



# The Experiences of Ghanaian Midwives on the Use of Nonadjustable Delivery Beds: A Qualitative Study

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Anita F. Dartey, PhD, MNursing, OHNP, RN<sup>1</sup>,  
Gladys Dzansi, PhD, MPhil, RN<sup>2</sup> , Constancia Atachie Sr., MPhil,  
BA, RM, RNI<sup>1</sup>, Evelyn Sunnu, PNS, MPH, BA, RN<sup>1</sup>,  
and Felix K. Nyande, PhD, MPhil, BA, RN<sup>1</sup> 

## Abstract

**Background:** Hospital beds are of great assistance to both clients and caregivers as they give lots of choices to the users. More often, clients have difficulty getting in and out of beds, but the adjustable features of the beds make it possible for them to be comfortable, regardless of their condition. This situation may not be the same if nonadjustable delivery beds (NADBs) are used in conducting deliveries at health care facilities. This study explored the experiences of midwives using NADBs in selected Christian Health Association of Ghana (CHAG) hospitals in the Volta Region of Ghana.

**Methods:** The study employed an exploratory qualitative research design with purposive sampling. Semistructured interview data were audio recorded. The inclusion criteria were professional midwives with at least 1 year of working skills and the midwives should have conducted deliveries using NADBs during their practice. Data were collected concurrently with data transcription and analyzed using content analysis. Saturation was reached after the 20th interview.

**Results:** Three themes emerged from the study: NADBs not comfortable to work with, assumption of awkward postures, and the nature of the delivery beds.

**Conclusion:** The findings of the study show that midwives experience several setbacks in the use of NADBs in conducting deliveries as they sacrifice their health for work.

## Keywords

delivery, midwives, nonadjustable beds, pregnancy, quality health care

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## Background

Generally, in health care settings, hospital beds are important equipment that help in the delivery of quality care to patients. The beds are specially designed to aid in the diagnosis, monitoring, and treatment of medical and other health-related situations (World Health Organization [WHO], 2011). The beds have special features both for comfort and the well-being of patients as well as the convenience of the health workers. Hospital beds could be adjustable and/or nonadjustable.

Adjustable beds have a multihinged surface lying that can adopt several different positions such as sitting up and lithotomy. It also has a tilt mechanism adapted to tilt the platform surface laterally with the flex, both being operable with the other mechanism in an operational state. Also, the adjustable

bed may have features that include side rails, adapted to raise the side member relative to the platform surface, the tilt mechanism tilting the platform surface toward the side member to include the upper body, and raising the lower body independently of each other. Again, adjusting the height of the entire bed, the head-end, the foot-end, and

<sup>1</sup>School of Nursing and Midwifery, University of Health and Allied Sciences, Ho, Ghana

<sup>2</sup>School of Nursing and Midwifery, College of Health Sciences, University of Ghana, Legon

### Corresponding Author:

Felix K. Nyande, School of Nursing and Midwifery, University of Health and Allied Sciences, PMB 31, Ho, Volta Region, Ghana.  
Email: fnyande@uhas.edu.gh



much more is possible (Syeda, 2019). However, nonadjustable beds lack some or all features mentioned concerning adjustable beds. There are different types of hospital beds and the focus of this study is non-adjustable delivery beds (NADBs).

NADBs cannot function well in terms of changing to desired positions as and when necessary, to suit the client and the healthcare provider. This contradicts the rules of ergonomics; the application of scientific information concerning humans to the design of objects, systems, and the environment for human use to optimise human well-being and overall system performance (Christensson, 2011). Therefore, it is obvious that delivery beds need to be adjustable.

Midwives have been found to adopt awkward postures when conducting deliveries contributing to the prevalence of musculoskeletal disorders (MSDs) (Long et al., 2013). Working with obsolete equipment such as NADBs adds to the stress experienced by the health workers, including MSDs (Anderson & Oakman, 2016; Stucky et al., 2018). Strategies adopted by midwives to cope with the use of NADBs are not sustainable in the long run as these strategies have been noted to affect the health of the midwives and the quality of midwifery care rendered to clients (Nyande et al., 2021).

Although, there is a paucity of literature describing the experiences of midwives regarding the use of NADBs in the delivery room, several studies have described the experiences of midwives regarding the use of obsolete equipment and its impact on the quality of maternal and child health care delivery and health outcomes in Ghana (Ameyaw et al., 2020; Banchani & Tenkorang, 2014; Dalinjong et al., 2018). These factors contribute to dissatisfaction among nurse midwives and in some cases their decision to migrate to better resourced environments or even switch careers (Alonso-Garbayo & Maben, 2009; Murphy et al., 2016), the long-term impact of which could be the loss of essential human resources for health.

However, in Ghana it has been observed that midwives continue to conduct deliveries on NADBs in most public health care facilities, hence, the need to explore the experiences of midwives using NADBs.

## Materials and Methods

### Study Area

The research settings were the labor wards of four selected Christian Health Association of Ghana (CHAG) hospitals in the Volta Region of Ghana. The Volta Region has a total of 326 health institutions, out of which 242 are owned by the Ghana Health Service; 18 by CHAG, one quasigovernment, and 65 privately owned (Ghana Statistical Services [GSS], 2013). The study involved only CHAG facilities. They were selected because anecdotal evidence

suggests these facilities are recipients of used medical equipment including delivery beds from individuals and organizations abroad; but most of this equipment is obsolete. These facilities are located in different districts within the region.

### Study Design

The study applied a qualitative research approach with exploratory design. Denzin and Lincoln (2015) describe qualitative research as involving an interpretative naturalistic approach to the world. Qualitative researchers study things in their natural setting, attempting to make sense of phenomena in terms of the meanings people bring to them. Exploratory research investigates the full nature of phenomena rather than simply observing and explaining the phenomena and provides an insight into a comprehension of an issue or situation (Polit & Beck, 2014).

### Study Population

The target population for the study was professional midwives with at least 1 year of work experience in the labor wards of these selected hospitals and having used NADBs in conducting deliveries. A year's experience in the labor ward was deemed long enough for the midwife to have experienced deliveries on NADBs since these beds are very common in the facilities.

### Sample Size and Sampling Procedures

The sampling technique used in this study was purposive. Purposive sampling, a form of nonprobability sampling technique, is most effective when one needs to study a clinical domain with experts (Acharya et al., 2013). With the assistance of gatekeepers, midwives with first-hand experience of using NADBs were purposively identified and those who consented were included in the study. Khan et al. (2012), reported that the sample size in a qualitative study is based on saturation, which was achieved after 20 semi-structured interviews.

### Data Collection Tool and Procedures

A semistructured interview guide was used to gather audiorecorded data. The interview guide had two parts; the first part was the demographics, which included the number of years of practice as a midwife. The second part explored the main issues with the use of NADBs and with built-in probing questions. A pilot study was carried out in "facility A" using two participants. This was done to ensure the credibility and clarity of the interview guide and remove any haziness (Polit & Beck, 2014). There were minor adjustments that were effected before the commencement of actual data collection.

Informed consent was obtained from the individual midwives after an explanation of the nature of the study. The place and time of face-to-face interviews were scheduled according to the participants' convenience. All interviews were conducted in English; however, informal expressions used occasionally were accepted. Each interview lasted between 30 and 45 min, which was recorded using digital audio recorders as well as detailed field notes. Participants were assigned pseudonyms to ensure anonymity and confidentiality. The alphabets starting with the name indicate the health care facility involved. For instance, "facility A" had A names, "facility B" had B names.

### Data Analysis

Data analysis was done alongside data collection to familiarize research with the information gathered. Data were transcribed verbatim after listening to the audio recordings several times. The researchers employed content analysis, which maintained the assurance of identifying and understanding the gravity of the phenomena being studied (Riff et al., 2019). The researchers applied Bengtsson's pattern of content analysis, which involves the identification of meaning units, extracting content, identification of themes and putting them together as representative, and drawing conclusions (Bengtsson, 2016). Transcripts of interviews were read several times and initial codes generated by the research team members. Codes were identified and compared by the team members for consensus. The codes were grouped according to patterns identified and labeled as themes and subthemes. Direct extracts from units capturing the main ideas were used to support the descriptions of the themes and subthemes.

### Research Rigor

Research rigor considered by Elo et al. (2014) was based on the four aspects of trustworthiness: conformability; researchers listened and read through data several times to avoid bias, dependability; audit inquiry was done by researchers to ensure findings were consistent with the participants who provided the data, transferability; a detailed description of the methods used are available for any researcher who intends to replicate the same study and credibility; accurate lived experiences of participants has been maintained. Trustworthiness was therefore conducted in a manner that ensured accuracy in presenting the results of the study.

### Ethical Clearance

Ethical clearance was obtained from the University of Health and Allied Sciences, Research Ethics Committee with clearance number UHAS-REC A.2 [11] 18–19. Introductory letters were taken from the School of Nursing and

Midwifery, University of Health and Allied Sciences for the four hospitals, and formal permission was sought from the hospital administrations before the data collection process.

## Results

All the participants in this study were females because there were no male midwives in the selected facilities at the time of data collection. Participants' ages ranged between 26 and 60 years with the average age being 37.5 years. Half (50%) of participants were under the age of 30 years. Participants' number of years in service ranged between 1 and 19 years with the majority (70%) having working years below 5 years. Data for marital status showed that 80% of the participants were married, 10% were not married and 10% had had a divorce. Three themes were identified in the study, namely, (a) nonadjustable delivery beds not comfortable to work with, (b) assumption of awkward postures, and (c) the nature of the delivery beds.

### Theme One: Nonadjustable Delivery Beds not Comfortable to Work with

All participants reported that NADB were not conducive in conducting deliveries. From the findings of this study, it was clear that participants expected better beds to conduct deliveries. All midwives who took part in the study were unhappy working with the NADBs and that the delivery beds were uncomfortable to use. This was revealed in the statements of the participants:

"First of all, NADBs are not comfortable at all to work with, especially to the healthcare provider" (BAFOA). "I don't feel comfortable with the NADBs in care delivery" (ABA). "My comfortability is not guaranteed as I use NADBs. There is no comfort using NADBs" (BAABA). "Very bad, very uncomfortable, when using the NADBs" (BENA). "Yes, I have conducted deliveries on NADBs. Sometimes during the procedure, it is uncomfortable" (DELA).

Other participants described the use of the NADBs as tiring and stressful. They indicated that they struggle using these beds to provide service:

"Apart from the fact that NADBs are very uncomfortable, they are tiring and stressful. After conducting the deliveries, you get so tired. Even during the procedure, you are so worn out because the position you assumed in conducting the delivery makes it tiring and uncomfortable" (CATHERINE). "NADBs is not helpful to me in conducting deliveries" (AKOS). "It's not easy madam. At times we struggle [using] non-adjustable delivery beds" (CARO). "It is very rough, exhausting and stressful conducting delivery

on NADBs on the ward” (AFI). “It affects me because of how the bed is not comfortable” (ABINA).

One participant gave reasons why the NADBs were uncomfortable:

Actually, very uncomfortable conducting a delivery because the patient cannot assume the right position for delivery since the bed is not adjustable (CELLY).

The discomforts associated with the use of NADBs were not limited to the service providers, but also the clients who came to deliver. This was how the participants presented their cases:

“The clients sometimes feel uncomfortable because of the pain as they are made to assume some positions” (BAFOA). “The challenge is that because we are not using the adjustable delivery beds when the clients come and we are conducting the deliveries, the clients also don’t feel comfortable” (BENA).

One challenge during labor is frequent urination as a full bladder obstructs the progress of labor. The results of the study identified that during labor, pregnant women had difficulty moving out of bed to empty their bladder. One participant thought that tall beds hindered the movement of the pregnant woman to pass urine frequently:

The feeling is difficult and the pregnant women too suffer in as much as the bed is tall and they have to be getting down and be urinating (AFI).

Consequently, the women in labor sometimes refused to use the delivery beds and delivered on the floor as clarified by this participant:

At times too, the patients get fed up and complain of waist pain. Some refuse to go to bed and deliver on the floor which is so tedious, tiring and uncomfortable (AMINA).

### ***Theme Two: Assumption of Awkward Posture***

Exploring the reasons why the NADBs were not comfortable to use, it emerged that the midwives who delivered pregnant mothers on these beds assumed awkward postures to manage the delivery process. The participants reported that for the process of delivery to be successful, the service provider needed to adjust her body since the beds they were using could not be adjusted:

“And we the midwives too, it affects our posture. Sometimes, you have to stand beside the client while you adjust yourself a little because when you try to stand facing her directly you

have to bend on her while conducting the delivery” (BAFOA). “And once the beds are not adjusted to suit me, I the human being have to adjust myself” (BAABA).

Participants explained that assuming these awkward positions was injurious to their health. Some of the participants gave their reasons in the quotes that follows:

“The fact that the beds are not adjustable, [means] you have to assume a certain position that is not good for your health. And sometimes when you believe in caring for only clients you will end up getting hurt yourself because you only concentrate on mother and baby” (BABBY). “... In that, the beds are not adjustable and you have to be stressing yourself to assume awkward postures to be comfortable to conduct your delivery to the detriment of your own health” (BELDY). “After conducting the deliveries, you are so tired. Even during the procedure, you are worn out because the position you assumed in conducting the delivery makes it scratchy” (CATHERINE).

A participant also mentioned that assuming an awkward posture did not end after delivering the baby, but also when they had to suture a tear:

And so, imagine these beds which are not suitable for delivery, standing by the bedside to suture the tears is a whole difficult process altogether. It affects us during and after delivery (DELA).

The fact that the beds were not adjustable, getting adjustable chairs could have helped, especially during episiotomy suturing, but this also was not the case as the chairs could not be adjusted to give any cosiness:

“Also, if the chairs were adjustable, even though the beds cannot be adjusted during such times, the chairs could have been adjusted to suit the midwife and make her comfortable” (EDEM). “And also, when the perineum is not suitable and hence we give an episiotomy or when there is a tear which needs to be sutured, one will have to sit down, but the chairs available are very uncomfortable and worsen our pains and health effects” (AMA). “The absence of comfortable adjustable chairs is another big challenge since sometimes when monitoring labour, we usually have to sit” (BAABA).

### ***Theme Three: Nature of the Nonadjustable Delivery Beds***

In answering the question of why, they assumed awkward postures during labor monitoring and delivery of babies at the health care facilities, participants were of the view that the nature of the delivery beds made them assume such

positions. From the results of the study, it was evident that almost all the midwives had an idea of how adjustable the delivery beds should be; they knew that the correct delivery beds had adjustable features and could be adjusted. The participants realized that because of the nature of the beds they used, they were neither adapted to work, nor the work adapted to them. In which case, shorter participants grumbled more as some had to stand on stools to increase access to the clients:

... But my friend sitting over there, because she is short, sometimes she has to stand on a stool to aid her to deliver clients on these NADB's (AMINA).

However, few participants who refused to use stools had to stretch themselves to reach the patients:

“As the delivery bed is taller than me and I am not going to stand on a stool, so I have to strain myself by stretching to reach the client. And in this case, am doing more harm to my body” (AFI). As the bed is taller than me and I don't want to stand on a stool, I have to strain myself by stretching to reach the client (COMFORT).

However, some of the beds were described as too short and the taller midwives had problems with them as reported by the quotes that follow:

“The bed is too short that I can't sit upright to suture episiotomy, I still bend to do it” (AKOS). “I bend down because the bed is shorter than me. It affects my health “paaa” (seriously). “It affects me ‘papapa oo’ (too much). I bend down, straining my back because the delivery bed is very short; shorter than me” (ABA).

In some facilities, participants did not describe the delivery beds in terms of heights, rather the height of the users (the midwives) conducting the deliveries using these beds. This is how BABBY described how she used different beds:

The beds we have now are either too low or too high, so I stand on a stool when using the high bed and squat a bit when using the low bed to receive the baby. I think adjustable and proper beds should be used during delivery. It will go a long way to help us and the client.

In addition to the beds not being adjustable, weakened, or broken-down beds added to the stress of limited beds available to clients. It posed a risk to both care providers and clients as reported by these participants:

“NADB's make delivery very very difficult. Some of the beds to are not that strong aside being non-adjustable” (DELA). “Currently, there is a bed here with one of the legs broken,

we have to put plywood under it to support it and it's very risky. There was a time a client fell off the bed” (BENA).

In as much as, using the NADB's was problematic, some facilities did not even have enough of these beds. This participant testified that mothers delivered on the floor, which worsened their plight:

These beds are also not enough because sometimes we can get about three or more women in labour at the same time and this makes it difficult attending to all of them at the same time since the delivery beds are not available. Even sometimes we have to deliver them on the bare floor and you can imagine our plight (AMINA).

The shortage of delivery beds coupled with work pressure made the midwives forget to decontaminate the delivery beds before putting new clients on them:

Sometimes due to the pressure of more women in labour, we forget to decontaminate the delivery beds before transferring other clients on to them (BAFOA).

## Discussion

Quality health care is not only measured based on the qualification of the providers, but also the availability of adequate health care equipment such as delivery beds. The discomfort associated with the use of NADB's in the monitoring of labor and delivery of pregnant women is life threatening to both clients and attending midwives. Knezevic et al. (2011) revealed that midwives are subjected to multiple stressors due to working with inadequate equipment. Similar studies have identified the midwifery practice as a known stressful career and therefore made it clear that the stressors faced by midwives daily should not be underrated (Dartey et al., 2019; Douri, 2015). Some of these are body discomforts to midwives due to assuming awkward postures such as bending and low midwife-to-patient ratio, which tend to make work uncomfortable for midwives as revealed in the above findings (Bradley et al., 2015).

It is evident from the current study that the majority of the midwives assumed abnormal positions when conducting delivery as a result of the inability to adjust the delivery beds. This result is supportive of David et al. (2008) who found that awkward working posture (bending, trunk twisting, leaning forward, stooping) is a major challenge faced by midwives during delivery on NADB's. Furthermore, awkward working postures are major ergonomic problems faced by midwives during delivery on NADB's (David et al., 2008). Therefore, midwives are prone to MSDs such as lower back pain, wrist pain, and neck pain.

The nature of the delivery beds that were reported to be used by midwives in this study for monitoring labor and

conducting deliveries in this modern age is not standard in any way. The beds were found to be either too tall or too short, which implies that the laws of nature and anatomy and physiology were not considered. This violates the labor law, which states that the right equipment should be provided to workers (Labour Act 2003 Act 651, Ghana). Ghersi et al. (2018) are of the view that in the 21st century, with technological advancement, modern medical beds would have been in use all over the world. From the WHO (2016) perspective, the provision of quality health care for pregnant women in health care facilities does not only require competent and motivated health-care professionals, but also essential equipment such as beds. Women and children pay the price for the absence of this health equipment. The researchers believe that if the problem is resolved in time, midwives' work stress will reduce.

In effect, midwives experience setbacks in the use of NADB's in the labor ward. Midwives sacrifice their health for work. Again, NADB's prolong the duration of labor as pregnant women are reluctant to empty their bladder frequently due to discomfort associated with moving in and out of NADB's. Also, there may be cross-infection as the midwives forget to decontaminate delivery beds in between deliveries.

## Recommendations

The hospitals should be provided with adjustable delivery beds to facilitate service delivery. The beds must be made in response to the needs of the midwives to ensure smooth service delivery.

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## ORCID iDs

Felix K. Nyande  <https://orcid.org/0000-0002-4858-2287>  
 Gladys Dzansi  <https://orcid.org/0000-0002-6036-811X>

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