Rural-Based Midwives and Nurses: Instrumentalities and Persistence in the Provision of Obstetric and Neonatal Care in the Northeast Region of Ghana — A Qualitative Study

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Abstract

This qualitative study sought to understand the instrumentalities, tactics, and persistence demonstrated by midwives and nurses delivering maternal and neonatal care in resource-poor rural health care facilities in six districts of the Northeast Region of Ghana. Interviews with 45 respondents (25 midwives and 20 nurses) show that in the absence of supplies like plastic sheets, boiled scissors and mobile phone flashlights, the delivery staff resort extensively to improvisation. The adaptations were clever but could compromise infection control and provider safety. The study established key coping strategies like switching among tasks, adapting protocols, peer support and spiritual survival as well as technical resources and study parrticipants were examples of creativity and emotional stamina. Despite infrastructural constraints, care continuity is preserved through shift rotation, home-visits and flexible appointments. Volunteer delivery, and integration with the local traditional birthing staff, were important to make services available. Frontline providers are remarkably resilient, the study concludes, but systemic change is vital. Suggestion: Give basic tools, essential supplies to health facilities, strengthen infection preventioninfrastructure and supplies, improve referrals and subsidies for health retention in rural locations to develop an effective and equitable rural health system.

Introduction

Maternal and neonatal health continue to be key public health initiatives around the world and rural areas have less access to high quality care. The situation in the Mamprugu districts of Ghana – in the North East Region – is typical where geographical isolation, lack of infrastructure, and chronic supplies shortages limit access to fundamental obstetric and neonatal care. Against this backdrop, midwives and nurses deliver life-saving care, frequently through improvisation, resilience and community solidarity to meet minimum standards of maternal and neonatal health. The World Health Organisation (WHO), in 2022, recognizes skilled birth attendance and emergency obstetric care as key action steps to reduce maternal mortality and neonatal mortality. However, in rural Ghana, systemic gaps pose barriers to the implementation of these interventions. Working in these contexts require health workers to navigate uncertain supply chains,

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insufficient staff, and a lack of efficient referral processes, in addition to caring for high volumes of patients in complicated clinical situations (Ayawine & Atinga, 2022). Midwives and nurses often find ways to cope with these challenges with different strategies. These include using materials in local contexts, task delegation, shifting responsibilities, community involvement, and adaptive clinical decision making. These are all not only examples of frontline providers' ingenuity strategies but also highlight the pressing need for reforms and investment in policy and focused research for targeted funding of rural health systems. Knowing these coping strategies is important for devising in-service interventions which are sensitive to the context to help healthcare actors and support the development of maternal and neonatal health. This study therefore investigated the instrumentalities demonstrated by midwives and nurses in providing obstetric and neonatal care in rural districts of the Northeast region. Through the recording of the lived experiences midwives and nurses, the study will add to the existing literature supporting the case for rural health resilience efforts, to inform action for strengthening maternal and neonatal care infrastructure in Ghana.

Problem Statement

Although positive progress has been achieved at the national and regional levels in maternal and child health in Ghana, there is a considerable disparity between existing maternal and neonatal morbidity and mortality rates in rural districts of Northeast Region. Basic obstetric and neonatal care delivery in these region is limited by continuing resource limitations, such as shortages of crucial medications, equipment and qualified staff. Midwives and nurses, the lifeblood of rural health, often need to improvise and adapt to deliver care in these challenging circumstances. There have been studies establishing that healthcare providers in rural Ghana experience direct barriers and indirect barriers that adversely affect their capability for delivering quality healthcare. Some of these include irregular power supply; absence of sterile delivery package; transportation problems for referrals and a lack of continuing professional development (Ismaila et al., 2021). In response, midwives and nurses use alternative tools, mobilise community health volunteers, and modify clinical protocols to suit available health resources. Yet these coping strategies are rarely documented, or are integrated into formal health system planning process. And the lack of structured support for these approaches threatens to normalize poor care and damages the morale and safety of providers. Additionally, when policymakers do not understand the complexities of these coping strategies, they may miss areas that require direct, large investments and reforms. The districts in the Northeast region are particularly relevant as a case study for investigating how frontline providers deal with restrictions regarding resources, due to their socio-cultural and geographical specifics. The study may demonstrate their instrumentalities for coping, system level gaps and rural health delivery enhancement opportunities. This study is addressing a pressing problem in that there is a lack of knowledge and evidence of midwives and nurses in these districts, and the still is billed to document lived experiences of these frontline staff and to contribute to policy and practice.

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Objectives of the Study

Thestudy investigated instrumentalities and the kinds of supplies used by midwives and nurses in rural Ghana, focused on coping strategies adopted being applied to overcome persistent systemic challenges, examined the impact of these challenges on the quality and continuity of maternal and neonatal care. It also assessed the level of community-support system as a facilitator of service delivery, and suggeted recommendations to strengthen the health system of this region.

Literature Review

Theoretical Framework

This study is inspired by the Lazarus and Folkman's Transactional Model of Stress and Coping (1984), which suggests that individuals attempt to cope with stress by thinking critically about their responses and coping with stressors. In rural health care, midwives and nurses experience challenges like supply shortages, high patient volume and poor infrastructure. Their coping, which can be problem-focused (e.g., improvisational tools) or emotion-focused (e.g., peer support), is influenced by their instrumentality to appraise the realities and the availability or lack of resources. Importance of this framework is that it considers coping to be a flexible process shaped by both intrinsic resistance and external limits. It helps to analyze how health care providers operate under systemic challenges with quality care.

Empirical Review.

Such approaches to coping among midwives and nurses working in resource-limited societies, particularly in sub-Saharan Africa where systemic health issues continue to prevail, have garnered growing scholarly interest. In Ghana, Ismaila et al. (2021) examined how midwives respond to barriers in maternal and neonatal care, and observed pragmatic responses, including task shifting, improvised, non-traditional tools, and working through community support systems. They framed these strategies as responses to ongoing shortages in equipment, drugs and skilled individuals in a chronic way. In a related study, Ayawine and Atinga (2022) emphasized the significance of contextual flexibility and community work. Their observations showed that midwives took advantage of volunteers and altered clinical approaches based on available resources—thus indicating that rural healthcare systems are usually co-producing resilience between providers and local populations. Lartey et al. (2020) introduced a psychological perspective which emphasized emotional coping mechanisms like peer, spiritual, and professional identity, and which were useful for midwives and nurses to cope with the occupational stress and motivation. Though all three studies emphasize the role of improvisation and flexibility, they differ focus-wise technical, community, and emotional. Together they indicate an epistemological void in how these aspects relate to one another and suggest the necessity of integrated and comprehensive strategies to successfully cater for rural healthcare providers.

Gaps in the literature and the contribution of the study

Nevertheless, what is written thus far still has the tendency to be limited to the practice of coping and to consider these strategies solely as technical improvisation, regional adaptation and emotional reaction. Hence, the existing literature on the holistic approach to how instrumental midwives and nurses concurrently implement multiple

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coping mechanisms when confronted with systemic limitations is scarce in empirical work. Additionally, there are fewer studies that had targeted the Mamprugu districts in Ghana's North East Region with geographic remoteness and absence of infrastructural facilities contributing to these conditions of maternal and neonatal care. This study aimed to address the lacuna, through a detailed examination of the strategies, techniques, and tenacity of midwives and nurses in rural settings in the Northeast region. By unifying technical, psychosocial, and community-based coping strategies, it adds to the existing literature. The study sought to provide contextually relevant evidence that may be utilized in bolstering health systems, reforming policies, and providing targeted and systematic supports to frontline providers in resource-poor settings by conducting in-depth qualitative inquiry.

Conceptual Framework

An important conceptual framework underlying this study is formed by Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, which theorizes that individuals manage stress through cognitive appraisal and subsequent application of coping strategies. Rural-Based Midwives and nurses in obstetric and neonatal care are often confronted with stressors related to lack of supplies, poor infrastructure and a lack of available workforce. Such systemic constraints engender a stress appraisal process whereby healthcare providers evaluate the challenges they face and their ability to respond. Following this appraisal, midwives and nurses implement coping strategies that can broadly be divided into two groups: technical improvisation and psychosocial resilience. Such technical coping methods might comprise other tools, task shifting, or protocol adjustment (Ismaila et al., 2021; Ayawine & Atinga, 2022), while psychosocial strategies concern peer support, spiritual practices, and emotional regulation (Lartey et al., 2020). However, such coping strategies also influence critical care delivery outcomes — continuity, safety, quality of care, and provider morale.

Methodology

Research Design

The study used a qualitative exploratory research design to examine midwives and nurses' coping-focused responses in providing obstetric and neonatal care in resource-poor rural settings. This type of design was suitable for examining the stories of the participants and their attitudes and coping strategies (Lartey et al., 2020) in Mamprugu districts. Qualitative methodology facilitated the exploration of coping strategies that were context-specific for our patients and so therefore are often disregarded in quantitative research.

Sample Size and Sampling Method

An initial purposive sampling technique was used to identify study sample with the focus to have first-hand experience of maternal and neonatal care in rural health institutions. Inclusion criteria were that participants be registered midwives or nurses registered at least a year for the obstetric and neonatal service, in the districts of Northeast region (Mamprugu). A total of 45 participants(25 midwives and 20 nurses), were recruited from different CHPS compounds and health centers, and clinics and hospitals. This sample size was chosen to maintain sufficient thematic saturation and to contribute to the analytical strength and generalizability of findings across

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differing facility types and geographical settings (Guest, Bunce, & Johnson, 2006).

Data Collection Procedure

Data were gathered through face-to-facesemi-structuredinterviews.

Interviews lasted 30 to 45 minutes in duration and were audio-recorded with consent from participants. Following the study aims, the interview guide was created and administered, the challenges faced, coping mechanisms and community support were explored. Non-verbal cues were also obtained through field notes, and contextualisation was documented. In any form, all interviews were transcribed verbatim and translated as needed.

Statistical Analysis

The analysis of data was conducted using Braun and Clarke's (2006) framework, the transcribed data were thematically analyzed. To accomplish this, participants familiarized themselves with the data, created initial codes, started searching out themes, reviewed themes, and defined and named themes, followed by writing the final report. NVivo software was used to aid coding and themes organization. The analysis sought to identify patterns of coping strategies, resource improvisation, and community engagement in care delivery.

Ethics Approval

Ethical approval for the study was acquired from the Ghana Health Service Ethics Review Committee (Protocol ID: GHS-ERC 012/2023). Respondents were informed that the study was going to take place, they could withdraw from it or do so at any point in time and that they were not permitted to speak out without their permission without fear of penalties. Participants provided written informed consent prior to data collection. Anonymized and stored data was obtained for private and confidential purposes.

Findings

Sociodemographic Characteristics of the Participants

Table 1 presents details of key socio-demographic characteristics of participants. A total of 45 participants-25 midwives and 20 nurses-were recruited via rural health centers in six selected Mamprugu area: West Mamprusi (n=11), East Mamprusi (n=9), Mamprugu-Moaduri (n=7), Bunkprugu (n=7), Yunyoo (n=6) and Chereponi (n=5).

This distribution guaranteed wide geographical representation throughout the region. The majority (86.7%) of participants were female, which speaks to the gender composition of Ghana's midwifery and nursing workforce. The average age of participants was 35.2 years (SD ± 6.8), with an average of 36.1 years for midwives and 34.0 for nurses. Most participants (44.4%) were within the 30–39 age frame, which suggests a young and active workforce. Regarding level of work experience, average years at service were 8.2 years (SD ± 4.5); midwives were an average of 9.1 years and nurses of 7.0 years. The percentage of professionals with between 1 and 10 years of experience, at 73.3%, indicated a mix of young and middle age workers. The types of facilities were CHPS compounds (48.9%), health centers (33.3%), and hospitals/polyclinics (17.8%); these underscore the decentralized nature of health care delivery in rural Northeast region.

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Table1ParticipantsSocio-Demographic Characteristics

Characteristics	Frequency (n=45)	Percentage (%)
Gender		
Male	**6**	**13.3**
Female	**39**	**86.7**
Professional Roles		
Midwives	**25**	**55.6**
Nurses	**20**	**44.4**
Facility Type		
CHPS compounds	**22**	**48.9**
Health Centre/Clinics	**15**	**33.3**
Hospitals/Polyclinic	**8**	**17.8**

2. Objective 1: Tools and Supplies Used

Participants from all the study districts described routine improvisation as the result of chronic shortages of tools or supplies that mattered. In West Mamprusi, midwives replaced sterile delivery kits with plastic sheets, boiled scissors and reused cord clamps. *"We sometimes use boiled scissors wrapped in gauze when the sterile packs run out,"* one midwife said. In Mamprugu-Moaduri, mobile phone flashlights, and kerosene lamps were deployed in some facilities during deliveries to cope with the erratic power supply. A nurse added: *"We've delivered babies using torchlight apps – it's not ideal, but it's what we have."* In East Mamprusi and Chereponi, gloves, disinfectants and even baby weighing scales were obtained through donations from the community. Some facilities used makeshift benches as delivery beds. *"If the delivery bed is broken, then our mattress is set on a wooden bench,"* said a nurse based in Chereponi. Yunyoo and Bunkprugu participants shared using locally sewn baby wraps, reused delivery mats and plastic aprons made from water sachet wrappers. Though creative, these modifications posed risks to infection and provider safety.

3.Objective 2: Coping Strategies for Systemic Challenges

How the midwives and nurses in the study districts coped was different, indicating both institutional limitations as they worked out solutions in collaboration with local instrumentality and creativity. Task shifting was an important strategy used in East Mamprusi, with community health nurses often taking on midwifery roles during staff shortages. *"I have had the opportunity to practice managing deliveries since our midwife is often alone or unavailable*," one nurse told me. While adhering to a process that was more informal, this allowed for continuity of care in poorly staffed facilities. Protocol modification was widespread in Bunkprugu and Yunyoo. Providers tailored WHO guidelines to available resources – for example substituting oral antibiotics for injectables or deferring referrals where transport was not available. *"We modify the treatment plan to what we have, not what we should have,"* said a nurse in Yunyoo.

There are also limitations. Participants in Mamprugu-Moaduri reported peer mentoring and informal knowledge sharing and this was due to the lack of formal training. *"We teach each other on the job — you can't wait for workshops,"* a midwife said. Spiritual coping was most evident in Chereponi where prayer, fasting and faith were important means of coping with stress and uncertainty. *"We pray before every delivery—it gives us strength when we lack tools,"* one midwife added. Others said they sang songs while on night shift into the night to raise morale as hymns. Collaborations, improvisation and emotional survival became fundamental coping skills for the people in each district in the absence of sustained resources.

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4. Objective 3: Quality and Continuity of Care Impact

Under continuing challenges throughout the study districts, participants demonstrated a great sense of duty toward care continuity. In West Mamprusi, rotating shifts allowed 24-hour care despite a small workforce. *"We sleep a shift in the facility so there is somebody there all the time,*" said a midwife. In Mamprugu-Moaduri, midwives made home visits to evaluate postpartum recovery and provide antenatal education. *"We sometimes walk miles to see mothers who can't return,"* one nurse explained. But safety and timing were often at risk. A nurse who spoke in Yunyoo said, *"We lost a baby because there was no backup for the referral vehicle, it broke down."* In East Mamprusi, poor road conditions and absence of means of communication affected the response to emergencies. *"We have personal phones to call if we need to, but the network is unreliable," s*aid a midwife. Burnout was a constant worry. Individuals in Chereponi and Bunkprugu described emotional fatigue after an unceasing stream of improvisation. *"We are always working our asses off — and there's no end, no relief,"* lamented one nurse. Yet, however, through it all, you could tell that it was a fight, it was a fight, and many are left wondering how long such coping could still continue in the absence of systemic support.

5. Objective 4: Engage With the Community

Community involvement was crucial in all the study districts and frequently filled key gaps in formal health care delivery. In East Mamprusi and Bunkprugu, volunteers rode motorbikes and tricycles to help women in labor — especially at night or in the event of an emergency. "*Without the community riders, a lot of the women would not reach the facility on time,"* said a nurse in Bunkprugu. Traditional birth attendants (TBAs) were integrated into the care continuum in Mamprugu-Moaduri and Chereponi. They provided early labour monitoring, antenatal education and referrals. A midwife in Chereponi said, *"Our TBA lets us know when a woman is in labor — we work together for safe delivery.*" Another in Mamprugu-Moaduri said, *"She helps calm the mothers and helps them come to us early."* In West Mamprusi, community health committees arranged supply drives, sanitation campaigns and even built makeshift shelters for waiting mothers. *"They took us soap, gloves, even provided a shade for antenatal days*," said one midwife. Youth groups in Yunyoo mobilized by local leaders cleaned facilities and escorted health workers during their outreach. These bottom-up efforts were perceived as necessary to maintain care delivery even in a context of chronic resource shortages.

6. Objective 5: Recommendations for Health System Strengthening

Participants from each of the study districts argued that government and policy makers should direct priority to addressing rural health system strengthening through focused policies. One important recommendation was that every health facility newly commissioned in a country should have at least one basic package for tools and supplies—which includes sterile delivery kits, gloves and disinfectants, as well as basic medicines—and these have to be re-tooled at regular intervals to avoid chronic shortages. Midwives in Yunyoo and Mamprugu-Moaduri urged for solar-powered lighting and refrigeration units to ensure safe nighttime deliveries and proper storage

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of temperature-sensitive medicines. In East Mamprusi and Chereponi, there was a suggestion for more regular in-service training, in view of the geographic isolation and difficulty of accessing professional development. *"We need refresher courses, so we don't just have it once NGOs come, but as part of the system,"* said a nurse. Referral systems were a major challenge in Bunkprugu and Mamprugu-Moaduri for critical care, where infrastructure with poorly developed roads and no emergency vehicles were key issues. They suggested an investment in transport system, specific ambulances and mobile communications to enhance emergency response. Last but not least, they campaigned for policy levers, like incentives to recruit and retain top skill manpower in underserved areas—including rural posting allowances, housing assistance and opportunities for career advancement. These reforms, they said, were crucial to keeping quality levels of maternal and neonatal care consistent in rural Ghana.

Discussions

This study investigated the coping styles of midwives and nurses working in rural maternal and neonatal care in the districts of Northeast Region of Ghana. Based on qualitative data collated from these six districts, the findings demonstrate a complex interplay between resource limitations, adaptive practices, community engagement, and systemic deficiencies. These are analyzed under the light of Lazarus and Folkman (1984)'s Transactional Model of Stress and Coping, which highlights how people evaluate and deal with stressors in their context. The rampant improvisation of tools and supplies shows a systemic failure to provide basic facility needs for optimal obstertric and newborn care. The use of plastic sheets, boiled scissors, reused cord clamps, and mobile phone flashlights during delivery shows how far frontline providers need to stretch and adapt to chronic shortages. These are creative practices; they raise vital concerns about the control of infection. Left to their own devices, these are often unsanitary materials, which raise the risk of postpartum infections, neonatal sepsis, and cross-contamination. Ismaila et al. (2021) also noted that midwives in Ghana often take advantage of non-standard tools, creating a barrier to clinical safety. The fact is that community-donated gloves and disinfectants are effective but not always appropriate and are sometimes not even adequate for hygiene maintenance. Infection control, which is a primary basis for safe maternal care, is now fragile when the basic necessities are missing, or improvised. The coping strategies used by participants showed a combination of technical adaptation and psychosocial resilience. Task shifting, especially in East Mamprusi, where midwifery roles were occupied by community health nurses, is a practical reaction to shortage of appropriate obstetric and neonatal healthcare staff. This is consistent with the findings of Ayawine and Atinga (2022) about the degree of interpretability of rural health systems contextual flexibility. Adaptation of protocol, like replacement of injectable antibiotics by oral options in Bunkprugu and Yunyoo, reflects clinical creativity in the face of pressure. But these adaptations may not always correspond to best infection prevention practice when sterile procedures are not possible. In Mamprugu-Moaduri peer-mentoring and informal knowledge sharing supported procedural compliance but may vary among infection control services in the absence of formal training. Spiritual coping from

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Chereponi—prayer and singing hymns—was emotional, but it is not a substitute for the structural protections taken to ensure infection is not sustained. In spite of such adaptations, the systemic limitations were apparent on the quality and continuity of care. Sharing rotating shifts, home attendance and flexible working hours, participants showed undying dedication. Still, at the high price of this determination. Delayed emergency care resulting from poor roads, poor communication and no means of transport brought to pass the inevitable preventable maternal and neonatal deaths. Burnout was a common issue, with particular complaints made in Chereponi and Bunkprugu, where endless improvisation and emotional burnout caused exhaustion and doubt about sustainability. The pressure of maintaining infection control under such circumstances — devoid of sufficient supplies, training or infrastructure — further adds stress to the provider and compromises care safety. Community involvement became a key element for ensuring the delivery of rural healthcare. Volunteers in East Mamprusi and Bunkprugu provided emergency transportation via motorcycles and tricycles; Mamprugu-Moaduri and Chereponi-based traditional birth attendants (TBAs) were incorporated into antenatal education and maternal and child labour monitoring. These grassroots partnerships echo the perspective of Ayawine and Atinga (2022) who suggest that community partnerships are crucial to service provision. Health committees organized supply drives and built shelters for waiting mothers in West Mamprusi, while groups of youth in Yunyoo helped sanitation facilities and escorted health workers during outreach. While there are hygiene and infection control efforts, these are not replacements for consistent supply chains or trained people. The insights present a pressing need for policy and systemic changes. All newly commissioned health facilities must be provided with a minimum critical set of tools and supplies with frequent re-tooling to avoid chronic shortages, participants said. Infection management needs to be a high concern, as sterile delivery kits, disinfectants, gloves and waste disposal systems are necessary. Solar lighting and refrigeration was suggested in Yunyoo and Mamprugu-Moaduri for safe delivery and storage of drugs. In East Mamprusi and Chereponi, routine in-service training emphasized, where there are limited access to professional development due to geographic isolation. A significant number of Bunkprugu and West Mamprusi referral systems need investment, transportation infrastructure and communications tools for improving emergency response. Finally, policies such as allowances for rural postings, housing programs, and career advancement paths were viewed as key tools to attract and retain talented workers. These recommendations conform with the wider call for equity in the allocation of health resources as well as recognition of rural realities in policy processes (Ismaila et al., 2021; Ayawine & Atinga, 2022).

Conclusions and Recommendations

Conclusions

This study identified coping strategies among midwives and nurses in the district of Mamprugu in Ghana. However evidence suggests that providers experience resilience and flexibility but institutional failures diminish quality of care. Improvisation is common because of a constant shortage of key items, undermining infection prevention and control and safety. Coping strategies are task

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shifting, protocol adjustments, peer mentoring, and a sense of spiritual fortitude, which illustrate both inventiveness and emotional hardship. Care continuity through innovative scheduling, outreach, is still ensured, but emergency services and safety are commonly affected. Community support—volunteers, TBAs, and community leaders—presents a crucial factor that helps meet the needs of service needs. But a lack of systemic backing exacerbates burnout and raises the question of whether what we are doing is sustainable in the long run.

Recommendations

To empower rural maternal and neonatal care services in Ghana, we need coordinated action at the Ministry of Health (MoH), Ghana Health Service (GHS), and District Health Directorates. With the control of the GHS, all health facilities, particularly CHPS compounds and health centers must have basic goods and refill every quarter. MoH and District Assemblies should prioritize infection prevention infrastructure, particularly in Mamprugu-Moaduri, Yunyoo, and Chereponi. In limited-grid areas, the Energy Commission and GHS should install solar-powered lighting and refrigeration to make deliveries more safe. GHS Training Division should make regular education and mentorship institutionalized in such isolated districts as East Mamprusi and Chereponi. Referral systems require improvement with better roads, ambulances, and communication tools based on the Ministry of Roads and District Assemblies led. GHS and community health committees should formalize community partnerships with the TBAs and volunteers. MoH and Ministry of Finance need to bring rural incentives if skilled staff are to be retained at home. MoH and GHS monitoring is crucial for policy recommendations and to prevent unsafe conduct.

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