Experiences of Nurses on Cardiopulmonary Resuscitation in the Non- Critical Care Wards

by

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Abstract

Nurses' experiences in the performance of Cardiopulmonary Resuscitation in the non-critical care wards are seen to be emotionally and physically exhaustive. This is due to needed time sensitiveness and urgency which could influence the survival of patients who suffers cardiac arrest. This study explored the lived experiences of 11 nurses in the performance of CPR in non-critical care areas at the 37 Military Hospital in Ghana. The study used a qualitative descriptive approach. Semi-structured interviews were conducted using interview guides. Braun and Clarke's thematic analysis steps were used to analyze data. The nurses' experiences that emerged from the study were grouped into five areas: Heart of Stone and Heart of Softness; Winning and Losing a Battle; Concentrating on the Moment; Mental strength and weakness and Physical Exhaustion and resources, Support and Education. The findings indicated that nurses working in the non-critical care areas find CPR a necessary procedure that challenges their emotions, ability to perform and self-confidence. Avenues for staff support and provision of logistics necessary for the adequate performance of CPR in the non-critical care areas in the hospital are vital to enhance practice and sustain clients' health.

Keywords: Lived experiences, Cardiopulmonary Resuscitation, Nurses, Non-critical care wards.

Preface

This thesis is an original work by Veronica Ami Lebene Fiave. This research received research ethics approval from the University of Alberta Research Ethics Board and the Institutional Review Board 37 Military Hospital, Project Name “Experiences of Nurses on Cardiopulmonary Resuscitation Performance in the Non-Critical Care Wards”, Study ID. Pro00110496, May 31, 2021: 37MH-IRB/IPN/507/2021, June 22, 2021.

Dedication

To all nurses who are sailing through challenges, yet performing CPR to contribute to saving lives,

This work is for you

Acknowledgement

I would like to acknowledge all persons who have directed and supported me throughout my master's study at the University of Alberta. My first appreciation goes to my Supervisor, Dr. Simon Palfreyman, who unceasingly pushed my critical thinking ability and writing capacity. Your zeal in coaching and mentoring is admirable. I feel fortunate to work with you in teaching and receive your guidance during my journey as a researcher. I would also like to extend my gratitude to my thesis committee members, Dr. Kathleen Hunter and Dr. Alex Clarke. I would not have carried out this study without your counsel and approval. Thank you for your directions.

For my coursemates and the professors, I thank you for the exposure and the valuable knowledge you have contributed to my personal and professional life. Engaging in round table discussions and subsequently moving online made my study at the University of Alberta very remarkable.

A special thank you to my family, who has supported me in diverse ways from afar. Delali, your unmeasurable support and encouragement have brought me this far studying in Canada. Ewoenam and Worlase, thank you for the endurance and the sacrifices you have made in helping me achieve academic success. To my parents' Ex-WO 1 Fiave Robert and Juliana Fiave, thank you for the spirit of handwork and discipline you instilled in me. Of course, hard work never breaks a bone like you have always taught me. It has brought me this far and will expose me to higher opportunities.

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Experiences of Nurses on Cardiopulmonary Resuscitation in the Non-Critical Care Wards

Cardiopulmonary resuscitation (CPR) is a chain of lifesaving activities performed to enhance the survival of clients following cardiac arrest (Sasson et al., 2010). Noticeably, nurses are the first to arrive at the scene of a cardiac arrest in the hospital (Kim & Roh, 2016). Global studies have reported that nurses experience stress when performing CPR (Sjöberg et al., 2015). I have organized this thesis into five chapters. In the first chapter, I have provided an introduction, background, problem statement, rationale of the study, an overview of aims and research objectives regarding my thesis. In the second chapter, I present the literature review on the experiences, training and support available to healthcare workers on the performance of CPR. Literature on how nurses experience stress and anxiety related to CPR performance and the psychological or emotional impact on nurses after CPR performance have also been explored. In chapter three, I discuss the study design of qualitative exploratory descriptive using thematic analysis. The research findings are in chapter four. Finally, in chapter five, discussion, implications and accompanying recommendations are summarized regarding the study findings, followed by the study's appendices.

Performing CPR in a hospital environment often causes stress for clinical staff, which can manifest in feeling uncertain, morally conflicted, oppressed, and burdened with guilt (Cole et al., 2001). CPR outcome in patients has been linked to location of occurrences in the hospital, for which emergency and coronary care accounts for higher survival compared to intensive care unit and the general wards (Saklayen et al., 1995). Thus, Cardiac arrest could occur anywhere and at any time (Lewis et al.,2007), including the non-critical care areas in the hospital. Non- critical care areas could include general wards that house conditions that require continuous monitoring and management. Studies have shown cardiac arrest involving patients admitted to non-critical

care wards, and survival rates have not improved despite 40 years of progress in medicine (Brindley et al., 2002). Although numerous works of literature are available globally to back experiences concerning the performance of CPR among nurses (Gamble 2001; Hogan,1990; Laws, 2001; Mastey &Cole,1992; Ranse & Arbon,2008 & Sjöberg et al., 2015), most of the research was in the emergency and the intensive care unit.

Ghana has no published literature on the experiences of nurses performing CPR in the non-critical care area. Evidence of nurses' lived experiences in CPR participation in the non-critical care areas of practice is limited. This is regrettable since decisions to improve the procedure at their level will be affected.

During my work in the non-critical care wards as a nurse, I have performed Cardiopulmonary resuscitation on a number of occasions. The first CPR I performed was in a non-critical care ward which ended up unsuccessfully. I remember dealing with a long-term conscience of losing a patient who had suddenly suffered a cardiac arrest on the unit. I immediately resumed working to take care of other patients as if nothing had happened; however, my approach to care for the other client was affected on that day. At all the time, I never forgot the emotional stress I went through with no support or a debrief to analyze the event. I accumulated a feeling of fear anytime I was at work with the thought of having to deal with CPR when a client suffered a cardiac arrest. I felt disappointed and, with some reflection, decided on taking part in any workshop that had to deal with CPR. Unfortunately, not many avenues were available to train on CPR, limiting my continuous professional education chances. The second CPR I performed was successful. However, I was always in distress when I had to participate in CPR. This was worsened with the lack of respect and appreciation from doctors, especially in unsuccessful CPR. Most doctors' doubt was with how the procedure was performed

and if it was according to standard. The questions I kept asking myself was 'How often had these nurses on the ward had to partake in a refresher course?' How have CPR events been handled after nurses have performed them in the wards? I continued questioning how this was supposed to be handled? Subsequently, I came to accept the culture of subjective management in the events of CPR performance. However, the psychological burden of the procedure, how well I performed, what I could have done better, and issues of systemic concerns remained a subject of worry and concern to me.

The health system of Ghana has most hospitals that focus on general medicine (Drislane et al., 2014), for which cases of sudden cardiac arrest could be anticipated because most of the clients have medical conditions like hypertension, coronary artery diseases, diabetics', among others. Training and practice of nurses in Ghana are regulated by the Nurses and Midwives Council of Ghana (Nursing and Midwifery Council of Ghana, n.d). However, it is not the responsibility of the nurses and midwives' council of Ghana to continuously engage facilities and nurses on CPR training and support. The nurses and Midwives council ensures nurses renew their licence annually based on engaging in continuous professional development irrespective of their choice of continuous education.

Background

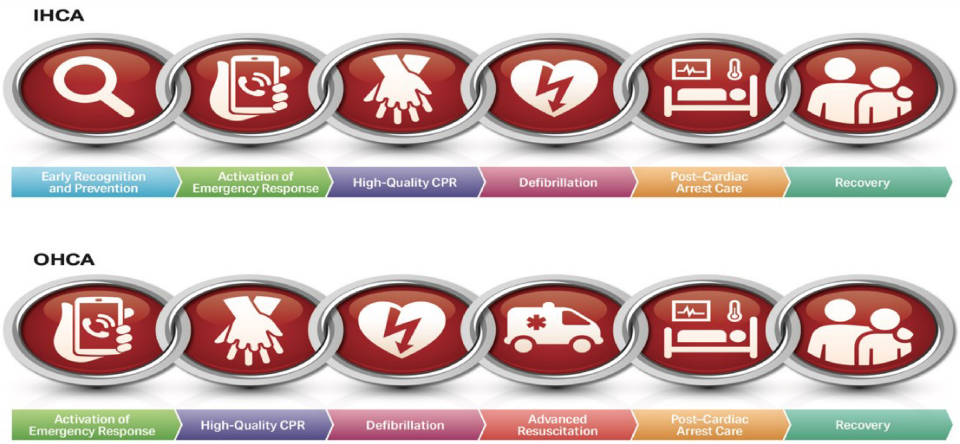
Cardiopulmonary resuscitation (CPR) is a vital lifesaving emergency skill in improving the survival rates following sudden cardiac arrest, and all health care professionals must be proficient in it (Hunziker et al., 2011) to effectively carry out the procedure. CPR's purpose is to save lives by restoring breathing and blood circulation to vital organs in a cardiac and respiratory arrest person. There are five critical components for optimum CPR delivery, according to the 2010 American Heart Association (AHA) and Emergency and Cardiovascular Care (ECC):

- Chest compressions rate no less than 100/min,
- Compression depth no less than 2 inches (5 cm) in adults, and at least one-third of the anterior-posterior depth of the chest in infants and children (about 1.5 inches in infants and 2 inches in children),
- Allowing for absolute chest recoil following each compression,
- Decreasing interferences in chest compressions
- Avoid excessive ventilation (Hazinski et al., 2010).

AHA (2010) also advocates a compression-to-ventilation ratio of 30:2 for single rescuers of adults, children, and infants (keeping out newborn infants) (Hazinski et al., 2010). Additionally, once initiated in the hospital or out of the hospital, CPR must follow a successive and combined AHA chain of survival activities (AHA,2020). According to AHA (2020), for a successful CPR after a cardiac arrest, actions must be performed in the order of recognition, activation of the emergency response system, high-quality CPR, defibrillation, post-cardiac arrest care and recovery.

Figure 1

*AHA Chains of Survival for adult IHCA and OHCA***. (***CPR & ECC Guidelines*. cpr.heart.org. (2020). https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines).In the public domain



The rate of in-hospital cardiac arrests managed by resuscitation teams delivering Cardiopulmonary Resuscitation (CPR) has been estimated to be 1.6 per 1000 admission in the United Kingdom (Nolan et al., 2014). As an essential medical procedure, CPR must be performed promptly (Lyneham & Marzooq, 2009) since patients' survival rate decreases by 10% for every minute of delaying CPR initiation (Go et al., 2013). For a successful CPR outcome, the time elapsed between the cardiac arrest and initiation of CPR and the quality of the performance of the CPR procedure (Aune et al., 2011; Herlitz et al., 2002) is vital.

Nurses spend the most time with patients and are frequently the first to identify or be called during cardiac arrest (Broomfield, 1996) to initiate CPR. Chelle (1993) reported that unpredictability, interruption of the planned nursing activity, ethical dilemma, life-threatening event, emotional stresses are all problems nurses experience when they get involved with CPR

performance. Ranse & Arbon (2008) reported that nurses with less than one year of experience and nurses with more extensive experience find CPR situations stressful.

Even without a patient's subsequent death, participation in CPR can be a stressful event for nurses (Vindigni et al., 2017). Studies have reported that nurses experience physical and emotional stress when performing CPR (Gamble 2001; Laws, 2001 Ranse & Arbon, 2008; & Sjöberg et al., 2015). In addition, nurses have also expressed feelings of insecurity (Hogan,1990; Mastey & Cole, 1992), anxiety, uncertainty, and emotional pressure (Cole et al., 2001) about how CPR was managed.

External stressors include feelings of oppression (Cole et al., 2001), poor patient outcomes, and lack of training (Morgan & Westmoreland, 2002). Studies have also shown that limited time to prepare for CPR affects health professionals' anxiety and stress (Chelle,1993; Larsson & Engström, 2013). Nurses also express insecurity about how CPR was managed (Ferreira et al., 2018; Hogan,1990; Hunziker et al., 2011; Mastey & Cole, 1992), especially in the event when CPR was not successful.

The rapid-cycle deliberate practice introduced by Hunt et al. (2014) recognizes the need to speedily attain a target of proficiency in any given session due to the essential consequences of critical clinical skills such as cardiac arrest. A mastery learning and deliberate practice model in resuscitation training have shown successful improvement in CPR practice (Wayne et al., 2006). Studies suggest that the availability and accessibility of training or workshops on advanced cardiac life support should include all clinical staff and not only the resuscitation team since it enhances knowledge and skills (Hemming et al., 2003; Morgan &Westmoreland, 2002; Ranse, 2006).

According to published studies, debriefing sessions can be critically crucial for nurses being a helpful tool stimulating and enhancing post CPR evaluation (Couper & Perkins, 2013; Ranse & Arbon, 2008; Sjöberg et al., 2015). However, some other studies (Bledsoe, 2003; Smith & Roberts, 2003) report controversy over debriefing benefits and risks. Nurses have expressed positive feelings on CPR's successful performance as an underlying feeling of security, self-worth, and goal fulfillment for saving lives (Lee & Cha, 2018; Sjöberg et al., 2015).

In Ghana, very little research has been published on CPR performance in the hospitals' non-critical care areas. Many studies of CPR done in Ghana emphasize knowledge assessment, perception, and CPR participation among nurses in emergency settings (Akuamoah Sarfo & Osei Akumiah, 2015), maternity wards (Alhassan et al., 2019), students (Asare, 2019), and bystanders (Anto- Ocran et al., 2020). These studies found low level of CPR knowledge among the participants. Afrifa et al. (2021) also explored emergency nurses' basic life support practices and the challenges they face working in the emergency unit in a Ghanaian university hospital. Despite these pieces of information about the knowledge level of nurses, students, and bystanders on CPR being vital for decreasing mortality rates, there is an urgent need to study the lived experiences associated with conducting CPR by nurses in the non-critical care wards of hospitals in Ghana. Failing to intercede in these negative experiences may lead to negative attitudes toward CPR performance, thereby affecting CPR advancement and outcomes and negatively impacting patients' care (Mäkinen et al., 2009). The knowledge from this study will, in turn, have a substantially positive impact on patient care by bringing out recommendations that will physically and emotionally prepare nurses for CPR performance. Important also to the health care delivery system is focusing on non-critical care wards which aim to manage patients for a successful health outcome. Therefore, addressing nurses' lived experiences may empower

nurses to deliver effective and successful CPR procedures to save lives and improve the quality of the client's care in the event of sudden cardiac arrest. In addition, with the increase in the dynamic of contemporary nursing practice in the era of COVID – 19, it will also be necessary to explore how nurses have dealt with CPR during the pandemic in the non-critical care areas.

The study used an exploratory qualitative descriptive approach to identify key themes and issues related to nurses' experience of CPR performance in the non-critical care wards. The thematic analysis focused on understanding data gathered on lived experiences, which accounts for experiences with the research question in interviews and narratives (Sandelowski, 2000). The focus was on disclosing or revealing from concealment nurses' lived experiences in CPR performance in the non-critical care areas since there is a lack of existing qualitative research on Ghana's issue. Knowledge of how these nurses perceive these critical situations is investigated through research that addresses working conditions. Therefore, the study's research question it sought to answer was:

> "What are the experiences of nurses in the performance of CPR in non-critical care wards at the 37 Military hospital in Ghana".

Problem Statement

Cardiovascular diseases rank one of the top two causes of mortality in Ghana (WHO,2017). Nurses spend the most time with patients and are frequently the first to identify or be called during cardiac arrest (Broomfield, 1996) to initiate CPR. However, nurses' experiences on CPR performance in the non-critical care areas in the Ghanaian hospital have received far less attention than expected. The attention has been on CPR knowledge assessment in the hospitals, schools and among bystanders. A study by Akuamoah Sarfo & Osei Akumiah (2015) on knowledge assessment, perception, and CPR participation among nurses in the hospital,

concluded nurses had low knowledge of CPR. Alhassan et al. (2019) also studied CPR knowledge and experience among maternity wards and found insufficient knowledge about neonatal resuscitation. Afrifa et al. (2021) also explored emergency nurses' basic life support practices and the challenges they face working in the emergency unit in a Ghanaian university hospital. Thus, there is the need to study the lived experiences associated with conducting CPR by nurses in the non-critical care wards of hospitals in Ghana. The lack of knowledge about how nurses should be prepared to conduct CPR and cope after the event may lead to negative attitudes toward future CPR performance. This may also have a negative impact on patient outcomes and the nurse's well-being. The study used an exploratory qualitative descriptive approach to explore the nurses' experience on CPR performance in the non-critical care wards at the 37 Military Hospital in Ghana.

The rationale of the study

The study sought to explore the experiences of CPR performance among nurses in the 37 Military hospital located within Ghana. The experiences associated with performing CPR by nurses in the non-critical care wards of hospitals in Ghana has not been widely reported. This is important because there is the potential to reveal situations in the practice of CPR and help inform decision making on conditions to improve CPR practice. The study's findings aimed to identify gaps that can be used within recommendations to address issues in CPR performance by Nurses. It is also anticipated that the study’s findings could contribute to teaching student nurses and provide support in relation to anxiety. The findings also expected to serve as evidence-based findings that will improve nurses' conditions and improve practice influencing the quality-of-care nurses provide to clients, especially in cardiac arrest. CPR Policies and guidelines among nurses

are anticipated to emerge from the study to improve CPR practice among nurses in the 37 Military hospital.

The primary research question was

"What are nurses' experiences regarding CPR performance in non-critical care wards in Ghana?"

Aims of the Study

This thesis aimed to explore, understand, and interpret nurses' lived experiences on the performance of CPR in non-critical care wards in the 37 Military hospital in Ghana. The various factors that influence how nurses are prepared to conduct CPR and cope after the event may be enough reasons to lead to negative attitudes toward future CPR performance.

Study Objectives

1. Explore nurses' feelings associated with participation in cardiopulmonary resuscitation.
2. Probe the psychological or emotional impacts on nurses after CPR performance.
3. Investigate how nurses experience stress and anxiety related to CPR performance.
4. Find out about supports available for nurses during and post CPR performance.
5. Explore avenues or programs that are available for training of nurses on CPR.

Chapter II: Literature Review

This chapter presents what literature has to say and discusses the works about the experiences of nurses in the performance of CPR, how nurses are prepared for CPR and the supports available to them. Conducting a literature review is essential in thesis writing because it provides context by sharing the results of other studies and relating the study to more extensive dialogue in the literature (Creswell, 2014). According to Creswell (2014), a literature review provides a framework for establishing the importance of a study and a standard for comparing the results to other findings. Although the literature review followed the systematic review principles, it was not a true systematic review due to the time and resources available to the researcher. Search limitations have been highlighted and discussed in the next subheading. Literature that would be most useful and valuable for answering research questions guiding this study was examined. There were no records of previous research in Ghana on the experiences of nurses on the performance of CPR in the non-critical care areas.

Literature review method

Peer-reviewed articles, dissertations, conference reports, policy documents and unpublished articles were included in the literature search. Search in all these sources was included because gathering and including studies reported in all publications reduces bias (McKenzie et al., 2019). The search was also limited to literature from the year 2000-2020 because the researcher seeks current scientific evidence (Moher et al., 2010). The search was also limited to only those written in English. Although restricting the search to only those published in the English language could lead to bias, searching and analyzing studies in any language can be expensive due to translation (McKenzie et al., 2019). Databases searched included google scholar, Cumulative Index to Nursing and Allied Health Literature (CINAHL)

and Medical Literature Analysis and Retrieval System Online (MEDLINE) because they contain publications from all areas of health and detailed studies in nursing (Lefebvre et al., 2019). They are also a good source for qualitative studies and contain indexed conference papers and abstracts, making more studies available for further search if needed (Lefebvre et al., 2019). Sources of grey literature such as reports, dissertations, theses, and databases of convention abstracts were searched on websites for information on nurses' experience performing CPR. I included both published and unpublished studies in my searches extensively to reduce the risk of publication bias and identify as much substantial evidence as possible (Higgins et al.,2019).

In CINAHL, I used the search terms cardiopulmonary resuscitation" or cardiac resuscitation," or mouth to mouth resuscitation" or heart massage" or chest compression" AND experience" or perception" or views" or feelings" or belief" or attitude" AND nurses" or nursing'. I combined the search terms using the Boolean operators "OR" and "AND" and implemented a database-specific searches strategy for each database (CINAHL and Ovid Medline). Details of the searches conducted on Ovid Medline and CINAHL can be found in Appendix D and E respectively. A literature search was conducted on google scholar to identify key published studies that explored CPR performance among hospital healthcare workers.

Literature Review Results

The Initial CINAHL search result identified 266 articles, and Ovid, 118. This was followed by scrutinizing the text word found in the title, abstract, and index words used to describe the article. The reference lists of all reports and articles pointed out were searched for added studies, which explains citation of some works done before the year 2000. A total of 56 articles were retrieved from the database of CINAHL, Ovid and Google scholar. Most of the works of literature gathered were on studies done in the intensive and critical care areas. Pieces

of literature on the experiences of CPR performance in the non-critical care areas in the hospital were limited. Table 1 provides a summary of focused areas under which each of the 56 articles retrieved were grouped to provide an overview of literature related to the topic.

Table 1

Literature Search Results

Feelings associated with the participation of cardiopulmonary resuscitation	**How nurses experience stress and anxiety related to CPR performance**	**The psychological or emotional impact on nurses after CPR performance**	**Supports during and post CPR performance**	**Education and training of nurses in the techniques and skills of providing effective CPR**
Badger (1996)	Driskell et al. (1999)	Lee & Cha (2018)	Bledsoe (2003)	Aminizadeh et al. (2019)
Chelle (1993)	Lee & Cha (2018)	Ouzouni, C., & Nakakis, K. (2013)	Clark & McLean, (2018)	Dwyer & Williams (2002)
Dwyer & Williams (2002)	Tschan et al. (2011)		Cole et al. (2001)	Fabius et al. (1994)
Ferreira et al. (2018)	Tramer et al. (2010)		Couper & Perkins (2013)	Flint Jr et al. (1993)
Gamble (2001)			Drotske &De	Gabbott et al.

		Villiers (2007)	(2005)
Hogan (1990)		Edelson et al. (2008	Hamilton (2005)
Hunziker et al. (2011)		Ireland et al. (2008)	Handley & Handley (2003).
Larsson & Engström, (2013)		Magyar and Theophilos (2010)	Hunts et al. (2014)
Laws (2001)		Perkins et al., (2011).	Källestedt et al. (2012),
Mastey & Cole, 1992		Ranse & Burke (2015	Kozamani et al., (2012)
Rajeswaran (2009)		Ranse & Arbon (2008)	Kutzin & Janicke (2015)
Ranse & Arbon, (2008)		Ross – Adjie et al. (2007)	Lemke et al. (2019)
Sjöberg et al., (2015)		Salas et al. (2008)	Mäkinen et al. (2009)
Tramer et al. (2018)		Samter et al. (1993)	Marzooq & Lyneham (2009)

Vincent et al. (2020)			Smith & Roberts (2003)	Mortell (2009).
Vindigni et al. (2017)			Sjöberg et al. (2015)	Nori et al. (2012)
			Travers et al. (2010)	Peterson (2006)
			Troiani & Boland (1992)	Rajeswaran (2009)
				Wadas (1998)
				Wayne et al. (2006)
N= 16	**N= 4**	**N= 2**	**N= 18**	**N= 20**

The following sections of the literature review provide an overview of the published evidence regarding the experiences in the participation of CPR in the hospital by healthcare workers. The literature was focused on five areas as

1. "Feelings associated with participation in CPR",
2. "How do nurses experience stress and anxiety related to CPR performance",
3. "The psychological or emotional impact on nurses after CPR performance",
4. "Support during and post CPR performance",
5. "Education, and training of nurses in the techniques and skills of providing

effective CPR".

Feelings associated with the participation of cardiopulmonary resuscitation

There were 16 studies that reported on the feelings associated with participation in CPR. Studies found were conducted in Sweden, Australia, Botswana, America, Switzerland, and Brazil. Although there is the difference of context of the practice of Nurses in the countries where the studies have been done, the feelings of individual irrespective of geographical location plays a relevant role in practice. Even without a patient's subsequent death, participation in CPR can be a stressful event that nurses experience (Vindigni et al., 2017). Rajeswaran (2009), in a thesis work conducted in Botswana, confirmed that participation in medical emergencies such as CPR increases the instinctive flight-or-fight response automatically generated in human beings under extreme pressure. This instinctive reaction contributes substantially to creating and maintaining dysfunctional levels of stress and anxiety in health care personnel who are required to deal with life-threatening emergencies (Rajeswaran, 2009). Studies have also reported that nurses experience physical and emotional stress when performing CPR (Gamble 2001; Laws, 2001 Ranse & Arbon, 2008; & Sjöberg et al., 2015; Vincent et al., 2020). Sjöberg et al. (2015), in a Swedish study, found that performing CPR is stressful and chaotic. They suggested that one nurse should take the lead to delegate roles during CPR to reduce confusion and create order. In addition, studies have shown that limited time to prepare for CPR affects health professionals' anxiety and stress (Chelle,1993; Larsson & Engström, 2013).

Laws (2001), in a study of critical care nurses in Australia, concluded that a wide range of emotional and physical stress had been experienced after performing CPR. Other factors contributing to creating and maintaining high stress levels in emergencies included organizational deficiencies and problems and various technical and environmental factors (Laws

2001). Badger (1996), in his paper, attributed the high level of stress that nurses experience to their instinctive feeling. Thus, nurses are responsible for the welfare of dying patients and are concerned that any fundamental error during the administration of CPR might result in the death of a patient. According to Badger (1996), such feelings of stress and anxiety are enormously magnified in nurses who find that they cannot operate the equipment at their disposal during some emergency. This is because some of the equipment has not been adequately maintained, serviced, and periodically certified as being in good working order and ready for immediate use.

According to Cole et al. (2001), the source of anxiety in critical care nurses arises from stress generated by a conflict within the individual or by a conflict between the individual concerned and some other source. Their study among ICU nurses in the northeast USA posited that stress and anxiety were routinely associated with failed resuscitations and delays in initiating resuscitation (Cole et al.,2001). Thus, resulting in frustration, anger, guilt, helplessness, and a sense of professional failure in emergency care personnel. Many nurses unconsciously resort to restructuring their role expectations and decreasing their involvement in their clinical roles by distancing themselves from their involvement in the very emergencies for which they are responsible (Cole et al., 2001).

Nurses also express insecurity about how CPR was managed (Ferreira et al., 2018; Hogan,1990; Hunziker et al., 2011; Mastey & Cole, 1992), especially when CPR was not successful. In a study conducted in Brazil, Ferreira et al. (2018) revealed that healthcare workers experience challenges such as anxiety, insecurity, and loss of concentration during CPR, especially with the presence of family members. Previous resuscitation experiences, feelings of insecurity about how past cardiac arrest situations have been handled, and feelings of guilt, inadequacy, shock, and grief can all influence CPR performance (Dwyer & Williams, 2002). In

addition, a positive or negative attitude towards the survival rates of in-hospital arrests determine the quality of a nurse's intention to perform any future CPR (Dwyer & Williams, 2002).

Correlation has been found between gender and stress in the performance of CPR. In an observational study in a simulator Center of the University Hospital in Basel, Switzerland, by Tramer et al. (2018), females have shown an overall stronger reaction than males regarding electrocardiogram (ECG) changes in CPR performance. In addition, higher stress and negative emotions associated with resuscitation have been perceived more in females than males in a study by Hunzinker et al. (2011) in Switzerland.

How do nurses experience stress and anxiety related to CPR performance?

From the search, four articles revealed details on how nurses experience stress and anxiety in CPR performance. The studies found were conducted in South Korea, the United States of America, and Switzerland. Participants in a South Korean Hospital felt their hearts pounding because of the stress of performing CPR on patients with little information and deviating from routine care (Lee & Cha, 2018). Due to the tense atmosphere of CPR in addressing the life and death of patients, participants became sensitive and emotionally rude toward other health professionals who performed CPR with them and with the families of patients (Lee & Cha, 2018). Participants have become emotionally hurt because of the authoritative and harsh tone of voice used during CPR, making them perceive the situation negatively. According. to Lee and Cha, participants who had emotional difficulties during CPR suppressed their emotions, and after work, tried to relieve emotions.

A study among US navy technical school personnel by Driskell et al. (1999) concluded that during CPR performance, stress might lead to a loss of team perspective and favour only the individual perspective. Thus, the distribution of tasks among team members during CPR

performance has witnessed shortcomings due to the experience of stress (Driskell et al., 1999; Tschan et al., 2011). Tschan et al. (2011) explained that task switching and switching attention between the group level and the individual during CPR could be associated with increased mental demand. In Switzerland, a study by Tramer et al. (2010) found that stress-induced by CPR performance led to heart rate variability among healthy medical students. The medical students' ECG results showed that students have suffered from autonomic cardiac dysregulation and acute myocardial stress performing CPR. Considering these findings remains a gap in the literature that fully explores how nurses have experienced stress and anxiety in the non-critical care areas in the hospital.

The psychological or emotional impact on nurses after CPR performance

Two articles were retrieved for the psychological and emotional impact on nurses after CPR performance. While performing CPR, participants experienced psychological difficulties, such as performing CPR without knowing patients' free will, according to an ICU study by Lee and Cha (2018) in South Korea. Ouzouni and Nakakis (2013) also conducted a study in Greece on the attitude of nurses toward an attempted suicide. Nurses in their study experienced psychological conflict in performing CPR because they have little information about the patient or when a patient has repeatedly attempted suicide (Ouzouni, C., & Nakakis, K. 2013). The findings in these studies have suggested that nurses experience psychological or emotional impact in performing CPR on patients with specific conditions. Further studies are needed to investigate the emotional or psychological burden nurses have experienced after performing CPR in non-critical areas in the hospital.

Supports during and post CPR performance

From the articles retrieved, eighteen articles were centred on supports during and post CPR performance. Most of the studies found were conducted in the USA, South Africa, United Kingdom, and Australia. According to AHA (2020), debriefings and referral for emotional support follow-up for lay rescuers, EMS providers, and hospital-based healthcare workers after a cardiac arrest event may be helpful. Hospital-based care providers may suffer the emotional or psychological effects of caring for a patient with cardiac arrest (AHA, 2020). For example, a study in the northeastern United States by Cole et al. (2001) noted an extremely high incidence of stress and anxiety among nurses. They recommend that nurses alert their hospital administrators or colleagues to the need for professionally designed interventions such as debriefing and counselling sessions conducted by professional counsellors. According to Cole et al. (2001), such measures will undoubtedly improve the stability and satisfaction of nurses who work in hospitals and improve productivity, job satisfaction and staff morale. Drotske and De Villiers (2007), in a study of nurses in a South African accident and emergency unit, posited that debriefings or post-resuscitation discussions should create a safe space for expressing candid opinions about personal and collective flaws. They further emphasized facilities selecting preferred measures that might achieve better CPR outcomes. A study by Edelson et al. (2008) in a university hospital also demonstrated that an integrated debriefing program based on actual resuscitation performance effectively improves CPR quality and patient survival from in-hospital cardiac arrest.

Most nurses have emphasized the need for immediate debriefing post CPR performance to seek personal needs of reassurance and validation, and professional needs to improve professional practice (Clark & McLean, 2018). According to Clark and McLean (2018), nurses working in acute adult wards in a hospital in the United Kingdom recognized that personal and

professional needs are reached by debriefing at varying times after a cardiac arrest. The nurses expressed professional needs to use the experience to learn and improve practice, and personal needs for reassurance and validation. Also, a review by Couper and Perkins (2013) provided a view of the effectiveness of debriefing interventions by distinguishing two approaches to debriefing based on the delivery timing. Hot debriefing, which takes place directly after the CPR, focused on the incident and team performance issues, the pace of resuscitation team response and equipment availability. Cold debriefing implies debriefing occurring at a later date. Cold debriefs focus on objective performance such as defibrillator recordings and on improving performance and patient outcomes.

Post-event debriefing after CPR performance in both military and aviation practices in the USA has shown the evaluation of challenging situations for future improvement on CPR performance (Samter et al., 1993; Troiani & Boland, 1992). It is anticipated that post CPR debriefing will also report any health system factors that may require addressing to improve CPR quality (Perkins et al., 2011). An Australian study by Ross – Adjie et al. (2007) found that debriefing is absent or not offered consistently and, when done, could be inadequate. The nurses believed that debriefing after resuscitation should be compulsory and undertaken by trained professionals with debriefing or counselling skills. The absence of opportunities for debriefing in clinical practice may echo the limit to the implementation of debriefing. Time pressures within acute care areas and unclear guidance and policy may hinder engaging in long debriefing exercises after critical incidents (Salas et al., 2008). Similar to a study in the United Kingdom by Ireland et al. (2008), a review by Magyar and Theophilos (2010) has also reported no formal debriefing policy or guidelines. Thus, debriefing occurs when it is necessary with no formal guidelines and little evidence of effectiveness.

According to published studies, debriefing sessions can be critically crucial for nurses being a helpful tool stimulating and enhancing post CPR evaluation (Couper & Perkins, 2013; Ranse & Arbon, 2008; Sjöberg et al., 2015). In addition, AHA (2020) has emphasized that team debriefings may allow review of team performance such as education, quality improvement and recognition of the natural stressors associated with caring for a patient near death. However, some other studies (Bledsoe, 2003; Smith & Roberts, 2003) report controversy over debriefing benefits and risks. For example, according to Bledsoe (2003), stress-related symptoms may worsen following debriefing; as such, Ranse & Burke (2015), in a study of first aid volunteer members in Australia, suggest participants individually develop a coping mechanism by engaging with colleagues, friends, and family immediately after the CPR event for discussions.

Fundamental to a successful resuscitation system of care is the collective acknowledgement of the challenges and opportunities presented by the Chain of Survival. Thus, individuals and groups must work together, share ideas and information, to evaluate and improve their resuscitation system (Travers et al., 2010).

Whiles relevance has been attached to the subject of support in most advanced countries where the studies were conducted, Ghana has no known data on support available to nurses after the performance of CPR. Therefore, the need to explore the supports and activities available to nurses in non-critical care areas after performing CPR.

Education and training of nurses in the techniques and skills of providing effective CPR

From the literature search, 20 articles focused on the education and training of nurses in the techniques and skills of providing effective CPR. Studies found were conducted in Iran, England, South Africa, Sweden, Bahrain, United Kingdom, and Finland. Although all nurses received CPR training during their study in the university, most of them lack CPR cognitive

knowledge and skills (Nori et al., 2012). Thus, trained healthcare professionals responsible for responding to cardiac arrest or who would be expected to deal with sudden cardiac arrest in the ordinary course of their work do not retain their Basic Life Support (BLS) skills (Handley & Handley, 2003). For this reason, emphasis has been made on the necessity of periodical training because of the weak retention of CPR knowledge (Flint Jr et al., 1993; Handley & Handley, 2003).

Only nurses who have learned everything they need to know about the correct administration of CPR are in a fit state to administer CPR wherever required (Rajeswaran, 2009). Källestedt et al. (2012), in examining changes in behaviour among nurses before and after CPR training in Sweden, found that pieces of training significantly influenced attitudes. Training also reduced anxiety among the nurses and assistant nurses. Contrary to the previous study, Wadas (1998), in an American study, had found that despite the annual training, staff reported that they felt anxious and uncomfortable when there were required to handle resuscitation situations. CPR learning is acquired through in-service education and training, real-life situations, annual certification of proficiency in CPR, and participation in refresher workshops or classes (Rajeswaran, 2009). In a Bahrain study, nurses expected institutions to provide learning opportunities for CPR rather than assuming responsibilities themselves (Marzooq & Lyneham, 2009). Accordingly, hospital leaders should ensure that all their staff receives training in resuscitation (Gabbott et al., 2005). In a panel discussion in the USA, Flint Jr et al. (1993) stated that although hospitals and employing agencies are responsible for assessing and ensuring competencies of individuals in CPR, awarding course completion cards by accredited agencies conducting BLS training is also essential.

The mode of training available for CPR training was also identified to influence CPR training. Peterson (2006), in an American study, explains that computer-based training can be as effective as a traditional educational method for teaching CPR. A mastery learning and deliberate practice model in resuscitation training have shown successful improvement in CPR practice among second-year residents in northwestern university in America (Wayne et al., 2006). In addition, computing and Video self-instruction for training in CPR has been shown to improve competence in resuscitation (Hamilton, 2005). An Iranian study concluded that using electronic education as a training method combined with the traditional method has played an essential role in determining CPR skills (Aminizadeh et al., 2019). Aminizadeh et al. (2019) found that emergency medical technicians preferred the electronic education method because of its learner-oriented method, interactive training, flexible availability and providing an equal learning opportunity for an intermediate technician. Contrary to the findings of Aminizadeh et al. (2019), Fabius et al. (1994) concluded that computer-aided training was less preferred because it is time-consuming compared with the traditional lecture style, which favours nurses' CPR training.

The use of dummies in CPR simulation training has also been of value to most nurses in urban and rural hospitals in Greek because they increase nurses' knowledge and confidence (Kozamani et al., 2012). According to Kozamani et al. (2012), these workshops have not been proven to impact levels of anxiety and worry nurses face in real situations requiring CPR. The study also concluded that the main factor that affects the attitude of nurses from initiating CPR is the lack of training. Furthermore, research done in Finland among nurses working in a medium-sized secondary hospital argues that scenario practice on dummies does not address all CPR situations' concerns, especially the emotional experience, aside from the theoretical-practical-ethical gap it addresses (Mäkinen et al., 2009; Mortell,2009).

Although learners' have classified the worth of rapid-cycle deliberate practice sessions, complaints of tiredness are associated with the high energy needed to practice (Hunts et al., 2014; Kutzin & Janicke, 2015; Lemke et al., 2019). In their article, Dwyer and Williams (2002) noted that nurses are generally pessimistic about attending resuscitation training. According to the study by Marzooq and Lyneham (2009), among nurses in Bahrain, nurses lacked the motivation to update their knowledge. Most of the nurses were unable to answer questions that might affect patients' survival and CPR outcomes. The reasons for their reluctance may be the perceived clinical credibility of the teacher, the particular style of the teaching methods and the general lack of enthusiasm of nurses towards any clinical updating or refresher courses (Dwyer & Williams,2002). In their paper, Dwyer and Williams (2002) concluded that nurse educators should design new interventions that will address issues that arise from changing attitudes, reinforcing skills, and keeping nurses abreast of the latest.

Summary of Findings from Literature Review

The literature review identified a number of trends in the experiences of nurses in the performance of CPR. These have been described in detail with the qualitative, descriptive, quantitative and exploratory studies that have been described above. These studies have described the psychological and physical stress most nurses go through in the performance of CPR. Literature review on what is currently known on training types and preferences were also explored. There were also similarities from the review above irrespective of the countries of studies such as lack of support structures, omission of debriefings and lack of refresher training on CPR.

The main aim of CPR is to restore cardiac and respiratory functions. Any shortfalls in the nurse’s ability to prepare for the procedure physically and mentally could have a devasting

outcome on patients who suffer cardiac arrest and need CPR in the ward. Studies need to be conducted in Ghana to explore the experiences of nurses on the performance of CPR in the non-critical care wards. How the nurses in the general wards should be prepared to conduct CPR and cope after the event is vital towards future CPR performance.

This study explored the feelings associated with participation in CPR and how experiences have influenced how these nurses performed the procedure, which ultimately aimed to preserve patients' lives and improve the quality of the client's care. The study used an exploratory qualitative descriptive approach to explore the nurses' experience on CPR performance in the non-critical care wards at the 37 Military Hospital in Ghana. The following chapter will describe the methodology the researcher adopted to study the phenomena.

Chapter III: Research Design and Methodology

This chapter describes the research methodology that supported the research process and the results' analysis and interpretation. It describes the research setting, the sample, the techniques used for sampling, the process of data collection, how the results were analyzed, and the ethical principles that guided the research.

An exploratory qualitative descriptive design was used for the study to collect data using semi-structured interviews targeting nurses' experiences performing CPR in the non-critical care wards in the military hospital. The qualitative descriptive study is a valuable methodological approach which produces knowledge and is the method of choice when straight descriptions of phenomena are desired (Sandelowski, 2000).

Research Setting

The study was conducted with nurses working in the non-critical care areas in the 37 Military hospital in Ghana, West Africa. The hospital's primary objective was to serve military personnel and their families; however, they now serve civilians. The hospital has a 400-bed capacity with ten non-critical care wards and five critical care wards. The Military hospital is widely known in Ghana's healthcare setting for receiving patients with cardiac and respiratory problems. It also serves as a referral destination to most hospitals from nearby regions of Ghana for specialist care. The nurses practicing at the Military hospital are of diverse backgrounds with experiences from different nursing training schools and other health institutions. In addition, some of them, in one way or the other, have participated in CPR. These qualities made the study findings fit into transferability to the health care setting in Ghana. Transferability occurs when research findings are useful to individuals in other settings by determining how applicable the findings are to their situations (Polit & Beck, 2012).

Sampling and Data Saturation

Saturation occurs when interviewing for new data does not provide a different aspect of the phenomenon under investigation (Bernard & Bernard, 2013). When no new information is being gathered from the interviews, then data saturation is reached. It has been suggested that data saturation may indicate the optimal sample size (Guthrie et al., 2004; Sandelowski, 1995). By definition, saturated data ensures replication in categories, verifying comprehension and completeness (Morse et al., 2002). Four general approaches to deciding qualitative sample size have been suggested by Sim et al. (2018). They include rules of thumb, based on a combination of methodological considerations and past experience, conceptual models grounded upon specific characteristics of the proposed study, numerical guidelines originating from the empirical investigation and statistical formulae, based on the probability of finding a sufficient sample size. Given the scope and area of this study, I grasp both the conceptual and numerical approaches to establish my sample size of 11 participants. Under the conceptual model, Sim et al. argue that sample size in qualitative research could be determined by the study's specific characteristics. For example, its aim, its underlying theoretical framework, and the type of analysis intended. Morse (2000) explained that the sample size depends on the nature of the topic. The clearer the nature of the topic, the smaller the sample size and the quality of the data. In a current study, Malterud et al. (2016) suggested that sample size can be determined as the 'information power' that a particular sample holds. The information power is subjective to the specificity of the sample, interview quality, and the analysis approach. The more the participants fit into the study's aims, the smaller the sample size. The richer the conversation in the

interviews, the smaller the sample size. The analysis approach targeting in-depth analysis would require few informants.

Another popular approach to determining sample size in a qualitative study is the numerical guidelines (Sim et al., 2018). Guest et al. (2006) noted that a few interviews could be conducted to reach data saturation, as low as six interviews, depending on the population's sample size. Guest et al. (2006), in their influential study of West African women, used 60 interviews to decide the level of saturation as it occurred during a process of thematic analysis. Saturation was considered to occur within 12 interviews, a figure they suggest could be used for future studies. The transcripts of the first six interviews were examined based on Guest et al. (2006), revealing that six interviews offered ample data to support their themes. No new issues were brought out during the second part of the interviews. As such, I stopped conducting further interviews. Ando et al. (2014) examined saturation in the context of thematic analysis. They concluded that all the themes, and more than 90% of codes emerged from 12 interviews. Thus, recommended 12 as a sufficient sample size for thematic analysis with higher-level concepts. A large sample size does not assure that data saturation will be attained, nor does a small sample size, but it is what makes up the sample size (Burmeister & Aitken, 2012).

The population from which the sample was drawn were nurses who have been practicing in non-critical care areas at the Military hospital and have actively been involved in CPR performance in the non-critical care environment. Actively participated in CPR implies taking up a role such as external cardiac compressions, assisted ventilations, assisted defibrillation, and administration of medications in an occurred cardiac arrest. Nurses who did not play active roles such as observing or passing items to doctors were excluded from the study. The non-critical care environment includes all clinical areas of the hospital, aside from those where patients are

monitored continuously, such as the emergency departments, critical or resuscitation areas, operating theatres, and the intensive care units.

Purposeful sampling was used to enroll nurses who have participated in CPR performance in the non-critical care ward. Participants were looked for based on their broad general knowledge of CPR or those who have undergone the experience of delivering CPR (Morse & Field, 1995). In obtaining a purposeful sample, the researcher selected participants according to the study (Morse & Field, 1995). Social media platform such as WhatsApp was used to disseminate information and select study participants. Snowballing was also used to recruit study participants by asking nurses who have participated in CPR to refer colleagues who have performed the procedure to me. Snowballing was used because it allows access to study participants who are difficult to be located even though they meet the required study characteristics (Sadler et al., 2010). In this method, an existing study participant refers future participants or an associate with similar characteristics that fit the study (Sadler et al., 2010). A qualitative study aims not to recruit the entire population that fits the inclusion criteria but instead provides a situational perceptive (Morse & Field, 1995) of the study cohort. This will provide insight into the lived experience of the nurses who participate in CPR within the non-critical care area.

Data Collection Methods

Semi-structured interviews were used to collect data. An interview schedule was developed based on open-ended questions and not restricting the respondent's choice of answers (Gubrium & Holstein, 2002). The rationale was to arrange an atmosphere to facilitate discussions on topics in detail between the interviewer and interviewee. The interviewer can utilize the

interviewee's signals to help direct them into the topic area of the research, thus being able to gather a more in-depth or detailed data set (Creswell, 2018; Patton, 2002).

Before the actual data collection, I conducted a pilot interview on three nurses to test the questions to determine whether there is a need for modifications or improvements. The interviews were conducted on zoom at a time convenient for the participant and recorded. The duration of the interviews ranged from 30–45 minutes. The interviews were recorded using audio recording since it helps get the material written down accurately and retrievable (Hove & Anda, 2005). Audio recording also ensures that the interviewer can concentrate on what is being said instead of taking notes (Hove & Anda, 2005). The interviews used question techniques such as probes and prompts (Robson, 1993), which started with a broad question: 'what is it like to participate in CPR? How nurses experience stress and anxiety after performing CPR. Other questions focused on nurses' feelings following a CPR situation, the emotional or psychological impact of performing CPR, their support, and questions about their training. After each question, I posed follow-up questions to allow the informants to elaborate, such as 'Can you tell me more?' and 'What happened after that?'. Recorded interviews were transcribed into written form to be studied in detail and linked with analytic coding (Stuckey, 2014). Sounds, cut offs and hesitations were represented with dash.

Data Analysis

Thematic analysis was used to analyze the interviews. This technique systematically identifies, organizes, and offers understanding into themes across data (Braun & Clarke, 2006). Using thematic analysis, researchers identify and make sense of shared meanings. According to Braun and Clark (2006), codes and themes are derived from the contents of the data, and that is what the researcher maps during the analysis of the data. The most widely used procedure in

qualitative analysis is to develop an inductive coding scheme based on actual data (Elo & Kyngas, 2008). There are six key stages to qualitative data analysis in thematic analysis: familiarization, generating an initial code, searching for themes, reviewing potential themes, defining and naming themes, and producing the report (Braun & Clarke, 2006). In using Braun and Clarke's guide to thematic analysis, the transcript was familiarised by listening to the audio several times and reading through the transcript twice after transcription was done. Whiles reading through transcript comments were made by taking notes. The next phase entailed making initial coding to the entire transcript using colour codes. This was to ensure that coding was assigned to information gathered during the interview.

As a nurse who have worked in the non-critical care ward and in CPR, I was aware that when interviewing the nurses, I needed to remain unbiased. To achieve this, I maintained my position as a nurse researcher throughout the data collection and analysis process, setting aside my personal opinions and reactions as a registered nurse. I listen to participants share their experiences without letting my personal opinions influence what they say. Although this fact was a challenge, continuously referring to my reflective journal helped me to separate my own experiences from what I was seeing in the data.

Rigour

According to Lincoln & Guba (1986), for trustworthiness to be ensured, research should satisfy four criteria: credibility, transferability, dependability, and confirmability. I used direct quotations from the participants to indicate the trustworthiness of my results (Polit & Beck,2012). For credibility, I ensured that those participating in the research were identified and described accurately. I asked open-ended questions to allow participants to freely express their experiences when conducting CPR and motivate them to share their diverse views. I also gave

participants the chance to read through some of the transcripts after data collection and encouraged them to remark their accuracy, rectify them as needed, and provide supplementary explanations if seen appropriately. For transferability, I provided findings to nurses who did not participate in the study in a different setting to review the content and determine the extent to which the findings will fit their situation. A complete set of notes on decisions taken during the research was done in the process to ensure dependability (Korstjens & Moser, 2018). To assure confirmability, I shared reflexive writings on the research topic to appreciate prior understandings and experiences of the phenomena (Korstjens & Moser, 2017). I also ensured that pieces of information provided by participants and their interpretation are accurate representations and not invented by the researcher (Polit & Beck, 2012). I organized my interview questions to ask multiple participants the same questions; otherwise, achieving data saturation would be difficult as it would be a continually moving target (Guest et al., 2006).

Ethics

Ethical approval to conduct the research was sought from the institutional review board of the 37 Military hospital and the University of Alberta committee for human research ethics board. I provided participants with a proper explanation and a detailed information sheet about the study's aims, goals, objectives, and ethical considerations, which is crucial and reiterated the need. I obtained participants' informed consent by providing a google consent form that participants had to fill before data collection commencement. Information to the participant to not be obliged to participate or voluntarily decide if they wish not to continue with the study was re-echoed at the beginning of the interviews. Participants were also informed about deciding to answer or not to answer any uncomfortable questions asked (Taylor, 2006). Finally, participants

were informed that discussions and interviews would be recorded, and at a time, there may be the possibility for another interview.

Ethical considerations of confidentiality and anonymity were ensured. In seeking consent participants were guaranteed of confidentiality. Information that was collected was stored on a computer with a password, and consent forms were securely kept and accessible only by me. Confidentiality may be broken if an unauthorized person gains access to the data collected (Denzin & Lincoln, 2000). Anonymity is the means of keeping participants unknown or nameless, and it is essential to protect the rights of the participants. Participant consent was sought on the use of their spoken words for direct quotes during recruitment and at the commencement of the study. I assured participants of anonymity in the studies report by presenting everybody's viewpoint and not to attach their names. Throughout the research, I ensured that the identity of the participants was not revealed. Pseudonyms were used to withhold participants' identities in data collection and presenting the study's final findings. If a participant or a specific event could be traced at the point of data presentation, the data will be withheld from the research (Taylor, 2006)

Chapter 4: Result

In the following chapter, I will present my findings. The characteristics of the study participants will be presented, followed by the major themes of the nurses' experience performing CPR in the non-critical care wards. Appendix F shows some few examples of codes that was created from the transcripts with few excerpts gathered for each code. 98 codes were identified during the initial coding of the first five of the interview transcripts. Some codes were reapplied to the second part of data collected. Remodification of coding was done when all the data was fully coded. For example, the codes 'Informal management style' was used to represent how participants manage stresses. The code was later elaborated to 'self-therapy, self-reflection, self-management' to specify how the participants have specifically managed stresses after CPR. Themes were then generated from the codes that were created. Initial themes generated were 13. Subsequent collapsing and merging of theme ended up with 5 themes. All the analysis was performed manually using Google documents.

Five main themes that emerged from the analysis of the interviews conducted were:

a. Heart of Stone and Heart of Softness
b. Winning and Losing a Battle
c. Emotional and Physical Exhaustion
d. Concentrating on the Moment
e. Resources, Support and Education

Some participants were emotional about sharing experiences about CPR. I had to pause the interview and give participants some time to breathe and voluntarily continue with the interview at their wish. Such information on where to get counselling was part of the information and re-echoed at the beginning of meetings.

Detailed analysis of the themes will be presented below.

Demographic Characteristics of Study Participants

Eleven nurses who work in the various non-critical care wards in the 37 Military Hospital were interviewed. Out of eleven participants 9 were soldiers and three were civilians. It is a military hospital, where there are civilian workers, but majority of my participants were soldiers which is reflecting in my sample. Details of the sample are shown in Table 3. The majority (9/11;81.82%) of the nurses were registered general nurses with no specialty, and two (2/11;18.18%) of the nurses were general nurses who have specialized in critical care. Five (5/11;45.45%) of the nurses have been working at the non-critical care wards for 6 to 10 years, five (5/11; 45.45%) also between 11 and 15 years, and one (1/11; 9.09%) for five years. Most (7/11;63.64%) have performed Ambu-bagging, medication administration, and chest compression during CPR procedures. One (1/11;9.09%) nurse has performed only chest compression, one (1/11;9.09%) nurse has done Ambu bagging and chest compression-only, while two nurses (2/11;18.18%) have performed all the roles in CPR (Ambu-bagging, administration of medication, chest compressions, and defibrillation). The demographic data of the nurses are shown in table 2 below.

Table 2

Demographic Characteristics of Nurses (N=11)

Characteristic of Nurses		**No (N=11)**	**Percentage**
Gender	F	3	27.27%
	M	8	72.73%

	Other	0	0
Age Range = 26 - 40	26-30 31-35 36-40	4 3 4	36.4% 27.3% 36.4%
Specialty	RGN CCN	9 2	81.82% 18.18%
No of Years in Nursing Practice Range = 0 - 15 Mean = 9.9	0 – 5 6 – 10 11 - 15	1 5 5	9.09 45.45% 45.45%
Highest Level of Education	Diploma in Nursing BSc Nursing MSc	1 9 1	9.09% 81.82% 9.09%
Activities performed During CPR	C – Comp Only AB, C- Comp Only AB, AD, C-Comp AB, AD, C-Comp, AED	1 1 7 2	9.09% 9.09% 63.64% 18.18%

Note. AB – Ambu bagging, AD – Administration of medication, C -Comp – Chest Compressions, AED – Automated External Defibrillator. RGN – Registered General Nurse, CCN – Critical Care Nurse

Table 3

Participant Details

	Gender	**Age Range**	**Hospital Area**	**Experience**	**Highest level of education**	**Activities Performed during CPR**
Participant 1	Male	26-30	Medical Ward	6 – 10	MSc	AB, AD, C-Comp
Participant 2	Female	36-40	Medical-Surgical Ward	11 - 15	BSc Nursing	AB, AD, C-Comp
Participant 3	Male	26-30	Medical Ward	0 – 5	BSc Nursing	AB, AD, C-Comp
Participant 4	Male	36-40	Medical Ward	11 - 15	BSc Nursing	AB, AD, C-Comp
Participant 5	Female	31-35	Surgical Ward	6 – 10	BSc Nursing	AB, AD, C-Comp
Participant 6	Male	26-30	Medical Ward	6 – 10	BSc Nursing	AB, C-Comp

						Only
Participant 7	Male	31-35	Medical Ward	11 - 15	BSc Nursing	AB, AD, C-Comp, AED
Participant 8	Male	26-30	Medical Ward	6 – 10	Diploma in Nursing	AB, AD, C-Comp
Participant 9	Male	36-40	Surgical Ward	11 - 15	BSc Nursing	AB, AD, C-Comp
Participant 10	Male	36-40	Surgical Ward	11 - 15	BSc Nursing	AB, AD, C-Comp, AED
Participant 11	Female	31-35	Surgical Ward	6 – 10	BSc Nursing	C – Comp Only

Theme 1: Heart of Stone and Heart of Softness

'Heart of Stone and Heart of Softness' is the theme that represents the feelings of two opposing characteristics. The theme emanated from a term used by one of the participants to describe their feelings associated with CPR participation. "I would say it's a responsibility when there is a need to perform CPR. You know the military aspect toughens you, is not that you have a heart of stone. You have that heart of care but let's say if it didn't go the way you wanted your patient to come back to life. Life moves on; other patients are there who need your care. So, you can't go and be crying" (Participant 6). Looking at the data of the study, this was fitted in some experiences of hard hearts participants explained during the interviews. Participants in the study described their feelings in a binary fashion, which I have grouped as 'Heart of Stone and Heart of Softness.' 'Heart of Stone' represents nurses who remained indifferent to performing the procedure and its outcome. Some nurses have been hard-hearted and not yielded nor attached any emotions during and after performing CPR, especially when unsuccessful.

Although some were hard heartened, they verbalized a momentary sadness that did not affect them in any way. That is, immediately after the procedure, they feel a little bad but brush it off. Thus, having a mixed feeling. Some nurses during the interview were also with soft hearts, which could easily be penetrated or influenced by the happenings of CPR and its outcome. Hence the theme 'Heart of Softness '. These nurses have exhibited negative emotional responses such as sadness, worry and shock about CPR and its outcome.

All the females in the study were soft-hearted. Of the eight men who took part of the study, some of them partly related to their macho gender and their role as soldiers showed a hard heart while some admitted to heart of softness. The years of experience in practice of the participants did not influence how the nurses' feelings have been affected during and after CPR

performance. The age and condition status of clients who needed CPR has also hurt nurses' feelings and impacted how nurses have felt during CPR. Nurses have mostly been emotionally affected when CPR was performed on younger patients and those whose conditions were deemed stable on the wards.

Some nurses with 'Heart of Softness' have been very emotional, shocked, and broken on the inside on the procedure and its outcome. Nurses have been left devasted by the happenings during CPR and the aftermath of the procedure, mainly if the procedure turns out bad. A male participant who was left devasted after performing CPR has said:

> "My emotions, at a point I was really sad, and I was a little bit and more disturbed, though we knew it could have happened but not so soon. We knew maybe he might go in a different way or die, not by this condition. And I don't really know how to put it, but it's so sad that…. Hmmmmm, let's leave it because I have still not recovered from that one (Participant 4)."

Another participant said:

> "Like I'm saying, when you perform the CPR, and you resuscitate the patient, it's a good feeling. Yes, you have done something, a lifesaving process, and it has paid off. However, when the person doesn't also come back, here, you are down. Your spirit goes down. (Participant 3)"

As some nurses have condemned other nurses for showing emotions, some nurses have shared tears showing their soft side for other colleagues to see while others have obscured it from the eyes of their colleagues. Both male and female participants have shown a heart of softness. Although the nurses have carried on their duties, they said they had carried the burden of loss during CPR in their hearts. A female participant said

> "Although I have been working for so many years, I cried. Yeah, I cried …...I… After that incident, it took me three days to get back to my usual self. It really took a toll on me. (Participant 5)"

A male nurse also said:

> "You know, hmmm, like people say nurses are…, people see us as if we don't have feelings. When people lose their relations and cry, the nurses are quiet, and well, they think we have seen it all. But we also have emotions. Losing life is difficult; it's painful. You are really taking care of someone, and the person just has to go like that. It's painful; even though we cannot cry, we are down (Participant 3)."

On the other hand, nurses with the 'Heart of Stone' during the interviews described not being affected or attaching any emotions with the situations of CPR during and after a performance. Some admitted immediate feeling of being down but that last only for a few seconds, and they are back to normalcy. Participants have felt that performing CPR is a procedure and an obligation. As such, performed it and carried on with other duties irrespective of the outcome. From the interviews, only some male nurses were not disturbed by the procedure and its outcome. It was evident from their speech that they were not emotionally affected if CPR was not successful.

> "Personally, I don't attend to patients, and at the end of the whole thing, I get issues and be carrying the issues around. I feel I had to do what I'm supposed to do; I do them, and whichever way it goes, I try to get over it and then move on (Part 7)."

Most of the male nurses who performed CPR without attaching any emotions have linked it to the nature of their job as soldiers. Nurses have felt their military status does not warrant

showing that they have been affected after performing Cpr. Some have also linked it to their gender.

One male participant said:

> "I would say it's a responsibility when there is a need to perform CPR. You know the military aspect toughens you, is not that you have a heart of stone. You have that heart of care but let's say if it didn't go the way you wanted your patient to come back to life. Life moves on; other patients are there who need your care. So, you can't go and be crying. This is a military hospital, and we are not expected to show a lot of emotions when it comes to that aspect.
>
> (Participant 6)."

Another male participant said:

> "I really have tough skin. For me, I'm quick to make assessments and try to put things at the back of me (Participant 8)."

Another participant also said:

> "I'm a man, and I'm a soldier, so sometimes instantly you will feel that sadness, but within a short time, you just get out of it or from your mind. (Participant 9)"

However, other soldiers felt very emotional performing CPR and having an unsuccessful outcome. One participant who also happens to be a soldier said:

> "It is something that's a bit traumatic for me because for some hours or even days, I keep asking myself, what went wrong? What didn't I do right? So, the thought of that thing alone is traumatic enough. Frankly, if you have to go through the thought of what didn't go right for about a day or two, you will realize that the whole scene always plays back anytime you are thinking of what didn't I do right. The whole scene of the CPR, the

> unsuccessful nature of it, then everything comes back. So it's a bit traumatic. (Participant 10)"

Another soldier has said:

> "It's always stressful. You know most CPR patients, our patients who need CPR, don't really survive, so we don't want to get there most times. It's really cumbersome. I don't want to be there. I don't want to see a patient in that state because I would say one out of ten survives in most times out of CPR. (Participant 4)"

Like the females in this study, some male participants have also displayed a heart of softness. A female participant said:

> "You know you've put in all the effort trying to save the person's life, and you realize that it wasn't fruitful, you become a bit sad. I personally become sad and down. (Participant 11)"

Similarly, one male participant said:

> "To me, for instance, when the patient is not able to make it after CPR, I will say my day becomes bad, especially when it happens in the morning; the rest of my day becomes something else. I'm not able to organize myself, it takes a long time to put myself in the right form. (Participant 4)"

Some participants performing CPR in the non-critical care wards have aroused mixed feelings. These feelings have influenced how nurses have approached and performed CPR on the non-critical care wards. The conflicts in feelings associated with the CPR procedure and its outcome have created intensifying sensations that have impacted nurses' lives. A female nurse said:

> "I get carried away with the mixed feeling. I feel drained. At the same time, I feel fulfilled when the patient is able to recover. (Participant 5)"

Coincidentally a male nurse has shared the same experience. A male participant said:

> "Performing CPR comes with some kind of euphoria. It's a mixed feeling kind of thing, and it involves a lot of pressure as well. You need to work under speed. You need to work very consciously. You need to be very mindful (Participant 7).
>
> Life is involved, so it comes with mixed feelings. You get a good feeling when you do it successfully, and the patient actually recovers. You can do it very successfully, but then the patients don't recover. For one reason or the other, the patient does not recover, and it comes with some bad feelings as well. You look at not just the patient passing on, but then you as an individual the effort that you put into it, that just goes down the drain, it kind of comes with bad feelings. (Participant 7)"

The emotions of nurses have also been affected due to patients' age and condition. Most of the nurses said they had felt very sad and moody when the clients they had deemed healthy ended up needing CPR and dying when CPR was not successful. Most nurses felt that the amount of stress and the disappointment they suffered depended on the age and how ill the patients were before the cardiac arrest.

> "You know you've put in all the effort trying to save the person's life, and you realize that it wasn't fruitful, you become a bit sad. I personally become sad and down. And sometimes, it also depends on the state or the condition of the clients before the CPR was performed or before the need for CPR. You know that some of the conditions you are just managing; palliative sort of, so even if it happens that the client passes on, you know that well…, it was bound to happen. So, you've done your part. But in a case where you realize there was a particular client whose condition wasn't too bad. I would say fairly

> stable or stable, and then suddenly the condition changes, and you perform the CPR but ends up in a bad way. When you are done, you feel very sad and emotional, sometimes you even doubt yourself. (Participant 11)."

Another nurse said:

> "You feel disappointed that maybe this condition shouldn't have taken the person's life, especially if the person is young, the person shouldn't have died. Why did the person die? (Participant 6)"

Another nurse said:

> "At a point, I was really sad, and I was a little bit and more disturbed, though we knew it could have happened but not so soon. We knew maybe he might go in a different way or die, not by his condition. And I don't really know how to put it, but it's so sad (Participant 4)."

Similarly, nurses grieved about CPR-related deaths, especially in younger clients with family and children.

> "It was emotional. At the end of the day, we lost the patient, the patient did not make it, and that was quite sad, and you know when you, it is like whenever you lose a patient, it is always difficult. And like a middle-aged woman with family and children, it is always quite a sad situation. So that was something. (Participant 1)"

Gender has influenced how these nurses have dealt with CPR performance. The experiences shared by all females showed a pattern of females being more emotional during and after unsuccessful CPR compared to the males. All the females showed 'a heart of softness'

Although most male nurses did not attach emotions to CPR participation, some male participants were emotional. Military status has also impacted the feeling that came out during and after CPR performance. Some participants shared that their military status has shaped their perspectives and required showing toughness in performing CPR and its related outcome. Despite some soldiers displaying a ‘Heart of Stone’, some other soldiers displayed a ‘heart of Softness’. The age and condition status also contributed to feelings nurses have expressed.

Theme 2: Winning and Losing a Battle

Another theme that arose from the interview was 'winning and losing a battle.' It originated from some expressions made during the interviews with the nurses. Most nurses have target success during CPR because they classify CPR as either winning to save a life or losing to death. Most of the nurses described performing CPR as a 'battle', as in fighting a competitor and defeating them and a 'must-win' event which implies the urgency and importance of the event. This feeling is aroused the moment participants were faced with a cardiac arrest and are performing CPR. There is a feeling of victory during CPR when a patient survives, but when CPR is not successful participants felt, they have lost to CPR. Instances when clients die hours after CPR, participants still feel a win because they had been successful in sustaining a life after the CPR.

Nurses have, during the interviews, described their excitement and loss during CPR performance. Although survival of patients during CPR was not evident, most nurses have performed CPR for a longer duration before declaring a cold because they believe the continuous performance of the procedure could resuscitate patients. Some nurses have raised the concern of causing pains and injury to the clients’ chest walls during the continuous performance of CPR. Aside the fear nurses have, some also expressed the feeling of self-doubt and confidence in the

outcomes of CPR. During the conversations, it was seen that nurses had suffered self-blame for unsuccessful CPR outcomes. For the nurses' conscience not to be burdened, some of them had attached spirituality to the performance of CPR. Nurses have during the interview held the belief that losing to CPR has a divine implication. To most nurses, God is the one who decides if a patient should stay alive and not how effective, or long they performed the CPR. Details from the interviews describing the feeling of 'winning and losing a battle' are presented below.

The excitement and the loss that accompanies CPRs have been experienced by nurses uniquely. The joy of winning and the despair of shock in losing attached to performing the CPR have been described in different ways by the participants. A participant said:

> "I remember one CPR we did. We were able to keep the patient, we got something, we got some pulse, we got some heart, we got some cardiac activity. Then we finally got the patient to the ICU to be intubated, and that felt like a win for that night. It felt like a win, but eventually, the patient passed anyway after a few days at the ICU. But that night, it felt like a win. (Participant 1)"

Another nurse said:

> "To get the patient to record asystole on a cardiac monitor. And doing all your nursing practices, in respect to CPR, making sure you are doing your chest compressions, you are doing your inotropes, you are doing your artificial ventilation by the Ambu bag, and then you are doing the defibrillation to revive the patient who has recorded asystole on a cardiac monitor. It's a wow moment. (Participant 10)"

Some have felt the win overrides the energy that they invested during CPR. A participant enthusiastically stated that:

> "You know, performing CPR is very tiring, but when you are able to get the patient back to life, all that kind of tiredness, you don't know where it passes. Because of the joy and the excitement of getting the patient, that kind of tiredness….. All those around, you become so happy and then those non-medical staff really become proud of us. And ourselves we are very proud of ourselves going there and achieving our aim. So, it becomes a joyful atmosphere. (Participant 4)"

Another participant said

> "You know there is this feeling; you walk about with a very good mood. I wouldn't say with a swollen head, but you have this feeling like today you have been able to save a life. Yes, save a life!
>
> When the patient comes back to life, yes, you are really excited. All your effort has really paid off. But when after everything, all the things you have
>
> done and then the patient doesn't come back to life, the feeling is like a wasted effort. But well…(Participant 3)."

Some participants have described it as:

> "There are few two or three that I have done CPR for them that have survived. That moment you feel happy, you want to check on the patient every five minutes. You want to be with the patient the whole day. You want to do everything extra to ensure that once the person comes alive, he should stay alive. (Participant 6)"

In statements of losing the battle, one participant said:

> "Yesterday we had a CPR procedure for one of our patients, though that one we lost it, but I was really focused ……. I would say we were about four or five performing the CPR, so I went in for about three or four times. All because I wanted that patient to come

> back, but it was sad. And I was all wet, with sweat, a little bit confused. I was really disturbed. So, at a point in time, after everything, the battle was lost. Am just surprised that this boy really got to that stage of chest compressions for us going there and then losing the battle…… But we can't win all the fights. We can fight, but we will lose some. (Participant 4)"

Another nurse has said:

> "So, going to the general ward, I always psych myself that the result of CPR is only two. You either lose the patient, or you revive the patient. In any instance, the first and foremost action that you take is very paramount, that is one. And the action that you take after the CPR has been done is also paramount. So, when you get success with your CPR, how to carry yourself is very important. When you don't get success in CPR how you carry yourself is also very important. So, I always psych myself that the result of any CPR is two. You won't get anything apart from the two. You are either losing the patient or you are reviving the patient. (Participant 10)"

Since performing CPR was seen as competing with an opponent, most nurses have carried out the procedure long enough in the quest of winning at all costs. During the interviews, most of the nurses explained that they had performed CPR for a longer duration with the intention that the client's life would be fully restored.

> "We stood on the man from 3 am to 4:30 am. We did CPR, and we did three sections of the defibrillator. At a point, the patient was so cold we had to put warm water in gloves to put at the extremities just to bring him back. Fortunately for us, with all our hustle, the patient was able to revive back….and subsequently discharged. So, it was a great feeling. It's something that I will never forget in my nursing practice. I have done a lot of cardiac

> resuscitation, but this particular one remains in my head all the time. So, it brings some job satisfaction, and it brings some joy. When you are able to do CPR successfully, and you get the patient revived. (Participant 10)"

Another nurse:

> "You will be pushing, doing the compression. At times when the doctor declares the patient dead, you feel like, no, the patient is not dead, so you want to do the compression for some time to see whether there will be any effect. (Participant 6)"

Some nurses were also worried about the harm they would be causing to the client due to the pressure put on the client's chest during CPR performance. The nurses have intrinsically debated within their minds the negative effects the procedure could bring to the patient. The effects include breaking a rib bone or causing physical bruises. However, nurses have instead performed the CPR than have the patient die.

> "It's really involving, and then having to be putting that sort of pressure on the patient chest walls. Having it at the back of your mind that you might not do it so hard as to break his ribs alone is actually not a good thing. But, well, someone will say it's a necessary evil, so you need to do it. You need to do it to bring the patient back to life. (Participant 3)"

Another nurse also said:

> **"….** if you are compressing, you are not supposed to compress too much to break the ribs of the patient. You are supposed to compress at some level. So, you also have another mixed feeling that am I rupturing the lungs or the alveoli of the patient. (Participant 7)."

A participant during the interview shared how a colleague expressed concerns about how a client would have fared if the client had survived after CPR was performed. The nurse said:

> “I remember one of my colleagues mentioned that "the way we spent so much time doing CPR and trying to resuscitate her if she had even survived how will she have fared. The kind of pains she would have on her chest, how would it have been for her. Would it have been easy for her? (Participant 1)”

Battling with the thought of causing harm to client’s chest during the performance of CPR, participants have also experienced a feeling of unsureness and a sense of inadequacy during and after CPR performance. Nurses have felt their actions during CPR led to the death of patients. From the interviews, nurses have constantly harboured the mind of self-doubt in the previous CPR's they have performed.

> “I was very disappointed, and It was like having success in something for a long time and then getting a bad report with one. It's bad. The thought of what happened, what went wrong, what didn't you do well? All those thoughts come back, and you start asking yourself so many questions. What was the delay? Was there something that could have been done before we identified the cardiac arrest that we didn't do? It leads you to a lot of questions. (Participant 10)”

Other nurses said:

> “Sometimes, you even doubt yourself. Why, is this something that I did wrong? did I not do it right, did I probably waste a lot of time getting my things together, did I not start the procedure well? Or my timing was just too bad. So, you sometimes question yourself when it happens that way. (Participant 11)”

Another nurse has said:

> “Maybe I don't know …. I might not know if maybe, is it that I didn't do it well and it wasn't successful. that's what comes to mind. (Participant 9)

Sometimes you feel like was I supposed to do something that I didn't do? (Participant 7)" Another nurse said:

> "When we win, you know that one is a happy moment, so that one, there is no need for anything. But when we lose the patient, naturally, nobody wants to lose a patient, so at that point, I will be sad. I will be confused, and I will be thinking in my mind what we failed to do or what we are supposed to do (Participant 4)."

The nurses have said they sometimes blame the actions they have performed to cause the client's death. One nurse has said that

> "But when you lose the patient, you become down; you become moody, psychologically you keep thinking, what didn't I do right? What didn't I do? Whether there is something that went wrong, you want to blame yourself for, or maybe learn from it so that next time it doesn't happen again. So, I think that is the feeling I get. (Participant 3)"

Some nurses have felt that past CPR outcomes influence self-confidence and impact future outcomes of CPR. One participant said:

> "Instances where you don't get good results, you are kind of down, and you don't have that morale to go into the next CPR should you be confronted with one. If you are fortunate to get two or three successful CPR's, then the subsequent ones that you will be confronted with you are very hopeful because the previous one has been successful. But when you get them all off, and you are going into another one, you are not that very confident, and you are not that ok. Though you will be going into it with all your effort,

> the previous bad experience makes you not have enough confidence, unlike if you've done it and you are successful, and you are going into another one. (Participant 7)"

Though self-blame of the actions and inactions of participants during CPR has been a source of worry, most nurses attached the procedure and its outcome to spirituality. The issue of spirituality and its relation to winning and losing the battle is further described here. The nurses held different spiritual believes during CPR performance. During the interviews, nurses raised the concern of believing that no matter what one does to save lives, some people must die. With that notion in mind, some nurses performed CPR without having to worry about the outcome. One participant said:

> "You can't save everybody. Some people must go, and when it is time for them to go, no matter what you do, they will still go. That's how I feel. It's painful. It will put me down a little. My emotions will change that whole day, or for some few hours, I will be down, and I will be contemplating what I should have done. Normally, my emotions I'm down, but I reassure myself that it's one of those things. Some will die no matter what you do, so when I get that reassurance, it helps me to move forward. (Participant 3)"

Some nurses believe God knows the reason behind every death, and nothing can be done to stop it from occurring.

A nurse said:

> "Then you feel like you needed to do more, but sometimes we take consolation in the saying that "God knows best" …. And sometimes we encourage ourselves too that we did a good work, but maybe there is a reason why…(Participant 4)."

Similarly, another nurse said:

> "But then we did everything that we could, but then we are not God to ……. Mostly what we say is that God knows best. (Participant 6)"

A nurse shared spiritual believes of how things have turned out to help relieve the fear and anxiety of patients who have witnessed a loss of a roommate who had CPR done.

> "We make them understand that it's not all lost. It's not that we didn't do our best, but the reason is best known to God. (Participant 4)"

Another nurse has also believed that continually performing CPR could bring patients back to life even when doctors have declared a cold. One nurse said:

> "You will be pushing, doing the compression. At times when the doctor declares the patient dead, you feel like, no, the patient is not dead, so you want to do the compression for some time to see whether there will be any effect. (Participant 6)"

Others also believed that life is sacred, and nurses must try at all costs to save clients' lives irrespective of their condition. One nurse said

> "Oh, even regardless of whether the person's time is up, or you think, oh, well, it's God's will, so you should just let the person go, even that you still have to do your part, perform your CPR (Participant 11)."

Feelings nurses experience during CPR have been linked to the joy of winning and the sorrow of losing a battle. In the quest to win CPR, nurses have had to perform CPR for more extended periods irrespective of chances of clients' survival. Performing CPR for a longer duration has been associated with the worry nurses face in the procedure. Nurses have felt worried about the harm the procedure could inflict on the patient's chest. Amid all these feelings, nurses had inwardly suffered from self-doubt and self-blame in the events when CPR was not successful. Most nurses have blamed certain decisions and actions they have performed led to the

unsuccessful outcome of CPR. Some nurses, in contrast, have been influenced positively with self-confidence in the successful outcome of CPR. In order not to carry the burden of loss, nurses have attached spirituality to the outcome of CPR. To most nurses, CPRs outcome remains with God irrespective of nurses' efforts and actions.

Theme 3: Emotional, Psychological and Physical Exhaustion

The nurse's experience performing CPR has influenced their lives in various ways, both negatively and positively. The negative effects constitute emotional stresses, psychological stresses, disappointment, and the physical exhaustion they had faced each time they performed CPR. The positive effects encompass the knowledge acquired and the enthusiasm, passion and confidence that nurses have built from the performance of CPR. Physically, participant have verbalized shoulder and bodily pains and fatigue due to the compressions and running around during CPR. Mentally participants suffered flashbacks of how events unfolded and the loss of clients they have experienced with CPR performance. Even after several some months participants still grieve over the loss of clients after CPR.

Participants have also described how performing CPR impacted their lives, duties, and care to other clients in the facility during and after CPR performance. How the nurses have dealt with family presence during CPR has also been a great source of stress, especially in the subsequent loss of a patient. During the interviews, nurses also stated that the physical energy expended in performing CPR was immense. Most nurses experienced general muscular and shoulder pains in the description of their physical exhaustion.

Despite the pains of disappointment, emotional stresses, physical stresses, and the challenges these nurses face, the nurses have verbalized the positive impact of performing CPR on them. There has been increased knowledge scope and attitude towards CPR performance,

according to some of the nurses. The nurses' emotions and physical exhaustion have been described in the following paragraphs.

During CPR performance, most nurses have held fear and anxiety. One nurse said:

> "Although it's something I do most of the time, the feeling is always new. Fear of the unknown. You hope the patient survives, and with your team members, you want to come out with effective nursing care. So psychologically, it takes a toll on me personally (Participant 5)."

Another participant said:

> "Well, there is the sense of panic because you are at a rush to save someone's life. Someone is about to die, so there is a rush, there is panic and anxiety. You just have to do a lot and a lot will be running through your mind at that time, but you just have to find a way of calming down and then knowing what to do. (Participant 2)"

As the nurses disclosed their experiences, they shared that the manner in which the CPR was performed has also influenced the nurses' emotions in the form of regret and guilt. Nurses have felt that during the procedure, some decisions they have taken have not yielded a good outcome. One nurse said:

> "And I would say we were all taken by surprise, so our organization, our rotating of the chest compressions, was really not organized well. That's another part. Somebody will go in, the next person comes, instead of the third person coming in, the one who went in first will come again, and the resting period is not long. I think next time, we have to reorganize ourselves mostly in rotating and doing the chest compression so that we can; conserve energy, perform it and do it well, and better still, we have to move the bed and

> bring the mattress on the floor. I think that one will give a firm level ground for us to have more accessibility (Participant 4)."

Despite the pressures involved in performing CPR, nurses have verbalized the procedure's positive impact on their lives. Nurses have said they have felt they had impacted the lives of their clients during CPR, especially after a successful CPR. During the interview, one nurse said:

> "I would say that knowing that you were part of a team trying to save a life, that alone is fulfilling sometimes. Because you realize that you have helped and you have really really contributed your quota in the whole procedure, that is in the whole process. You have done your part, so it's fulfilling. Although it doesn't always turn out the way you want it, it's in a way fulfilling because you know that you didn't fold your arms and sit there to see the clients just drift away, but put in your maximum best to help this client, hoping that the person will survive. (Participant 11)"

Another nurse has said that:

> "Well, it has given me that confidence that with CPR, you can revive a patient who is at the verge of losing his/her life. The positive result of CPR is that if a patient is dying, you can revive the person. It is something that is so important, and it is indelible in my mind so much that if I'm talking to somebody about CPR, the first and foremost thing I tell the person is, it's something that can revive somebody who is at the verge of losing his /her life. So that is it. CPR has really impacted positively on me. Because the thought about the positive end result of the procedure is enough for it to be something that I would want to do any day and any time. You are reviving a life back. (Participant 10)."

The good feeling of being able to rescue clients who suffered cardiac arrest was also shared by some nurses. A nurse who said:

> "For me, I know not all cases will CPR be able to rescue, but even not being able to rescue it prolongs that client or that particular person's death time, at least, you appreciate that, if not because of my intervention this patient would have just gone. But with a little CPR, he was able to resuscitate it. He lived for maybe for some time, and eventually, he had to go. (Participant 8)."

Performing CPR has made nurses feel confident about themselves and improved nurses' knowledge about medications used in resuscitation. Participants have said that through CPR, they have learned unfamiliar treatments that would typically not be known with routine care. One nurse said:

> "Well, the CPR'S that I have performed, the ones with the good outcome, has boosted my confidence. I have gained more experience, and it has made me gain more knowledge that helps me to appreciate the fact that every client is unique, and it has sharpened my skill when it comes to playing the role as a team worker, at the same time, it helped me to improve my discretion when relating to patients' relatives. (Participant 5)."

Another nurse has said that:

> "So, with the impact, let's say at the early stage, you didn't get to know some medications like adrenaline because it was not available on the ward. Through CPR, you get to meet something is adrenaline, this is atropine, hydrocortisone ...this is how we give it this time. So, your knowledge is kind of influenced on CPR. (Participant 6)"

Aside from the emotional stresses nurses endured dealing with client loss, dealing with patients' relatives has also been a significant source of stress for nurses. Nurses had also felt very emotional and tense having to deal with the thought of family members, especially when they happen to be around when the patient had the cardiac arrest. Although optimum attention is required during such critical moments, nurses performing CPR have been made to endure psychological pressures.

> "Once a relative is there, what will come into your mind is to do the CPR so that you will end up getting a good result. Other than that, you might not know what to tell the relatives and how they too will feel. Because in the whole scenario, they have seen what he was going through before coming to tell you or whatever. Sometimes you too, you put yourself in their shoes that you have to also do your best before you need to achieve a good result. (Participant 9)"

Another nurse also said in the interview that:

> "They put pressure on you to do at all costs to let the patient survive. Even instances where you can see that the patient is not doing well as in the pupils are dilated, and you can tell that the patient is gone. You still cannot stop and feel you should continue in that the patient will get better, simply because you have at the back of your mind that relatives are waiting for you and know what is going on. So it's very stressful, very stressful, very, very stressful. (Participant 7)."

One nurse also described the feeling as:

> "At that moment, I was telling myself, I have to put in my best effort to resuscitate this patient so that when I come out of the room, I can smile and tell them everything is going

> to be fine. So, there was this tension on me that I really had to put in all the nursing intervention: the right procedure, just to keep this patient alive and come out and tell his relatives that he is doing fine.
>
> The disappointment was so huge. Eeerm do I say I developed cold feet coming out of the room. The feeling was very uncomfortable to make an eye contact with them. Because I was not having good news for them the way I anticipated it. (Participant 5)."

Although the presence of family members had put psychological pressure on nurses, some of them had made conscious efforts during CPR to forget about them and concentrate fully on the patient for a successful procedure. One nurse said:

> "So, we were able to try and push the patient relative, but they were still looking and felt a bit worried. We could see them moving around, so that also felt like a bit of pressure from patient relatives. So I think all these things were sort of sources of stress for us. At some point, we had to, you know, we screened the area. As I said, we tried to move the patient relatives away from the areas as possible, but I mean, you know, relatives they just kept on. They try to always find out what is happening there. I think we tried as much as possible to not let it influence us, but personally, I think that at some point, we even forgot they are there, you know, consciously, but maybe unconsciously, it might have affected our actions as possible. Consciously I think there are times we just forget about them and just work. (Participant 1)."

In contrast, some nurses have not been troubled with family members' thought during CPR performance.

> "For me, I'm not the type who doesn't thrive under pressure. Pressure doesn't come on me in terms of anything I'm doing unless otherwise I'm not good at that or I don't know.

> Whether relatives are there, whether families are there for me, I'm cool because at that time, I don't think about anybody around me. My focus is on my client, what I can do for the client for him or her to be okay. It doesn't matter who is watching. (Participant 8)"

Another nurse said

> "CPR, if you allow anything to distract you, you might not be successful. So as a professional nurse who has psyched yourself up for any situation, I have to be in control. In any case, the thought of the patient's relatives being around will not yield anything, so all our concentration at that moment is on the patient. I don't really focus on the family. I do the procedure as if there are no family members around. I have it at the back of my mind that if it's not successful, how to even break the news is something else. But I don't let that one take the better part of me. I put all those aside, and then at that moment, the patient's recovery or survivor is number one; it is of utmost importance. I forget that the patient relatives are even around. (Participant 11)."

When nurses have deal with family presence during CPR, the outcome of CPR have also determined or influenced how nurses have provided care to the rest of the clients on the ward. The zeal of nurses to provide better care to other clients on the ward, especially after an unsuccessful episode of CPR, was unimaginable. All the nurses had said that after they had performed CPR, especially when it did not go well, they channeled their energy into taking extra precautions and carefully attending to the other patients. Though the nurses' moods were affected, they felt it was worth the pain to provide attentive care to the other client to prevent any pending heart attack.

> "I would rather make myself extra careful with everything that I do for others. Because as I said, I kept asking myself what went wrong? So, for me not to have a repeat of it, I was very cautious and very careful with the way I handled the rest; that is what I really remember. I was down, but I was very careful about what I did for the rest so as not to have a repetition of what happened. (Participant 10)."

When asked about how nurses have felt during CPR performance after they have previous experience of losing a client to CPR. One nurse said:

> "But eerm, you know, it's like eggs, when the fowl or hen lay eggs when you are lucky all of them will hatch, if you are not lucky some will not. So that if I have lost a patient previously, that shouldn't put me down to channel those emotions to another patient. Maybe he might survive, so I should be able to put that thing behind me and then focus on the ones that are living. (Participant 3)."

Another nurse also said that:

> "I have done my part performing CPR, but just that, unfortunately, it didn't go the way I wanted. It ends like that for that patient, so the rest of the patients, you kind of task yourself that you need to do more for them, especially those who need extra care in order to stay alive. (Participant 6)"

Nurses felt focusing on the present patient and the next patient by taking a lesson from the previous unsuccessful CPR is paramount. Interestingly participants have used statements like a famous proverb in the Ghanaian culture, "di33 mboa n'edi no wondi ko, nnaaso di33 aka no y3n bo ho ban". This means that "What the birds have eaten, you should let it go, but what is left must be protected". One nurse during the interview said:

> "The patient that is present now is the one that we can do something about. The other one is history. So, if I'm thinking of the one that is past, I might not be able to help today's patient. So that's what I sometimes tell myself. That one is gone. It's the recent, right now that needs your help, so whatever I can do for this person right now has to be done (Participant 3)."

Performing CPR is a task that requires not only mental energy but also physical strength. Most nurses interviewed said they felt physically drained during and after performing CPR. Nurses have considerably used their muscles in compressions and running around during CPR, leading to the fatigue most nurses have described. During the interview, one nurse said:

> "It is really intensive; everything is very quick during the activity, and sometimes it could be very tiring because you have to perform it for a very long time. For example, we had a very typical case where we had to do CPR for a little more than 20 mins. We had to take turns; it takes a lot of energy and a lot of physical activity. You have to kneel down, position your hands and keep on pumping for a while as you perform the procedure. After a while, one person gets exhausted, and one person has to take over. (Participant 1)."

The nurse has added that:

> "Apart from the fact that it was just tiring, and the lady was huge. Another stressful part was that we had to continuously move around to get the right medications. Because anytime you are not even performing the CPR, it is either you were running around performing the other activities because we were just three people performing the CPR and also taking care of other aspects of the resuscitation, monitoring the person's vitals. We were using the monitors anyway, but we still have to be monitoring a couple of

> things. It is either you were performing the CPR or performing other duties. It wasn't just like after the CPR, you will be relaxed, you are waiting for your turn. (Participant 1)"

Another nurse said:

> "I become stressed when I perform CPR for a very long time. I mean, you change over and over; you become tired, especially when you don't have a lot of people. (Participant 3)"

Nurses have verbalized experiencing physical exhaustion and bodily pains due to making a lot of movements during CPR performance and gathering items needed.

> "You are supposed to compress at some level, so it comes with physical exertion as well as psychological exertion. So after that, you get tired; you are panting, physically you are tired. Some of the mattresses should be even hard enough to be able to perform CPR on them. But then, one way or the other, you might not have it, and so you have to move the patient. So sometimes improvisation comes in, and there's a lot of movements during CPR, there's a lot of movement. Now some of the movement is you are doing the compression one person, don't do the compression, you do the compression, you move away another patient comes to do the compression, you move away another person comes to do the compression, there are a lot of movements. Running to get Ambu bag, medications…. (Participant 7)."

Another nurse added that

> "it's very stressful. Because normally when, for instance, I have personally not done the single handle rescue CPR before, it has always been a team like you are doing this, somebody is with the Ambu bag, where you do the compressions, and they will use the Ambu bag on the patient and stuff. But it's not easy. It's not easy at all because by the time you are done, sometimes your shoulders, your whole body is weak. (Participant 8)."

Participants have shared their emotional and physical stresses in various ways of dealing with CPR due to the urgency required to save clients live during Cardiac arrest. The next theme will highlight how the participants have described the urgency attached to the procedure.

Theme 4: Concentrating on the moment

I coined the theme 'Concentrating on the Moment' during the interview and analysis of the data. There was a common trend of participants describing how they approached the procedure with the urgency they have attached. Some participants described 'adrenaline rush' as causing them to take initial actions without thinking of any further favorable alternatives they would have preferred if it was not under the circumstance. In critical situations such as cardiac arrest, the ability to prioritize and maximize the speed with which care is delivered means the difference between life and death for most nurses. Concentrating on the moment of CPR was passionately expressed by the nurses. The moment nurses had to perform CPR is seen as critical and held in high esteem. Nurses put in the effort to bring back life no matter the challenges they are faced with. From the interviews conducted:

> "Okay. So, when there is the need to perform CPR, you know what is at stake. And what it is, is that life is at stake. This life can be lost. It's a very critical period. An Individual life is at stake as a nurse you are on the ward to save life. Okay. Your ultimate goal is to

> save life. And so if this life that you want to save is in critical condition, it's at stake, it's kind of you are losing it. It gives you that urgency, gives you that anxiety. (Participant 7)."

Another nurse has said that:

> "The first thing that comes to my mind when something like that happens or when I have to perform CPR is I have to try as much as possible to save this patient. This client really needs me now or the most because as you know as nurses, our aim is to save lives. So, knowing very well that someone needs a lifesaving procedure at that material moment, that is what really comes into my mind. That is how I fell. (Participant 11)."

Like what has been said, a nurse also stated that:

> "What comes to mind is the patient's life. I just hope we can make it. You know, it's really exciting when you go in to perform CPR, and the patient survives, and you think yes, you have really done a perfect job, and you are happy. Saving a human life is the actual thing or the reason why I'm in the hospital. So, when it happens like that, I'm really more serious about that. And I put in all the effort and all the arrangements; all those you have to call; we make them to be on standby. So, the seriousness in going into performing CPR is always the number one thing in mind, that we should just get the patient back to life. (Participant 4)."

Adrenaline rush in nurses has also been said to have influenced most of nurses' actions during CPR. Nurses have taken some actions due to the rush in performing CPR before realizing it. One nurse said:

> "Errm, when there is the need for CPR here, there is the feeling of I mean, it becomes like a life-threatening something. The patient is on the verge of death, so there is that

> adrenaline rush in the system to try to do something, whatever it is, to bring the patient back again. Sometimes you want to even start doing it before you get the necessary things that are needed.
>
> (Participant 3)"

Another participant has said:

> "Even though we have been quite successful one or two, sometimes we end up the patient doesn't survive. But personally, I think it is one thing that I've always said to myself that going forward, if there should be any time that I'm to do such a procedure in my ward. I have to ensure that I get a firm surface as it has been stated, or we have been taught about CPR. Basically, that is, sometimes maybe, it is about the rush. And sometimes we will be doing it and in the course of it before I realize that I have started CPR on a patient on a bed, and it's not appropriate. Possibly let's organize the slab and put the person on it. But I starts before I realized that. (Participant 8)"

CPR in the hospital may benefit from healthcare teamwork, including Doctors intensive care nurses, among others. During the interview, most nurses said they had professional limitations in performing CPR roles, such as medication administration. Doctors and intensive care nurses not being readily available on the non-critical care wards has been a challenge for most of the wards, especially in the event of Cardiac arrest. The participants in this study expressed serious reservations about the valuable time wasted in calling doctors during emergencies such as Cardiac arrest. Time to call for help, calling nurses from other wards and a doctor from the emergency to come and assist in performing CPR has been a very stressful and worrying situation for nurses. With the nurses knowing that valuable times that elapsed before initiation

of CPR could lead to poor outcomes. Moreover, most of the nurses have said they could not perform some activities due to professional limitations.

> "Well, there are times that there is a delay when you call the doctor. So you have to keep performing, resuscitating the patient till you get a doctor to come in. You know, as nurses, we work within a certain limitation, you don't go doing things that are not expected of you(Participant 5)."

Another nurse said:

> "If you are calling for a doctor, our place like this, you will be calling for a doctor, and then the doctor is not coming. You will try everything you can, and you know that you are a nurse; you can do this, but you are restricted. So you are not supposed to do this. Sometimes you take the risk in doing it. Sometimes you go like, well, I'm not authorized to do this. So I would have wished that in relation to CPR, the nursing system would improve that some emergency medications would be given by nurses. At least it will help you save some people's lives. (Participant 6)"

Some wards had Doctors responding earlier to their call during CPR. One nurse said:

> "Yes. And at the same time communicating with the doctor. The doctor came in to join in the resuscitation, and eventually, we made quick arrangements to transfer the patient to the intensive care unit. (Participant 5)."

Another nurse said:

> "Initially, the house officer who was around was taking the lead role before those from the ICU came, the doctor from the ICU came. (Participant 4)"

Theme 5: Resources, Education and Support

The theme resources, support, and education came out from the set objectives for the present study. The participants in the present study attributed their stress and worry during CPR to an acute shortage of personnel and the non-availability of equipment. The subject of training and education on knowledge and skill upgrade in CPR was also described by most nurses from different views. Limited training opportunities had resulted in most nurses not refreshing their knowledge and skills on the procedure. In the absence of CPR training, some nurses have suggested using CPR guideline algorithms in the various wards to serve as a procedure reminder for nurses. Nurses have also raised concerns about the lack of support systems that address CPR performances, either successful or non-successful. The participant in the study had bottled up feelings and created informal management approaches to handling the situations they were met with each time they had to perform CPR. The following paragraphs will present three subheadings that emerged from resources, that is personnel, materials, in-service training, and education. CPR guideline Algorithm and informal support structures that emerged from the interviews conducted will also be presented.

Personnel Resources

The inadequate number of nurses in the wards delayed the immediate initiation of CPR during emergencies. Nurses have expressed deep concern about the panic and confusion caused by a shortage of indispensable personnel during CPR. Nurses working in the non-critical care areas have raised concerns about the panicky and anxiety they experience during the performance of CPR. The feeling of stress has been aggravated due to the shortage of

indispensable personal during CPR. The event has been performed amid challenges that nurses have no control over. One participant said:

> "Well, there is the sense of panic because you are at a rush to save someone's life. Panicky in the sense that sometimes you have a shortage of staff. Personally, when I talk about panic, there are cases where we are short of staff, and you find yourself to be alone with quite a number of patience, and then someone needs CPR done. So, that's where personally, sometimes I panic. Getting other people to come quickly help you is that state in which the panic really occurs for me. (Participant 1)"

The feeling of having a good team helps with a successful CPR. Most participants spoke about the importance of working in a team and having a leader during resuscitation. One participant said….

> "I think one of the best support structures that I can mention is that in my ward, we always have an ICU nurse available, so there is always some sort of a lead when it comes to CPR, that is my ward, and ICU nurses are really good at CPR, so they always take the lead. They show if you are doing something wrong they will tell you that do it this way, do it that way and you know for we general nurses, that really is a very strong support for our side and that is a major support that I think I could identify right now. (Participant 1)"

Another nurse said:

> "Yesterday for instance, I had a great team, and when it happens like that, you are more positive of the outcome. But when the team you are working with, some of the members are sluggish, as if they don't know what they are about, you have to say everything, and it makes it quite challenging. (Participant 5)"

One participant has said that he thinks disorganization and lack of coordinated activities during CPR have not helped with the procedure's outcome. When asked if they had a lead role, a participant said

The participant said:

> "For the lead role, I would say yes, we had one, the house officer was there. At a point in time, then the doctor from the ICU also came too. But their focus was on the intubation. (Participant 4)"

Material Resources

The participants in their various interviews have said they became deeply anxious during cardiac arrest events because of the non-availability and lack of functional equipment. Unavailability of items needed for CPR and nurses running to the ICU makes performing the procedure very stressful for nurses.

> "When a person arrest, we should always have access to everything; almost every ward should have an Ambu bag, defibrillators, emergency drugs just being accessible. Because I remember the last CPR, we had to keep on running to our ICU to get back to the ward to get some of these things, and this was a bit stressful. It would have been nice to get some of these things. I don't know whether it would be possible to have all these things in just every ward so that in the event of such emergencies, we could just have access to them and use them. (Participant 1)"

One nurse said:

> "We don't have pre-packed items to use on the patient, so you have to go and search these items one after the other, put them together and then use them. So sometimes that brings some stress because when you have prepackaged items, you can just get that and go and use it on the patient. But when you have to pick, go get an Ambu bag, go get an oxygen mask, go get a flow meter for oxygen one after the other by the time you attend to the patient, your time is gone. So those things cause a lot of stress. (Participant 2)"

Similarly, a nurse has said:

> "And sometimes the materials you need, an Ambu bag you have one, but it's borrowed by another ward then it becomes a problem. So you can't use the Ambu bag. Like I said, I will be stressed when maybe I'm not getting the right tools for the job. You know at the end of the day, you perform CPR, and when you need the items to assist you, you don't get them, so it's like pouring water in a basket. Everything goes in vain. (Participant 3)"

The wards that had the equipment noted that some were not functional as well.

> "Yesterday, for instance, we ran out of a medication we quickly had to run out to a different unit to get it. And the Ambu bag, one of the team members had to bring all the Ambu bags; we have three at that section of the ward. We had to bring all the three to be sure which one was functioning well. (Participant 5)"

Another nurse also stated that:

> "There was one time for instance, that we were performing the CPR and then realized that the Ambu bag was not even good enough. We had to run around. We were using ours all right, but it wasn't the best, so we had to run around, just looking for a very good one. (Participant 11)"

Poor equipment quality was also a source of emotional stress with performing CPR. Almost all the participants raised concerns about the lack of adequate bed types necessary for effective CPR performance. Although most of the hospital's beds are not suitable for resuscitation, some wards have mattress boards that help them to provide effective CPR. One nurse said:

> "A lot of our beds are just not just good for CPR. They are not just adequate enough, you can't perform effective CPR on some of the beds we have. This is one of the major concerns and major challenges with last the last CPR I performed (Participant 1)."

Another participant has said:

> "And also, I would say you know our hospital beds, they are a form of a little bit of spring-loaded, or the mattress itself, so if we could really get…. Though we used a board under the mattress to absorb some of the spring effects of the beds. Those are really the challenges that we really have. (Participant 4)."

It was also noted that some wards did not have a board to support the mattress base to perform effective CPR.

> "We don't have a board. I think these are some of the things we really have to sit down and talk about after a CPR section. (Participant 5)."

In contrast to the above findings, one ward had many boards to manage multiple CPR should it occur.

> "For the……ward, we have about four planks. It means that at a time if four patients are going into cardiac arrest, we can confidently put it there and then have proper CPR done on them. So, for the …… ward, we have four planks. (Participant 10)"

Apart from concerns with major equipment, the participants have also been faced with stress related to supplies of emergency drugs. Participants noted that the emergency trolleys were not

adequately equipped with needed items to perform CPR. Nurses have been stressed and frustrated with the absence of the essential emergency drugs used in CPR. Some said they had to run into other wards and ask for what was lacking in their wards. One nurse said:

> "The medication sometimes, we don't have emergency drugs or sometimes, the emergency drugs they are not frequently updated. We have a ward admin or the ward master who is supposed to do that, but they are not frequently monitored, so some of the drugs are expired. You don't know what to do, so you go running to the pharmacy up and down. You get to the patient, then sometimes the bed the patient is on is not the bed you can move about freely to ensure to effective CPR, then you see that let's say. Then the medication, then the other machines that you will need, there are no defibrillators also to give the shocks. The things that we will need to work in the ward are not available. (Participant 6)"

Another nurse also said:

> "Okay, and then you have your defibrillator, your cardiac monitor and stuffs there, but at times, the situation is just that you might not even have the drug in the trolley, or the Ambu bag might have been used somewhere or is being used somewhere so you have to quickly rush and get maybe from a different Ward quickly rush and get it. (Participant 7)"

Feeling frustrated, one nurse also said

> "In the general ward, all the emergency drugs are under lock and key. So the one that was successful with the 12-year-old boy. My luck was that the pharmacists were around; we had some pharmacists attached to the ward. So while we were doing that, they were tasked to get us the drug. If they were not around, who would have been going around

> looking for the key for emergency drugs, where I think it's not the best. Even if those will be done for control measures, some can be removed and put in an emergency trolley that is set that is not under lock in key. And then we will account for it every morning as part of our handing over. So that if you were left with three adrenaline, the following morning, you account for the three adrenaline. So that in case something happens during the night it wouldn't be a problem for the night staff. There wasn't any standby emergency trolley. Then the emergency drugs were under lock in key, which I didn't find too good for a ward like…ward. (Participant 10)."

Another nurse also said:

> "Sometimes we give adrenaline, so you will realize that maybe you will need it, and then you will go into your emergency tray then there is none. It's a challenge. You have to now send someone, please go to this ward, and go and check if you can get this medication for me or something. (Participant 11)"

Resources in terms of Training and Inservice training

For CPR to be performed effectively, nurses need to prepare through training and refresher courses to adequately apply necessary knowledge and skills during cardiac arrest in the ward. From the semi-structured interviews, it was found that only two nurses had current refresher training within a year and a half to three years ago. Since training school, some of the nurses have not engaged in CPR refresher courses. The participant responses acknowledge the importance of continuous education. Responses on the part of participants were as follows. Some of the participants said that:

> "But I said to myself, wow, this is CPR. Let me just watch them for some time before I attempt or before I take or before I take my part, in the next cycle or at least the next two or three rounds. That was the first time after the long break. So I think training is vital and the standard keeps changing as I remember. It will always be nice that we have the BLS courses always available for us as often as possible. There should be some form of in-service. (Participant 1)"

Another has said:

> "But as I said, it's been a long while, so I think more refresher courses would have been more beneficial. I believe that refresher courses should be organized more often. Probably, every six months on this CPR in particular, yes, it's it would have been good because they keep upgrading a lot of things. So, refresher trainings are very important. (Participant 11)"

Nurses who have had training shared that one way or the other did not benefit from the training because of the large number of participants and how the facilitation was done.

> "And you know, sometimes when we even go for training due to the number, some people might not even have the chance even to practice. It is also an issue, because, for instance, if you are training about fifty or a hundred people and you want them to all practice on dummy trying to do the proper thing. It is not possible. It is not something feasible, you can't achieve that. (Participant 9)."

Another nurse has raised concern about the facilitator approach of talking too much instead of practicing the skills involved in CPR performance.

> "But the part that I didn't enjoy is that I felt the facilitator was talking too much than us practicing. (Participant 5)."

When asked about which form of training participants preferred, most chose the lecture and hands-on practice style. Some nurses also concluded that videos and practicing were good in learning the skills. The nurse's rationale for their choice was that it was the most effective method to learn and build confidence in practicing skills of CPR. One nurse said:

> "I would prefer the traditional hands-on because, with that one, you are actually and actively participating. So, if you are not doing something right, you would be corrected there and then. If you are learning by video and you are not doing something right, you will not be corrected. Because there is some certain technique when you are doing the chest compression, or if it's the traditional one- hands-on, everybody present and you are not doing it right, the facilitator will direct you that, no it's not done this way, it's done that way. But if it is through a video and you watch and you think that you have grasped the concept, but you do it, and you don't do it right, there wouldn't be anybody at that time to direct you that this thing that you are doing that is not how we do it even though you are doing something similar. So I prefer the hands-on the traditional hands-on training (participant 11)."

Another nurse also said:

> "For the training, it should be inclusive. You should watch the video, listen to the lecture and then you practice it. The practice is very paramount. But I think you should watch the videos, watch all the lectures, listen and then you practice it. But the practice cannot be taken out. If you have to do one and take out the other, then they should leave all the rest and do the practice. Practice is essential. So, for me, I prefer practice. (Participant 7)."

One of the nurses described his choice of training with famous Ghanaian proverbs: "agro ne fom" meaning "A play should be on the ground or in person" or "twenie da hoa yenbor nkyen" meaning "when you have a drum, you don't play it from its side", The nurse said:

> “They had the computer to project maybe the importance of CPR, but it's real hands-on. There is a dummy. You kneel before it, and you actually do it. So these are the training I had. Ok, I don't know, but CPR training without real hands is actually not CPR. That is it. The traditional style is CPR. If you are watching the thing on the computer, you are not doing anything. “Agro ne fom”, ana “Twenie da hoa yenbor nkyen” (Participant 3).”

The benefit of training may boost nurses’ confidence and make them indispensable in the ward when the need arises for CPR performance. It was surprising to hear during the interview that some nurses doubted their colleagues with CPR performance. One of the participants during the interview shared his challenge working in the ward with colleagues who could not perform CPR.

> “A lot of people have learnt it in school. You will be taught in school, and that is it. Basically, that is it for a lot of people. From school, they will not have any training again. In as much as you know CPR, it's something you need to be trained on it. You need to be going through training regularly. So it's a challenge. People don't really go through the training. You are found in the ward, and you have only about one or two people who have actually been trained, who know how to do it. People watch, but it's a different thing watching people do it. So that's one of the challenges. So we don't have a lot of trained staff actually on CPR. These are people when you call, can't actually help you because they will tell you they don't know how to do it. And you see them, and you know they can't really help. When they come, they can't really perform. (Participant 3).”

Another nurse also doubts if his colleague could effectively perform the procedure if he takes up the mantle.

> "If I'm to do the pushing because that little time probably we may want to change over and so once what you are doing is achieving the result I always tune my mind that, okay let me continue because you might change it or maybe the other colleague who might be coming in for the chest compression may not be doing it rightly, and in that sense, you will not achieve the result, so you overlook the idea of your tiredness and try as much as possible to do something so that in the course of what you're doing, then you end up achieving something(Participant 8)."

According to the nurses' training must be made readily available to nurses in the hospital. This is because performing CPR is not a choice rather an inevitable situation that every nurse must be prepared for irrespective of the areas in the hospital nurses work.

> "It should be out there so that every now and then, definitely more nurses are going to be interested because it's something we do all the time. Even if you don't want to do it, you will be faced with such a problem. So, you would have to do it whether you like it or not. We just have to have such training every now and then. It's something that will help all of us. (Participant 2)"

Another nurse said:

> "There should be periodic in-service training about Cardiopulmonary resuscitation. It is not something that is only done in the hospital. You might meet somebody on the way, and you would need to apply that knowledge, so every health personnel should be able to be equipped, in fact not just knowing the basics about CPR but being an expert. So that

> wherever you find yourself, whether in the hospital or out of the hospital. At least if not the advanced Cardiac support, the basic life support., you'll be able to do it and do it perfectly. (Participant 10)"

During the interview, participants indicated no permanent hospital in-service educational programmes for reinforcing CPR skills and knowledge. Such reinforcement is not offered regularly by the hospital. Almost all the nurses reported that they had not had CPR training for more than three years. The nurses have said that the quality and quantity of in-service education directed towards managing a cardiac arrest was also deficient. One nurse said:

> "I wish our hospital could provide training services on most of these areas or in-service training. We have in-service training, but it's more of concentrating on students than the rest of the workers. So I would have wished that the hospitals could concentrate on major things that are or things that are common to every ward, then they take it like be educating and be organizing a workshop for each ward. It will help improve our knowledge. (Participant 5)."

Another participant has said:

> "I've been seeing this, a lot of workshops that we are doing on other things like how to do wound dressing, catheter care, caring for cataract patients, among others. They have been publishing all those things, but I can't recollect when I saw a workshop on CPR for some time now. (Participant 8)."

Similarly, one nurse said:

> "The Hospital has an in-service office. They do periodic service training for the staff. But I went back to 37 in November 2020. Since then, I have not really seen it as part of the

> in-service topic, CPR. I have not seen it. But it's very important they include some of these topics in training for the whole hospital staff. (Participant 11)."

The nurses made suggestions on the importance of prioritizing workshops related to CPR. One nurse said:

> "I just want to say that going forward. I hope that they would put CPR as a top priority in training so that the in-service trainers would make it a point to train people on CPR every now and then because it's very important. (Participant 2)"

Most of the nurses are not aware of CPR training available to them in the hospital regularly. One nurse said:

> "But then in-service does not do training on CPR regularly, or you don't hear about it? (Participant 9)"

Another nurse said:

> "There have been trainings. But I don't know CPR. Sometimes you know 37, everything is in the part 1, so when you don't get it to read, it means… There might be training, but since I have been here, I haven't seen one since I came. And I came not long when covid started. Since covid started, no. Maybe after covid, they will start. I'm sure they do it, but because of covid….(Participant 3)"

In contrast to the views of those nurses who are not aware of pieces of training in the hospital. one nurse has said that:

> "Oh, training, we have training to renew our license. We have training per the hospital protocol, and there are a number of training. So, for training, periodically, we do training. Personally, you have to do training to renew your pin. The hospital also has a training

> protocol for the staff to keep them updated on CPR. The in-service training varies, and it comes in every month one or two is organized. But then you cannot all have your training at the same time, so we go in batches, from ward to ward or this particular group of nurses. But then personally, you yourself need to update your PIN periodically, so you also need to get training so that you can update your pin. But the hospital one; I think every month twice or so. (Participant 7)"

When told that all the other participants did not know of such training, participate insinuates it might be due to the wards they are working in. The nurses said:

> "Maybe or the field they are? But then the hospital does training (Participant 7)."

Some nurses have attended CPR training organized by different institutions for PIN renewal and refresher purposes. Most of this training is voluntary and requires nurses to fund them themselves. One nurse has said:

> "There are some private training, some private workshops that they train on CPR. They do it occasionally. That's very available to us, but we don't have it in the hospital as a routine. So that is left to you, the nurse, to do on your own. (Participant 2)"

Another nurse said:

> "But myself I did one basic life support training; it was one of the American heart institutions or organizations who has been taking us through once a while. So I have done that course myself. Some of my colleagues too had done some when they organized CPR in the hospital. But it's not a continuous activity that we have been doing because there are other topics too. (Participant 4)."

One nurse who is yet to decide on a time to do the refresher course said:

> "For refreshing, I try to read and then, as I said earlier on, when there is eermm…. for instance in Korle-Bu, they organize workshops on topics including CPR, and there is this American association that helps with basic life support. That is not something organized by the hospital. It's an individual initiative. When you are interested, you register in it. So, I'm looking forward to taking part in that program soon. Aside from that, there has not been any current training on CPR. (Participant 5)"

Though a deficiency in continuous education and training on CPR was identified from all the interviews conducted, nurses have benefited from learning and refreshing their knowledge on CPR by witnessing and partaking in the procedure on the ward.

> "I think I have learned over time. I have had training before because I have been a nurse for a while, so I rely on that all the time. Over time, I have picked a couple of things even though I haven't had any update or refresher training on CPR, but I have picked up a few things. We've had a lot of these cases requiring CPR. And over the course of time, I have picked up a lot of things from practice and not from training. That really comes in handy during times like that (Participant 1)."

Another nurse has said:

> "The more you do it, the more you become perfect in it. And then as you do it over and over and over, it becomes normal for you, and you become very perfect to the extent that immediately your patients' arrests you just go to it, and you do it as if it's something that is not anything to you. And you know the procedure, and you know from this step you go to that step, and you just go on and do it. And so doing it over and over and being in the

ward and practicing it makes you very efficient and very effective to do it. (Participant 7)."

Similarly, another nurse said:

"Performing CPR keeps reminding us of whatever we have learnt from the books, and we are practicing it. so sometimes putting it in practicing makes us better (Participant 9)."

CPR Guideline algorithm

According to some nurses, the quality of CPR is undoubtedly influenced by the absence of clear guidelines about resuscitation procedures. Some nurses have said standardized guidelines should be made available in the wards to serve as constant reminders about the steps in the procedure. The nurses expressed the need as follows:

"I think it will also be nice that we have something around to always remind us of how we can, to constantly remind us of how we should be doing these things because sometimes we can easily forget or maybe not forget but not do it in the right way for it to be effective. So it would be nice to have that. (Participant 1)"

Another nurse also said:

"The process of CPR should be pasted on the ward and the medications to give even when there is no Dr. (Participant 6)."

Similarly, a nurse has said:

"I think having those posters will also keep reminding them of the procedure, remembering them on what they are to do and the steps that they have to go through. I

> think posters are also good. At a point in time, anybody that is passing might just look at it and read it. It will stick in your mind. So in case you encounter any problem and you are to do CPR, it will also help to know the steps. (Participant 9)"

Informal supportive structures

Support systems to help nurses navigate the process and outcomes of CPR in the hospital were absent in all the wards from which the participants were working.

> "On my ward, there isn't anything written, documented like that. There is no documented support system before and after CPR. But as the ward in charge, if after CPR I realize that a staff member is psychologically down and is not able to pick up, then I, through my own initiative, will invite the clinical psychologist in. That is through my own initiative. There is no SOP about it. If there is, then I don't know about it. (Participant 10)."

Another nurse has said:

> There's nothing like any support structure or anything on the ward. (Participant 11)

Nurses have used various forms of support adopted by themselves to manage their emotions during and after the performance of CPR. The nurses have used terms such as self-therapy, self-management and self-reflection to describe their informal support structures. Nurses collectively share their emotions through talking to each other to manage their stress. In most of the interview's nurses have used informal means such as talking to each other after CPR to discuss what was done well and what could have been done differently.

> "Sometimes if maybe, I meet my colleagues and we are just chatting, it will just occur to me, and I will just share with them that this is what happened to a patient, or maybe somebody might bring a similar situation, then maybe I just chip in that this thing

> happened to me and I did my best, but eventually, this is what happened. And we will be talking and sharing that on my mind(Participant 9)."

Another nurse said:

> "I talk to some of my colleagues. Probably the person I was on duty with when the whole procedure started and, they encourage you. Others tell you that you have done your possible best, so you should just let things go as it has happened. Sometimes too, I just go quietly sit in the nurses' room and then reflect on everything that had happened. yeah, that's all that normally, I do. (Participant 11)."

Talking about how they have managed through reflections, nurses have said:

> "So, sometimes when I feel stressed out or disappointed with another case, I just try to reflect on the positive outcome of other patients and how I'm able to put smiles on their relatives' faces, and it keeps me going not to give up. (Participant 5)"
>
> "After that, I reflect. I reflect on what was done; the procedure, if there was something that was missed, there was something that we did wrong, or we did everything right and still, the patient just died. I just go reflect and think about if there is anything that could be done better. You put it into a note and then get ready for another challenge. If something like that is to occur again, you know what to do next time. (Participant 2)"

Some nurses have described such informal supports as:

> "Just like we have always managed our emotions, it's the same you go through your self-support. I call it self-therapy. You think through it yourself, you counsel yourself. It is the

way our minds work..That's what we've been trained to do for a long time (Participant 1)."

Another nurse has described it as:

"Issues like this if you are not talking to yourselves; there is no one to talk to. So we have also learnt to adapt to that; managing our own self, manage your emotions, and then things that go on in work. So other people see you like that, and they think that Charley, but these people, don't they have feelings? But it is part of the managing, managing your own self, so you put on like a thick skin, a defensive mechanism. (Participant 3)"

In the interviews conducted, nurses have been suffering from both physiological and psychological stress in the aftermath of cardiopulmonary resuscitation. From most of the interviews, no debriefing sessions were ever conducted after resuscitation attempts, whether it was successful or not successful. Participants have been living with the psychological burden of the aftermath of CPR. Nurses feel how they have managed their emotions after CPR has been ignored as though it was not necessary; however, it has a significant impact on them. During the interview, one participant said:

"So, you have done CPR, the person is gone, I mean yes, he is gone, but there should be structures there, so that those people who are still grieving about it, those people who are still worried about it to go through. But no, it doesn't work. It's a problem. Issues like this if you are not talking to yourselves; there is no one to talk to. (Participant 3)."

Another participant has said:

"I do my work normally, when I get home, then I can continue being sad. (Participant 2)"

Most of the participants have shared similar opinions that there is a need for immediate and regular debriefing sessions after CPR performance. Nurses have said they will identify their errors and strengths to improve their next CPR performance if debriefing is performed.

> "I think we have to meet and put ourselves together, deep brief and talk about our shortfalls, our strength, then prepare ourselves so that the next time we come to any situation like that, we will know how to manage our patients. I think that one, from now on we have to talk about that. Those things are supposed to be put in place so that we don't always lose our battles. (Participant 3)".

Similarly, another participant has said:

> "I think we need a support system. You know, the experience I'm sharing with you is just a current CPR I did yesterday. There was this CPR I did for a patient some time back, three months ago, let me say, and this is a patient who had lost his wife, and they had a son. He is the only surviving parent of the son, and the team did their best, but he could not survive. Although I have been working for so many years, I cried. Yeah, I cried. After that incident, it took me three days to get back to my usual self. It really took a toll on me. I think it will be great to have a support system (Participant 5)."

Nurses have mentioned that things happen so fast during CPR and other duties that do not leave room for debriefing after the event. Two participants who happened to be team leaders did debrief on some occasions, but it is not constant.

> "Sometimes, when I happen to be a head nurse, I always give the chance to people to comment about what they saw, what their expectations were, and probably what we did

> not do well and what we did right. We will just give ourselves some kind of self-criticisms and just take note of that, and that's all. Sometimes that we don't even do because by the time we are done, we have a lot to do as well, so there isn't even time for us to sit there trying to deliberate on what went wrong and what went right. There are times we don't even do so. (Participant 8)."

The other nurse also said

> "Seriously, when those thoughts come, it gives you an opportunity to involve all the members of the ward, that this is what has happened, let's find out what didn't we do right. Let's all come on board, and when I went and instituted some kind of in-service training every fourth night. So, anything that happens on the ward that didn't go on well, we try to bring it into the in-service training. Go, and then we do a lot of research about it. Give to one resource person, then come back and educate everybody on the ward. So, in-service training was organized for CPR, and everybody was taken through CPR once again. (Participant 11)"

Exceptional circumstances were noted with CPR performance during the interview.

Only one ward had instituted a structure of debriefing which was informal.

Only one ward has a defibrillator.

Only one participant stated being anxious about performing CPR due to the fear of being infected with covid

All participants stated they discussed the aftermath of CPR with their colleagues. However, only one nurse said she discussed it with the husband when she performed CPR and was affected psychologically.

All of the participants agreed that debriefing helped to reduce stress and that it, therefore, performed a therapeutic function. They also felt that the debriefing process would help them to evaluate and thus to improve their performance. All the participants agreed that debriefing should be carried out after successful and unsuccessful resuscitation attempts.

One participant has experienced only one loss in CPR of 15 years of practice and performing uncountable CPR.

Summary of the Finding

This chapter presented the findings from the semi-structured interviews conducted with nurses working in the non-critical care wards in the 37 Military hospital. The quantitative data were analyzed using simple statistical calculations. The major themes in the qualitative findings consisted of :

1. Heart of stone and heart of softness,

2. Winning and Losing a Battle

3. Emotional and Physical Exhaustion

4. Concentrating on the moment

5. Education, support and resources.

In this study, nurses described the complexities of CPR performance in the non-critical care wards in varying ways. Nurses from the interviews disclosed how situations surrounding their experiences with CPR have influenced their lives in diverse ways. Nurses mentioned how they felt during successful and unsuccessful outcomes of CPR. Nurses used informal support structures such as talking to peers and managing self in CPR and its outcome. Most of the nurses have not received formal support from the aftermath of unsuccessful CPR, which has had a negative impact on them. The impacts of performing CPR on the nurses were also highlighted in the study. Most nurses have been influenced positively despite the negative experiences with performing CPR. Lack of personal and logistics necessary for CPR performance has also been emphasized in the study. There was a noticeable deficiency in CPR refresher training among most nurses working in the non-critical care wards. According to the interviews conducted, the availability of in-service training to the nurses was also deficient.

CHAPTER 5: DISCUSSION

This study explored the lived experiences of conducting CPR by nurses in the non-critical care wards of the 37 Military hospital in Ghana. CPR refresher training and support available to nurses in CPR performance were also investigated. An exploratory qualitative descriptive approach was used to identify key themes and issues related to nurses' experience of CPR performance in the non-critical care wards. Interacting with nurses about their experiences performing CPR in the non-critical care wards was an emotional and overwhelming experience. On the other hand, it was delightful talking with nurses about their experiences. It was difficult for nurses to talk about positive feelings associated with the procedure and rather focused mainly on the negative aspect. As nurses shared their stories, I understood how nurses' attitudes toward CPR performance were shaped by their participation in CPR in the wards. CPR advancement and outcome of patients care can be affected if there is a dwindling effort to address negative experiences with the procedure (Mäkinen et al., 2009). Lack of refresher training to equip nurses with knowledge and skills on CPR is a major problem identified in the current study. The results indicated inadequate training avenues needed to prepare nurses for the future occurrence of CPR and a lack of resources needed for effective CPR performance.

The current study revealed nurses' CPR emotions in the form of enthusiasm, anguishes, doubtfulness and helplessness. It is clear from the current study that the incidence of CPR performance has a massive psychological impact on nurses. This resonates with Dwyer and William's (2002) findings that previous resuscitation experiences, insecurity about how past cardiac arrest situations have been handled, and feelings of guilt, inadequacy, shock, and grief can all influence CPR performance. This study allowed me to understand first-hand what was

needed to help nurses perform CPR without fear of being successful or unsuccessful, to enhance effective management of clients in cardiac arrest and improve confidence.

In this chapter, I will discuss the main findings of my thesis work. The study identified critical areas of importance to the performance of CPR in the non-critical care areas. The study found that nurses predominantly experience negative emotions than positive feelings during CPR. Aside from the negative emotions, the study also revealed that nurses battled in their minds during CPR. Thus, the outpour of classifying CPR performance as 'winning and losing a battle.' Another significant finding in this study is that debriefing was a major shortfall in practice, hence it was highly recommended by nurses to alleviate the fear, frustration, and disappointment encountered during CPR. A deficit in CPR refresher training and lack of logistics needed for effective CPR performance was dominating. Nevertheless, nurses have extensively recommended the CPR guideline algorithm to serve as a reminder of the procedure in the various wards.

The research identified five key themes.

1. Heart of Stone and Heart of Softness
2. Winning and Losing a Battle
3. Concentrating on the Moment
4. Mental strength and weakness, and Physical Exhaustion
5. Resources, Support and Education

Heart of Stone and Heart of Softness

It has been suggested that humanism is the link that authenticates professional nursing actions (Cohen, 2007) and guarantees that death and dying are not lessened to clinical occurrences lacking human emotion (Walker, 2008). In the current study, the performance of

CPR and its perception were rooted in deep emotions shown as 'Heart of stone' and 'heart of softness'. As demonstrated in other studies (Cole et al., 2001; Gamble 2001; Laws, 2001; Ranse & Arbon, 2008), this study found that performing CPR has been associated with emotional stress, psychological pressures, and anxiety. Anxiety and thinking through the chaotic moment during CPR have been stressful for the nurses in the current study, even with ample work experience. Further to this, Ranse and Arbon (2008) showed that performing CPR in real situations is stressful irrespective of having experience in the hospital environments, such as intensive care units. Whiles the current study suggests that stresses nurses experience during CPR might affect subsequent roles and later CPR occurrences, a study by Tramèr et al. (2020) suggest that stress alone might have less impact on CPR performance and linked it to self-esteem. Considering a possible explanation for the stress nurses experience is that, in a developing country such as Ghana, there is a lack of basic items and structures in wards to aid in CPR performance (Tsima,2019). Evident from the data is the expression of worry and panic most participants have verbalized due to resource unavailability in the wards. The exception of participants not being emotionally stressed in the performance of CPR and its outcome was linked to the participant's military point of view. The data from this study provides a clearer picture of the work of Hodgetts (1999), which reported that soldiers undergo intensive training during their military training and are taught to tactically manage casualties with a 'Master Drill' irrespective of the nature of the incident to save lives. In the current study, irrespective of how CPR events unfolded and their outcome, soldiers performed the procedure and carried on other duties without being emotionally impacted. This result also builds on Hodgett's (1999) report that what is most importantly required is a practical soldier who can perform first aid as a drill irrespective of the situation. It was evident from the data that some military participants

displayed a 'Heart of Softness' like their civilian counterparts, which has impacted their lives and practice in the wards. The fact is that working in direct contact with the suffering of others and death is a crucial stress-generating component that may have straight implications on a worker's professional and personal life (Fernández-Aedo et al., 2017). Unexpectedly none of the participants who showed softness was reluctant to perform CPR due to their perceived feelings. This study has proved that irrespective of the feelings expressed by nurses in CPR performance, the urgency and zeal attached to the procedure is phenomenal. It is important to note that, to my knowledge, this is the first study that has described military personnel's emotions towards CPR performance in the non-critical care areas.

The current study found that gender influenced how nurses have dealt with CPR performance. The information gathered confirmed that females were more emotional and stressed during and after CPR, mainly when unsuccessful compared to the males. This is similar to the findings by Hunzinker et al. (2011), where higher stress and negative emotions associated with resuscitation were present in both males and females but perceived more in females. It is worth noting that there were more males than females in the current study. As such equal comparison could not be made in this study, which is a limitation. All the females in the current study showed 'a heart of softness'. This is similar to an observational study by Tramer et al. (2018) in a simulator Center at a University Hospital in Basel, Switzerland, which found a correlation between gender and stress in the performance of CPR. In their study, females had a higher heart rate than the males with an increase in ST-segment and T- wave shift. While the study by Tramer et al. (2018) used physiological marker of electrocardiogram (ECG) changes to depict that females have shown an overall stronger reaction than males in CPR performance, this study used subjective views from the participants.

The current study found that performing CPR in younger patients and clients deemed healthy immediately affected nurses' mood, especially in failed situations. Similarly, Fernández-Aedo (2017) had found that the degree of empathy, the emotions and sensations following the cessation of resuscitation maneuvers, are more intense when performed in a younger population than those they experienced with adult patients. A previous study by Morgan and Westmoreland (2002) also found that performing futile CPR on a patient who obviously will not benefit may be traumatic for a junior doctor, causing stress. It was expected from the current study that even without a patient's subsequent death, participation in CPR can be a stressful event for nurses (Vindigni et al., 2017). Aside from the trauma nurses have equally suffered, they had undergone psychological and emotional pressures performing CPR for clients, especially when they did not survive after the procedure. In the current study, nurses expended much time and high level of energy in CPR, not only on clients with poor prognosis but also on stable clients. As found in this study, understanding emotions from different angles will help in knowing the different approaches to be developed to address concerns of support after CPR performance in the wards.

Winning and losing a battle

Performing CPR has been classified as a 'battle', as in fighting a competitor and defeating and a 'must-win' event'. This study found that the urgency and importance of winning or losing to CPR performance have become a pattern and a norm in the hospital when nurses encounter CPR. The reaction is linked to the so-called "rule of rescue," which describes well our psychological compulsion to act. That is, when someone is in imminent peril, we feel an immediate sense of duty to try to save the person (Jonsen, 1986). The result of this study might suggest that nurses in this position have subconsciously harboured a fear of losing to CPR and judging themselves with the outcome of CPR. This is in line with Jecker's (2017) report that reflexively using CPR has

yielded some human fears such as death, fear of letting go of loved ones and fear of losing the war waged against disease. Thus, practitioners have failed to stop performing CPR to feel good in the present to avoid what is feared and later suffer moral distress. A typical pattern in the current study implies winning in CPR is triumph over death, which could account for the widely expressed distress following unsuccessful CPR outcome. A more reasonable explanation to this was found by Page and Meerabeau (1996), who found that the pursuit of life in the face of death has led to the outcomes of CPR to be seen in nursing or medical term as success or failure. Where success is restoring the functions of the heart and failure is death.

In this current study, there is the culture of performing CPR for a prolonged duration to promote survival in clients in the quest of winning. This was demonstrated in an observational study by Goldberge et al. (2012), where the definition of an optimum duration for resuscitation attempts was not possible. Their findings posited that continuously prolonging resuscitation activities could enhance survival in vulnerable populations. Possibly participants in the current study have attached spirituality to the performance of CPR and its outcome. Also, nurses in the current study had performed CPR for a longer duration as a form of defence to relieve the psychological burden. Spirituality attached to conducting CPR is suggested to impact decisions of the duration of CPR. It could also be hinted that aside from the belief of divine implication, nurses have always claimed professional ego and concern of being judged by others have influenced their decision of refusing to accept situations in CPR. This resonates with Jeckers' (2017) report in her paper, which firmly clings to the belief that CPR will accomplish miracles well beyond medical goals to demonstrate competency to colleagues and clients, fulfill duties and show care towards clients have too often been ignored. Similar to the findings in the current study Jecker (2017) mentioned that medical personnel are ill-prepared for possible bad outcomes

of CPR. According to Jerker, excessive faith in CPR has yielded tragic results because medical personnel are not expected to fail in helping patients. It also fails to heed the injunctions to avoid harming patients and to heed justice. It is deduced from the results that, rather than have the patient die; nurses prefer to prolong resuscitation and simultaneously battle with thoughts of causing harm to the patient. Of course, there is a significant correlation between longer CPR duration and complication rate (Krischer et al.,1987). Whiles previous study by Hoke and Chamberlain (2004) found no compelling evidence to show an increased complication rate associated with active compression-decompression, nurses in the current study showed worry of causing injury to client during CPR

The current study found that self-doubt and guilt after performing CPR were generally conveyed, especially when CPR was unsuccessful. Due to such feelings that arose, nurses' self-esteem has been low, equating to feelings one experiences when a battle is lost. Similar to findings by Pups et al. (1997) that nurses outside critical care areas are more likely to personalize cardiac arrest and question their actions, feel responsible and on occasions express feelings of helplessness when the arrest involves their patients. I deduced from the result that nurses' morale after CPR failure had left a persistent feeling of shame and doubt, which nurses carry on both into their personal and professional lives. Similar to what Dwyer and Williams (2002) found, previous resuscitation experiences, feelings of insecurity about how past cardiac arrest situations have been handled, and feelings of guilt, inadequacy, shock, and grief can all influence CPR performance. According to Tramèr et al. (2020), self-esteem was linked significantly to CPR performance and predicted team performance during resuscitation at the group and individual levels. Interestingly this study found that both males and females experienced self-doubt with CPR performance. This contrasts with findings in previous studies, which concluded that female

students reported lower self-esteem than their male counterparts in CPR performance (Bleidorn et al.,2016; Tramèr et al., 2020).

Concentrating on the Moment

The findings in this study showed that CPR is experienced as a critical moment associated with inborn urgency to act and save clients' lives. Most nurses' decision to save clients' lives and avoid death when cardiac arrest occurs in the ward influenced their speed to care and prioritize their actions. Similar to the findings of Dwyer and Williams (2002) that speed and performance of emergency department staff affect survival after CPR hence creating tension for nurses who first detect a CPR situation. In the current study, participants have held in high esteem every action and decision taken during CPR because they feel it is their utmost responsibility to save clients at all costs. This, of course, is accompanied by tension nurses experienced the moment cardiac arrest occurs, and CPR is needed. Similar to what Badger (1996) concluded in his paper by attributing the high level of stress nurses experience to their instinctive feeling. Thus, nurses are responsible for the welfare of dying patients and are concerned that any fundamental error during the administration of CPR might result in the death of a patient.

In the current study, participants under pressure to save the moment have taken initial actions without thinking of other favourable options should it have happened in a different situation. The force behind participants' actions during such critical moments was linked to a sensation of rush. This reaffirms Rajeswaran's (2009) findings in a study conducted in Botswana, where participation in medical emergencies such as CPR increases the instinctive flight-or-fight response automatically generated in human beings under extreme pressure. According to Rajeswaran (2009), this automatic reaction contributed substantially to creating and maintaining

dysfunctional levels of stress and anxiety in healthcare personnel required to deal with life-threatening emergencies.

The study found a trend of concern raised on limitations in role performance the moment CPR is being performed, such as medication administration and the application of a defibrillator. The participants worried that such limitations and valuable times that elapsed waiting for doctors to order medications to be administered could lead to poor outcomes. A study by Ornato et al. (2012) in an in-hospital cardiac arrest population found a decreased survival when the first vasoconstrictor was administered >5 min after IHCA onset in patients whose arrest lasted for at least 5 min. Although nurses in the current study want medication autonomy during CPR, Nayeri et al. (2020) found that nurses lacked attention to the patients' rhythm to give the drug needed in these emergencies. In addition, a study by Ornato et al. (2012) also found that choosing the wrong medication and the wrong dose are the most common drug errors in cardiac resuscitation. The study found a gap in standard knowledge on what nurses think they can do and cannot do in CPR performance. Hence, it could suggest why nurses feel they are limited to performing some aspect of CPR. Further research is needed to investigate nurses' knowledge of role performance during CPR (what nurses are allowed to do and not do during CPR).

Approaching a necessary procedure such as CPR is better handled by a team than by an individual (Hunzinker et al., 2009). Information gathered from the participants in this study revealed that doctors and intensive care nurses are not readily available to assist the nurses at the crucial moment of CPR performance. A possible reason contributing to this issue is that Ghana has a considerable shortage of healthcare workers, especially doctors (Adua et al., 2017). Deducing from the experiences shared during CPR, it will be fair to say that the emergency team is not readily available within the military hospital to respond to cardiac arrest cases should they

occur in any non-critical care ward. However, it is worthy to note that even facilities or institutions with a dedicated emergency team do not usually have them instantly available at the onset of a cardiac arrest (Huzinker, 2009). As an essential medical procedure, CPR must be quickly performed following a heart attack (Lyneham & Marzooq, 2009) since patients' survival rate decreases by 10% for every minute of delaying CPR initiation (Go et al., 2013). For a successful CPR outcome, the time elapsed between the cardiac arrest and initiation of CPR and the quality of the performance of the CPR procedure (Aune et al., 2011; Herlitz et al., 2002) is vital.

Mental strength and weakness, and Physical Exhaustion

The participants' experiences concerning CPR illustrated a significant effect on nurses' mental strength and weakness and physical exhaustion. Similarly, studies have shown that nurses express strong reactions to stress when performing CPR (Gamble, 2001; Ranse & Arbon, 2008).

Cardiac arrest is still most likely to be an unexpected medical emergency (Monk & Flynn, 2014) which could occur even in the presence of the client's family. In the current study, nurses felt very tensed and mentally stressed with the thought and dealing with the client's family members, especially when they happen to be around when the patient had the cardiac arrest. In a study conducted in Brazil, Ferreira et al. (2018) revealed that healthcare workers experience challenges such as anxiety, insecurity, and loss of concentration during CPR, especially with the presence of family members. Confronted with mental pressure when optimum attention is required for successful CPR, participants in the current study's thought was shifted to clients' relations. The experiences shared by the participants in the current study are in line with Monks et al.'s (2014), that family presence during resuscitation simultaneously challenges professional nurses' expertise, arouses compassion, empathy, and humanism. It is fair to say that participants

in this study had put extra effort to resuscitate clients, especially when relations were present to avoid breaking bad news and prove their competency. There is a possible prolonged resuscitation when families are present (Mitch- ell & Lynch, 1997). Moreover, family relations during CPR enable families to witness everything that is done for their sick individual (Hemming et al., 2003). In order not to suffer any interference and be successful at the procedure, some participants in the study made a conscious effort not to think of clients relations during CPR. This contrasts with Miller and Stile's (2009) findings that nurses overcome stereotypes and fears transitioning to acceptance of family presence during resuscitation and invasive procedures.

The current study showed that performing manual chest compressions on patients is tiring. Studies have found that the performance of chest compressions is a physically strenuous activity (Lucia et al., 1999). Deeper compression requires more significant effort and increases physical exertion, which might cause rapid rescuer fatigue (Yang et al., 2014). It is worthy to note that rescuer fatigue has been considered the main reason for the deterioration in the quality of chest compressions over time during CPR performance (Ashton,2002). Similar to the findings in this study, Tschan et al. (2011) explained that task switching and switching attention between the group level and the individual during CPR could be associated with increased mental demand.

In the current study, evidence suggests the positive impacts of confidence and fulfilment of participants performing CPR in the non-critical care wards. The feelings have risen the morale and motivated nurses. Matchim and Kongsuwan (2015) found that participants' self-value was enhanced through their pride in being part of a team that saved a life with CPR participation. Peculiar also to the nurse's experience in the current study was that, through CPR, nurses' have learnt about unfamiliar medications that most of the nurses would not know in their routine

practice in the non-critical care wards. Comparably, Lee and Cha (2018) found that participants learned unfamiliar procedures or treatments they did not experience in the emergency department as routine care through CPR.

Resources, Education and Support

The present study showed that stress and worry during CPR were related to an acute shortage of personnel and the non-availability of equipment. This is similar finds from previous studies that the lack of nursing staff is one of the organizational challenges affecting the outcome of CPR, patients' health outcomes, and the causes of errors (Mtega et al., 2017; Rasjewaren, 2009). A shortage of human resources affects the quality of care for patients who suffer cardiac arrest (Rasjewaren, 2009). The current study also revealed concerns about a shortage of indispensable personnel available during CPR. Rasjewaren (2009) suggested that better patient outcomes occur when more registered nurses are employed in hospitals than licensed practical nurses or nursing assistants to perform functions that registered nurses would typically perform.

In spite of the presence of registered nurses during CPR, the present study showed that nurses worried about the lack of leadership role influencing how CPR was performed and subsequently negatively impacting the outcome of CPR. Consistent with previous studies, leadership must be regarded as an essential auxiliary medical skill to manage critical situations and improve patient outcomes (Marsch 2004; Hunziker et al., 2009). In the current study, disorganization and lack of coordinated activities during CPR are suggested to result from the negative outcome experienced during the procedure. This was illustrated in previous studies that lack of explicit task assignments and shortcomings in leadership behaviour has been associated with poor team performance (Amache et al., 2017). The finding in this study is also in line with

previous studies which observed an association between leadership and team performance of cardiac rescuers (Hunziker,2009; Tschan, 2014). A structured leadership for the team and task performance has been linked to a successful team performance during CPR.

Leadership role in the performance of CPR did not show any variations between gender in this current study. This research revealed that women took leadership roles equally as their male counterparts. This contrasts with the findings of Streiff et al. (2011), who found female rescuers made significantly fewer leadership utterances, even though the total number of communication statements and the level of knowledge did not differ between the sexes. It is also worth noting that females took full responsibility for CPR tasks without relegating in this study. Opposing to this finding is the result of Amacher et al.'s (2017) study, who found that female students tend to transfer leadership tasks to other team members in the mixed-gender resuscitator group (Amacher et al., 2017).

The availability of proper equipment and drugs plays a significant role in a cardiac arrest victim (Hazinski, 2010). According to Soar and McKay (1998), a cardiac arrest trolley in any hospital should be fully equipped with a defibrillator, and cardiac arrest drugs should be perpetually available in every ward. Information gathered from the current study suggests non-availability of functional equipment, lack of adequately stocked emergency trolleys and lack of emergency drugs needed during CPR. Similar to a study by Afrifa et al. (2021) at a university hospital in Ghana, lack of equipment, proximity of drugs and items needed for an emergency was significant problem in the emergency ward. Other studies have also reported a shortage of essential equipment, supplies and medications needed in emergency care in developed (Smith et al., 2008) and developing countries (Japiong et al. 2016; Rajeswaran,2009; Tsima et al., 2019). Smith et al. (2008) found noncompliance to emergency trolley checking policy to be the reason

for deficiency in a developed country such as the United Kingdom. In the current study, the source of the scarcity of equipment and drug shortage was not assessed. Further research will be required to investigate the root cause of such problems at a level one hospital like the 37 Military hospital. It is important to do this research because unavailability and poor quality of equipment influence patient outcomes and result in an enormous degree of stress for the nurses (Laws, 2001). Even when clients have a high potential to survive, the unavailability of equipment or its malfunctions may affect the chances of resuscitating a patient successfully (Kavari & Keshtkaran, 2005)

The current study found that the availability and use of defibrillators were limited to only one ward, and even with that one, it was faulty. In a study by Tsima et al. (2019), critical care wards had better CPR equipment distribution than other areas in the hospital. The culture of vigilantism of critical care workers to restock emergency trolleys due to the high number of critical cases seen in the critical area could explain the availability of CPR equipment. In the current study, the reason for non-critical care areas not having defibrillators was not sought since the participants interviewed were not at the managerial level. It is worth noting that immediate defibrillation is a class I recommendation for a witnessed cardiac arrest (Huzinker, 2009). Defibrillators are expected to be in every ward in the hospital because it is an important step in the management of Cardiac arrest (Heng et al., 2011). Suraseranivongse et al. (2006) also found that the non-availability of a defibrillator causes a delay before the initiation of advanced life support. Evidence from the current study suggest nurses being handicapped during CPR due to the non-availability of items needed. Having at disposal resources directly influences the autonomy of nurses, the nature of the workload and the quality of patient care provided to the clients (Bucknall,2003). In this current study, not only are defibrillators unavailable in the non-

critical wards, but most nurses are not familiar with its use. A familiarisation with such equipment used by the medical emergency team may also empower non-critical care nurses to engage in a more hands-on capacity (Ranse & Arbon, 2008)

Most of the CPR nurses in the non-critical care wards have performed ended up unsuccessful. The interviews conducted comparing general nurses to the critical care nurses (CCN) working in the non-critical care wards showed that the CCN had more experience and a higher patient survival rate. There is currently no study comparing patients' performance and survival rate after CPR between general nurses and CCN in the general wards. However, Kayser et al. (2008) revealed that CPR in the emergency department location was an independent predictor of improved survival. They speculated that this was due to the requirement for emergency department staff to receive primary and advanced cardiac life support training and their frequent experience in performing resuscitation compared to clinicians working on general hospital floors. Participants in the current study have suggested that CPR training must be accessible in the hospital to keep all nurses working in all areas abreast with the procedure. Similar to what previous studies have suggested, to enhance performance at an in-hospital resuscitation event, having at disposal to obtain advanced cardiac life support training should be available for all clinical staff, not only the medical emergency team (Hemming et al., 2003; Morgan & Westmoreland, 2002; Ranse, 2006).

The current study found a deficit in CPR training after completing nurses' school. The participant with the current duration of receiving refresher course was 18 months prior to conducting this study. This is in line with the study of Verplancke et al. (2008), who reported that there were nurses in his study who had last attended a CPR refresher training course 18

months prior to his investigation. Participants in the current study acknowledged that maintaining professional competencies, especially CPR performance, required consistent refresher courses and practice. Reasons why participants in the current study had not had continuous professional refresher courses on CPR were linked to limited opportunity, time constraints and staff shortage. Given that the in-service office is already functional and active in the military hospital infusing CPR training every quarter to make room for extensive participation might be a meaningful intervention. As advocated by Thomson et al. (2006), continuous professional development helps nurses acquire the requisite knowledge and skills to maintain their professional competencies.

Deducing from the findings, it will be justifiable to conclude that completing training school alone does not guarantee the adequate performance of CPR; nurses need to be engaged actively on continuous CPR refresher training. Most of the participants in the study suggested that hospital in-service training should make it a priority to ensure that nurses receive regular training on CPR to enhance effective care in the event of sudden cardiac arrest in the wards. Similar to what Gabbot et al. (2005) submitted, healthcare institutions have a responsibility to ensure that workers receive adequate training in resuscitation regularly so that their nurses can maintain their level of competence. Gabbot et al. (2005) think that nurses who work in the clinical area should update their skills annually.

The current study has suggested that the CPR guideline algorithm be posted in all the wards to serve as constant reminders and help nurses continuously assess their performance. This echoes the finding of Shuriquie et al. (2007), where the absence of clear and unambiguous guidelines and policies limits the competence of nurses and gives rise to substandard and even

dangerous nursing practices that ultimately affect the well-being of all patients and the overall quality of care. From this current study, the quality of CPR is undoubtedly influenced by the absence of clear guidelines about the procedures that should be followed during resuscitation. Brown et al. (2006) indicated that rescuers knowing and observing CPR guidelines are more likely to perform correct compressions and ventilations. Brown et al. (2006) also agree that the degree of familiarity with CPR guidelines is a fundamental determinant of the performance quality of some aspects of CPR.

After CPR, participants have been leaving with the trauma and flashbacks they have experienced after several months of being involved in CPR. It will be reasonable to say that such occurrences can significantly impact the mental health of nurses and affect their approach to subsequent CPR. The current study upholds Javidi and Yadollahie (2012), who found that exposure to potentially traumatic events can result in acute stress responses causing anxiety, hyper-arousal, avoidance and flashbacks. Similarly, a study found that accumulation of symptoms related to stressful experiences, such as in-hospital cardiac arrest, may lead to post-traumatic stress disorder and, in turn, depression and anxiety, which can have economic effects secondary to absenteeism (Spencer et al., 2019). Participants in the current study posited that debriefing would benefit them psychologically and help them identify their errors and strengths after CPR to improve their next CPR performance. Spencer et al. (2019) concluded that in addition to supporting emotional welfare, debriefing could be a valuable tool for helping people learn and develop under challenging circumstances that can be cognitively disruptive. Therefore, not only will nurses benefit from emotional support when introduced in the facilities, but debriefing will serve as an avenue for refreshing knowledge on CPR. In contrast to the findings

in this study of the benefit of debriefing, some other studies (Bledsoe, 2003; Smith & Roberts, 2003) disputes debriefing benefits and risks.

In spite of the stressful situations, people have been found to sustain performance to a considerable extent (Hockey, 1997). The current study found that debriefing was not a practice considered in most wards. Irrespective of the challenges nurses encounter, they still practice without debriefing. Lack of formal structures and time pressures to perform other duties was why debriefing was not practiced in most wards. Similarly, Clark and McLean (2018) found that lack of awareness, uncertainty about the role of a debrief, identifying time for debriefing and the lack of clear guidance from organizational protocols are barriers to the practice of debriefing after CPR. It is recommended that further studies be conducted to identify effective strategies in overcoming barriers to the provision of debriefing.

The present studies have shown that nurses have developed self-adopted approaches to deal with the physical and emotional stresses during and after CPR. Informal approaches adopted include self-therapy, self-management, individual reflections and social supports. A study by Hays et al. (2006) on non-formal strategies found that nurses working in the ICU have adopted coping strategies which are sometimes utilized, including self-controlling, planful problem solving, and seeking social support. Further study is needed to evaluate the effects of stress and the coping mechanisms adopted by nurses in the performance of CPR. In this study, self-reflection helped the nurses think of different options to choose from in the future, appreciate their weaknesses, and build on them. How subsequent affairs are accomplished is dependent on the capacity of persons to modify their everyday experience into knowledge, skills, attitudes, values and emotions (Jarvis, 1987). Reflection is vital for learning by experience and developing

new skills because it emphasizes steps and instinctive actions, evaluating reactions to events (Jarvis, 1991). Page and Meerabeau (1996) concluded that nurses improved their knowledge using the knowledge acquired from their past feelings and encounter on cardiac arrest and successive resuscitations in the absence of debriefing.

Recommendations

The experiences nurses have shared in the performance of CPR have provided a clear need to address such issues to improve CPR delivery to improve patient care following cardiac arrest. It is important to note that there is a need to support and guide all hospital staff to perform effective resuscitation care (Ouseph et al., 2015) irrespective of the setting. Debriefing after cardiac arrests in the non-critical care wards in the military hospital was deficient. The nurses in the study appreciated that immediate debriefing after CPR will help them psychologically and serve as a learning avenue. The study recommends that debriefing be promoted in all wards to help support nurses emotionally, serve as a refresher avenue and develop learning programmes. Ward officers in charge and shift in charge should use debriefing to create an atmosphere of understanding and acceptance for each nurse. Shift leaders should adopt debriefing to release nurses' experience of tension, anxious feelings due to increased workload and psychological difficulties from CPR. It should also be promoted that support after CPR is for everybody and that needing support is not an admission of weakness. My study identified informal approaches of debriefing adopted by participants following CPR; however, how it has contributed to their professional and personal life was not explored. Further study is needed to evaluate the coping mechanisms adopted by nurses in the performance of CPR and how it has impacted their personal and professional roles.

The study has shown that only one ward has a defibrillator. The 37 military hospital must endeavour to equip all non-critical care wards with defibrillators and make them easily accessible for resuscitation care. This will aid in providing optimum resuscitation to enhance client care should cardiac arrest occur at any time. The wards in the 37 Military hospital maintain emergency trolleys. However, they are mostly not equipped with those items needed for successful CPR, such as Ambu bags and medications. It is recommended that items needed for effective delivery of CPR should be readily available in a resuscitation trolley in every ward. Strict monitoring systems could be instituted in the various wards to ensure that the emergency trolley is constantly restocked. Time wasted, and stress nurses face travelling to other wards to collect such items will be reduced and help provide CPR promptly to save clients' lives.

Standardized CPR guidelines should be made available in all wards in the hospital. Participants in the current study communicated that CPR guidelines should be a must-have in the wards to serve as a reminder and a form of assessment after CPR performance.

The study also revealed that nurses do not regularly engage in CPR refresher courses. The collected information showed that the military hospital organizes in-service training regularly; however, the topic of CPR is not conducted regularly, for example, on an annual basis. CPR training and clinical exposure to CPR practice will positively impact CPR knowledge and practice retention. It is recommended that aside from practicing nurses in the general wards, health assistants in the military hospital must continuously have some standard of CPR training and assessment. It is essential in delivering adequate resuscitation provision (Andreatta et al.,2011). Because nurses are the first responders in resuscitation, their training should be prioritized.

Policy on CPR certification should be made to ensure nurses update their knowledge and skills on CPR during their practice. This could be facilitated through continuous professional development programs. National mandatory certification in CPR on an annual basis within the profession should be set by the Nursing and Midwives Council of Ghana, the governing body for nurses. In advanced countries such as the UK (Drey et al. 2009) and Australia (Halcomb et al. 2009), mandatory updating has been introduced in the nursing profession. It is compulsory for nurses who wish to keep their registration for continuous practice.

Conclusion

In conclusion, CPR experiences should be addressed to release nurses from the tension and psychological pressures of the procedure. However, it is encouraging to note that nurses maintain limited resuscitation equipment to save lives. It is not that systems are not functional, but evidence from the data suggests that nurses feel ignored with respect to their feelings and needs to enhance effective CPR performance.

Future studies should consider the availability of resuscitation officers for the training in the hospital. The study has identified that nurses at the 37 Military hospital zealously perform CPR irrespective of the challenges and unavailability of defibrillators. Continuous professional development programs concentrating on CPR are vital for the retention of the CPR skill. It is recommended that nurses working in the non-critical care areas be adequately equipped with support, material resources, and the continuing education needed to be efficient in their performance of CPR. This will enhance in-hospital cardiac arrest survival rate since patients are prioritized in healthcare.

My role as a researcher is to disseminate information about my study to shift leaders, ward supervisors, and hospital administrators through the hospitals working in-service office. I

will also cover the importance of informal post-CPR strategies in hospital-organized durbars. Given that hospitals do not have standard protocols for post-CPR debriefing, my research found that these informal strategies can address the stress and associated issues of CPR. Also, since the military hospital has a functioning in-service office, I will recommend to inservice training office to conduct CPR trainings as my research found insufficient CPR refresher avenues. If the suggested measures are incorporated in improvement plans and actions of the 37 military hospital, then excellent resuscitation practice will be guaranteed in the hospital.

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Appendix A*: INFORMATION LETTER and CONSENT FORM*

Experiences of Nurses on Cardiopulmonary Resuscitation (CPR) Performance in the Non-Critical Care Wards

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Background

You have been asked to participate in this study because you are a Registered Nurse working in the military hospitals in Ghana, and have participated in Cardiopulmonary resuscitation in a non-critical care ward.

Purpose

The aim of this study will be to explore the experiences of nurses in Ghana who have taken part in CPR. The researcher will recruit approximately 15 nurses working in the non-critical care areas in the hospital for the study.

The study findings will identify areas where information and support might be needed to improve how nurses cope during CPR. The findings may also contribute to education programs aimed at teaching nurses and reducing anxiety about CPR. The findings might also improve nursing practice and influence the quality of care nurses give to clients, especially during cardiac arrest.

The study forms part of Veronica Fiave's Master of Nursing thesis.

Study Procedures

Your participation in the study is your choice. You may choose to withdraw at any time, without giving a reason. Should you choose to no longer participate, any data collected from your interview(s) will be destroyed.

Participation involves taking part in an interview lasting approximately 30 to 45 mins. During the interview you will be asked to describe your experiences of performing CPR in the non-critical care wards. You will also be asked about your training and your views about how the experience of CPR could be improved or changed. Each interview will be audio-recorded and a written transcript created. In the transcript any information that might identify you will be removed so that your information is anonymous.

Your identity will be anonymized and will not be shared with anyone. You might also be asked to take part in another short interview lasting approximately 30 mins. During this interview you will asked about your views of the issues that have been raised by other participants. Taking part in this study will not affect your job, your current standing as a Registered Nurse, your current professional status, or have any effect on the professional role you are currently performing or will perform in the future.

Possible Benefits and Risks

It is not anticipated that there will be any direct benefit to you from taking part in the study. However, your views and participation in this study may help with recommendations to address issues in the performance of CPR in the future. It may also help to create support systems that might help address sensitive matters relating to taking part in CPR.

Although it is not anticipated that there will be any risks to taking part in the project, the researcher is aware that the topic of CPR may raise emotional memories and anxieties. If this happens during the interview the interviewer will stop the interview and ask if you wish to continue. If you feel that you need more support the interviewer will provide information about local groups that you can contact.

The interview will be transcribed using a professional transcriber who will sign a confidentiality agreement. The only exception to the promise of protecting your identity is that the research investigator has a legal duty to report any intentions of harm to yourself or others.

Further Information

If you have any further questions regarding this study, please do not hesitate to contact the Research Investigator, Veronica Fiave, or the Research Supervisor, Dr. Simon Palfreyman.

The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can call (780) 492-2615. This office is independent of the researchers."

Title of Project: Experiences of Nurses on Cardiopulmonary Resuscitation (CPR) Performance in the Non-Critical Care Wards

Ethics ID#: Pro00110496

Principal Investigator: Veronica Fiave

Attached is the link to a Google form for Consent Form. Please tick and check to provide consent to the study.

https://docs.google.com/forms/d/e/1FAIpQLSflzKYgzz5yBLnpijlPLGi_KnSBvDijYpC-vXX2MemmUCzf1w/viewform?usp=sf_link

Appendix B: Interview Questions

1. Please tell me a bit about your work history, precisely the number of years in practice and area of specialty.
2. Tell me about the actions you had performed during previous resuscitations.
3. What is it like to participate in CPR?
4. Can you tell me about your feelings following a CPR situation?
5. What happened after that?
6. How do you experience stress/anxiety relating to CPR performance?
7. What is the psychological /emotional impact on you after CPR performance?
8. How have you managed your emotions after a CPR?
9. Describe the support structures and systems available to you after CPR performance.
10. I want to hear about the CPR training that is available to you.
11. Can you tell me more about the training you have been part of?
12. What are the potential impacts of taking part in CPR?

Successive interview(s) will be performed to verify or clarify the interpretations drawn from the initial interview data. I will begin by presenting participants with an outline of the study themes:

1) Reference to our initial conversation, is there anything that you have thought of or would like to discuss or provide details? Do you have any further comments as to your experiences in performing CPR?

2) What are your thoughts about the themes I have identified? Do these correctly portray your views?

3) Can we review the themes together and discuss our interpretations?

Appendix C: Recruitment Poster

Seeking Participants

Are you, or someone you know a

Registered Nurse

who has participated in Cardiopulmonary Resuscitation (CPR) in a non-critical care ward?

I would like to hear about your experiences performing CPR in the non-critical care wards. If you are a registered nurse working with 37 Military Hospitals and works in any of the wards aside the emergency wards, please consider participating in this research study.

Contact Veronica Fiave for more information:

0540648978 / 0505697007

fiave@ualberta.ca

APPENDIX D: Initial Medline Search Result on October 22, 2020

MEDLINE SEARCH RESULTS		
Set	Searches	Number of Articles Retrieved
1	exp Cardiopulmonary Resuscitation/	18401
2	limit 1 to yr="2000 - 2020"	15454
3	Basic life support.mp.	2172
4	emergency procedure.mp.	778
5	1 or 2 or 3 or 4	20244
6	Nurses experiences.mp.	1553
7	exp Nurses/ or exp Nursing Staff, Hospital/ or nurses perception.mp. or exp Perception/	561313
8	nurses feelings.mp.	79
9	nurses emotion*.mp.	153
10	debriefing.mp. or exp Simulation Training/	12623
11	6 or 7 or 8 or 9 or 10	574250
12	emergency ward.mp. or exp Emergency Service, Hospital/	80777
13	intensive care units.mp. or exp Intensive Care Units/	100765
14	exp Critical Care/ or critical care area.mp.	58597
15	noncritical care areas.mp.	10
16	12 or 13 or 14 or 15	222097
17	5 and 11 and 16	118
18	from 17 keep 14, 21, 29, 42, 44, 46.	19

Appendix E: Initial CINAHL search result on October 22, 2020

CINAHL SEARCHES		
Search ID #	Search Terms	Results
S1	(MH "Resuscitation, Cardiopulmonary+") OR "cardiopulmonary resuscitation OR cardiac resuscitation OR mouth-to-mouth resuscitation"	2,403
S2	Heart massage" or CPR or Chest compression	13,136
S3	S1 0R S2	13,743
S4	experience" or perception" or views"	115,555
S5	feelings" or emotions" or belief" or attitude	385,845476,762
S6	S4 OR S5	471,546
S7	nurses" or nursing	937,704
S8	S3 AND S6 AND S7	266

Appendix F: Six codes illustrating direct quotes

Feelings associated with CPR performance	Impact of emotions on nurses during and after cpr	Physical exhaustion in nurses during and after cpr	Informal support of emotional Stress and Anxiety management	Systemic Challenges	Lack of CPR refresher trainings
Well, there is the sense of panic because you are at a rush to save someone's life. Someone is about to die, so there is a rush, there is panic and anxiety. You just have to do a lot and a lot will be running through your mind at that time, but you just have to find a way of calming down and then knowing what to do and who to call and all that. So, it's a bit panicky. (Participant 2)	I was very disappointed, and it was like having success in something for a long time and then getting a bad report with one. It's bad. The thought of what happened, what went wrong, what didn't you do well? All those thoughts come back, and you start asking yourself so many questions. What was the delay,	So, you should be able to think very fast and move the patient so you are exhausted in energy, so you are moving the patient if you're using the umbo bag to administer the oxygen to blow oxygen or air into the patient you are pumping the ambu bag to pump it at certain rates you have to pump it with some pressure. (Participant 7)	I talk to some of my colleagues and then they on their part also try to console you and encourage you or just tell you that you did your best and so you should just let things go as it has happened (Participant 11)	When a person arrest we should always have access to everything, almost every ward should have an ambu bag, defibrillators, emergency drugs just being accessible .Because I remember the last CPR , we had to keep on running to our ICU to get back	You will be taught in school, and that is it. Basically, that is it for a lot of people. From school they will not have any training again. In as much as you know CPR it's something you need. (Participant 3)

	was there something that could have been done before we identified the cardiac arrest that we didn't do? It leads you to a lot of questions (Participant 10).			to the triage to get some of these things and this was a bit stressful(Participant 1)	
the emotional part where most of the time if the patient makes it, it is always a good thing. I remember one CPR we did. We were able to keep the patient ,we got something , we got some pulse, we got some heart, we got some cardiac activity. Then we finally got the patient to the ICU to be intubated and that felt like a win for that night. It felt like a win but eventually the	although it's something I do most of the time, the feeling is always new. Fear of the unknown(Participant 5)	I become stressed when I perform CPR for a very long time. I mean, you change over and over; you become tired, especially when you don't have a lot of people. (Participant 3)"	so, during my CPR I feel bad, so what will happen is you talk about it when you come to work, you talk with colleagues, or with the medical team or any of the doctors who knows the patien (Participant 6)	when you need the items to assist you, you don't get them, so it's like pouring water in a basket. Everything goes in vain.(Participant 4)	oh, it's been long, yes, like three years. I believe they've been organizing training on CPR but what I saw and went was that one that I went three years ago. So probably I have not taken notice of the other training that they have published for us to attend on CPR. We as a ward currently, we are

patient passed anyway after a few days at the ICU. But that night it felt like a win, you know(Participant 1)					organizing our own small workshops just to upgrade ourselves also. So, the CPR training is also something that is in the pipeline that we will soon organize for all the other staff. .(Participant 10)
I do right, what didn't we do, what should I have done? Should I have done it this way? You know,...but when the patient pulls through then well at that moment you think that well you did the right things, it is the right thing that you did that made the patient go through. And the feeling is nice. You know there is this; you walk about with a very good mood. I	it's always stressful. You know most of CPR patients, our patients that need CPR don't really survive so most times we don't want to get there. It's really cumberso me. I don't want to be there. I don't want to see a patient in that state	But it's not easy. It's not easy at all, because by the time you are done, sometimes your shoulders, your whole body is weak.(Particip ant 8)	So, sometimes when I feel stressed out or disappointe d with another case I just try to reflect on the positive outcome of other patients and how I'm able to put smile on their relatives faces, and it keeps me going not to give up. (Participant 5)	Sometim es we give adrenalin e, so you will realize that maybe you will need it and then you will go into your emergen cy tray then there is none. It's a challeng e. You have to now send	To be honest I haven't had any CPR training since , for a very long time I haven't.No I haven't… I felt a bit unprepared so i have to see people do it for the first or second cycles (Participant 1)

wouldn't say with a swollen head, but you have this feeling like today you have been able to save a life. Yes, save a life. I mean you have a good feelin(Participant 3)	because I would say one out of ten in most times out of CPR.(Participant 4)			someone, please go to this ward, and go and check if you can get this medication for me or something (Participant 11)	

Notification of Approval

Date:	May 31, 2021
Study ID:	Pro00110496
Principal Investigator:	Veronica Fiave
Study Supervisor:	Simon Palfreyman
Study Title:	Experiences of Nurses on Cardiopulmonary Resuscitation Performance in the Non-Critical Care Wards
Approval Expiry Date:	Monday, May 30, 2022

Thank you for submitting the above study to the Research Ethics Board 1. Your application has been reviewed and approved on behalf of the committee.

Approved Documents:

Recruitment Materials

Seeking Participants Poster

Letter of Initial Contact

Email letters_Recruiting.docx

Consent Forms

INFORMATION LETTER and CONSENT FORM

Questionnaires, Cover Letters, Surveys, Tests, Interview Scripts, etc.

Interview Guide.docx

Protocol/Research Proposal

Thesis ProposalVF_REB1.docx

Any proposed changes to the study must be submitted to the REB for approval prior to implementation. A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Research Ethics Board does not encompass authorization to access the staff, students, facilities or resources of local institutions for the purposes of the research.

Sincerely,

Anne Malena, PhD
Chair, Research Ethics Board 1

Note: This correspondence includes an electronic signature (validation and approval via an online system).

Institutional Review Board
37 Military Hospital
Neghelli Barracks
ACCRA

Tel: 059 1759506
Email: irbmilhosp@gmail.com

7 June 2021

ETHICAL CLEARANCE

37MH-IRB/MAS/IPN/507/2021

On 22 June 2021 the 37 Military Hospital (37MH) Institutional Review Board (IRB) approved your protocol.

TITLE OF PROTOCOL: Experiences of Nurses on Cardiopulmonary Resuscitation in the Non- Critical Care Ward

PRINCIPAL INVESTIGATOR: Veronica Fiave

Please note that a final review report must be submitted to the Board at the completion of the study.

Please report all serious adverse events related to this study to 37MH-IRB within seven (7) days verbally and fourteen (14) days in writing.

This certificate is valid till 21 June 2022.

37 MILITARY HOSPITAL
INSTITUTIONAL REVIEW BOARD
DATE: 21-06-2021

DR EDWARD ASUMANU
(37MH-IRB, Vice Chairman)

Cc: Brig Gen NA Obodai
Commander, 37 Military Hospital