

Prompt Attention: Labour and Childbirth Services and Maternal Complications in Two Referral Hospitals in Tanzania

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Abstract

Background: Prompt attention is one of the eight non-medical domains used to evaluate healthcare and is considered the most important domain for maternal healthcare. Prompt attention includes short travel and waiting times (within 1 hour) to support good health outcomes. This study aimed to determine the impact of prompt attention (as measured by travel and waiting times) on labour and childbirth services in two Tanzanian referral hospitals between October and November 2014.

Methods: Simple random sampling was used to recruit 163 mothers within 48 hours post-partum; 81 from Haydom Lutheran Referral Hospital and 82 from Mwananyamala Referral Hospital. Data were collected using a structured interviewer-administered questionnaire. Frequency distribution tables and figures were generated and Pearson's chi-square tests were used to examine the relationships between travel and waiting times and maternal complications. P-values < 0.05 were considered statistically significant.

Results: The majority (n = 102, 62.6%) of participants travelled to the healthcare facility within 1 hour. However, 61 (37.4%) travelled for more than 1 hour. At both facilities, most participants (n = 161, 98.8%) waited less than 1 hour to be attended. Although 64.5% (n = 104) of the women who were attended within 1 hour did not develop maternal complications after childbirth, although 35.4% (n = 59) developed maternal complications. In addition, 71 (69.6%) of the 102 women who travelled to the health facility within 1 hour did not develop maternal complications.

Conclusion: There were insufficient data to detect a real difference in the association between waiting times and complications between the two hospitals. However, greater travelling time was statistically significantly associated with maternal complications in both hospitals. The reported complications might have been attributable to delays in deciding to access healthcare before labour. Further studies on this topic are needed, including qualitative research that explores mothers' perspectives.

Keywords: Health System Responsiveness; Prompt Attention; Maternal Complications; Labour and Childbirth

Abbreviation

WHO: World Health Organization

Introduction

Prompt attention is among the eight domains developed by the World Health Organization (WHO) to evaluate health system responsiveness [1]. According to the WHO, prompt attention includes appropriate travel and waiting times. For example, waiting times for health services should be within 1 hour to support improved health outcomes. Other domains of health system responsiveness are: communication, autonomy, social support, choice of provider, confidentiality, amenities, and dignity [2,3]. There are three main types of delays in accessing healthcare. First, delays in spotting deviations from normal and making decisions to seek healthcare services. Such delays may include complications not being identified as severe, late seeking of healthcare services because of family members, or the use of alternative treatments associated with sociocultural beliefs in a given community. Second, there may be delays in obtaining transport to reach an appropriate health facility. Transport-related delays can be related to no available means of transport or money for travel, or healthcare facilities being situated far from the community meaning people have to travel long distances [4]. Third, there may be delays in receiving suitable healthcare services within a health facility. These delays may be attributable to negative attitudes toward care provision among healthcare professionals, lack of training, shortage of staff, and inadequate basic equipment, drugs, and materials [5-7].

Globally, maternal complications and deaths are public health problems that may arise in the antenatal, intra-natal, and immediate post-partum periods. Women die because of complications related to pregnancy, labour, and delivery. Almost 75% of maternal mortality is due to hemorrhage (mostly post-partum hemorrhage), sepsis (especially during the post-partum period), pre-eclampsia and eclampsia, obstructed labour, and childbirth-related complications [8]. In Africa, competent delivery care for women and their newborns is crucial to prevent complications and reduce neonatal and maternal mortality [9]. The lives of numerous pregnant women and mothers would be saved if pregnancy- and childbirth-related complications were prevented [9]. Childbirth-related complications are unpredictable; therefore, all women and their newborns must be attended by competent healthcare providers. Prompt diagnosis and early treatment of childbirth complications is central to preventing unnecessary interventions [9].

Prompt attention is the most important domain of healthcare system responsiveness for maternal healthcare [3]. Few previous studies have reported results concerning health system responsiveness in maternal childbirth services, although the responsiveness of health services in other disciplines such as mental healthcare has been assessed [3,10]. In Tanzania, there is a paucity of research on prompt attention as a health system responsiveness domain although maternal and neonatal deaths related to maternal childbirth services are reported. This highlights a knowledge gap regarding prompt attention in Tanzanian maternal childbirth care services. Therefore, this study aimed to assess the impact of prompt attention on maternal childbirth services in two district hospitals (currently referral hospitals) in Tanzania; a faith-based hospital (Haydom Lutheran Hospital) in Manyara region and a governmental hospital (Mwananyamala Hospital) in Dar es Salaam region. Information obtained from this study may be useful to inform development of relevant policies by the local governments of Kinondoni (Dar es Salaam region) and Mbulu (Manyara region) districts and the Ministry of Health, Community Development, Gender, Elderly and Children. In particular, our findings may help in formulating health policies to support timely obstetric services and implementing strategies to reduce maternal complications by promoting quality obstetric care, skilled birth attendants, postpartum care, and addressing delays in maternal services to improve the Tanzanian health system and meet Sustainable Development Goal 3.

Materials and Methods

The selection of the two participating health facilities was based on location and ownership; that is, an urban public hospital and a rural faith-based hospital that provided the same level of care. Simple random sampling was used to recruit 163 post-partum mothers within 48 hours after childbirth; 81 participants from Haydom Lutheran Hospital and 82 from Mwananyamala Hospital.

Ethical clearance was obtained from Dean of the School of Nursing, of the Muhimbili University of Health and Allied Sciences (MUHAS) and permission to conduct research was sought from District Medical Officer from Kinondoni District and Mbulu District; Mwananyamala

and Haydom Lutheran Hospitals respectively. All study participants were informed of the nature of the research and consent was obtained for all those participants who were interviewed.

Data were collected using a structured, interviewer-administered questionnaire containing 16 closed-ended questions and one open-ended question. The questionnaire was adapted from WHO and questions developed and contextualized through reading different literatures on the prompt attention and the aim of the study considering the research questions asked to be answered. The researcher interviewed all participants as planned in their postnatal wards within 48 hours of childbirth, with each interview lasting between 30-60 minutes. Information on the demographic and obstetric characteristics, prompt attention were collected. Data entry, cleaning, and analysis were performed using SPSS version 22, and frequency distribution tables and figures were generated. Pearson’s chi-square tests (95% confidence intervals [CI]) were used to analyze categorical variables. P-values <0.05 were considered statistically significant.

Results and Discussion

Participants’ socio-demographic characteristics

Participants were 163 women that were recruited within 48 hours after childbirth; 81 (49.7%) from Haydom Lutheran Hospital and 82 (50.3%) from Mwananyamala Hospital. Participants were aged from 14 to 34+ years, with 47 (28.8%) aged 19 - 23 years. The majority of participants (n = 117, 71.8%) had a primary education level, 61 (37.4%) described their occupation as peasant, 120 (73.6%) were married, and 93 (57.1%) had one or two children (Table 1).

| | Haydom Lutheran Hospital (N = 81) | Mwananyamala Hospital (N = 82) | Total |
|-------------------|-----------------------------------|--------------------------------|------------|
| | N (%) | N (%) | |
| Age, years | | | |
| 14 - 18 | 8 (9.9) | 5 (6.1) | 13 (8.0) |
| 19 - 23 | 20 (24.7) | 27 (32.9) | 47 (28.8) |
| 24 - 28 | 20 (24.7) | 20 (24.4) | 40 (24.5) |
| 29 - 33 | 12 (14.8) | 24 (29.3) | 36 (22.1) |
| 34+ | 21 (25.9) | 6 (7.3) | 27 (16.6) |
| Education | | | |
| Primary | 62 (76.5) | 55 (67.1) | 117 (71.8) |
| Secondary | 12 (14.8) | 20 (24.4) | 32 (19.6) |
| College | 2 (2.5) | 5 (6.1) | 7 (4.3) |
| None | 5 (6.2) | 2 (2.4) | 7 (4.3) |
| Occupation | | | |
| Peasant | 60 (74.1) | 1 (1.2) | 61 (37.4) |
| Employed | 3 (3.7) | 6 (7.3) | 9 (5.5) |
| Self-employed | 5 (6.2) | 32 (39.0) | 37 (22.7) |
| House wife | 13 (16.0) | 43 (52.4) | 56 (34.4) |
| Marital | | | |
| Married | 71 (87.7) | 49 (59.8) | 120 (73.6) |
| Divorced | 1 (1.2) | 0 (0.0) | 1 (0.6) |
| Unmarried | 9 (11.1) | 33 (40.2) | 42 (25.8) |
| Parity | | | |
| 1 - 2 | 32 (39.5) | 61 (74.4) | 93 (57.1) |
| 3 - 4 | 20 (24.7) | 19 (23.2) | 39 (23.9) |
| ≥ 5 | 29 (35.8) | 2 (2.4) | 31 (19.0) |

Table 1

Traveling time to the health facility

The majority (n = 102, 62.6%) of participants reported they had travelled to the hospital within 1 hour (Haydom Lutheran Hospital: n = 45, 55.6%; Mwananyamala Hospital: n = 57, 69.5%), whereas 61 (37.4%) had travelled for more than 1 hour (Haydom Lutheran Hospital: n = 36, 44.4%; Mwananyamala Hospital: n = 25, 30.5%). Generally, the two hospitals were able to attend their clients within the recommended time (Table 2).

| Traveling Time | Haydom Lutheran Hospital | Mwananyamala Hospital | Total N (%) |
|------------------|--------------------------|-----------------------|----------------|
| | N (%) | N (%) | |
| Within 1 hour | 45 (55.6) | 57 (69.5) | 102 (62.6) |
| More than 1 hour | 36 (44.4) | 25 (30.5) | 61 (37.4) |

Table 2: Traveling time to the health facility.

Waiting time for childbirth services

Of the 163 participants, 161 (98.8%) had waited less than 1 hour to be attended. At Haydom Lutheran Hospital, 80 of 81 (98.7%) participants were attended in within 1 hour, and only one (1.3%) participant was attended after 1 hour of waiting. Similarly, most (n = 81, 98.8%) Mwananyamala hospital participants were attended in within 1 hour, with only one (1.2%) participant attended after 1 hour of waiting. This showed that both facilities were able to provide services within the time recommended by the WHO (Table 3).

| Waiting Time | Haydom Lutheran Hospital | Mwananyamala Hospital | Total N (%) |
|------------------|--------------------------|-----------------------|----------------|
| | N (%) | N (%) | |
| Within 1 hour | 80(98.7) | 81 (98.8) | 161 (98.8) |
| More than 1 hour | 1 (1.3) | 1 (1.2) | 2 (1.2) |

Table 3: Waiting time for childbirth services.

Association between waiting time and maternal complications

In total, 161 (98.8%) participants at both health facilities were attended within 1 hour. This suggested that regardless of location, environment, and hospital ownership, these facilities were able to provide services to most clients within the WHO recommended waiting time. More than a half (n = 104, 64.5%) of all women who were attended within 1 hour did not develop any maternal complications after childbirth (Haydom Lutheran Hospital: n = 61, 75.3%; Mwananyamala Hospital: n = 43, 52.4%). However, 59 (35.4%) participants who had been attended within 1 hour developed maternal complications after childbirth. The two participants (one from each hospital) that were attended after 1 hour of waiting both developed maternal complications. The chi square test revealed that Haydom Lutheran Hospital ($\chi^2 = 3.088$, df = 1, p = 0.079) and Mwananyamala Hospital ($\chi^2 = 1.116$, df = 1, p = 0.291) did not statistically significantly differ in terms of waiting times. However, there were insufficient data to detect a real difference between the two hospitals ($\chi^2 = 3.567$, df = 1, p = 0.059) (Table 4).

| Complications | Haydom Lutheran Hospital: Complications | | Mwananyamala Hospital: Complications | | Total (%) |
|------------------|---|-----------|--------------------------------------|-----------|--------------------------------|
| | Yes (%) | No (%) | Yes (%) | No (%) | |
| Waiting Time | | | | | |
| Within 1 hour | 19 (23.5) | 61 (75.3) | 38 (46.3) | 43 (52.4) | 161 (98.8) |
| More than 1 hour | 1 (1.2) | 0 (0.0) | 1 (1.2) | 0 (0.0) | 2 (1.2) |
| Chi square | $\chi^2(1) = 3.088, p = 0.079$ | | $\chi^2(1) = 1.116, p = 0.291$ | | $\chi^2(1) = 3.567, p = 0.059$ |

Table 4: Association between waiting time and maternal complications.

Maternal complications and traveling time

Of the 102 (62.6%) women who travelled to the health facility within 1 hour, 71 (69.6%) did not develop any maternal complications, although the remaining 31 (30.4%) developed complications. Regardless of travelling time, no complications were reported for 61 (75.3%) women at Haydom Lutheran Hospital and 43 (52.4%) women at Mwananyamala Hospital. Out of 36 participants who travelled more than 1 hour at Haydom hospital, only 11(30.56)% developed complications. Twenty five participants who travelled more than 1 hour to Mwananyamala hospital, 17 (68) developed maternal complications. The results of the chi square tests for Mwananyamala Hospital and Haydom Lutheran Hospital were $\chi^2 = 6.024, df = 1 (p = 0.014)$ and $\chi^2 = 1.198, df = 1 (p = 0.274)$, respectively. The chi square test for both hospitals was statistically significant ($\chi^2 = 3.976, df = 1, p = 0.046$), which suggested that greater travelling time was associated with maternal complications (Table 5).

| Travelling Time | Haydom Lutheran Hospital: Complications | | Mwananyamala Hospital: Complications | | Total (%) |
|------------------|---|------------|--------------------------------------|------------|--------------------------------|
| | Yes, n (%) | No, n (%) | Yes, n (%) | No, n (%) | |
| Within 1 hour | 9 (20) | 36 (80) | 22 (38.60) | 35 (61.40) | 102 (62.58) |
| More than 1 hour | 11 (30.56) | 25 (69.44) | 17 (68) | 8 (32) | 61 (37.42) |
| Chi square | $\chi^2(1) = 1.198, p = 0.274$ | | $\chi^2(1) = 6.024, p = 0.014$ | | $\chi^2(1) = 3.976, p = 0.046$ |

Table 5: Maternal complications and traveling time.

Discussion

This study explored the relationship between prompt attention (as assessed by travel and waiting times) and maternal complications. There were insufficient data to detect a real difference in waiting times between the two study hospitals, although greater travelling time was statistically significantly associated with maternal complications. However, these complications may be attributable to various delays in accessing healthcare before labour. Our finding was consistent with a survey conducted in 2001 in Bangladesh, which also revealed that participants had short traveling times to reach the health facility and were attended by healthcare professionals within 1 hour [11,12].

The present study showed that although women in Tanzania receive prompt delivery attention, there were still a large number of maternal complications. However, this might have been attributable to a range of factors associated with maternal complications that we did not investigate. Reasons for delays that were not explored in this study could also have contributed to the observed numbers of complications, including: complications identified as not severe, late healthcare seeking because of family members, and use of alternative treatments associated with sociocultural beliefs within a given community. Lack of transport or money for travel to reach the health facility, as well as healthcare facilities being situated far from the community mean that many women must travel for a long time to reach healthcare facilities [4]. Negative attitudes toward care provision among healthcare providers, under-trained staff, shortage of staff, inadequate basic equipment, drugs, and materials may also contribute to delays in women receiving the care they need [13].

In particular, married women reported complications ($n = 39$, 47.6%, $p = 0.034$), which may related to most decisions being made by the husband, who is regarded as the head of the household. This decision making process might have contributed to delays in seeking healthcare and therefore complications.

A previous study from a rural district in Tanzania [14] stated that in most cases, husbands are the final decision makers as they are the family bread winners; however, husbands were reported to be reluctant to seek pregnancy-related medical advice and take their wives to healthcare facilities. We also observed that educational level was associated with complications ($n = 39$, 47.6%, $p = 0.04$); especially in urban areas where most women had at least completed primary education. Our finding was consistent with a study conducted in six centers in Tanzania [15], which showed that 53.0% of respondents reported having a primary school educational level (although not all had reached standard VII). Finally, parity was strongly associated with complications, particularly in rural settings, which may be because most rural women had more than five children. This was also supported by previous studies. For example, Mgaya, showed that there was a significant association of grand multi-parity with adverse outcomes compared with lower parity women [16]. Donald also noted that frequent and short-spaced deliveries were associated with a high tendency for postpartum hemorrhage due to uterine atony [17-31].

Some study limitations were time allowed for the study was too short therefore choosing only two study hospitals with only 163 participants cannot represent all hospitals in Tanzania. Interviewing the participants might have denied them freedom to express themselves due to fear the negative impact on the maternal services from the health providers.

Conclusion

This study did not find a significant relationship between waiting time and development of maternal complications, although greater travelling time was significantly associated with development of complications. However, these reported complications may be attributable to delays in deciding to access healthcare before labour. Further studies on this topic are needed, particularly qualitative research that explores mothers' perspectives.

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Conflict of Interest

The authors declare that they have no conflicts of interest in relation to this study.

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