use of health services can be hampered by the distance to be traveled by women to seek maternal health services [27, 28]. Shorter distance to the health facility was significantly associated with the utilization of services due to reduced costs of traveling to the clinic or hospital. Transport problems were viewed as a strong determinant of the utilization of health services in HWSWD and this finding complied with findings from another previous study [29]. Women from the slums surrounding the district faced a challenge of poor road networks and long distances since these areas are remote and lack development. This results in delays especially if the mother is faced with imminent labor and delivery issues at night.

Families with better income status are more likely to utilize maternal health services [23, 24, 27]. In the Shona culture, the husband/male partner is perceived as the provider for the family and our study found

out that a husband/male partner's monthly salary of more than \$100 and those who were formally employed was associated with improved utilization of maternal health services. Although the maternal services offered at the facilities are 'free', many related expenses such as transport to the clinic, CT-scan, and consumables used during delivery are dependent on out of pocket payments from the mothers. Formally employed husbands/partners are more likely to have health insurance which enhances access to health services. Poverty is associated with non-use of health services in India [30]. Consequently, pregnant and nursing mothers who cannot afford these expenses are bound to have difficulties in seeking health care services.

Even when services are readily available, women's decision making power has a major impact on the ability of mothers to seek health services [31]. Thus, women who earn a stipend or salary are more likely to seek health services. However, this study noted that women who earned less than \$100 a month were more likely to use maternal health services than their counterparts who earned more. Due to stringent long working hours in Zimbabwe, those who earn more may have little time to visit the facility on the recommended days. This was confirmed by participants (mainly case) who reported that they failed to book in time and meet the recommended appointments because they were at work.

Skilled birth attendance during labor and delivery is only possible if the referral system is active, the health system is adequately equipped and sufficient health care workers are well trained and motivated [23]. These two interventions are instrumental in reducing maternal and infant mortality and morbidity. However, health systems in low resource settings are usually grossly underfunded and women services received by the mothers are of poor quality. Women attending facilities for maternal services in HSWWD endure long waiting hours in the queues due to a shortage of staff. Thus, it was no surprise that some women ended up seeking services from private institutions. Literature also reviewed that poor services in the public health sector led to women seeking ANC services from private doctors [24].

Maternal education is a strong predictor of the utilization of maternal health services and this was supported by studies in Ethiopia and Bangladesh [23, 32]. Conversely, the current study did not find a significant difference in the utilization of services and maternal education status. The majority of the mothers (97%) had gone beyond the primary school level hence we assumed they understood the importance of utilizing the services.

Pregnant women who sought permission to visit health facilities from their spouses were less likely to utilize maternal health services compared to those who did not. This shows that a woman's autonomy is vital in the utilization of maternal health services. In a study conducted in Burkina Faso, it was noted that to increase utilization of maternal health services, the empowerment of women and exemption of user fees/cost-sharing could help improve access [33]. The need to seek permission contributed to the three delays in seeking health services which increases the risks of severe complications or maternal death. A study conducted in Ethiopia found out that more than half of the respondents reported that the decision to seek obstetric care was made by the husband/partner [34].

In most countries in the African region, women are still vulnerable to common and preventable causes of maternal morbidity and mortality like postpartum hemorrhage and sepsis. This is mainly due to a lack of access to maternal health care because of user fees. In Nigeria, the introduction of user fees has been widely implemented in government health programs as a means of alleviating pressure on constrained budgets as demands for services increase [35]. However, many sub-Saharan African countries have introduced “free” maternity services in a bid to eliminate poverty as an important barrier to maternal health service access and utilization [36]. Our study revealed that maternal health services in this urban setting were not entirely free since women were made to pay \$25 at initial booking.

Surprisingly, almost three quarters of both the cases and controls reported that they preferred to be attended by a male nurse during all the three episodes of maternal visits. This finding is strange and difficult to interpret since women are known to be more caring than men. Mothers in this study perceived male nurses as kindness and empathetic when compared to female nurses who were perceived as brusque and cynical. Health worker’s attitude of disrespect and abuse of women during institutional delivery services can be a barrier to the utilization of maternity care services. A similar study revealed superior respectful maternity care performance of male providers over female providers [37]. Another study in South Africa cited that female nurses ‘deployed violence against patients in their work’ [38]. The female nurses mainly did this to create a social distance and assert their professional identity.

Satisfaction with the service provided by clinicians at the health facility during pregnancy was significantly associated with the utilization of maternal health care. Pregnant women who were satisfied with the service provided were more likely to utilize maternal health care services than those who were not. The process of care dominates the determinants of maternal satisfaction in developing countries. In a study to determine client satisfaction with delivery care service in Southwest Ethiopia, client satisfaction was seen to play a significant role in increasing utilization of institution-based delivery and thus reducing maternal morbidity and mortality mostly through focusing on women-friendly care in hospitals [39].

Our study found out that women who had unplanned pregnancies were less likely to utilize maternal health services. Two studies in east Africa also found out that women who had unplanned pregnancies were two times more likely to book for ANC late compared to women who had planned to have a baby [40, 41]. This may be attributed to the late diagnosis of the pregnancy thus, the woman may be shy visit the clinic and register the pregnancy especially in cases where the pregnant mother is very young, dependent, and not married.

The utilization of maternal health care services is influenced by many individual, household and system-based factors. The factors constitute health beliefs and personal characteristics of the users, social structure, availability, quality and cost of services. Inequity in the use of health care services is also an important element affecting maternal and child survival. High standards of maternal health care utilization are the only measure towards safe motherhood.

Study Limitations

This study was predominantly made up of women from high-density suburbs in urban Harare, where a lot of private surgeries are sprouting up in the area. Thus, women who were seen at these surgeries and never visited the public facilities were excluded from the study. The study also depended on the woman's narrative which can be influenced by recall bias. Although the maternity booking register, ANC and PNC registers were reviewed, some mothers reported having attended all the visit at another clinic or hospital. Thus, the subjective nature of the mothers' responses could be affected by social desirability bias.

Conclusions

This study revealed that religion, paternal occupation, maternal age, birth order, and maternal occupation were significant factors associated with the utilization of maternal health services. Besides, permission to visit a health facility, transport problems and distance to the health facility, presence of a delivery plan and having money to pay health service were also strongly influenced access to maternal health services.

Maternal health care service utilization in HWSWD can improve if the user user-fee is completely stripped-off, more midwives are recruited and employers are educated on the importance of allowing pregnant women to access maternal health services. There is the need to articulate policies and design maternal health care programs that target the socially and financially marginalized women and create women-friendly health facilities with extended hours for the ANC, delivery care and PNC services for mothers to decongest the health facilities.

List Of Abbreviations

ANC Antenatal Care

BBABorn Before arrival at the clinic

EMNO Emergency Maternal and Neonatal Obstetric Care

HWSWD Harare West South West District

PNC Post Natal Care

SBASkilled Birth Attendance

WHO World Health Organization

ZDHS Zimbabwe Demographic Health Survey

Declarations

Consent for publication

None applicable

Competing interests

The authors declare that they have no competing interests

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Ethics approval and consent to participate

Ethical clearance to carry out this study was sought from Africa University Research Ethics Committee (Approval Number: AUREC 386/18. Date of approval: 20/03/18) and permission was sought from the Ministry of Health and Child Care through the Director of Health Services of the city of Harare.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Author contribution

EN and PC came up with the concept and wrote the protocol. EN collected and analyzed the data. The study was supervised by EMC. PTM wrote the manuscript which was reviewed by all the authors. All authors read and approved the final manuscript

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Tables

Table 1. Socio-demographic factors and predisposing factors influencing the utilization of maternal health care services in HWSWD.

Variable	Category	Cases n=73		Controls n=73		p-value
		n	%	n	%	
Maternal age	<24	28	38.4	44	60.3	<0.01*
	≥24	45	61.6	29	39.7	
	Median	29(Q1=21; Q3=32)		22(Q1=22; Q3=29)		0.020
Place of residence	High density	73	100	73	100	
	Other	0	0	0	0	
Birth order	Below 2	13	17.8	43	58.9	<0.01*
	Above 2	60	82.2	30	41.1	
Marital Status	Single	1	1.4	2	2.7	0.31 (F)
	Married	72	98.6	71	97.3	
Maternal education	Primary	3	4.2	1	1.4	0.30 (F)
	Secondary	70	95.8	72	98.6	
Maternal occupation	Informal	63	86.3	69	94.5	0.05* (F)
	Formal	10	13.7	4	5.5	
Religion	Apostolic	39	53.5	10	13.7	<0.01*
	None	34	46.5	63	86.3	
	Apostolic					
Paternal education	Primary	9	12.3	11	15.1	0.32
	Secondary	64	87.7	62	84.9	
Paternal occupation	Informal	58	79.5	33	45.2	<0.01*
	Formal	15	15.5	40	54.8	

F= Fisher exact p-value; *statistically significant

Table 2. Enabling factors related to the utilization of maternal health care services in the HWSWD.

Variable	Category	Cases		Control		OR (95%CI)	p- value
		n	%	n	%		
Permission to visit the health facility	Yes	46	63	4	5.5	29.4	<0.01* (F)
	No	27	37	69	94.5	(9.6- 89.6)	
Had transport problems	Yes	10	13.7	3	4.1	3.7	0.02* (F)
	No	63	86.3	70	95.9	(1.0- 14.1)	
Was accompanied to a health facility	Yes	64	87.7	67	91.8	0.64	0.21
	No	9	12.3	6	8.2	(0.2- 1.9)	
Distance from a health facility	≤3km	44	60.3	62	91.8	0.64	<0.01*
	>3km	29	39.7	11	15.1	(0.12- 0.6)	
Satisfied with health services during pregnancy	Yes	49	67.1	70	95.8	0.11	<0.01* (F)
	No	24	32.9	3	4.2	(0.03- 0.4)	
Had a delivery plan	Yes	39	53.4	34	46.6	0.08	<0.01* (F)
	No	4	46.6	39	53.4	(0.03- 0.2)	
The health services are affordable	Yes	34	46.6	69	94.5	0.07	<0.01* (F)
	No	39	53.4	4	5.5	(0.02- 0.2)	
Partner's monthly income (\$USD)	≤\$100	12	16.7	2	2.7	6.9	<0.01*

(F)

>\$100 61 83.6 71 97.3 (1.5-32.4)

Own monthly income (\$USD)

≤\$100 37 50.7 61 83.6 0.2
>\$100 36 49.3 12 16.4 (0.09-0.4)

<0.01*

Preferred a female health worker

Yes 16 21.9 20 27.4 0.74
No 57 78.1 53 72.6 (0.3-1.6)

F: Fisher exact p-value; * statistically significant p-value.

Figures

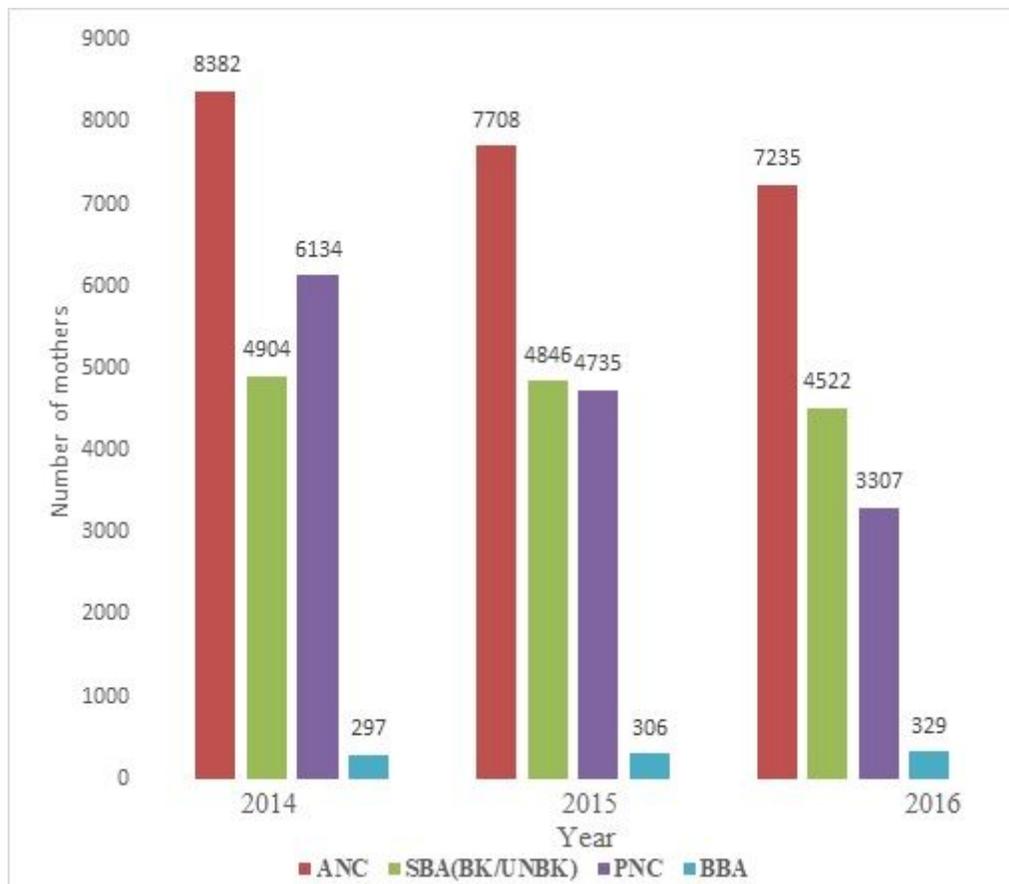


Figure 1

Maternal Health Care Utilization in the HWSWD 2014 to 2016. Source: The Harare Annual Report (2016).

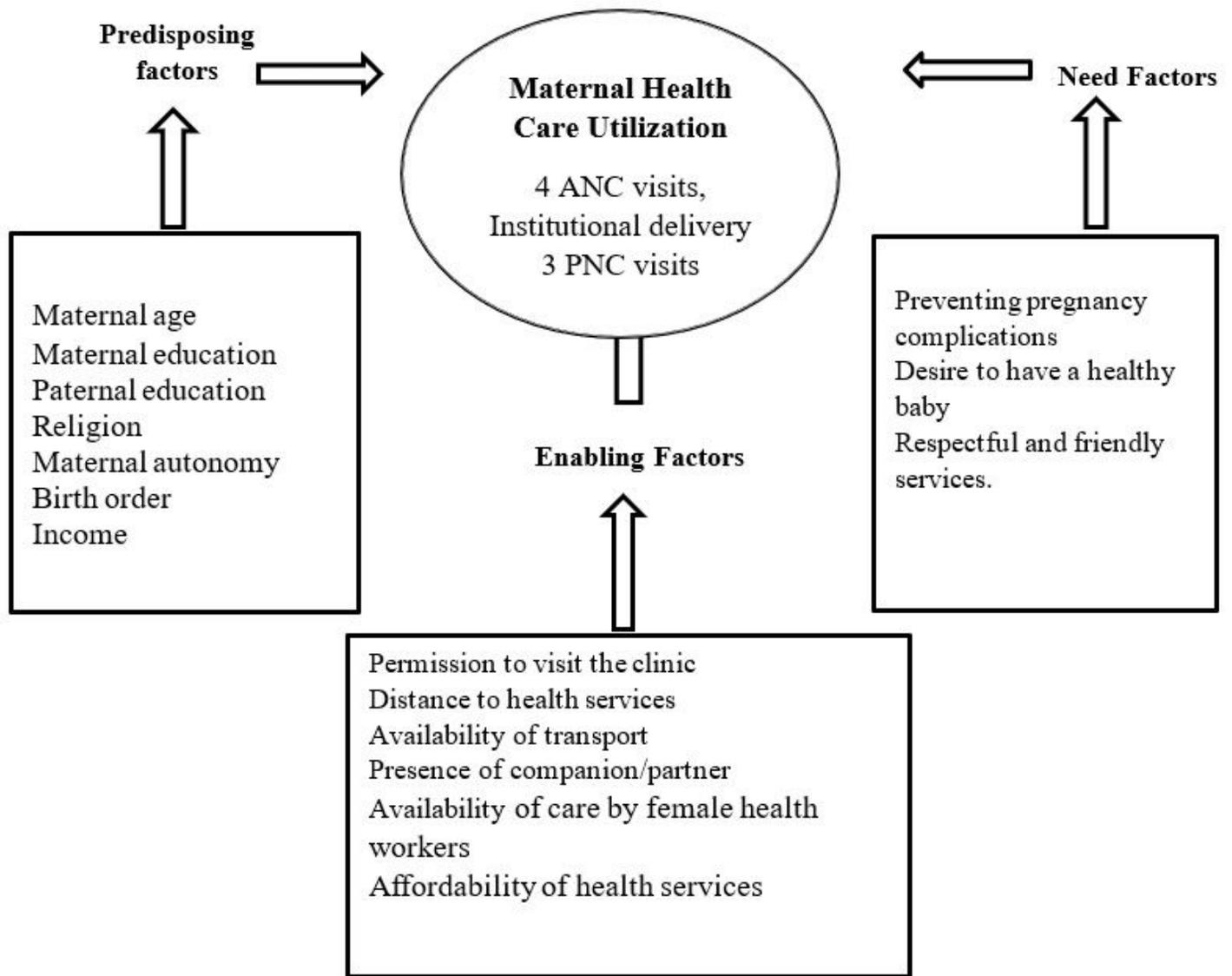


Figure 2

Conceptual framework: Andersen Model of Health Care Utilization Source