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Qualitative inquiry into Registered General Nurses' experiences in the emergency centre

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ABSTRACT

Introduction: Though nurses are frontline workers in emergency care, their experiences in emergency centres are seldom researched. This study explored lived experiences of Registered General Nurses working in emergency centres.

Methods: This study employed an exploratory qualitative design. Purposive sampling was used in selecting hospitals and participants for study. Data were collected through semi-structured interviews with 20 Registered General Nurses who worked in emergency centres. Data analysis was performed through content analysis.

Results: Demographic results revealed that only one respondent used knowledge of critical care nursing to practice emergency care in an emergency centre. Four thematic categories emerged after qualitative data analysis: a) Emergency centre as a place of learning and increased confidence for nurses; b) Feelings of joy in emergency centres; c) Social and physical consequences of emergency centres on lives of emergency centre nurses; d) Clients receiving low quality care in emergency centres.

Discussion: Employment of specialist trained emergency staff and formal education of Registered General Nurses in the advanced role of emergency care nursing may be necessary to improve quality of care rendered to clients in emergency centres.

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African relevance

- This study made use of content analysis to describe the experiences of African emergency care nurses.
- Nurses maintained that although the emergency centre was a stressful environment, it was an interesting one.
- Challenges include the dire impact on African emergency care nurses' personal lives.
- More emergency nurses are required in Africa to address the problems highlighted in this study.

Introduction

Good emergency systems are needed to provide quality emergency care in emergency centres [1] and provide safe, cost-effective, and caring emergency healthcare to all clients reporting to the emergency centre [2]. While emergency care is seen by many as ambulances and emergency transport, the role of care that

can be provided in the communities and hospitals is neglected [1]. The burden of acute illness is overwhelming in less developed countries with high levels of every category of injury [3]. There is an added burden to the emergent care of injured patients in Africa as many patients also have other conditions, such as Human Immunodeficiency Virus (HIV), Acquired Immunodeficiency Syndrome (AIDS) or Tuberculosis (TB) [4]. HIV, AIDS and TB complicate client care and have consequences of blood borne and droplet infections for nurses involved in emergency care [4]. Though emergency care can reduce deaths in less developed countries, emergency care must be well planned and supported at all levels, from community to national levels [1].

Despite the many challenges experienced by nurses in emergency centres, there is also evidence of positive experiences in emergency centres such as nurses feeling satisfied after clients recover from their injuries [5] and emergency centres serving as stimulating environments for learning [6,7]. Emergency centres allow nurses to strengthen their competencies in emergency care [8]. Though the nature of emergency care makes it possible for nurses to improve on their competencies, many emergency centres lack specialised emergency care nurses in low- and middle-income countries [9]. It is wrongly assumed by policy makers and the

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public that practitioners in emergency centres have the requisite competencies to meet needs of clients [2]. Most emergency centres in Africa are staffed with Registered General Nurses (RGNs) with no additional formal education in emergency nursing [4]. In Ghana, as in other low- and middle-income countries, little consideration has been given to optimising the training of nursing staff for the care of acutely ill or injured patients [10]. Untrained nurses in emergency nursing exacerbate an existing rudimentary emergency care system in Ghana [10,11]. Though RGNs in emergency centres may have both challenges and positive experiences in providing safe and quality care to clients, emergency centre nurses' experiences within emergency centres are seldom investigated [12]. It is necessary to investigate positive and negative experiences by RGNs within the emergency centre in order to provide recommendations that will facilitate emergency nursing work in Ghana. Understanding the experiences of RGNs in emergency centres is fundamental to addressing the challenges which exist in emergency centres to optimise positive experiences. This study explored experiences by RGNs working in emergency centres in selected hospitals of the Volta Region of Ghana.

Methods

A qualitative exploratory design was used in conducting this study. The exploratory design, which has roots in philosophical traditions, explores people's everyday life experiences [13]. A qualitative study design was chosen to explore both positive and negative experiences by RGNs in emergency centres in selected hospitals of the Volta Region of Ghana. This design provides an understanding of both motivating and inhibiting factors of emergency centre work [14]. This method also allowed participants to freely express themselves about their experiences in emergency centres. The qualitative explorative design has been used in conducting similar studies into experiences of participants in various fields [15–17].

The settings for data collection were three public hospitals in the Volta Region of Ghana that had emergency centres. These hospitals were Volta Regional Hospital (VRH), Keta Municipal Hospital (KMH), and Ho Municipal Hospital (HMH). The target population for this study was RGNs working in emergency centres at VRH, KMH and HMH.

The research proposal was submitted to and approved by the University of Cape Coast Institutional Review Board. Additionally, the study received approval from the Ghana Health Service Ethical Review Committee and each hospital where data were collected. Adherence to all principles of research ethics was strictly observed. Researchers briefed participants about the study aims and procedures before obtaining written informed consent from them. Participants were informed about their rights to refuse participation at any stage without giving any reason. Also, participants were informed that their refusal to participate in the study would not be used against them in any form. Confidentiality and anonymity of participants were enforced through coding of transcripts and the use of codes to represent names. Participants were assured that data obtained would be used for research purposes only.

Participants for data collection were selected through purposive sampling technique of nurses working in emergency centres of the VRH, HMH and KMH in order to garner opinions and experiences from individuals who have a certain level of familiarity working in this setting. Only nurses who had worked in emergency centres for one year or more were sampled. Data were collected in January 2015, within a three-week period. A list of all RGNs in emergency centres was requested from Nurse Managers of emergency centres. Inclusion criteria were RGNs with professional identification numbers who had worked for one year or more, and were willing to

give written consent. The eligible sample size was estimated to be 20 participants for data saturation. Saturation was reached after interviewing 20 participants, when new data confirmed previous data without adding new insights [18].

Emergency centres were visited prior to data collection to present and inform staff about the study. Staff of emergency centres had an opportunity to ask questions and receive answers concerning the study. Mobile phone numbers of selected participants were requested. A place and time for the interviews were agreed upon via phone calls with selected participants. As no validated semi-structured interview guide was available, the themes of the interview and the questions were developed by the research team, based on the study team's expertise and the extant scientific literature. Questions were asked regarding the following objectives: 1. Description of nurses' experiences in emergency centres, 2. Description of how nurses feel whilst working in emergency centres, 3. Description of social and physical consequences on nurses in emergency centres, and 4. Description of nurses' perceptions of the quality of care clients receive in emergency centres.

The interview guide was pre-tested with four participants in a similar health facility. Two interview questions were modified based on the pretest. One semi-structured interview was conducted with each participant. Interviews were conducted in the English language since all respondents could speak English. Each interview was recorded and transcribed verbatim. Interviews ranged from 30 to 60 min. Transcribed interviews were stored in password protected electronic folders that were created and labeled with codes for identification. These folders were kept on a pen drive solely meant for the purpose of the study and kept secure. Transcribed data were analysed using content analysis [13]. Each transcribed interview was read several times by all authors and the primary codes were determined by the research team. Primary codes were developed by locating words and phrases that represented various experiences by nurses in emergency centres. The related codes were put in groups. Categories were developed based on similarity and content of codes. Credibility was ensured through prolonged interactions with participants and continuous checking of ambiguous responses during data analysis. All efforts to ensure the reliability of the results were utilised including using a team approach in data analysis. Coding was performed separately by four members of the research team after which comparison of coding was done within the team. Discrepancies were discussed for mutually agreed-upon decisions to be reached.

Results

In this study, 15 respondents were between the ages of 25 and 29 years. The remaining five other participants were between the ages of 30 and 59 years. Nineteen RGNs working in emergency centres studied general nursing at the Nurses Training College (NTC). Only one RGN had additional training in critical care nursing (an advanced diploma course in critical care nursing) to practice emergency care in emergency centres. None of the respondents studied emergency nursing as a degree programme. Fourteen participants had worked for two years or less in the emergency centre. Fifteen participants indicated that there was only one professional nurse on a shift in an emergency centre.

Four thematic categories were determined by the data analysis. The categories of experiences by RGNs working in emergency centres were a) emergency centre as a place of learning and increased confidence for nurses; b) feelings of joy in emergency centres; c) social and physical consequences of the emergency centre on lives of emergency centre nurses; d) clients receiving low quality care in emergency centres.

Emergency centre as a place of learning and increased confidence for nurses

All professional nurses indicated that the emergency centre was a learning environment and that working in the emergency centre increased their confidence levels for practice. As one participant said:

Working in the emergency centre is interesting; it exposes you to many challenges and broadens your mind. Every nurse must experience the emergency centre. [P1]

Another participant confirmed this by saying:

Working in the emergency centre has brought a lot out of me. It has broadened my mind because it comes with many challenges. The emergency centre has really affected my attitude towards work. When I was a student I never thought I could work at the emergency centre. But now I come to work early, respect clients and treat them with respect. I now have an attitude of urgency. [P2]

Other participants stated:

I feel bold and great anywhere I go . . . even other wards. I feel I can take charge of everything, even in other hospitals, I feel I can handle everything. The emergency centre has broadened my knowledge and skills. [P12]

Working in the emergency centre has opened my eyes to know how to work in and out of the hospital. It makes me feel sufficient as a nurse. I have met a lot of different cases. It has prepared me to work in diverse situations. [P8]

The high acuity nature of different cases that nurses manage in the emergency centre increases their confidence in emergency care and also serves as a continuous learning process for them.

Feelings of joy in emergency centres

All participants indicated that though the emergency centre was stressful and that it was an interesting environment. Participants stated:

Aside from the stress, anything else is pleasure. When I see someone healed and coming back for review, I feel so good. [P5]

Even though the place is stressful, it is an interesting place. You meet a lot of people. It's interesting so I will always prefer emergency. I enjoy working with the people I work with now, both doctors and nurses. We are friends and communicate nicely and cordially to each other. It's not only about colleagues but working together to satisfy relatives and patients. At the emergency centre we are guys so we are easy to deal with. [P6]

Many RGNs indicated that their interest in emergency centres increased as they spent longer years in emergency centres. As one RGN said:

In my first year I wanted to be re-shuffled to another ward, but now in my second year, I am beginning to enjoy the emergency centre so much. Now I want to be in the emergency centre for a long time because of the interesting nature of the emergency centre. We are all friends here, both nurses and physicians. We communicate among ourselves effectively. This centre is stressful but I always work with joy in the emergency centre. [P4]

Another participant confirmed the interesting phenomena of the emergency centre by saying:

Our bosses here are friendly. There is no senior and there is no junior. There is good communication between nurses, doctors and other staff here. Sometimes you are home and you are called that

there is an accident and you are able to come with happiness. If our bosses in management will behave the same way, it will be very nice. [P20]

Some nurses also stated that working in emergency is more enjoyable when working with fellow professional nurses. A participant stated:

Emergency care is more interesting when working with colleague professional nurses. [P8]

Many participants in this study did not want to be moved to other departments in their health facilities because they found emergency centres to be more interesting than other departments. Nurses preferred to cope with the stress and continue to work in the emergency centre.

Social and physical consequences of the emergency centre on lives of emergency centre nurses in practice

Not all aspects of working in emergency centre was positive for nurses. Many nurses interviewed indicated that emergency care affected aspects of their physical and social lives negatively. A participant indicated this in the following statements:

I had a peptic ulcer when I started working here. Whilst doctors are given lunch, nurses are ignored. I don't put on weight. I don't even have time to eat and rest. When I have off, I have a whole lot of things to do. Socially, I am deprived. Like funerals, wedding, parties, I can't attend. [P9]

Another respondent stated:

I am always at work from morning to evening. Even though I go for morning shift, I always have to stay on to help the next shift because of the busy nature of the place. I am not even able to pick calls. Even when I get home I am usually too tired to call back. Working in the emergency centre is really affecting me both socially and physically. [P11]

Emergency centre work deprived emergency nurses socially as they could not make time for social activities as they wanted. Long working hours also affected the physical health of some nurses working in emergency centres.

Clients receiving low quality care in emergency centres

Participants said they could not give quality care to clients in emergency centres as a result of challenges such as overcrowding and lack of resources. Participants had this to say:

The patients at the emergency centre do not get quality care because of the mess sometimes. [P6]

The emergency centre is always hectic. We always add extra stretchers. The place is always messy. [P1]

Sometimes I feel we are not giving the best of care to our patients because of the minimal contacts we have with them. [P8]

The majority of participants described how the unavailability of materials and human resources in the emergency centre affected the provision of quality care. A participant described this in the following statements:

The emergency centre exposes you to so many conditions but there are no materials and human resources. Sometimes there is no gauze to dress a patient's wound. There are no emergency nurses or emergency physicians here. I have to force myself to learn. Sometimes I try something to see whether it will work. It's like the lotto which is not good enough. [P2]

One participant likened the emergency centre to a battle ground:

Nurses are just brought into the emergency centre to battle like soldiers who don't even know how to shoot guns. You have to push yourself to learn because there are no emergency nurse role models to learn from, and this results in some mistakes. [P7]

Another said:

Working in the emergency centre is emotional because patients die easily. I think if there were trained emergency nurses and physicians, we could prevent some of the deaths. I feel sad when people die like that. [P20]

Moreover, one other participant stated:

The problem is about staffing. At least staff strength should be increased. Nurses are really sacrificing in the emergency centre. We do not have items too and patients come and it looks like we are not prepared for them. [P7]

As a result of inadequate clinical staff, especially medical officers in emergency centres, nurses have had to perform duties that did not fall within their job descriptions. A participant said:

Due to the staffing situation, we are now prescribers especially at night shift. In the emergency centre we don't have prescribers so sometimes nurses in emergency centres are forced to prescribe, though it is not our job. Because of legal issues I wish we had a standing prescriber. [P20]

Another participant said:

We sometimes actually request investigations which should have been done by medical officers. These things make me feel uncomfortable because it does not fall within my job description. [P5]

Resource challenges such as lack of space and inadequate emergency specialists endangers the lives of clients that report to the emergency centres.

Discussion

In this study of RGNs working in emergency centres in the Volta Region of Ghana, participants described the emergency centre as a place of learning and one which increased their clinical confidence. Emergency centres are uniquely positioned to respond to an array of life threatening emergencies [19]. Nurses working in these emergency centres are frontline workers during situations of emergencies or crises and are frequently exposed to various forms of emergencies [20]. The unique situations of emergencies in emergency centres allows nurses to learn continuously to maintain their competence [8]. Hamilton and Marco [21] concluded in a study that emergency centres provide a good learning environment for nurses and other staff. Emergency centres could improve the competencies of RGNs in emergency care especially if they had requisite emergency staff, such as specially trained physicians or advanced practice nurses that could serve as mentors for RGNs.

Though the emergency centres were stressful, many of the RGNs in this study indicated that they experienced joy in emergency centres. As was found in a study by Ogundipe et al. [6] many participants did not wish to be reshuffled to other departments though they agreed that emergency centres were stressful [6]. The reason for not wishing to be transferred was the fact that emergency centres provided rich learning experiences for staff [21] and many nurses enjoyed working in the emergency centres. The nurses in emergency centres indicated that communication between nurses and other staff within the emergency centre was cordial and effective, as has been demonstrated in other studies

[22,23]. RGNs found emergency centres became more exciting as they spent more years working in the emergency centre. There are generally good interpersonal relationships between nurses and medical officers in emergency centres [23]. Good communication between nurses and medical officers in emergency centres contributed to making emergency centres enjoyable for many nurses despite the many challenges in the emergency centres. This sort of agreement between workers in the emergency centre could be emulated by other departments since it has enormous advantages for the provision of quality care to clients [23].

The social and physical consequences of the emergency centre on lives of emergency centre nurses was frequently reported. Findings in this study confirmed reported cases of stress in emergency centres that resulted in both social and physical consequences for emergency centre nurses [24,25]. RGNs indicated that emergency care affected aspects of their physical and social lives negatively. This finding is in agreement with Smeltzer et al. [24] who found that challenges in emergency care include occupational health problems for emergency centre staff [24]. These negative consequences are complicated by the challenges of providing care in the context of both a fast-paced and holistic health care system [24]. Martino and Misko [25] also found in their study that nurses' emotional parameters in emergency centres fluctuate during their shifts, which can be related to the burnout and stress of the care delivery in emergency centres. Management of hospital facilities with emergency centres should create an environment in which nurses can have breaks and ease their stress whilst at work. Motivations for other categories of emergency staff such as lunch for medical officers could be extended to RGNs in emergency centres.

The RGNs in this study reported frequently performing jobs that were not within their job descriptions as a result of shortage of medical officers within the emergency centre. Clients may receive lower quality health care as a result of such situations where the responsibilities of the medical officer were performed by the RGN. Extra jobs performed by RGNs as a result of a shortage of medical officers could be better performed by specialised emergency nurse practitioners as practiced in the United States where these emergency nurses are masters degree holders who are specialised in emergency nursing care [26]. Emergency nurses with masters or doctorate degrees are better suited to perform extended roles in emergency centres [26]. In the case of Ghana, there are only two institutions that educate nurses in emergency care and critical care. These institutions graduate limited critical care nurses and emergency nurses. Currently, there is only one emergency degree nurse in the Volta Region where this study was conducted. Though there are a number of critical care nurses with advance diploma certificates, they are placed in operating theatres. It is therefore necessary to establish more emergency nursing programmes as degree courses and subsequently train nurses at the masters level. Much more attention should be given to the education of nurses as emergency nurse practitioners in Ghana. An emergency nurse practitioner would be more capable of managing patients who do not require advance emergency medical intervention [27]. During busy periods or where there is reduced medical coverage such as at night, the presence of specialised emergency nurse practitioners could be of great benefit to patients in emergency centres [27].

Apart from the acute human resource shortages, nurses in this study also noted having material resource challenges whilst taking care of clients in the emergency centre. This is consistent with a study by Frazee and Stocks [28] who found that nurses working in emergency centres face a number of challenges which include decreased reimbursement by insurers which results in inadequate resources in emergency centres [28]. In most emergency units in Ghana, patients presenting are not triaged and most emergency centres are poorly equipped and overcrowded [9]. Existing emer-

gency care systems in Ghana are rudimentary in comparison to those in developed countries [9]. An assessment of an emergency centre of a police hospital in Ghana showed that essential items and services were inadequate for an emergency centre [29].

Nurses in Ghana are currently an underdeveloped resource for the provision of high quality emergency care [30]. However, the future of emergency care can be bright with support from hospital management, government and international partners [9]. Emergency centres should be allocated more material and human resources to enable nurses and other health care workers in emergency centres to provide quality care to clients. There is also a need to form an association of all critical and emergency care nurses in Ghana that could become a formidable force in the improvement of emergency nursing practice.

Due to the subjective nature of qualitative research, this study does not attempt to generalise its findings. Results and themes should be interpreted with care to populations not represented in this study. Further qualitative and quantitative studies are recommended to explore the topic further.

Conflicts of interest

The authors declare no conflicts of interest.

Dissemination of results

This study was disseminated at internally organised conferences in hospitals where the study was conducted. A French translation of this paper was provided by the authors and is included as a [data supplement](#).

Author contribution

CAA drafted the proposal and final paper. JG supervised the proposal and study. TS and CPA helped with data collection. EA helped with data collection and analysis.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.afjem.2017.08.007>.

References

- [1] World Health Organisation. Emergency medical systems in low and middle-income countries: recommendations for action. Geneva, Switzerland: WHO Headquarters; 2005.
- [2] Andersson H, Sundström BW, Nilsson K, Jakobsson K. Competencies in Swedish emergency centres – The practitioners' and managers' perspective. *Int Emerg Nurs* 2014;22:81–7.
- [3] Jamison D. Disease control priorities in developing countries. Washington, USA: World Bank; 2012.
- [4] Brysiewicz P. South Africa's emergency care professionals are learning fast. *Emerg Nurs* 2011;18:5–7.
- [5] Ek B, Svedlund M. Registered nurses' experiences of their decision-making at an Emergency Medical Dispatch Centre. *J Clin Nurs* 2014;24:1122–31.
- [6] Ogundipe KO, Etoneyaku AC, Adigun I, Ojo EO, Aladesanmi T, Taiwo JO, et al. Violence in the emergency department : a multicenter survey of nurses' perceptions in Nigeria. *Emerg Med J* 2013;30:758–62.
- [7] Hodges HF, Keeley AC, Troyan PJ. Professional resilience in baccalaureate-prepared acute care nurses: First steps. *Nurs Educ Pers* 2008;29:80–9.
- [8] Tse JWK, Hung MSY, Pang SMC. Emergency nurses' perceptions of providing end-of-life care in a Hong Kong emergency department: a qualitative study. *J of Emerg Nurs* 2016;42:224–31.
- [9] Emergency Nurses Association. Competencies for Nurse Practitioners in Emergency Care. USA: Emergency Nurses Association; 2008.
- [10] Osei-Ampofo M, Oduro G, Oteng R, Zakariah A, Jacquet G, Donkor P. The evolution and current state of emergency care in Ghana. *Afr J Emerg Med* 2013;3:52–8.
- [11] Rominski S, Bell SA, Yeboah D, Sarna K, Hartney K, Oteng R. Skills and educational neemergency centres of accident and emergency nurses in Ghana: an initial neemergency centres analysis. *Afr J Emerg Med* 2011;1:119–25.
- [12] Gallagher R, Fry M, Chenoweth L, Gallagher P, Stein-Parbury J. Emergency department nurses' perceptions and experiences of providing care for older people. *Nurs Heal Sci* 2014;16:449–53.
- [13] Polit DF, Beck CT. Essentials of nursing research-apraising evidence for nursing practice. Philadelphia: Lippincott Williams & Wilkins; 2010.
- [14] Mustapha A. Textbook of nursing research and statistics. Delhi, India: AITBS Publishers; 2011.
- [15] Acheampong AK. 'I have no choice but to breastfeed': exploring motivational factors for breastfeeding among HIV positive mothers in the Greater Accra Region, Ghana. *Numi Hori* 2017;1:1–3.
- [16] Nachinab GT, Donkor ES, Naab F. Understanding the threat of infertility among women in Rural Northern Ghana. *Numi Hori* 2017;1:1–5.
- [17] Anim-Boamah O, Aziato L, Adebayor VM. Nurses' attitude and approaches to procedural pain management of children in Ghana: the case of Koforidua Hospital. *Numi Hori* 2017;1:1–5.
- [18] Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurs Edu Tod* 2004;24:105–12.
- [19] Marsh RH, Rouhani SA, Pierre P, Farmer PE. Strengthening Emergency Care: experience in Central Haiti. Haiti: Elsevier Ltd; 2015.
- [20] World Health Organisation. Guideline to essential trauma care. Geneva, Switzerland: WHO Headquarters; 2004.
- [21] Hamilton G, Marco VA. Emergency medicine education and health care disparities. *Acad Emerg Med* 2003;10:1189–92.
- [22] Scheeres H, Slade D, Manidis M, McGregor J, Matthiessen C. Communicating in hospital emergency centres. *Pro* 2008;23:13–22.
- [23] Maldonado T, Avner JR. Triage of the pediatric patient in the emergency department: are we all in agreement? *Pediatrics* 2004;114.
- [24] Smelter SC, Bare BG, Hinkle JL, Cheever KH. Brunner and Suddart's textbook of medical-surgical nursing. Philadelphia: Lippincott William & Wilkin; 2008.
- [25] Martino MMF, Misko MMD. The nurses' emotional parameters on the professional performance at intensive care units. *Rev Esc Enfe* 2004;38:161–7.
- [26] Chang E, Daly J, Hawkins A, McGirr J, Fielding K, Hemmings L, O'Donoghue, Dennis M. An evaluation of the nurse practitioner role in a major rural emergency department. *J Adv Nurs* 1999;30:260–8.
- [27] Howie P. Development of the nurse practitioner. Part 1. *Nurs St* 1992;1992(6):110–1.
- [28] Hines A, Frazee T, Stocks C. Emergency department visits in rural and non-rural community hospitals. Rockville: Agency for Healthcare Research and Quality; 2011.
- [29] Japiong KB, Asiamah G, Owusu-Dabo E, Donkor P, Stewart B, Ebel BE, et al. Availability of resources for emergency care at a second-level hospital in Ghana: a mixed methods assessment. *Afr J Emerg Med* 2015;6:30–7.
- [30] June JK, Cho S. Low back pain and work-related factors among nurses in intensive care units. *J Clin Nurs* 2011;20:479–87.