Perceptions of traditional birth attendants and midwives related to neonatal airway management in rural Uganda: a focused ethnographic qualitative study

Marvesh M Mendhi, Charlene Pope, Susan D Newman, Kathleen B Cartmell, Shahirose Premji

1 Department of Anesthesiology and Perioperative Medicine, Mayo Clinic, Jacksonville, Florida, USA; 2 Ralph H. Johnson Veterans Affairs (VA) Medical Center, Charleston, South Carolina, USA; and Department of Pediatrics, College of Medicine, Medical University of South Carolina, Charleston, South Carolina, USA; 3 College of Nursing, Medical University of South Carolina, Charleston, South Carolina, USA; 4 School of Nursing, Faculty of Health, York University, Toronto, Ontario, USA

Keywords: uganda, traditional birth attendants, neonatal, birth asphyxia

https://doi.org/10.29392/001c.17360

Background

The neonatal mortality rate in rural Uganda is 38 per 1000 births as compared to 6 per 1,000 in the United States. Hypoxic events, also referred to as birth asphyxia, represent 24% of neonatal deaths in Sub-Saharan Africa. Nearly 60% of birth asphyxia worldwide occurs in home-based deliveries with informally trained birth attendants. The World Health Organization has defined two categories of birth attendants in low- and middle-income countries (LMICs): i) midwife skilled birth attendants, who are formally educated; and, ii) traditional birth attendants (TBAs) who usually acquire skills through apprenticeship and have home-based practices in rural areas. Thus, there is an urgent need to provide neonatal resuscitation education and build capacity in rural areas, where access to healthcare is poor and the burden of long-term impairment due to hypoxic brain effects is substantial.

Methods

We collected data using a focused ethnographic approach to incorporate: i) field-notes; ii) informal interviews while observing five Ugandan midwives providing perinatal care; iii) semi-structured interviews with medical center managers and clinic coordinators; and, iv) a focus group with seven traditional birth attendants in Uganda. This qualitative study used a feminist theoretical stance to show the lived reality of women taking care of other women’s health with limited resources during childbirth and neonatal airway management.

Results

Our findings showed that the more formally trained midwives exhibited competence in providing neonatal airway management. In contrast, the traditional birth attendants experienced barriers to performing optimal neonatal airway management due to lack of resources, limited knowledge, and cultural practices. The traditional birth attendants identified their learning preferences as demonstration, poem, or song, and by using local spoken language to learn and implement neonatal airway management.

Conclusions

Findings will contribute to development and dissemination of a culturally tailored educational intervention to enhance TBAs' understanding of effective neonatal airway management. The joint effort of midwives and traditional birth attendants as a foundation for creating a training intervention with their preferred learning method constitutes a scaled-up team approach to meet the World Health Organization’s Sustainable Development Goal #3 to decrease neonatal mortality. Building on the internationally recognized Helping Babies Breathe model, this integrative initial analysis can be replicated to develop sustainable intervention for other rural areas of low- and middle-income countries.
As a contributor to neonatal mortality, hypoxic events, also referred to as birth asphyxia, represent 24% of neonatal deaths in Sub-Saharan Africa. Nearly 60% of birth asphyxia worldwide occurs in home-based deliveries with informally trained or unskilled birth attendants. The World Health Organization (WHO) has defined two categories of birth attendants in low- and middle-income countries (LMICs): 1) skilled birth attendants, who are formally educated and trained to manage childbirth, including physicians, nurses, and formally trained midwives practicing in facility-based clinics and 2) traditional birth attendants (TBAs) who usually acquire skills through apprenticeship and have home-based practices in rural areas. Thus, there is an urgent need to provide neonatal resuscitation education and build capacity in low resource settings, where access to healthcare is poor and the burden of long-term impairment due to hypoxic brain effects is substantial. A newborn who is unable to breathe presents an emergent event, requiring prompt intervention within one minute. In spite of under-reporting, birth-related respiratory distress has been estimated to range from 1.2 to 7.2% for live births. Implementing simple airway management skills can revive the newborn and prevent negative long-term health consequences.

Researchers have developed programs to teach neonatal airway management in LMICs; however, many of those programs are geared toward physicians and nurses who have received formal education. Though estimates of the rate of TBA deliveries vary from country to country, the rate in rural areas is higher, probably over 50% and remains the primary maternal-child healthcare (MCH) providers in LMICs. Therefore, interventions that educate rural TBAs are essential to decrease early neonatal deaths, though a systematic review finds there insufficient evidence that TBA interventions have effectively improved those outcomes. However, the role of TBAs in Uganda has been conflicted by edicts from the Ministry of Health in 2010 first banning TBA deliveries, then later advising non-governmental (NGO) agencies to integrate them into advisory roles.

The objective of this study is to capture the voices of TBAs and midwives practicing in rural Uganda and assess their perceptions of safe neonatal airway management, to determine how the Helping Babies Breathe (HBB) guidelines, a promising intervention are being used and what modifications may be needed. The perspectives of study participants will be used to contribute to more culturally appropriate adaptations in neonatal airway management training, incorporating the learning preferences of TBAs and midwives in settings like rural Uganda. This integrated approach to explore the cultural beliefs of neonatal care, health care structure related to maternal childcare and infrastructure of the rural area provides the researcher initial data for analysis. The intervention can be developed utilizing the knowledge gained and the education can be disseminated according to the cultural acceptance of the particular rural area of LMICs, with potential utility for other countries facing similar barriers in rural areas with limited resources.

According to the United Nations Children's Fund (UNICEF) 2015 child mortality report, significant improvement is reflected in the overall NNMR globally, which declined from 36 to 19 deaths per 1,000 births over 25 years. However, a slower decline in early neonatal deaths occurring in the first 24 hours following birth reflects an increase in the proportion of childhood mortality attributable to neonatal deaths from 57% to 44%. These early neonatal deaths require a time-sensitive intervention from TBAs related to neonatal airway management. The WHO and UNICEF are advocating the use of the Every Newborn Action Plan for midwives and TBAs to decrease neonatal deaths to 12 per 1,000 births by 2030 as part of Sustainable Development Goal #3. Considerable challenges and opportunities exist related to neonatal care with a focus on neonatal airway management by TBAs and midwives in rural Uganda, utilizing strategies currently promoted by the WHO and UNICEF. Figure S1 in the Online Supplementary Document, describes the support system needed by TBAs for effective practice, representing the complex factors affecting TBA decision-making about neonatal resuscitation in rural areas.

In Sub-Saharan Africa (SSA), approximately 47% of births occur in facility-based clinics, while the rest occur outside clinical facilities. There is a lack of adequately trained nurses, midwives, and physicians to cover all the urban and rural areas in LMICs. Standardized education requirements, which typically vary from 1.5 to 5 years, to practice midwifery in SSA are lacking. Although, the work of skilled birth attendants decreases the NNMR, their limited numbers cannot cover all rural areas. The proportion of rural births assisted by TBAs has been reported to range from 2% to 79% in 2006 in SSA to about 50% in SSA reported by UNICEF in 2017. Therefore, to address the 60% of birth asphyxia occurring in rural areas, expansion of the education of healthcare providers, such as TBAs, may result in a substantial impact on neonatal mortality.

Neonates born in home-based environments have limited access to facility-based care for urgent airway management due to inadequate infrastructure, difficulty in travel, and lack of resources. The inadequate infrastructure in LMICs, makes it difficult for pregnant women in labor to reach a healthcare facility. Cost of transportation and health facility charges are other barriers to accessing facility-based care. According to recent demographic data, 41.6% of all births are home-based in Uganda. Nationally, the NNMR in Uganda is 19 to 22 per 1,000 births; in the western region, which includes Masindi, the rate is 40 to 54 per 1,000 births. In LMICs, the NNMR is usually higher in rural areas versus urban areas, as noted in a recent Ugandan study.

The low literacy of TBAs contributes to a lack of access to educational resources for implementing safe neonatal resuscitation, since most resources are in written form. Three studies in Sudan, Nepal, and India, assessing TBA skills, found varying levels of illiteracy from 74% to 100%. Low literacy is a significant challenge in LMICs, where training tends to rely on written materials and lectures using medical language. Yet this training is potentially modifiable by adapting training methods to TBA learning needs and preferences.

Programs, such as HBB, are available to facilitate improvement in neonatal resuscitation in LMICs. The HBB recommendations were developed by the American Academic...
emy of Pediatrics and are supported by the United States Agency for International Development (USAID). HBB written training materials and guidelines are currently used in 77 LMICs, but typically are geared toward formally trained healthcare professionals (physicians, nurses and midwives). The HBB program is primarily available to facility-based neonatal care providers, but is not easily accessible to home-based neonatal care providers in rural areas, including TBAs with low literacy levels. Therefore, a notable gap exists. This study explores the perspectives of home-based care providers and rural facility midwives regarding their knowledge and use of the HBB as a basis for future intervention.

Historically, TBAs, as primary MCH providers, have learned mostly through apprenticeship. More formally trained healthcare providers tend to disrespect TBAs because of their limited education and experience with neonatal training. Izugbara and colleagues noted the humiliation experienced by TBAs when taking their clients to the hospital for obstetric emergencies; the TBAs were often referred to as quacks. This type of treatment also causes disrespect for TBAs in the public sector, as reflected in ambivalence by the Ministry of Health in Zimbabwe and attitudes in public health facilities in Honduras. The current Ugandan policy has prohibited TBAs to conduct deliveries at home as they are not formally trained, which has further questioned their role in childbirth care.

Gill et al noted that 98% of TBAs in their Zambian study were farmers, and 13% had a primary school education level. Low literacy can be a challenge to providing adequate educational material; thus, alternative methods of teaching have been utilized. Using the time-honored “call and response” method, Gill and colleagues showed a 63% reduction in neonatal deaths due to hypoxic events with an additional neonatal resuscitation program component. A meta-analysis of 60 studies in LMICs on the effectiveness of training TBAs revealed significant increases in TBA knowledge (90%), attitude change (74%), and behavior changes (63%) for providing essential newborn care, including effective neonatal resuscitation. Most importantly, the training led to an 11% decrease in birth asphyxia mortality. Most of the studies used alternative methods of teaching, such as demonstrations and verbally teaching the concepts. Notably, Silver and colleagues packaged the newborn care teaching material in a form of a song for home-based healthcare providers in Uganda.

In a systematic review, persistent barriers for mothers who wanted to use health facility-based care were accessibility, affordability, and cultural acceptability of TBAs. The authors concluded that integrating and providing linkage between TBAs and formally trained healthcare providers at the health facility may promote safer maternal and neonatal care. Other researchers have recommended promoting stronger linkage between home-based and facility-based neonatal care providers to maintain sustainable educational resources.

Our study explored the clinical and cultural practices of midwives and TBAs that support (facilitators) or interfere (barriers) with neonatal airway management in rural Uganda. Using an innovative qualitative focused ethnography method, data collection involved observing and interviewing midwives and TBAs regarding their practices of neonatal airway management as the basis for future training interventions. Such embedded participant observation in a low resource environment can significantly inform and guide culturally appropriate adaptations of existing HBB materials for neonatal airway management in rural areas of LMICs.

METHODS

PRELIMINARY STUDY

To conduct preliminary observations prior to the study reported below, the primary investigator (M M) joined One World Health (OWH), a faith-based organization, on a mission trip to serve as a volunteer healthcare worker at the Masindi Kitara Medical Center (MKMC) in Uganda. During the preliminary observation period, relationships were established with MKMC management staff, midwives, nurses, and local community healthcare workers.

METHODOLOGICAL APPROACH

In viewing the chosen method for data collection, ethnography is an approach to fieldwork research used originally by anthropologists Bronislaw Malinowski and Franz Boas, who utilized a holistic perspective in their study of cultural influences in human behavior. The goal of ethnography research is to tell a coherent story of participants’ experiences with vivid details and interpretation of observed events. Table S1 in the Online Supplementary Document describes the characteristics of the ethnographic approach used by the investigator as a participant observer to gain the emic view for an insider subjective account of behavior within a culture. Table S2 in the Online Supplementary Document further outlines the focused approach of the ethnographic method.

ETHICS CONSIDERATIONS

The authors’ research protocol was reviewed and approved for human subjects’ protection by the Medical University of South Carolina’s Institutional Review Board (Appendix S1 in the Online Supplementary Document). The OWH and MKMC sent a letter of invitation to conduct the study at the MKMC (“Appendix S2 in the Online Supplementary Document”). The OWH foundation and the MKMC received the statement of research prior to the study, which was inclusive of verbal permission scripts seeking participant consent (Appendix S3 in the Online Supplementary Document). The local midwife collaborator summarized the statement of research for the TBAs in Runyoro (local language). Verbal consent was obtained for the focus group discussions (FGD).

SETTING AND SAMPLE

The study was conducted in Masindi, Uganda at the MKMC. Masindi town is situated in a rural area of Uganda. The
population has tripled since 1991 from 129,682 to 305,400. Masindi has one district government hospital, and the MKMC, a private clinic. The MKMC includes an outpatient department and inpatient ward that can house 20 patients. The maternity center includes one delivery room, a recovery ward, and an operating room. The healthcare staff includes five midwives, one nurse anesthetist, four nurses, and one physician. All clinic staff members can communicate in English, but the TBAs in the surrounding areas speak only the local language, Runyoro. Midwives and Community Health Workers (CHW) who speak Runyoro assisted with interpretation during the FGD. The Center’s project manager (PM) was the gatekeeper, or key informant, providing a direct channel of communication between the primary investigator and the participants.47 The key informant provided insider perspectives of the center’s governance.48 The PM also provided the communication link between the researcher and lead CHW, who provided contact with the TBA facilitator (TF) for the villages affiliated with the MKMC. Contacts were also established during the pre-planning phase of the study, aligning with a focused ethnographic approach. The investigator communicated by email with the MKMC PM through the intercession of the OWH director, from whom written permission to conduct the study was obtained.

Using the purposeful sampling technique in qualitative research,49 interviews were conducted with three managers of the MKMC, one public health coordinator (PC) of the local health district, and one TF for the villages in the local district, who were all the representatives of the system available in this rural area. The FGD was conducted with seven TBAs chosen by the TF. Their ages ranged from 42 to 68 years, and for most, their primary profession was farming. Table S3 in the Online Supplementary Document summarizes detailed TBA demographics of the sample.

DATA COLLECTION

Data collection included semi-structured interviews with midwives and MKMC managers, FGD with TBAs, field notes, and photographs; interviews and FGD were audio recorded. Field notes were used to capture interactions where the recorder would have been intrusive, such as during field observations in open spaces with multiple patients and staff present. The researcher had the opportunity as a participant to observe the midwives during deliveries and utilize the HBB checklist to record the immediate newborn care given on three occasions.

In semi-structured interviews with midwives, open-ended questions were designed to reflect the goals of the specific aims of the study. Separate sets of questions were designed for each type of provider, ranging from 11 questions for midwives to 14 questions for managers. These interviews took place throughout the work-day. Using qualitative interviewing methods,50 probing open-ended questions were asked to prompt narrative stories concerning the midwives’ length of practice, their experience with newborn respiratory assessment and resuscitation, and their key learning experiences of neonatal care during airway management (“Appendix S4 in the Online Supplementary Document”). Semi-structured interviews with the managers were conducted using their specific interview guide to explore their perceptions of the TBA’s role in MCH services. Further probes about their cultural practices were explored.

Focus group questions were developed using modified WHO guidelines, originally developed for collecting information on patient safety.51 Topics emerged from previous observations of the facility and issues raised by midwives, managers, and informal meetings with TBAs and community health workers on the initial visit.

FGD with seven TBAs occurred at the MKMC. Three of the staff midwives and the lead community health team member helped to organize the FGD. One of the midwives read all the questions from the FGD guide (“Appendix S5 in the Online Supplementary Document”) to the TBAs, first in English, then translated in the local language (Runyoro). The TBAs responded to all questions in their local language. They answered the questions individually or as a group sometimes in unison to a question, and each TBA added her experience.

The FGD responses were captured in three different ways: 1) Audio recording, 2) notes recorded by two midwives as the TBAs responded, and those responses were translated into English, and 3) the PI’s notes from the English translation written during the FGD. Focus group responses captured by those three methods were especially rich. These steps created an audit trail permitting a transparent account of the process used to acquire and analyze the data.52 Overall, the data sources were congruent, with only minor variations. A newborn care sequence was noted differently by the midwives; this variation was resolved by listening to the recordings again.

Throughout the two weeks of data collection, the researcher took field notes. Some key times to take notes included everyday walks from the Masindi hotel to the MKMC, where the investigator had to cross the main road and walk down a dirt road through farmland. All staff members started their day together with a prayer session. The investigator engaged in ward rounds with the medical director and attended all the surgical operations occurring in the operating room. Observations also included interpersonal interactions between the midwives, nurses, and the housekeeping and kitchen staff. On two occasions, the investigator was called to attend cesarean sections during the evening hours, which allowed her to experience how the staff travelled after work hours to the MKMC. Mother and newborn care provided by the staff was also observed. Photographs of the environment depict the differences between MKMC and the village areas where childbirths occur (see Online Supplementary Document).

RESULTS

A qualitative content analysis was conducted using the conventional approach recommended by Hsieh and Shannon.53 All data was read to get an overall sense of the interviews as units of analysis, eliciting potential topics within the content to provide a basis for coding and categorization.53 The primary investigator transcribed data from the interviews and FGD word-for-word, and then derived codes with a second investigator (CP) to reflect key concepts pertaining to the research aims. Subsequently, results were assembled in
a matrix, which allowed the investigators to compare the codes and categories and reflect on each emerging theme from a feminist perspective. Details of the accounts from all the participants during the interviews and FGDs are available as supplement document.

The feminist perspective was used to analyze the data. The perceptions of the midwives and TBAs were grouped into four categories:

- Barriers related to healthcare system hierarchy
- Lack of access to health facility and financial support
- Home-based birthing as alternative to healthcare facility
- TBA access to education and airway management supplies

Cultural beliefs in TBA practices that limit access to services for female workers in a disenfranchised social position:

- Home-based practices representing their cultural beliefs and respect of privacy during childbirth

Facilitators to assisting TBAs in accessing educational resources of neonatal airway management from a previously non-supportive social system:

- Midwives have adequate education to teach TBAs
- Value of the medical center to provide educational resources for the TBAs

Learning preferences of the TBAs that privilege their formerly marginalized strengths as female workers:

- Use of local language and culturally appropriate learning preferences.
- Preferred learning methods which use more hands-on strategies and shared lived experience to compensate for low literacy.

Figure S2 in the Online Supplementary Document depicts the highlights of the analysis using the feminist lens. The findings revealed the learning preferences such as demonstrations, pictorial charts, poems, songs, and drama as culturally appropriate. The discussion below will elaborate on the findings.

DISCUSSION

This qualitative study used the focused ethnographic approach with a group of midwives and TBAs in rural Uganda to identify and explore facilitators for and barriers to learning and effective neonatal airway management skills for the development of future training. By applying the feminist perspective during data analysis, the investigators identified four categories outlined in the result section. In keeping with the focused ethnographic method, interviews, FGDs, and field notes from observations were coded line-by-line, with a focus on beliefs, attitudes, and inferred social and cultural contexts and behaviors within the participants’ world. These codes were grouped into the four categories, looking for replications across the data groups, and examining codes that differed across groups, as described by Silverman. As Wall describes, the ideas, beliefs, and values of how the participants see their world shape their description of the skills and activities they use, and references to power and control are derived from this structured comparison.

In this local context, barriers for TBAs to provide neonatal airway management in home-based births include hierarchy in the healthcare system, limited education, limited resources, an environment that is not conducive to patient safety, inadequate equipment, and specific cultural practices. Within the Masindi district, the hierarchy of the healthcare system creates a barrier in which TBAs are placed lowest in the social and health system, a status that limits their access to support and resources. Framed in a perspective of ecological feminism, a hierarchical structure is one of the four concepts described in a patriarchal society, where the highest position retains the ultimate control. Keating and colleagues described a similar hierarchical system within a maternity unit, where the obstetricians ranked highest, followed by senior midwives, and then junior midwives, who received the least support with their decisions. TBAs were perceived as least important within the Masindi healthcare system according to the accounts of the managers and midwives, yet the TBAs provide care for more than 40% of the births in the local rural areas. TBAs are also the least formally trained healthcare providers among all the MCH providers (nurses, midwives, physicians).

TBAs receive their training mostly by apprenticeship, rather than formal training. In the past, the WHO has developed programs for TBAs, such as Essential Newborn Care, but currently TBAs are discouraged from conducting births in the Masindi district, based on Ministry of Health policy. The TBA Facilitator (TF) voiced her concern that TBAs are “afraid they will be imprisoned” if they conduct births. However, the mothers cannot easily reach the healthcare facility to give birth and there are not enough midwives to assist the mothers at home with the births. These constraints provide a strong rationale for TBA practice in areas where access to approved facilities is difficult and midwives sanctioned officially for deliveries are too few. TBAs would like to provide their services as birth attendants, but remain marginalized and oppressed by the hierarchical system.

Several studies using the feminist perspective have concluded that oppression plays an important part in determining who does not receive information and who does not participate in decision making in a healthcare system. As a response to oppression, conscientization provides a means for developing a critical consciousness of the oppression, understood to have the power to transform reality. Other concepts, such as the importance of dialogue, were applied when the primary investigator was speaking with TBAs at the study site. The process of dialogue involves building trust, as stated in the following observation:

“Founding itself upon love, humility, and faith, dialogue becomes a horizontal relationship of which mutual trust between the dialogueurs is the logical consequence.”

In planning for future training, the use of conscientization as a form of consciousness-raising and dialogue as a
pedagogic strategy can function as threads in curriculum design. Freire’s concept of conscientization is also recognized by Werner and Bower, who author a guide book on how to teach healthcare providers in LMIC that emphasizes that training courses need to be modified for each area and each time they are taught as recipients of the knowledge may vary each time. The TBAs at the end of our FGD were eager to plan the training session with the midwives as they seemed to have developed a bond during this time.

**CULTURAL PRACTICES**

The concept of culture is embedded in the ethnographic approach. Culture is a system where accumulated knowledge and experiences are shared by a group of people and reflected in their behavior. The importance of cultural values, especially cultural beliefs practiced with rituals during childbirth, were revealed through the data collection. Cultural rituals, such as burying the placenta at the home site, represent creating a foundation and a positive future for the child. Families may be discouraged from using healthcare facilities due to their inability to practice this and other cultural rituals, restricting access to the safest neonatal resuscitation practices available. Future efforts should be made to involve facility managers in a dialogue about more inclusive practice.

The TF and the program manager highlighted the cultural practices that influence the mothers’ preferences during birth, stating that women felt most comfortable having their births attended by older women. At the healthcare facility, midwives may be younger than the mothers, so culturally they may not be accepted to attend births and may question the experience of younger midwives compared to the TBAs. According to focus group demographics, the age of TBAs in this study ranged from 42 to 68 years old.

The TF also revealed that mothers prefer to give birth at home, a banana plantation, or a lake side, places considered private compared to the health facility maternity ward, where they are surrounded by strangers in an unfamiliar setting beyond their control and without family support. From a feminist perspective, regardless of safety concerns for childbirth occurring outside of the healthcare facility, the TBAs respect the women’s privacy and their preference to give birth in a home or private environment in which they exert some control. Kaphle and colleagues reported that Nepalese women living in a rural mountain area preferred to give birth at a private place outside of the house, e.g. in a cowshed, to maintain their sociocultural tradition. This feminist perspective to preserve privacy is reflected by the cultural belief to respect the mother’s preferences.

Consistent with the ethnographic research approach, the factors that influence and facilitate the learning process for TBAs regarding neonatal airway management were explored before planning or launching an intervention to improve neonatal care. The TF recognized the need to educate the TBAs on neonatal airway management because they are frontline providers during childbirth. The TF also emphasized that education will increase TBA morale. During the FGD, TBAs explained they were willing to learn new skills, and they verbalized that they would organize other TBAs to participate in training. The focused ethnographic approach in this study enabled a demonstration of reciprocal respect for the TBAs who are marginalized in their work as MCH providers. The invitation to the MKMC for the FGD signaled acceptance. The TBAs were accepted by the midwives with love, humility, and faith as part of the MCH provider community in the region, while also encouraged to bring mothers to the center.

Educational resources can be provided by the staff midwives at the MKMC; they have adequate education to teach neonatal airway management to TBAs. During the observation phase, the researcher witnessed how a midwife resuscitated twins with just one ambu-bag. The midwife followed the HBB guidelines and taught the junior nurse how to assist her. The midwives were very enthusiastic about translating the basic HBB steps into the local language to teach the TBAs. This teaching opportunity provided them recognition within the MKMC and allowed them to gain continuing education units, part of the already expected requirement in the facility. This opportunity also built bridges of trust between the TBAs and midwives while breaking the social and cultural barriers separating them. The CHWs who are part of the Masindi Health Ministry system played a vital role as liaisons between the midwives and TBAs. This finding parallels Rudrum’s (2016) ethnography in northern Uganda in which the local health center educator, midwives and TBAs expressed positive perspectives for collaborative education and referrals based on trust.

As an example of a facility committed to reducing infant mortality, the managers recognized the value in teaching the TBAs basic neonatal airway management steps. The managers envision a training program that will take place at the MKMC, in which the TBAs will feel comfortable to refer the mothers to that facility. This relationship will increase the MKMC’s patient volume. The midwives will need a refresher course annually to teach the TBAs, which will in turn help maintain their own skills. One of the managers pointed out that this program can enable the midwives to become “change agents” and empower them to succeed in their profession. This example reflects a common response to building teamwork between different levels of community-based healthcare workers in lesser-resourced countries. The overall gain for TBAs and midwives is that knowledge provides power. Fahy (2002) used Foucault’s power/knowledge concept to explore women’s knowledge to empower them to experience the type of childbirth they desire. Another overall gain is for the MKMC to earn respect from the villages and the community. The whole community situated around the MKMC will benefit from a better standard of care practiced within the center and in home-based births. Social barriers between the community and the MKMC will be lessened because educational programs will be shared by all MCH providers serving the community.

This study addresses learning preferences of adults with a low literacy level using a feminist lens and Freire’s concept of literacy empowerment. The feminist perspective acknowledges the value of a non-hierarchical system and environment where interactive peer learning can occur, as seen in the willingness of the facility and TBAs to consider future collaboration beyond the limits they describe. Additionally, Freire’s concept of active dialogue between teacher and student reflects a key learning preference of these
TBAs. Previous studies used demonstration and time-honored methods to teach TBAs.\textsuperscript{53,57} Similar teaching-learning preferences were revealed in our research data. Data collection through various sources using the ethnographic approach revealed other common learning preferences: demonstration, pictorial materials, songs, poems, and drama. These learning preferences can be presented in a systematic process. First, the teaching materials must be translated into the local language. The MKMC midwives have translated the first five basic steps of the HBB guidelines for neonatal airway management program into Runyoro, the local language of the Masindi region of Uganda. Second, the learning environment must be non-hierarchical, where-by the midwives and TBAs create a dialogue among themselves to discuss and build upon their baseline knowledge of neonatal airway management. The TBAs have low literacy, but vast experience with homebirths, whereas the midwives have the current standard of knowledge regarding neonatal airway management. This learning-by-dialogue can formulate HBB basic steps into a teaching song, poem, drama, or pictorial scenario. In that learning process, TBAs should feel ownership of the translated teaching materials. The rural areas of other LMICs can benefit from similar exploration of cultural practice related to neonatal airway management and learning preferences of TBAs. Using the feminist approach to explore and analyze the data may result in sustainable educational intervention.

LIMITATIONS

The ethnographic approach for this study has the following limitations: a) small sample size, b) intensive nature of data collection in an low resource, time-limited setting, c) findings that are difficult to generalize, d) subjectivity of interpretation of cultural beliefs and values, and e) the need for the researcher to be accepted into the culture of the Masindi area.\textsuperscript{66} The small sample size is due to the limited number of healthcare providers in the rural area near Masindi, Uganda. Hence, the focus of this study was to explore the perceptions of a purposeful sample of MHC providers in an area of limited healthcare resources. The limited sample size allowed the researchers to analyze and manage the in-depth information collected. The pursuit of data in rural Uganda makes information gathering difficult, with limited transportation, unpaved roads, working across three languages, and restrictions about movement between settings related to security and the threat of violence.

In considering generalizability, communication with this specific group of TBAs and midwives depended upon the midwives as interpreters, though not trained as interpreters, which holds the possibility of filtering, selective interpretation, and undue influence on what was said.\textsuperscript{67} Moreover, the TBAs may not have felt safe providing criticism or feedback about the midwives and their approach to teaching/learning, since they served as interpreters. However, the audit trail of recordings provides a means of confirming veracity for this specific data, with outside interpretation.

Data collection using the participant-observation technique is inherently subjective,\textsuperscript{68} yet the benefits of gaining the aforementioned insights may well override the limitation. Qualitative studies have documented threats regarding validity and reliability.\textsuperscript{69} The researcher was able to use several data collection techniques to offset the risk of subjectivity, including participant observations, photographs, field notes, FGDs, and semi-structured interviews with key informants. Multiple data sources and a clear audit data trail ensured triangulation and credibility of findings. Triangulation of data provided validity for the study. There is an opportunity for reliability if this study is replicated in a similar LMIC environment.\textsuperscript{70}

Reflecting on the need for the researcher to be accepted into the culture of the Masindi area, the qualitative findings may apply only to the rural areas of Masindi, Uganda. However, they give the researcher an opportunity to generate future hypotheses and propose culturally tailored interventions using HBB guidelines to teach neonatal airway management in rural areas of other LMICs that have similar clinics and maternal-child demographics. The ethnographic approach can be challenging for a novice researcher; therefore, a faculty member with expertise in ethnographic research and midwifery mentored this investigation.

CONCLUSIONS

The disparity in NNMR between LMIC and high-income countries has been addressed by the WHO and the United Nations since 1990. Neonatal deaths caused by birth asphyxia (hypoxic events) occur more often with home-based versus health facility-based births. Because 60% of the births in LMIC occur in home-based environments and are attended by TBAs or family members, we explored factors that affect TBA provision of neonatal airway management to alleviate hypoxic events in one community setting in Uganda. Findings regarding TBA and midwives learning preferences and the current inadequacy of educational resources for teaching and learning neonatal airway management in rural areas of LMIC provide the basis for an intervention and should be addressed in future research. Facilitators identified in this study included the interest among participants in a collaboration of midwives and TBAs to develop future training and protocols. The training intervention can include measurement of knowledge competency and self-efficacy with educational resources tailored to Ugandan TBAs’ learning preferences for demonstrations, songs, poems, and specific scenarios, utilizing the voices of TBAs and midwives in this study for guidance. One generalized approach may not be a good fit for all rural areas. The individualized initial assessment for each rural area is essential to create a sustainable educational intervention. The integrated approach to utilize the formally trained midwives with initial assessment process and developing the educational intervention with TBAs can be replicated for other rural areas of LMICs, in keeping with WHO recommendations.\textsuperscript{71}

ACKNOWLEDGMENTS

Presented at The Consortium of Universities for Global Health 2017 conference. Portions of this manuscript have

FUNDING
Dr. Mendhi received a travel grant from the Medical University of South Carolina in support of this work.

AUTHORSHIP CONTRIBUTIONS
All authors contributed to the design and conduct of study, and the final draft of the manuscript.

COMPETING INTERESTS:
The authors completed the Unified Competing Interest form at www.icmje.org/coi_disclosure.pdf (available upon request from the corresponding author), and declare no conflicts of interest.

CORRESPONDENCE
Marvesh M. Mendhi, Ph.D., CRNA
Department of Anesthesiology and Perioperative Medicine
Mayo Clinic, 4500 San Pablo Road
Jacksonville, FL 32224
Mendhi.Marvesh@mayo.edu

Submitted: September 04, 2020 GMT, Accepted: September 06, 2020 GMT

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REFERENCES


SUPPLEMENTARY MATERIALS

Online Supplementary Document