

Health Care Providers and Community Health Care-worker's Perspectives on the Factors Contributing to Continued Neonatal Deaths in Gicumbi District, Rwanda

Corneille Killy Ntihakose^{1,2*}, Nicholas Ngomi¹

¹Department of Public Health, University of Mount Kenya, Thika, Kenya; ²Department of Public Health, Byumba District Hospital, Thika, Kenya

ABSTRACT

Introduction: Rwanda's neonatal mortality remains high and estimated to be 20 per 1000 live births according to the 2014-15 Rwanda Demographic and Health Survey (RDHS 2014-2015). Improving outcomes of maternal and child health outcomes in low and middle-income countries remains a major challenge. Globally, the United Nations estimated that the Maternal Mortality Ratio (MMR) was 216 per 100,000 births and the under-five mortality rate 43 per 1,000 live births in 2015 and that the majority of these deaths occurred in Sub-Saharan Africa. Factors like poor maternal health, management of pregnancy and delivery complications and poor medical & nursing care during childbirth or shortly after birth of neonate predispose to neonatal deaths and morbidities. These factors predisposing neonatal deaths and morbidities are poorly measured in developing world but some studies have revealed that neonatal asphyxia, severe neonatal sepsis, prematurity and low birth weight complications and tetanus are believed to be major components. The aim of this study is to explore health care providers and community health workers' perspectives on the factors contributing to continued neonatal deaths.

Methods: We conducted key informant interviews with 24 health care providers (medical doctors, nurses, and midwives) and Community health workers. Interviews were recorded and analyzed thematically.

Results: We conducted a total of 24 in-depth interviews. A majority of respondents believed that the main challenges in providing care to women who are delivering or in postpartum are inadequate number of staff (medical doctors and midwives). Close to 90% reported that mother's education is the area to be improved. Two thirds of our respondents reported that the area to improve during delivery is proper labor monitoring by midwives and medical doctors, and finally above half of respondents described that mothers who are delaying to reach health facility is important factor contributing to neonatal mortality and morbidity.

Conclusion: Our findings suggest that delaying to reach health facility is a big contributor to continued deaths; therefore, this study recommends for Ministry of health to allow maternity services in health posts which are being rolled out at cell's level in Rwanda.

Keywords: Perspective; Neonatal deaths; Gicumbi; Diarrhoea; Immune

INTRODUCTION

Improving outcomes of maternal and child health outcomes in low and middle-income countries remains a major challenge. Globally, the United Nations estimated that the maternal mortality ratio (MMR) was 216 per 100,000 births and the under-five mortality rate 43 per 1,000 live births in 2015 and that the majority of these deaths occurred in Sub-Saharan Africa [1]. An estimated 75% of maternal deaths and more than 80% of newborn deaths worldwide are preventable. Factors like poor maternal health, management

of pregnancy and delivery complications and poor medical & nursing care during childbirth or shortly after birth of neonate predispose to neonatal deaths and morbidities. [2]. These factors predisposing neonatal deaths and morbidities are poorly measured in developing world but some studies have revealed that neonatal asphyxia, severe neonatal sepsis, prematurity and low birth weight complications and tetanus are believed to be major components. Rwanda's neonatal mortality remains high and estimated to be 20 per 1000 live births according to the 2014-15 Rwanda Demographic and Health Survey (RDHS 2014-2015).

Correspondence to: Corneille Killy Ntihakose, Department of Public Health, University of Mount Kenya, Thika, Kenya, E-mail: cknihakose@gmail.com

Received: February 05, 2021, **Accepted:** February 19, 2021, **Published:** February 26, 2021

Citation: Ntihakose CK, Ngomi N (2021) Health Care Providers and Community Health Care-worker's Perspectives on the Factors Contributing to Continued Neonatal Deaths in Gicumbi District, Rwanda. J Trop Dis. 9:274.

Copyright: © 2021 Ntihakose CK, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

The interventions that aim at reducing number of deaths of neonates vary in different ways and by actors involved in implementation. These interventions are categorized in two classes based on demand or supply. A study in Rwanda, for hospitals located in Kigali [3]. Their sample size was 8424 births. They found that perinatal mortality rate was at 32/1,000 births. Factors contributing to deaths of neonates were delay in care seeking (39%), provision of poor care at hospitals and health centres (37%) and delay to reach to health centres of hospital (10%) secondary to lack of money as complained by community members.

Other studies have linked lack of midwives, walking long distances from home to health facilities, lack of adequate items in delivery with maternal health. The aim of this study is to determine perspectives of health care providers and community health care workers on the factors contributing to continued neonatal deaths in Gicumbi District, Rwanda [4].

METHODS

Study design

This was qualitative study that enrolled 24 participants working in Byumba Hospital and 5 health centres representing 24 health centres in Gicumbi District in key informant interview.

Study population and sample size

Key informants Interview was done for 24 health professionals working in Byumba Hospital and 5 sampled health centres with 4 medical Doctors, 4 health center managers, 4 midwives working at hospital, 4 midwives working at health center, 4 nurses who were working at ambulances and 4 community health workers who worked in Byumba Hospital and sampled health centres [5,6].

This study excluded medical doctors, community health workers, nurses and midwives who did not work in sampled health facilities or who did not work there during the study period [7].

Sampling health centers

Data collection: Interviews were recorded using phone voice recorder by a trained nurse. Interviews were directed using six research themes [8] (shown in Table 1).

Table 1: Top three health centres with highest number of deliveries in gicumbi district.

Health center	Total births (April-June 2019)
Rutare health center	164
Miyove health center	155
Kigogo health center	143

Qualitative themes

Challenges in providing care to women who are pregnant, delivering or in postpartum. Areas to be improved in follow up of pregnant women [9]. Areas to be improved during delivery. Areas to be improved in postpartum follow up. Factors contributing to continued neonatal mortality in Gicumbi District. Recommendation on areas of improvement for maternal and neonatal care in Gicumbi District [10].

ETHICS

This study ensured that patient privacy is respected by keeping all the information obtained from the files of patients confidential

and avoiding to be disclosed to anyone except the research supervisors. Participants had always the right of deciding the right to decide the time, overall situations and degree at which his/her information can be shared. Records were de-identified before being transferred for analysis. Only the researcher was able to link any personally identifiable information to the de-identified dataset. A locked cupboard of researcher kept all written documentation. The Computer with a protected password stored all digital data. No information identifying any person would be presented in any written reports resulting from this research. Ethical approval was obtained from Byumba ethical committee and Mount Kenya Institutional Review Board [11-14].

RESULTS

Thematic analysis

Challenges in providing care to women who are pregnant, delivering or in postpartum: Most of respondents pointed out that the main challenges in providing care to women who are delivering or in postpartum are inadequate number of staff (medical doctors and midwives) as reported by respondent 5 who said that: “the most challenge we are facing as health care provider to satisfy the maternal needs of having a live newborn is lack of enough medical, nursing and midwives staff, most of time we are 2 or three midwives with one medical doctor in labor and average number of mothers to do labor monitoring are 7 per shift” [15].

Areas to be improved in follow up of pregnant women: Close to 90% of our respondents pointed out on continued mother’s education is the area to be improved in following up pregnant women to expect good neonatal outcomes. This has been reported for example by respondent 12 who said that: “if we work on mother’s education and they are sensitized on importance of completing four antenatal cares, good nutrition during pregnancy and early consultation of mothers when they start labor, for sure we can expect good outcomes” [16].

Areas to be improved during delivery: Two thirds of our respondents reported that the area to improve during delivery is proper labor monitoring by midwives and medical doctors and as an example the informant 14 said: “Because of few staff we are not able to do the labor monitoring as required and many times our interventions like c/section, vacuum delivery are applied late” [17].

Areas to be improved in postpartum follow up: The majority of respondents informed that postnatal care and immediate postpartum follow up if are done adequately can improve the postpartum follow up, hence contributing to reduction of neonatal morbidity and mortality. The key informant number 9 said: “if we do adequately the postnatal care and mother’s postpartum follow up, the neonatal outcomes can be improved” [18].

Factors contributing to continued neonatal mortality in gicumbi district: Above half of respondents described that mothers who are delaying to reach health facility is important factor contributing to neonatal mortality and morbidity as reported by respondent 11: “Some mothers came delayed to health centers and no labor monitoring has been done, this significantly contributes to worse outcomes like birth asphyxia, immediate neonatal deaths and so, on” [19].

Recommendation on areas of improvement for maternal and neonatal care in gicumbi district: Two thirds of respondents have claimed to extend maternal services to health posts. The respondent

8 said: “The government, Gicumbi District and Byumba hospital must allow health post to offer maternal services, this will help too much mothers to receive maternal health services and if delivery is done in health post the mortality can be reduced significantly” [20].

RESULTS AND DISCUSSION

The present study found that delay to seek care by mothers is main factor contributing to neonatal morbidity and mortality. Delaying of mothers to reach health facility is linked to quantitative finding of active and expulsive phase of labor strongly associated with mortality during multivariate analysis. Other studies have found the quite similar on association of delaying to reach health facility with neonatal morbidity and mortality. A study in Rwanda, for hospitals located in Kigali. Their sample size was 8424 births. They found that perinatal mortality rate was at 32/1,000 births and stillbirth rate at 20/1000 births. Factors contributing to mortality were delay in care seeking (39%), provision of poor care at the health facility (37%) and delay to arrive at the health facility (10%) secondary to lack of money as complained by community members [21-22].

CONCLUSIONS

Health care providers and community health care workers pointed out on delay to seek care by mother, poor labor monitoring and delay to intervene in health facility as top factors contributing to continued neonatal deaths.

This study reported prevalence and predisposing factors of neonatal mortality and morbidity in Gicumbi District. Based on the findings from the study the following recommendations should be considered respectively

To the ministry of health, rwanda biomedical center and gicumbi district

Ministry of health to give accreditation of health posts to offer maternity services to cut down mother coming for delivery in active or expulsive phase of labor. Gicumbi District and Ministry of Health to scale up mothers' education and health promotion messages aiming at cutting down the delay to seek care by laboring mothers.

To byumba hospital and health centers in gicumbi district

To improve the quality of labor monitoring. To work on services delivery in maternity and cut delays to intervene. To sensitize mothers with previous scarred uterus to consult as early as possible.

To the community health workers

Community health workers should organize campaigns to promote maternal and child health

REFERENCES

1. Alkema L, New JR. Global estimation of child mortality using a Bayesian B-spline bias-reduction model. *Ann Appl Stat.* 2014;1:2122-2149.
2. Andargie G, Berhane Y, Worku A, Kebede Y. Predictors of perinatal mortality in rural population of Northwest Ethiopia: a prospective longitudinal study. *BMC public health.* 2013;13(1):1-7.
3. Baki MA, Haque A, Mohsin F, Nahar J, Akhter S, Begum T, et al. Risk factors for mortality in neonates with birth weight < 1500 gm. *BIRDEM Medical Journal.* 2012;2(1):19-22.
4. Bamji MS, Murthy PV, Williams L, Rao MV. Maternal nutritional status & practices & perinatal, neonatal mortality in rural andhra pradesh, india. *Indian J Med Res.* 2008;127(1):44.
5. Barria-Pailaquilén RM, Mendoza-Maldonado Y, Urrutia-Toro Y, Castro-Mora C, Santander-Manríquez G. Trends in infant mortality rate and mortality for neonates born at less than 32 weeks and with very low birth weight. *RLAE.* 2011;19(4):977-984.
6. Barros FC, Bhutta ZA, Batra M, Hansen TN, Victora CG, Rubens CE. Global report on preterm birth and stillbirth (3 of 7): Evidence for effectiveness of interventions. *BMC Preg Childbirth.* 2010;10(1):1-36.
7. Beck S, Wojdyla D, Say L, Betran AP, Merialdi M, Requejo JH, et al. The worldwide incidence of preterm birth: a systematic review of maternal mortality and morbidity. *Bull. World Health Organ.* 2010;88:31-38.
8. Berhan Y, Berhan A. Causes of maternal mortality in ethiopia: A significant decline in abortion related death. *EJHS.* 2014;24:15-28.
9. Bhutta ZA, Darmstadt GL, Hasan BS, Haws RA. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: A review of the evidence. *Pediatrics.* 2005;115:519-617.
10. Bhutta ZA, Darmstadt GL, Haws RA, Yakoob MY, Lawn JE. Delivering interventions to reduce the global burden of stillbirths: Improving service supply and community demand. *BMC Preg Childbirth.* 2009;9(1):1-37.
11. Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, et al. Group TL, Maternal and Child Nutrition Study Group. Evidence-based interventions for improvement of maternal and child nutrition: What can be done and at what cost? *Lancet.* 2013;382(9890):452-477.
12. Bhutta ZA, Zaidi AK, Thaver D, Humayun Q, Ali S, Darmstadt GL. Management of newborn infections in primary care settings: A review of the evidence and implications for policy? *Pediatr Infect Dis J.* 2009;28(1):S22-30.
13. Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, et al. Group TL, Maternal and Child Nutrition Study Group. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? *Lancet.* 2013;382(9890):452-477.
14. Campbell OM, Graham WJ. Lancet Maternal Survival Series steering group. Strategies for reducing maternal mortality: getting on with what works. *Lancet.* 2006;368(9543):1284-1299.
15. Carroli G, Rooney C, Villar J. How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. *PAEDIATR PERINAT EP.* 2001;15:1-42.
16. Casey BM, McIntire DD, Leveno KJ. The continuing value of the apgar score for the assessment of newborn infants. *N Engl J Med.* 2001;344(7):467-471.
17. Chavan YS, Dattal MS, Khadilker VV, Kshirsager VY, Walimbe AV, Shetti SB. Causes of early neonatal mortality. *Indian Pediatrics.* 1992;29(6):781-783.
18. Chowdhury HR, Thompson S, Ali M, Alam N, Yunus M, Streatfield PK. Causes of neonatal deaths in a rural subdistrict of bangladesh: Implications for intervention. *JHPN.* 2010;28(4):375.
19. Cupen K, Barran A, Singh V, Dialsingh I. Risk factors associated with preterm neonatal mortality: A case study using data from Mt. Hope women's hospital in trinidad and tobago. *Children.* 2017;4(12):108.

20. D'Sa S, Pinto D, Anousha BB, Baliga B. Effect of low birth weight on neonatal mortality in preterm and small for gestational age babies in a tertiary neonatal intensive care unit in India. *Int J Contemp Pediatr.* 2016;3(3):735-758.
21. Demirci O, Yılmaz E, Tosun Ö, Kumru P, Arınkan A, Mahmutoğlu D, Selçuk S, Dolgun ZN, Arısoy R, Erdoğan E, Tarhan N. Effect of young maternal age on obstetric and perinatal outcomes: Results from the tertiary center in Turkey. *Balkan Med J.* 2016;33(3):344.
22. Djaja S, Afifah T, Sukroni A. Contribution of socioeconomical and biological factor towards neonatal mortality in Indonesia. *Japan Med Assoc J.* 2011;57(08).