

Understanding the psychosocial and environmental factors and barriers affecting utilization of maternal healthcare services in Kalomo, Zambia: a qualitative study

Citation for published version (APA):

Sialubanje, C., Massar, K., Hamer, D. H., & Ruiter, R. A. C. (2014). Understanding the psychosocial and environmental factors and barriers affecting utilization of maternal healthcare services in Kalomo, Zambia: a qualitative study. *Health Education Research*, 29(3), 521-532. <https://doi.org/10.1093/her/cyu011>

Document status and date:

Published: 23/03/2014

DOI:

[10.1093/her/cyu011](https://doi.org/10.1093/her/cyu011)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
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- The final published version features the final layout of the paper including the volume, issue and page numbers.

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Understanding the psychosocial and environmental factors and barriers affecting utilization of maternal healthcare services in Kalomo, Zambia: A qualitative study

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Published as:

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Understanding the psychosocial and environmental factors and barriers affecting utilization of maternal healthcare services in Kalomo, Zambia: a qualitative study, 2014

HEALTH EDUCATION RESEARCH, 29, 3, 521-532

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Author's note:

Funding: The Netherlands organization for international cooperation in higher education (NUFFIC) and the Zambian Ministry of Health. The funding from NUFFIC [NFP-PhD.12/367] was part of the principal investigator's fellowship to support his doctoral studies and research work. Conflict of interest statement: None declared.

This qualitative study aimed to identify psychosocial and environmental factors contributing to low utilization of maternal healthcare services in Kalomo, Zambia. Twelve focus group discussions (n=141) and 35 in-depth interviews were conducted in six health centre catchment areas. Focus group discussions comprised women of reproductive age (15–45 years), who gave birth within the last year; in-depth interviews comprised traditional leaders, mothers, fathers, community health workers and nurse-midwives. Perspectives on maternal health complications, health-seeking behaviour and barriers to utilization of maternal healthcare were explored. Most women showed insight into maternal health complications. Nevertheless, they started antenatal care visits late and did not complete the recommended schedule. Moreover, most women gave birth at home and did not use postnatal care. The main reasons for the low utilization were the low perceived quality of maternal healthcare services in clinics (negative attitude), negative opinion of important referents (subjective norms), physical and economic barriers such as long distances, high transport and indirect costs including money for baby clothes and other requirements. To improve, our findings suggest need for an integrated intervention to mitigate these barriers. Our findings also suggest need for further research to measure the elicited beliefs and determine their relevance and changeability.

Background

Complications of pregnancy and labour are still the leading causes of death among women of reproductive age in most developing countries where 99% of all maternal deaths occur. Sub-Saharan Africa and South East Asia account for more than 90% of these deaths [1–4], with sub-Saharan Africa being more affected than any other region in the world [5]. Zambia is one of several sub-Saharan African countries with the highest rates of unfavourable maternal health outcomes. The latest 2007

Zambia demographic and health survey [6] found that the country has a high maternal mortality ratio of 591 deaths per 100 000 live births—a ratio which has remained steadily high over the past 15 years. Nevertheless, most common direct causes—haemorrhage, complications of abortion, pre-eclampsia and puerperal sepsis—are known [4–8] and are largely preventable through optimal utilization of available maternal healthcare services—including early and focused antenatal care, giving birth in a health facility under skilled supervision and postnatal care [2].

To ensure optimal maternal and newborn health outcomes, the Zambian Ministry of Health [9] in line with the World Health Organisation's (WHO) guidelines [2] recommends that women seek antenatal care as soon as they realize they are pregnant, preferably at 14 weeks, and that they should make a minimum of four antenatal visits before they give birth. In addition, each visit should be conducted by a skilled health provider, preferably a midwife or doctor. Moreover, the Ministry of Health also recommends that women give birth in a health centre or hospital where they can access skilled attendance from midwives and doctors. After giving birth, women are advised to return to the health facility for postnatal care, preferably within the first 6 days postpartum.

Nevertheless, utilization rates of these services in most rural parts of Zambia are still low [6, 9]. The 2007 survey [6] found that more than 50% of the women in Zambia did not complete the required four antenatal visits during pregnancy and that the majority (>60%) did not return for postnatal care. In addition, more than 50% of all childbirths nationwide took place at home where they were assisted by traditional birth attendants, older women, grandmothers or neighbours. Moreover, the largest proportions of the women who gave birth at home were those living in rural areas. As such, these women miss opportunities to receive skilled services provided by midwives and other skilled staff in the health centres [9]. In addition, the latest national health reports [10] show that more than 80% of the women in Kalomo district start their antenatal visits late, after the 20th week and only 7% of the women start their antenatal visits before the recommended 14th week of pregnancy. Moreover, more than 50% of the women give birth at home. The reasons for this low use are not yet fully understood. So far, no study has been conducted to explore why there is low utilization of maternal healthcare services in rural Zambia. Most published studies emphasize logistical barriers with little or no focus on psychosocial factors [11–17]. For example, although Stekelenburg et al. [15, 16] provided insight into the health system factors and logistical barriers that contribute to poor use of maternal healthcare, they did not explore personal factors influencing women's decisions regarding utilization of maternal healthcare services. Several studies have explored the importance of psychosocial factors in influencing utilization of these services [18, 19] and have concluded that the use of health services is determined not only by economic and logistic barriers but also by individual factors, such as attitude, normative beliefs and perceived behavioural control.

In addition, past healthcare-seeking behaviour, as well as demographic factors including age, number of children, education level and economic status, has also been shown to influence healthcare seeking behaviour [17–19]. In summary, although most maternal health complications can be preventable through optimal utilization of available healthcare services, the reasons for low utilization of these services are not yet fully understood. This study was therefore designed to explore psychosocial and environmental factors affecting utilization of maternal healthcare services in Kalomo, Zambia. Insight into these factors is important for the design of public health

interventions to promote utilization of these services in rural Zambia, and to ultimately decrease maternal mortality nationwide.

Materials and methods

Study design

The study used both focus group discussions and in-depth interviews to provide a detailed understanding of the issues under investigation. The Tropical Diseases Research Centre Ethics Review Committee and the ministry of Health Research and Ethics Committee in Zambia granted ethical approval.

Study setting

The study was conducted in Kalomo district, located 360km south of the capital Lusaka, and covering a total surface area of 15 000km². It has an estimated population of 275 779 [19] with an annual growth rate of 4.4%. Despite subsistence farming and cattle rearing as major economic activities, the district is one of the poorest in the country, with more than 70% of its population living on less than a dollar per day [20]. Administratively, the district is divided into three constituencies, four chiefdoms and 20 political wards. The health system in the district comprises two hospitals, 34 health centres and several health posts. The main players in the maternal health programmes are the Ministry of Health, missionaries, non-governmental organizations, community leaders and various community-based health agents, including traditional birth attendants.

Sampling techniques

Selection of study participants was done using a purposeful homogeneous sampling technique [21]. Five rural health centres with the lowest maternal healthcare service utilization rates in the district were selected with assistance from the District Medical Office. After identifying the five health centres, we selected two villages from each health centre catchment area, giving a total of 10 villages. Selection of the villages was done in consultation with local health centre staff and neighbourhood health committee members. Apart from the five rural health centres, one urban health centre was also included in the study in order to compare findings between the rural and urban settings.

Study population and data collection

The focus group discussion participants comprised women of reproductive age, aged between 15 and 45 years who gave birth within 1 year prior to the study. Women aged below 15 and above 45 years were excluded from participation. In addition, women who had resided in the area for <6 months were also excluded because the investigators thought these women would not have had enough local experience on maternal health challenges and available resources.

Twelve focus group discussions were conducted as follows: two in each health centre catchment area, one per village and two in the urban health centre catchment area. Each focus group discussion was conducted in a quiet place in each village and lasted between 1 and 1.5 h. The focus group discussions were arranged into two groups, according to age: women aged between 15 and 19 years

and those aged above 20 years. Each focus group discussion consisted of 12 participants, except for one focus group discussion conducted in the urban health centre catchment which consisted of nine participants. After these 12 focus group discussions, data saturation was achieved; that is, after 10 focus group discussions, no more substantial information was obtained.

A total of 35 in-depth interviews were conducted with key informants from each health centre catchment area. Key informants consisted of traditional leaders, civic leaders, mothers and fathers, nurse-midwives from local health centres, traditional birth attendants, neighbourhood health committee members and community health workers. In-depth interviews were conducted in the community in a quiet, private and confidential place and lasted 20–30min. Both focus group discussions and in-depth interviews were conducted in Tonga; interviews with health centre staff were conducted in English. Before each focus group discussion and in depth interview, written consent was obtained from each participant by requesting them to read and sign the consent form, which was translated into the local language—Tonga. Research assistants read the consent form for those who could not read. Each focus group discussion and in depth interviews was facilitated by two trained research assistants using a semi-structured interview guide which was translated into Tonga. One research assistant conducted the discussion/ interview, whereas the second one recorded. The principal investigator attended a few focus group discussions and interviews to ensure that the data collection protocol was consistently followed by the research team members.

Research instrument

A semi-structured interview guide for the focus group discussions and interviews was developed based on the logic model and had three predetermined themes, awareness about maternal healthcare services, maternal healthcare-seeking behaviour and personal and environmental determinants of maternal healthcare service utilization. The logic model was based on the PRECEDE part in Green and Kreuter's [22] PRECED/PROCEED model, which prescribes consideration of healthrelated behavioural determinants and environmental conditions at multiple levels [23]. Identification of personal determinants was based on the theory of planned behaviour [24, 25] and included attitude, subjective norms and perceived behavioural control. In addition, logistical barriers and enablers to the use of maternal healthcare services were also explored.

Data analysis

All voice recordings from focus group discussions and interviews were transcribed and translated into English by research assistants. To check for accuracy, 20% of the transcripts were back—translated into Tonga. Members of the research team then compared the Tonga and English versions for differences and similarities while listening to the original voice recording. After verification of accuracy in translation, each transcript was then thoroughly read by one research assistant while the other one was listening to the corresponding voice recording. Each translated transcript was compared with the hand-written field notes that the research assistants had prepared during the focus group discussions and interviews. After proof-reading and making corrections, the transcripts were saved on a password protected computer. The word documents were then exported into qualitative software research (NVivo 8.0 software) for processing. The exported data were then coded and the categories and key sub-themes were identified. Data analysis was based on the three

pre-determined themes. An inductive approach was used to derive the sub-themes from the main themes by content-analysing and grouping all the similar statements made with respect to particular themes. Several sub-themes emerged from the data analysis; all sub-themes are described later in the respective sections for the main research themes.

Results

Demographics

A total of 176 (n¼176) respondents participated in the study. Of the 141 focus group discussion participants, 68 (48.2%) were aged between 15 and 19 years, 50 (35.5%) between 20 and 34 years, and 23 (16.3%) were above 35 years. Of the 35 key informants, 24 (68.6%) were aged between 20 and 34 years, 10 (28.6%) were aged between 35 and 45 years, and 1 (2.8%) was 19 years old. A total of 141 (80%) were married, and 96 (68%) had between one and five children. A total of 85 (48.3%) had primary school education and 131 (74%) were farmers with an average monthly income of <\$20 per month. There were no major differences in characteristics among respondents from rural and urban health centres in terms of income and level of education; the only notable difference was among the health workers who had attained tertiary education, and had an average monthly income of more than \$200 (see Table 1).

Table 1: Demographics for In Depth Interviews (IDI) and Focus Group Discussion (FGD) participants.

Characteristic	IDI (n=35)	FGD (n=141)
Age in years		
15-19	1	68
20-34	24	50
35-45	5	23
>45	5	
Sex		
Male	20	0
Female	15	141
Marital Status		
Single	6	25
Married	26	115
Divorced	2	1
Widow	1	0

Number of Children		
1-2		60
3-5		36
6 and above		45
Cadre		
Mother	3	141
Father	2	
Midwife	4	
Nurse	3	
Community Health worker	4	
Traditional birth attendant	7	
Neighbourhood health committee member	5	
Village headman	6	
Civic leader	1	
Level of Education		
Never attended school	0	5
Lower primary (1-4)	0	17
Upper primary (5-7)	7	61
Junior secondary (8-9)	5	47
Senior Secondary (10-12)	16	11
Tertiary	7	0
Occupation		
Unemployed	3	25
Farmer	24	107
Self-employed	1	9
Formal employment	7	0
Level of income		
<\$20	18	119
\$20-49	4	14
\$50-99	3	6
\$100-199	2	2

Perspective on maternal health problems

Most respondents mentioned that many women were aware of the physical complications during pregnancy and childbirth and described various complications ranging from minor abdominal pain and spotting during pregnancy to life-threatening complications including retained placenta, excessive bleeding, cord prolapse, hypertensive disorders and obstructed labour. Maternal health complications were described as severe, and that some women even died in the process of giving birth; those who survived either ended up losing their babies or developed long-standing obstetric complications: *Yes, in this community many women face a lot of complications during pregnancy and childbirth; yes even dying, you or your baby can die (36-year-old mother).*

Pregnancy and childbirth complications were seen as resulting from poor maternal healthcare seeking behaviour, specifically poor antenatal care attendance and giving birth at home: *Most women who give birth at home are the ones who face problems during labour because most TBAs and old women do not have enough knowledge to assist them(25-year-old nurse-midwife).*

Regarding sources of information on maternal healthcare services, respondents had mixed views: older respondents mentioned nurses as the main sources of information and that most women obtained this information from the health centres during their previous pregnancies. In addition, respondents mentioned that nurses collaborated with community-based agents and local headmen to disseminate this information in the community: *We are taught by the nurses and TBAs; the community health workers and NHCs neighbourhood health committee members) also tell us to go for antenatal examinations when we are pregnant (36-year-old mother).*

In contrast, most young respondents explained that they did not get much information from nurses and community health workers, rather, their parents and friends were their main sources of information: *For us young ones, we get information from our parents; some young people ask their friends when to start going for antenatal examinations (19-year-old mother).*

Healthcare-seeking behaviour and utilization of maternal healthcare services

Use of antenatal care services. Our findings show that, despite starting late, most mothers use antenatal care services provided by nurses and traditional birth attendants in the health centres. Older respondents explained that, although most pregnant women did use antenatal care services, most started their visits late, typically after 5 months of pregnancy and most of them did not complete the recommended four-visit schedule. On why some women start their visits late, most respondents explained that many mothers delayed starting their antenatal visits because of normative beliefs and long distances to the clinic. With regard to providers of antenatal care services, all respondents revealed that nurses, midwives and traditional birth attendants were the main providers.

Utilization of delivery services

Analysis of the narratives indicated that most mothers gave birth at homes; they only go to the clinic if they develop labour complications or if during antenatal visits they were told the baby was not lying well in the womb. Asked on which group of women gives birth at home, most respondents mentioned mothers with many children: *Most women with many children don't come to our clinics to give birth; they give birth at home (57-year-old nurse-midwife).*

In contrast, most respondents from the urban health centres and most young respondents from both urban and rural health centres argued that they gave birth in the health facilities. Most young respondents viewed themselves as having no experience in childbirth and explained that they give birth at the health centre because they fear developing labour complications at home: *Most of us young ones give birth at the clinic because we have no experience; we fear to die (19-year-old mother).*

Regarding birth attendants, most respondents mentioned that nurses and traditional birth attendants were the main ones assisting women during childbirth. They explained that traditional birth attendants also assist in the labour ward if the nurse was alone or if she was not there. Similarly, most nurse-midwives confirmed that, due to inadequate staffing levels in the health centres, they collaborated with traditional birth attendants to assist women during childbirth in the health centres: *Yes, TBAs do assist here as you know we are under-staffed in these clinics (56-year-old nurse-midwife).*

With regard to birth attendants for the women who give birth at home, most respondents mentioned that traditional birth attendants and old women attend to those mothers. They added that some women get assistance from their neighbours and that others give birth by themselves, unassisted: *Most of us are assisted by TBAs. when you feel the labour pain, you just send someone to call her (43-year-old mother).*

Concerning practices that put women at increased risk of developing labour complications, respondents mentioned that women's delay in making decisions to go to the clinic and traditional birth attendants' delay in referring women to the clinic put some women at risk of developing complications. Most participants mentioned that some women give birth at home because they wait until they are in established labour and at this point they end up giving birth at home because they are unable to travel to the clinic anymore. Furthermore, respondents explained that some traditional birth attendants and old women delay referring these women to the clinic; they want to try until they either failed, or the woman developed complications: *Most women develop complications because TBAs delay them at home; they only allow them to come when they see that they have developed complications or the baby has stopped breathing (57-year-old nurse-midwife).*

Utilization of postnatal care services Most respondents mentioned that many women do not receive any postnatal care services from the clinic. They explained that most women only go to the clinic to take their children for under five clinics outside the postnatal period. Asked on why mothers do not go for postnatal care, respondents explained that mothers who gave birth at home were either shouted at or made to pay a penalty before they were attended to at the clinic; mothers who had no

money to pay and those who feared to be shouted at opted not to go for postnatal care: *If you go to the clinic after giving birth at home, nurses make you pay before they examine your baby (36-year-old mother of 6).*

In contrast, some respondents mentioned that some mothers do go to the clinic after giving birth. They explained that some mothers go to the clinic for the baby to get the human immunodeficiency virus (HIV) blood test if the mother was HIV positive. Respondents added that some mothers want their babies to be examined so that they know whether they are okay: *Some mothers go to the clinic to be examined after delivery so that they know whether their baby is okay (24-year-old mother of 3).*

(Negative) attitude towards healthcare providers and quality of maternal healthcare services

Mothers' (negative) attitudes towards nurses and midwives and the quality of services they provided negatively influenced their decisions to use various maternal healthcare services. Most respondents explained that some nurses insist on pregnant women going with their husbands to the clinic for antenatal care; they also tell pregnant women to take baby clothes with them when they go to the clinic for antenatal care and labour. In addition, respondents explained that if mothers failed to either go with their male partners or take baby clothes, nurses and midwives would shout at them in the presence of other people. Respondents explained that, because of the negative experience mothers had with some nurses at the health centre, most of them ended up not returning for antenatal, childbirth or postnatal care at the health centre; they opted to give birth at home: *Most of us give birth at home because we fear the way nurses treat us at the clinic; we face a lot of problems. They shout at us. Some of them even refuse to assist us during labour if we don't have baby clothes or 'jik' (bleach) (40-year-old mother).*

In contrast, nurse-midwives explained that as mothers go for antenatal care, they are advised to go with their husbands or partners so that together they are counselled and tested for HIV to prevent mother to child transmission of the HIV virus. They also explained that, as a way of preparing for childbirth, mothers are advised to buy baby clothes and that they should carry these when going for labour. Most nurses mentioned that no mother is sent away from the clinic for either failing to go with their partners or failing to take baby clothes: *We advise them to come with their partners so that they are counselled together; we also advise them to prepare for the baby and buy enough baby clothes. No mother is chased for failing to come with their partners or bringing baby clothes (57-year-old nurse-midwife).*

Moreover, most respondents mentioned that mothers believed that nurses did not have enough midwifery skills to assist mothers during childbirth. Furthermore, respondents stated that nurses were never found at the clinic; they only found traditional birth attendants who just 'pressed on their abdomen' and sent them home without confirming the condition of the baby in the uterus: *The nurses are never there at the clinic. We only find TBAs who just feel and press on your abdomen. You won't even know how the baby is lying; sometimes she tells you that the baby is lying well when it is not (42-year-old mother).*

On the contrary, most nurses explained that staffing levels were low in the health centres, and that if nurses went out for workshops or ordering of medical supplies at the district medical office, health

centres would be left unattended. They explained that in most cases, people in the community would know when the nurse was away from the health centre, and this made some mothers opt to deliver at home.

Opinions of important others

Our findings show that various opinions of important others within the community had a negative influence on the mothers' decision to utilize maternal healthcare services. For example, most respondents mentioned that some mothers delayed starting antenatal care visits because they believed that some important people in the community did not approve of one's pregnancy being exposed to non-family members when it was still small. Thus, they delayed starting antenatal care until the pregnancy was large enough, usually after 5 or 6 months: *Many women delay starting ANC because they are told that it is wrong for them to show their small pregnancy to non-family members; so they wait until the pregnancy is large enough, usually after 5 or 6 months (24-year-old mother).*

In addition, most participants stated that some women give birth at home because they believe that some important people in the community did not approve of pregnant women being examined and assisted by male birth attendants as it was embarrassing to the woman and her family: *Most women give birth at home because they feel shy and embarrassed to be assisted by a man (40-year-old mother).*

Perceived and actual barriers

With regard to barriers that prevented pregnant women from using services, respondents stated that mothers faced various challenges ranging from capability to convince important others about the benefits of giving birth in a health centre and early referral, to physical and socioeconomic barriers: *Those old women [parents] and TBAs are the ones who decide when we should go to the clinic. We can't force them to take us. They will only take you to the clinic when they feel that you have been in labour for a long time (19-year-old mother).*

Concerning physical barriers, respondents stated that long distances to the health centres, poor road network and non-availability of transport prevented many women from completing antenatal care visit schedules and giving birth at the clinic. Most respondents explained that many people in their communities live very far from the health centres (more than 10–15km) and that in some instances (especially in the Zambezi escarpment in the southern part of the district) there were no roads and getting the pregnant mother to the health centre was a huge challenge. As a result of these physical barriers, most pregnant women ended up giving birth at home or on the way to the clinic: *The main problem here is distance to the clinic. The distances are too long. Women have to walk all the way to the clinic. Some pregnant women can't manage to walk to the clinic (42-year-old headman).*

In addition, participants mentioned that some women gave birth at home because of high transport costs and other indirect costs such as baby clothes and other requirements, and food while waiting for labour at the health centre. Respondents explained that most mothers who failed to raise money for these requirements ended up giving birth at home because they believed that they lacked capability to face nurse-midwives (with perceived negative attitudes towards them) and explain why,

for example, they failed to buy required baby clothes: *Some mothers don't give birth at the clinic because they fail to find money to buy baby requirements like jik and baby clothes (42-year-old headman).*

Discussion

This study suggests important psychosocial and environmental factors negatively pregnant women's health-seeking behaviour in Kalomo, Zambia. Overall, our findings show that, most women are willing to use maternal healthcare services; however, several personal and environmental barriers negatively influence their health-seeking behaviour. Consistent with other studies [17–19], our findings show that most women in Kalomo district do have insight into various maternal health problems that affect them and are willing to use healthcare services to improve pregnancy and childbirth outcomes. Furthermore, in contrast to one Zambian study [29], our findings suggest that low utilization of these services is not due to lack of knowledge about the benefits of maternal healthcare use. Rather, other factors might be influencing pregnant women's health-seeking behaviour. This finding suggests that, although knowledge is a necessary pre-requisite determinant in the adoption of health promoting behaviours, it may not be sufficient to enable behaviour change [23–28].

Our findings show that mothers' negative attitudes towards nurses and the quality of health services negatively influence women's decision to use the services. Mothers who had negative experience with nurses during antenatal care or childbirth during previous pregnancies expressed negative attitude towards nurses and the services they offer, and this negatively influenced their intentions to use these services in subsequent pregnancies. Our findings further suggest that the mothers' negative experience with nurses was the main reason for the difference in attitude towards maternal healthcare use between the young and older mothers. Most young mothers who had little or no past experience with nurses and health centre services tended to be more positive about the benefits of using the services than the older mothers who had encountered 'abusive nurses' and the 'poor quality services' at the health centre. This finding is important as it shows that before engaging in the intended health behaviour, women will evaluate the expected outcomes, based on the available information and past experience.

Our findings are in line with past research from other low-income countries [15–19, 29–32], which has shown the importance of quality of care during labour and nurse-midwife's attitudes in predicting women's decision to use maternal healthcare services in subsequent pregnancies. This finding also underscores the need for public health intervention to ensure that young mothers have positive experiences when going to the clinic, perceive the benefits, are aware of other young mothers using maternal healthcare and are provided with the necessary resources for travel to and delivery at the health centre.

Regarding subjective norms—the belief that specific important individuals or groups approve or disapprove of one's behaviour [24, 26]—our findings show that most women only engage in behaviours that they believe were approved by important members of their family and community and these beliefs negatively influenced their use of healthcare services. For example, our findings suggest that one of the most important beliefs strongly held by women was that a 'young pregnancy'

should not be exposed to a non-family member. This belief might negatively influence antenatal care use as women who have strong beliefs in this social norm and high motivation to comply end up delaying first antenatal visits and/or are less likely to complete their antenatal visit schedules. Similarly, the belief that it is 'not right' for pregnant women to be assisted by male birth attendants can also negatively influence women's decision to give birth at the health centre. Furthermore, our findings suggest that, compared with younger mothers, older mothers tended to hold stronger beliefs and higher motivation to comply with 'social pressure'. The strength of this normative belief seems to be the reason why older women prefer giving birth at home compared with the younger women. In addition, our findings suggest that, because older women had stronger belief in the opinion of important referents, they consulted traditional birth attendants and older women before deciding to seek care at the health centre. These findings are comparable with research reported elsewhere in Zambia and Ghana, Nicaragua and Indonesia [16, 18, 19, 30, 31], which showed the importance of the role of the cultural perceptions, beliefs, expectations and practices in the woman's decision to seek healthcare services.

Regarding the perceived barriers, our findings show an important interaction between internal and external control factors in influencing women's health-seeking behaviour [24, 32]. Consistent with previous research [12–19, 29–32], our findings suggest that both low perceived behavioural control (i.e. a person's belief in one's capability to accomplish a given performance) and other external factors, such as long distances, poor road network, high transport costs, baby clothes and other indirect costs, negatively influence the woman's decision to perform the desired health behaviour. Women who experience many external barriers are likely to perceive less control over intended behaviour with regard to healthcare utilization [24, 30, 32]. That is, even if women have the knowledge about the benefits of using a health service, they may not use the service until they feel confident in overcoming perceived barriers and if external barriers are removed. For example, our findings indicate that most women give birth at home because of long distances to health facilities, bad roads, non-availability of transport and high transport costs. In addition, our findings report that many women give birth at home because they fail to raise money to buy baby clothes and other requirements. Those who fail to buy baby clothes give birth at home because they fear being harassed by nurses at the clinic. Similar findings were also reported by Stekelenburg et al.[15] and Thaddeus and Maine [32] and showed the importance of logistical barriers in limiting access to, and utilization of, maternal healthcare. Together these findings stress the need for public health interventions to focus on mitigating these physical barriers and indirect costs before women are expected to use the services.

A number of potential limitations should be noted. First, like other qualitative studies, the findings of our study may not be generalizable. The purpose of the study was to gain insight into the factors affecting utilization of maternal healthcare services. For these findings to be generalized, further research needs to be conducted to measure these determinants. Second, the focus of the study was on a rural district which is predominantly Tonga, making the findings not representative of other tribal groupings in Zambia. Third, the fact that the principal investigator attended some of the interviews as an independent observer may have influenced some participants in some way as most participants knew him as he had worked there before as a District Medical Officer.

Conclusion

In conclusion, this study provides information on the important psychosocial and environmental factors negatively influencing pregnant women's health-seeking behaviour in rural Zambia. Although most women have insight into maternal health complications and that most of them have high intention to use maternal healthcare services, several personal and environmental barriers—mothers' negative attitude towards nurses and health services, subjective norms, perceived and actual barriers—all prevent them from accessing and utilizing the services and lead to unintended maternal health outcomes. Thus, our findings suggest need for an integrated intervention which could help not only mitigate personal, logistical and health system barriers but also develop and support relationships and trust between various stakeholders, and ultimately increase effectiveness and use of maternal healthcare services in rural Zambia. For the design of such an integrated intervention, Bartholomew et al. [33] suggest the following process: (i) elicitation of salient beliefs, (ii) changing intentions by changing salient beliefs, (iii) changing behaviour by changing intentions and (iv) increasing skills or decreasing environmental constraints. To elicit salient beliefs, Fishbein and Ajzen [24] suggest qualitative followed by quantitative methods. To change intentions, Witte [34] suggests organizing the results of the determinants analysis in a list of relevant categories—for example, which beliefs need to be changed, reinforced or introduced. Thus, to mitigate psychosocial barriers, our findings suggest need for further research to measure the elicited beliefs and determine their relevance and changeability.

To decrease environmental constraints and improve quality of care, our findings suggest the need for (i) subsidizing health costs through provision of resources for mothers to meet indirect costs such as transport costs, baby–mother packs and food while waiting for labour at the clinic [35]; (ii) providing maternity waiting homes in clinics to mitigate physical barriers such as travelling long distances to health centres while in labour; (iii) improving motivation and staffing levels for nurses and midwives through increased training, equitable distribution and retention—for example, by extending the Zambian Health Worker Retention Scheme [36] to nurses and midwives, which is currently focusing mainly on doctors; (iv) strengthening collaboration and enhancing trust between nurses and traditional birth attendants by providing the latter with resources, training and skills in midwifery; and (v) supporting mothers through social networks such as Safe Motherhood Action Groups.

Acknowledgements

The authors' gratitude goes to the following individuals and organizations for the valuable support they rendered the research team at various stages of developing this work: Kalomo District Health management Team for providing technical information on the district. The authors also wish to particularly thank all the health centre in-charges, local headmen and community health workers for assisting in recruiting the research participants. Their gratitude also goes to the tropical disease research centre research ethics committee and the Ministry of Health for authorizing this study. The authors also wish to thank all the participants who sacrificed their precious time to participate in this study. Without their sacrifice and commitment, this study would not have been a success. Finally, they wish to thank all the research team members for their valued time, support and comments to make this work a success.

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