

SELF-REPORTED PREFERENCE FOR DELIVERY PLACE AMONG WOMEN PRESENTING FOR MATERNAL CARE HEALTH SERVICES AT A TERTIARY HOSPITAL IN THE EASTERN CAPE PROVINCE, SOUTH AFRICA

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ABSTRACT

South Africa's healthcare system is based on the primary care model in which women with low-risk pregnancies are encouraged to deliver in clinics, community health centres and district hospitals while women with high-risk pregnancies are encouraged to deliver in secondary and tertiary hospitals. However, in the South African setting quite a significant number of women with low-risk pregnancies are still delivering in tertiary hospitals. The objectives of this study were to determine the preference of delivery place in women with low-risk pregnancies presenting for maternal healthcare services at a tertiary hospital in the Eastern Cape province, South Africa, and the associated factors. A quantitative, observational, cross-sectional analytic design was utilised. Data were collected using an administered structured questionnaire on 200 women with low-risk pregnancies presenting for maternal healthcare services at the hospital. Data were analysed using software SPSS for Windows and EPI Info StatCalc. The study revealed that the majority of the women, 80 per cent (n = 161) preferred to deliver at a hospital as opposed to 20 per cent (n = 39) who preferred the community health centre independent of their age, parity, education, employment, income, location in relation to the health facility, beliefs regarding the reliability of ambulance and public transport as well as the affordability of public transport. The women's reasons for preferring to deliver at a hospital were largely because they felt that it was well equipped and



had skilled staff. Strategies such as the allocation of adequate human and infrastructural resources and educational campaigns to promote the utilisation of the primary healthcare settings should be implemented.

Keywords: primary healthcare setting; community health centre; tertiary hospital; low-risk pregnancy; high-risk pregnancy

INTRODUCTION AND BACKGROUND INFORMATION

South Africa's healthcare delivery system is based on the primary care model. The purpose of this model is to encourage people with less serious conditions to receive care at clinics, community health centres and district hospitals, and those with serious conditions to receive care at secondary and tertiary hospitals (Department of Health 2002). Despite the South African government's efforts to decentralise healthcare services in accordance with the primary care model, a significant number of women with low-risk pregnancies who ought to deliver in primary healthcare settings are still delivering in tertiary hospitals (Buchmann, Sithole, Makhale and Hlatshwayo 2010). This is despite the evidence that it is safer for women with low-risk pregnancies to give birth in primary healthcare settings (Hodnett, Downe, Walsh and Weston 2010, 10). A study on 1 898 women living in rural Tanzania reported that 42 per cent had bypassed their local primary care facility without a referral to give birth at a tertiary hospital (Kruk, Hermosilla, Larson, Mbaruku and South African Department of Health 2014). The study further observed that despite the logistical challenges and added costs, bypassers were more likely than non-bypassers to report being very satisfied with the overall birth experience, and to rate the quality of care as high (Kruk et al. 2014).

At the time of the study, a community health centre had only been officially opened in Mdantsane, East London, in 2009 and it was performing 720 deliveries per annum while the tertiary hospital was performing 5 138 deliveries per annum (Eastern Cape Department of Health 2012). A tertiary hospital is meant to function as a referral facility, with the obstetric unit dealing with high-risk pregnancies, however, 60 per cent of women that deliver at the tertiary hospital in the Eastern Cape province, South Africa, are women with low-risk pregnancies that can be safely managed at clinics, community health centres and district hospitals (East London Hospital Complex 2010). As a result, high-risk patients that do require to be admitted at tertiary hospitals may not receive the necessary level of care due to patient overload and staff shortages. In addition, the number of patients has continued to increase while skilled health workers exit the public health system, creating a void and restricting the services that can be safely provided (Day and Gray 2010, 319). This could probably be a contributing factor to the high maternal and child mortality in South Africa (Statistics South Africa 2015, 26; *ibid.*, 29). The appropriate distribution of healthcare services will undoubtedly improve maternal healthcare outcomes (Mgudlwa 2012, 15).

STATEMENT OF THE RESEARCH PROBLEM

In the South African setting quite a significant number of women with low-risk pregnancies are delivering in tertiary hospitals, while primary healthcare settings are underutilised (Buchmann et al. 2010). This is probably due to inappropriate referrals, convenience and perception of safety. This situation places a heavy burden on the obstetric services provided at tertiary hospitals. Little is known in South Africa about the factors responsible for women with low-risk pregnancies preferring to give birth at a tertiary hospital instead of a primary healthcare setting. This study would improve the understanding of the factors that influence women with low-risk pregnancies preferring to give birth in a tertiary hospital setting. The study would also be used to design strategies that would enhance the utilisation of primary healthcare settings by women with low-risk pregnancies and reduce the number of women with low-risk pregnancies giving birth in tertiary hospitals.

PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of the study was to investigate the factors that influence the choice of delivery place in women with low-risk pregnancies presenting for maternal healthcare services at a tertiary hospital in the Eastern Cape province, South Africa. The objectives of the study were to determine the women's preferences of delivery place and associated factors.

Definitions of key concepts

Community health centre refers to a primary healthcare facility which provides antenatal or postnatal care and a 24-hour birth care service.

High-risk pregnancy refers to a pregnancy where the probability of an adverse outcome for the mother or child is increased over and above the baseline of that outcome among the general population by the presence of one or more ascertainable risk factors.

Low-risk pregnancy refers to a problem-free pregnancy based on an assessment of the woman's past medical, obstetric and gynaecological history and present condition.

Primary healthcare setting refers to primary healthcare clinics, community health centres and district hospitals that provide care to women with low-risk pregnancies.

Tertiary hospital refers to a healthcare facility which provides care to women with high-risk pregnancies. The hospital in the Eastern Cape province, South Africa, where the study was undertaken is defined as a tertiary hospital for the purpose of this study.

RESEARCH METHODOLOGY

Research design

A quantitative, observational, cross-sectional analytic study was employed by means of an administered structured questionnaire among 200 women with low-risk pregnancies presenting at the hospital for maternal healthcare services. Quantitative studies usually collect data in the form of numbers, conduct statistical data analyses and use the data to make broad and generalisable comparisons (Terre Blanche, Durrheim and Painter 2007, 47). The purpose of the study was to investigate the factors that influence women's preference of delivery place. The relationship between women's preference of delivery place and associated factors could be best investigated by a quantitative study. A quantitative study was therefore conducted in order to offset the limitations of qualitative research.

Research setting

The study was conducted at a tertiary hospital in the Eastern Cape province, South Africa. The tertiary hospital is a referral facility for 15 clinics, one community health centre, 26 district hospitals and one regional hospital, and its obstetrics department is an 80-bed unit with an occupancy rate of 86.4 per cent that performs between 5 138 and 6 208 deliveries a year (Eastern Cape Department of Health 2012).

Research population and sample

The research population comprised all women attending maternal healthcare services at the tertiary hospital. Convenience sampling was used to select 200 women with low-risk pregnancies to participate in the study (Burns and Grove 2009, 353). Women older than 15 years, with low-risk pregnancies, attending maternal healthcare services at the tertiary hospital during the period January to June 2010, and who consented to participate were included in the study. All women with a poor obstetric history, multiple pregnancies, antepartum haemorrhage, diabetes mellitus or gestational diabetes, cardiac disease in pregnancy, hypertension in pregnancy, mental illness, less than 15 years old, outside the study period, and who refused to participate were excluded from the study.

Data collection instrument

An administered structured questionnaire was used to collect data. The questionnaire was divided into two main sections. The first section elicited information on the participants' demographic data such as age, educational level, parity, employment status, income, ambulance service reliability, public transport reliability, and affordability of public transport. The second section sought information on participants' preference of

delivery place and the reasons behind their preferred place of delivery. All items of the questionnaire were closed-ended questions except the item that sought participants' reasons for the preferred place of delivery, which was an open-ended question.

Reliability and validity

Content validity and face validity of the study were established by basing the development of the questionnaire on the review of relevant literature and objectives of the study. The researcher developed the questionnaire and sent it to a statistician as well as to his supervisor, a specialist medical doctor in gynaecology and obstetrics, for review. Through consensus, the researcher, statistician and supervisor refined the questionnaire for reliability by assessing the face validity of the variables. The questionnaire was pre-tested on a sample of 10 women who were not part of the study, to assess its feasibility. Improvements were implemented before the questionnaire was finally adopted. A low response rate was avoided by making the questionnaires available in both English and Xhosa to the participants, and by assisting illiterate participants to understand the questionnaires.

Data collection procedure

Data were collected during the period January to June 2010 by the researcher and five trained field workers. The identified participants were briefed on the objectives of the study and requested to sign the consent forms if they were willing to complete the questionnaires. Participants who could read and write completed the questionnaires themselves, while illiterate participants were assisted by the field workers.

Ethical considerations

The Research and Ethics Committees of the East London Health Complex and Walter Sisulu University approved the study protocol. Participants were informed that participation in the study was voluntary, that no monetary benefits would be provided, and that they could withdraw from the study at any time without punishment. Participants who agreed to participate in the study provided written consent. Consent forms were explained to those who were illiterate. For participants under the age of 18 years, additional informed consent was sought from their guardians (Burns and Grove 2009, 191). Participants were assured of anonymity throughout and after the study period. All data collected were treated confidentially and no identifying information such as participants' names and addresses were recorded on the questionnaires, research reports or any other documents.

DATA ANALYSIS

The data were analysed using software SPSS for Windows and Epi Info StatCalc. The common reasons for the preferred place of delivery were coded into themes using a thematic analysis (Babbie 2007). Questionnaire items were coded for easy computer analysis. Frequency tables and percentages were used to present the results. Categorical variables were compared by the use of the chi-square test. A p-value of <0.05 was considered statistically significant.

RESULTS

Demographic information

A total of 200 women completed the questionnaires. The majority of the women were in the age group 15–49, with the mean age 26 and standard deviation 5.8. Most of these women were of low parity, with 61 per cent ($n = 122$) of them presenting in their first pregnancy. A high rate of unemployment was found among the participants, with only 25 per cent ($n = 50$) being formally employed and another 3 per cent ($n = 6$) being casual workers. Of those that were employed, 59 per cent ($n = 118$) performed manual work while 41 per cent ($n = 82$) worked in administrative positions. A total of 15 per cent ($n = 30$) of the women were still students at the time of the study. The majority of the women in the study, 90 per cent ($n = 180$), had at least grade 10, and 54 per cent ($n = 108$) of the participants had completed at least grade 12. Regarding income, about 72 per cent ($n = 144$) of the participants had no discernible source of income. A smaller number, 16 per cent ($n = 32$), earned between R250 and R2 000 per month.

Women's preference of delivery place

There was a strong preference among the participants to give birth in the hospital over a community health centre: 80 per cent ($n = 161$) of the women chose to give birth at the hospital in comparison to 20 per cent ($n = 39$) of the women who chose to have their babies delivered at a community health centre ($p < 0.00001$). As summarised in table 1, the commonly cited reasons for preferring to deliver at the hospital were: the hospital had better services and facilities (30% ($n = 49$)), medical personnel were readily available, the hospital staff were understanding and caring (28% ($n = 45$)), the hospital was easily accessible, close to home and convenient (14% ($n = 23$)), the women were referred by a clinic (9% ($n = 14$)), and the women have had previous deliveries at the hospital (8% ($n = 13$)). The least cited reasons for preferring to deliver at the hospital were: the environment at the hospital was safer (4% ($n = 6$)), the environment was familiar (4% ($n = 6$)), the women were never turned away (1% ($n = 1$)), and the women were related to the staff (1% ($n = 1$)). A total of two per cent ($n = 3$) of participants indicated no reason for preferring to deliver at the hospital. The commonly cited reason by participants for

preferring to deliver at the community health centre was that the clinic was nearer to home (59% (n = 23)). The least cited reasons for preferring to deliver at the community health centre were: it was cheaper to travel, convenient and the women could book there (10% (n = 4)), there was a shorter waiting period (8% (n = 3)), there was good nursing care (5% (n = 2)), and the environment was familiar (5% (n = 2)). A total of 13 per cent (n = 5) of participants indicated no reason for preferring to deliver at the community health centre.

Table 1: Preference of delivery place and reasons

Preference of delivery place	
Hospital 80% (n = 161)	Community health centre 20% (n = 39)
Reasons	Reasons
30% (n = 49) – Better services and facilities 28% (n = 45) – Medical personnel readily available, understanding and caring 14% (n = 23) – Easily accessible, close to home, convenient 9% (n = 14) – Referred by clinic 8% (n = 13) – Previous hospital birth 4% (n = 6) – Environment at hospital safer 4% (n = 6) – Familiar environment 1% (n = 1) – Never turned away 1% (n = 1) – Related to staff 2% (n = 3) – No reason	59% (n = 23) – Clinic nearer to home 8% (n = 3) – Shorter waiting period 5% (n = 2) – Good nursing care 5% (n = 2) – Familiar environment 13% (n = 5) – No reason 10% (n = 4) – Other (cheaper to travel, convenient, could book there)

Factors associated with choice of delivery place

As shown in table 2, the participants' choice of delivery place did not depend on age, parity, education, employment, income, location in relation to the health facility, beliefs regarding the reliability of ambulance and public transport as well as the affordability of public transport.

Table 2: Factors associated with choice of delivery place

Variable	Hospital 80% (n = 161)	Community health centre 20% (n = 39)	p-value p < 0.00001
Age			
< 16	1% (n = 2)	0% (n = 0)	0.49
16–19	9% (n = 14)	18% (n = 7)	0.07
20–35	82% (n = 132)	72% (n = 28)	0.16
> 35	8% (n = 13)	10% (n = 4)	0.62
Educational level			
Tertiary	14% (n = 22)	10% (n = 4)	0.68
Secondary	83% (n = 134)	82% (n = 32)	0.88
Primary	3% (n = 5)	8% (n = 3)	0.19
Parity			
Nulliparous	60% (n = 97)	69% (n = 27)	–
Multiparous	40% (n = 64)	31% (n = 12)	0.33
Income			
< R1 000 per month	79% (n = 127)	71% (n = 28)	–
> R1 000 per month	21% (n = 34)	29% (n = 11)	0.3
Ambulance services reliability			
Reliable	32% (n = 52)	18% (n = 7)	–
Unreliable	68% (n = 109)	82% (n = 32)	0.13
Public transport affordability			
Affordable	57% (n = 92)	47% (n = 18)	–
Unaffordable	43% (n = 69)	53% (n = 21)	0.3
Public transport reliability			
Reliable	64% (n = 103)	62% (n = 24)	–
Unreliable	36% (n = 58)	38% (n = 15)	0.97

DISCUSSION OF RESEARCH RESULTS

The purpose of this study was to investigate the factors that influence the choice of delivery place in women with low-risk pregnancies presenting for maternal healthcare services at a tertiary hospital in the Eastern Cape province, South Africa. The majority of women in this study preferred to give birth in the hospital setting over the community health centre because they felt that the hospital was well equipped and had skilled staff with theatre facilities available. The findings are in agreement with other studies from low-income countries. A descriptive study from Syria among 500 women showed that 66 per cent preferred to give birth at the hospital, and 60 per cent preferred to be attended by doctors compared with those who preferred to be attended by midwives (21%) (Bashour and Abdulsalam 2006, 4).

Furthermore, a study in Tanzania has revealed that women bypassed their local primary healthcare facilities without a referral to give birth at a tertiary hospital because

they felt satisfied with the overall birth experience and rated the quality of care as high (Kruk et al. 2014). Analysis of a similar Malawian study identified that the most important factors influencing women's choice of delivery place fall into the following categories: quality of care (facilities, staff, equipment and drugs), distance, and transportation costs (Seljeskog, Sundby and Chimango 2006, 68; *ibid.*, 73). Given the preference of women for hospital births owing to their perception of safety and quality of care, there is need for education campaigns in order to change women's perception about safety and quality of care offered by the primary healthcare facilities.

The level of education for the preference of hospital births was compared with that of the preference for community health centre births. Although the levels of education between the two groups were comparable and did not show any statistical difference with regard to influence on choice of delivery place, the Syrian study showed that the well-educated women opted for hospital delivery and the less educated predominantly opted to deliver in their homes (Bashour and Abdulsalam 2006, 4).

A Bolivian study carried out in a rural setting, where the state of the roads was often a deterrent to access hospitals for pregnant women, showed an increase in the number of the women choosing to deliver at home (Otis and Brett 2008, 49). In the present study, the state of the roads was not an issue and probably played no significant role in the choice of place of birth. Even though it was quicker to get to the community health centre most women still preferred to give birth at the hospital.

According to the Syrian study (Bashour and Abdulsalam 2006, 4), the women's reasons for preferences were a perception of safety and competence, which is similar to the findings of this study. From the Tanzanian study, a total of 1 203 women completed the Discrete Choice Experiment, and the most important facility attributes were a respectful provider attitude, availability of drugs and medical equipment (Kruk, Paczkowski, Mbaruku, De Pinho and Galea 2009, 1669).

Some women give birth in hospital simply because during their antenatal clinic visits to the primary health clinic, they were told to go straight to the hospital once in labour. Inappropriate referral of women to high-risk obstetric units is likely to result from multiple issues such as understaffing of clinics, community health centres and district hospitals, lack of support staff and the lack of necessary equipment or malfunctioning equipment. In 2009, a community health centre performing approximately 720 deliveries per annum and staffed by two midwives per shift in a unit with 11 beds was opened in Mdantsane, East London. At the time of this study the community health centre was relatively new and underutilised. From the participants who preferred the community health centre birth, more than 60 per cent were influenced by proximity to their homes, the benefit of having their relatives or persons supporting them during labour, and commuting easily between home and the community health centre. This gives the impression that had the tertiary hospital been closer they would not have chosen the community health centre.

The ambulance service was seen by most women as being unreliable. Women may not only need the ambulance service for when in labour but also when pregnancy problems arise during the antenatal period. Ambulance unreliability results in delayed transfer in cases of complications which leads to poor maternal and perinatal outcomes. Such a situation will certainly cause client dissatisfaction with the community health centre and a desire to give birth in the tertiary hospital.

Low-risk pregnant women would benefit from having a baby in the community health centre owing to the convenience (proximity to home), lower risk of intervention and its complications. There would also be the benefit to the healthcare system by lowering the number of low-risk pregnant women who give birth in the hospital setting which would save resources and potentially improve care of the high-risk pregnant women.

Strategies to increase the number of women giving birth in the community health centres can be directed towards education of staff as well as potential clients of community health centres, and auditing of childbirth outcomes in community health centres as well as hospitals. It is evident from this study that pregnant women avoid community health centres because of the inappropriate attitude of staff to them. Primary healthcare staff should be educated on appropriate attitude to women in labour, and indications for referral to the hospital to avoid unnecessary referral and assure timeous referral when required. Midwives need to be empowered for both the community and hospital setting because as seen in data from Italy in 2007, the midwife-led birth centre was associated with a low rate of medical interventions during labour and birth, with high rates of spontaneous vaginal birth and without signs of complications (Morano, Cerutti, Mistrangelo, Pastorino, Benussi, Costantini and Ragni 2007, 333).

Many women in this study feared delayed hospital transfer from the community health centre if the need arises. The role of the health department is to assure availability of ambulance services, which will contribute to changing the women's attitude to the community health centre. Once the community health centre functions well, it will become an attractive option for childbirth. Another advantage of a community health centre is its ability to accommodate a support person in labour (owing to the proximity to home). Having a support person in labour is associated with quicker labour, and less intervention and need for analgesia (Hodnett, Gates, Hofmeyr and Sakala 2013, 15). This information should be communicated to midwives in the community health centre and to the pregnant women. Potential clients of the community health centre should be educated on the services available to them and on the advantages of the community health centre versus the hospital for childbirth.

According to the Tanzanian study, policy simulations suggested that if facility attributes such as a respectful provider attitude and availability of drugs and medical equipment were improved at existing facilities, the proportion of women preferring facility delivery would rise from 43 per cent to 88 per cent (Kruk et al. 2009, 1666). Introducing a triage system for low-risk self-referrals at a high-risk obstetric unit in

Johannesburg, South Africa, resulted in down referrals and a reversal of the trend to increase the number of births in this high-risk unit (Buchmann et al. 2010). Audits are useful and are necessary in order to improve the practice. An audit of the ambulance service, childbirth outcomes at community health centres and transfers from the community health centre to the hospital can be undertaken to improve the childbirth outcomes and increase client satisfaction. Nevertheless, the women's choice, which should be well informed, on place of birth is extremely important, should be respected and taken into consideration.

However, it should be noted that childbirth in a community health centre has its disadvantages such as intrapartum complications that require urgent and immediate interventions commonly arise unexpectedly in apparently low-risk pregnant women, and even if the community health centre is only a few kilometres from the referral hospital, referral involves, at best, a very uncomfortable ambulance transfer for a woman in labour and, at worst, loss of life due to the seriousness of the condition or transport delays (Hofmeyr, Mancotywa, Silwana-Kwadjo, Mgudlwa, Lawrie and Gülmezoglu 2014, 2). Referral rates in South Africa are similar to those reported in India, where about 30 per cent of apparently low-risk pregnant women require referral to hospital during labour (David, Pricilla, Venkatesan, Rahman, Sy and Vijayaselvi 2012, 323).

The study has certain limitations that should be taken into account when interpreting its findings. A small sample of women was used for this study, and the findings of this study cannot be generalised to other settings. Future research involving large samples and more settings should be conducted in order to generalise the findings of the study to other settings. The use of convenience sampling to select the sample did not give participants equal chance to be included into the study which might have made the study susceptible to bias. Another limitation of the study is the lack of information assessing the socio-economic situation of the households from which the women included in the study originated. Only monthly income was assessed and it was not a good indicator of the socio-economic situation of the participants. An assessment of the participants' employment history, additional sources of income support, household arrangements and stability of relationships would have increased the understanding of the socio-economic situation of the participants. The other limitation of the study is its failure to investigate the factors influencing the preference of delivery place by women who self-referred themselves to the tertiary hospital. Qualitative studies involving women who self-referred themselves to the tertiary hospital should be conducted in order to obtain an in-depth perspective of the factors influencing their preferences of delivery place.

The findings of this study raise a number of recommendations that should be implemented in order to promote women with low-risk pregnancies to give birth at the community health centre. It is recommended that community health centre staff be educated on management of low-risk obstetric patients and pathway for referral to the high-risk unit, and on communication skills in relation to clients and their families. Pregnant women should be educated on the course of pregnancy, childbirth and

childcare through antenatal classes. Media services can be used to promote the use of the community health centre by pregnant clients. There should be a delegated ambulance based at the community health centre and hospital to streamline the referral process (down-referrals or up-referrals). A three-year follow-up is needed to assess the number of women giving birth at the tertiary hospital since the community health centre has opened in 2009. In the Eastern Cape at both Dora Nginza Hospital and Frere Hospital, on-site midwife birth units administered and staffed by primary care services have been established (Hofmeyr et al. 2014, 2). These units have been very successful in reducing the number of births in the hospital labour wards. Given the preference of women in this study to give birth within the security of a hospital setting, it is recommended that more primary care on-site midwife birth units be established in hospitals so that women can receive appropriate primary midwifery level of care during labour, yet still be close to hospital facilities in the event of a complication. It is further recommended that strategies such as the allocation of adequate human and infrastructural resources to community health centres be implemented in order to promote their utilisation by pregnant women.

CONCLUSION

The majority of women in this study preferred to deliver in a hospital setting over the community health centre independent of age, parity, education, employment, income, location in relation to the health facility, beliefs regarding the reliability of ambulance and public transport as well as the affordability of public transport.

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