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FACTORS ASSOCIATED WITH BLOOD DONATION AMONG HEALTH CARE PROVIDERS AT THE CAPE COAST TEACHING HOSPITAL, CENTRAL REGION

BY

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This thesis/dissertation is submitted to the University of Ghana, Legon in partial fulfillment of the requirements for the award of **MASTER OF PUBLIC HEALTH** Degree.

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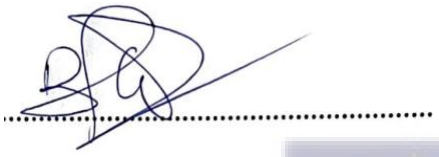
DECLARATION

I, Selorm Makafui Kwashie, hereby declare that apart from others' studies cited and referenced, this project is my original research under supervision towards my Masters' degree. This research is based on my own initiative, and it has not been submitted for any certificate/degree in any other institution/university to the best of my knowledge.



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DEDICATION

This work is dedicated to my mother Abbah, brother Selasi, sister Yayra and my best friend Etornam for their prayers, encouragement and unflinching support given to me throughout the course of my Master of Public Health programme.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

CCTH	-	Cape Coast Teaching Hospital
LMIC	-	Low- and Middle-Income Countries
MOH	-	Ministry of Health
NBS	-	National Blood Service
PBM	-	Patient Blood Management
PPH	-	Post-Partum Hemorrhage
TTIs	-	Transfusion-Transmissible Infections
TTM	-	Trans-Theoretical Model
UN	-	United Nations
WHO	-	World Health Organization

Operational Definitions

Blood Donation/ Practice of Blood Donation– Blood donation practice was considered if a respondent had ever donated blood at least once in their life.

Blood Donation Intention-A person's willingness to donate blood anytime in the future.

ABSTRACT

Background: Most countries in Africa including every country in sub-Saharan Africa experience blood shortages. The blood donation rate of 6.8/1000 people in low-middle income countries is abysmally low compared to the donation rate of 31.5/1000 people in high income countries. Accruing a stable voluntary blood donation base is crucial to addressing the challenges sub-Saharan African countries face with regards to access to blood products. An assessment of the factors associated with blood donation would be pivotal in designing interventions to predict and enhance blood donation behaviour change.

Objective: To assess factors associated with blood donation among health care providers at the Cape Coast Teaching Hospital, Central Region.

Method: The study adopted a cross-sectional study design using quantitative methods to collect data from 458 health care providers at the Cape Coast Teaching Hospital (CCTH) for analysis. A structured questionnaire validated by earlier researchers was adapted and administered to the participants who were recruited using the stratified random sampling and systematic random sampling techniques. The variables measured were grouped into dependent and independent. The data collected were analysed using STATA version 17. Descriptive statistics were presented in tables and graphs. Chi-square test and logistic regression analysis were used to ascertain the association between the dependent and independent variables. A level of significance of $p<0.05$ at 95% Confidence Interval (CI) was used.

Result: The estimated sample size was 458 participants however, the final analysis included 455 respondents (response rate = 99.3%). The prevalence of blood donation at CCTH was 36.3% amongst the respondents. Sex was significantly associated with the practice of blood donation with females less likely to donate blood than males [AOR=0.63 (95% CI

0.41,0.98)]. There was an association between intention and practise of blood donation. Those who had ever donated blood in the past were more likely to be willing to donate blood in the future than those who had never donated blood [AOR=8.68 (95% CI 3.82, 19.73)]. Community factors such as cultural acceptance, religious acceptance, peer and family influence were significantly associated with blood donation ($p<0.05$). Predictors of the practice of blood donation included male sex, future blood donation intention, discouraging spiritual perception of blood donation as well as peer and family donation of blood ($p<0.05$).

Conclusion: The practice of blood donation amongst the health care providers at CCTH was low compared to similar studies undertaken in low-middle income countries. Community factors are most likely to influence blood donation practice. Hence, more attention should be paid to these factors when designing interventions to bring about blood donation behaviour change.

CHAPTER ONE

INTRODUCTION

1.0. Background to the Study

Haemorrhage is the chief cause of mortality of trauma patients who do not get to the hospital, and up to 40% of the total mortality of those who reach the hospital worldwide (World Health Organization (WHO), 2018). Post-Partum Haemorrhage (PPH) is responsible for about a quarter of primary causes of all maternal deaths globally, and it is the leading cause of maternal deaths in low-middle-income countries (Say *et al*., 2014; WHO, 2012). The Ghana Maternal Health Survey 2017 revealed that 30% of all direct causes of maternal deaths were from haemorrhage (Ghana Statistical Service, (GSS), 2018). Every country in sub-Saharan Africa experience shortages in blood supply for use in hospitals (Raykar *et al*., 2021).

Healthcare providers in most High-Income Countries (HICs) have a comparatively easy task of administering a blood transfusion to a bleeding patient: blood is requested, and the blood bank supplies it (Raykar *et al*., 2021). Raykar *et al*. (2021) contend that for a huge proportion of clinicians and patients in low- and middle-income countries, getting access to blood is not certain as there is a problem with the availability and accessibility of blood at these facilities.

Blood and blood products form an integral aspect of patient care in every hospital. Ensuring access to blood supply is essential for good patient outcomes during emergency and non-emergency situations (Checkley *et al*., 2019). Checkley *et al*. (2019) support the position that blood and blood products are important in the management of injuries, medical illness and childbirth.

Blood transfusions are required for diverse health conditions. These include but not limited to cases of severe anaemia from a wide range of aetiologies, emergency obstetric and gynaecological conditions, severe trauma due to road traffic accidents and some surgical procedures (Kralievits, Raykar, Greenberg, & Meara, 2015). Blood transfusions also form an invaluable aspect of the management of certain health conditions such as sickle cell disease, thalassaemia and haemophilia (World Health Organisation (WHO), 2017a).

Swift access to safe blood is essential to the provision of safe surgical care. A study argues that this is affected by three main factors: adequate volume of supply of blood, strict protocols for donation and transfusion and appropriate regulatory framework to ensure safety, equity and sustainable distribution (Jenny *et al*., 2017). The general availability of blood in a nation is estimated by the whole blood donation rate. The World Health Organisation (2017a) reported that out of the 118.5 million blood units donated worldwide, only one-third of these are collected from developing countries who form 84% of the world's population. The WHO revealed that high income countries have a median blood donation rate of 31.5 donations per 1000 people while those in lower-middle income countries have a donation rate of 6.8 donations per 1000 people and only 5.0 donations in low-income countries (WHO, 2017a).

The WHO (2019) reported that Ghana's estimated blood requirement in 2018 was 280, 000 units but only 169, 000 units were collected in this sub-Saharan African country. In the following year, there was an increased blood requirement of 304,179 units but only 180,693 (59.4%) units were collected (WHO, 2019).

A consistent, healthy volunteer donor base is essential to closing the gap in blood availability between high-income countries and low-middle income countries. There are three types of

blood donors: voluntary unpaid, family/replacement, and paid (WHO, 2017b). The WHO (2017b) considers the voluntary unpaid blood donors as the recommended donors for all countries as an adequate and reliable supply of safe blood can be guaranteed by this group of donors. Voluntary unpaid donors are also considered as the safest donors because the risk of bloodborne infection is lowest amongst this group (WHO, 2017b).

In many low-middle- income countries, blood donations come from a mixture of voluntary unpaid donors, family/replacement donors and paid donors (Jenny *et al*., 2017). The National Blood Service (NBS) reported that only 33% of donations collected were from voluntary unpaid donors, failing to meet the WHO recommendation of 100% (National Blood Service (NBS), 2020).

An annual performance report of the Cape Coast Teaching Hospital (CCTH, 2020) reported that only 19% of all whole blood crossmatched was from voluntary blood donors while 80.8% was from replacement / pre-deposit donors. An inquest into the factors associated with blood donation would be crucial for planning interventions to ameliorate the problem, hence, improving survival and reducing mortality from blood related causes. As a result of the challenges associated with availability and access to blood at the hospital, this study aimed to assess factors associated with blood donation among healthcare providers at the Cape Coast Teaching Hospital in the Central Region.

1.1. Problem Statement

Blood transfusion is a live-saving procedure, which brings an improvement in the lives of many people who need it (Yahia, 2021; Malako, Yoseph, & Bekele, 2019). Hundreds of millions of individuals experience traumatic injury, obstetric bleeding and paediatric

anaemias annually and require urgent access to blood transfusion (Vos *et al*., 2016). Many low-middle income countries (LMIC) have a huge challenge accruing an adequate voluntary, non- remunerated blood donation base to meet the current needs/requirements (Jenny *et al*., 2017). Most LMIC are unable to efficiently coordinate and regulate blood services (Kralievits *et al*., 2015). Low-Middle Income Countries also have a high prevalence of transfusion-transmissible infections in blood supply compared to HICs, culminating in high discard rates and increased transfusion risks (WHO, 2017a).

The reasons for the low prevalence of blood donation in LMIC are multifactorial and can broadly be classified as knowledge, attitude and practices, individual/community factors and hospital/health system factors as explained below (Bantayehu, 2015; Checkley *et al*., 2019; Mbanya, 2012).

The challenge with apparent lack of and access to blood at health institutions could be related to the poor knowledge, attitude and practices among healthcare providers (Bantayehu, 2015; Malako *et al*., 2019). Moreover, the challenge with inadequate availability and access to blood products and blood donation could be seen from the individual factors of health care providers (Arage, Ibrahim, & Adimasu, 2017; Malako *et al*., 2019).

In addition, it could be argued that another challenge with inadequate availability and access to blood products and blood donation could be seen from the perspective of hospital/health system factors. Generally, there is a shortage of trained blood bank staff or test kits, the use of low-quality reagents, lack of appropriate cold chain facilities, and poor-quality assurance (Yahia, 2021). Another crucial hospital/health system related factor/problem that can influence the availability of and access to blood is the apparent lack of effectiveness of

Patient Blood Management (PBM) (Mbanya, 2012). Mbanya (2012) observed that low policy implementation rates; inadequate financial resources; high prevalence of Transfusion Transmissible Infections (TTIs) and lack of quality human resources were the major impediments to appropriate patient blood management (PBM).

Furthermore, it is important to assess the challenges with inadequate availability and access to blood products and blood donation from the perspective of community factors on health care providers (Asamoah-Akuoko, Hassall, Bates, & Ullum, 2017). Asamoah-Akuoko *et al.* (2017) found discouraging spiritual, religious and cultural perceptions of blood donation as the community or societal factors that were major deterrents to blood donation.

While Ghana has a National Blood Service, it has become noticeable that many patients who require blood and blood products at CCTH do not get access to blood (*Ghana News Agency* (GNA), 2021). This reflects the inadequate access to safe blood for use in hospitals in the country. The CCTH blood bank discarded 12.1% of all the whole blood it had crossmatched in 2020, classifying them as unsafe (CCTH,2020). Asamoah-Akuoko *et al.* (2017) found that fear due to lack of knowledge and demotivation from spiritual, religious and cultural perceptions of blood donation were the main deterrents to blood donation in Ghana.

The consequences of inadequate access to safe blood are high morbidity and mortality from blood related causes (Ghana Statistical Service (GSS), 2018; WHO, 2012, 2018). The highest proportion of maternal mortality from 2019 to 2021 at the CCTH was from haemorrhage / severe anaemia, which were most likely linked with issues pertaining to non-availability and lack of access to blood products. The percentages of maternal deaths from haemorrhage in 2019 and 2020 were 39.3% and 46.2% respectively (CCTH, 2020). The enumerated

problems causing the lack of access and inadequate supply of blood products at the CCTH were assessed in this study accordingly.

1.2. Justification of the study

A study examined the influence of individuals' knowledge, attitude and practices on blood donation in several populations in Ghana (Nuako, Bedu & Ansong, 2016). Even though this study evaluated an important aspect that affects blood availability and access, health system factors' influence on blood availability were not considered. This current study sought to identify individual factors, community factors as well as the hospital/health system factors that could affect blood donation among healthcare providers. These were the gaps identified in the existing literature forming the basis for the need for this study.

Even as some studies assessed how the challenge with availability and access to blood products and blood donation could be related to the poor knowledge, attitude and practices among healthcare providers, this issue had not been examined at the CCTH in the Central Region (Tadesse *et al*., 2018; Teferi *et al*., 2021).

Even though some studies assessed other variables causing the challenge to non-availability and access to blood products and blood donation, there was a gap identified related to individual factors of health care providers and their practice of blood donation at the CCTH (Arage *et al*., 2017; Bantayehu, 2015; Malako *et al*., 2019; Nuako *et al*., 2016).

Moreover, existing evidence was silent on how hospital/health system factors could affect blood availability and accessibility and blood donation in Ghana in general and among health care providers at the CCTH and Central Region in particular (Nuako *et al*., 2016).

Furthermore, another key variables that were missing from current literature as affecting blood availability and accessibility and blood donation were community factors and how they could influence health care providers to donate blood (Nuako *et al*., 2016).

The study provides answers to the persistent challenges facing the country in recruiting a stable voluntary non-remunerated donor base for blood donation and also explore the operational and system factors that may limit availability of and access to blood at the Cape Coast Teaching Hospital and by extension, all hospitals. Getting the correct answers will be very key to inventing innovative solutions to the blood crisis for improved health outcomes, which would serve as a 'small win' in the quest to achieving the Sustainable Development Goal 3 (Good Health and Well-being) (United Nations (UN), 2021). The study highlights a different line of research in the pursuit of addressing the incessant blood shortage in blood banks and its consequences on healthcare outcomes.

The motivation for the need to conduct this study stemmed from the fact that the researcher was a health provider working in Ghana's health sector who had been exposed to the myriad of challenges confronting blood donation and supply issues. The experiences gained over the years were useful in discussing the way forward towards ameliorating the seeming challenges.

1.3. Objectives of the study

The objectives of the study have been categorised into general and specific as shown below.

1.3.1. General objective

The general objective of the study was to assess factors associated with blood donation among health care providers at the Cape Coast Teaching Hospital, Central Region.

1.3.2. Specific objectives

The specific objectives of the study were;

1. To assess the knowledge of, and attitude towards blood donation among healthcare providers at the Cape Coast Teaching Hospital and their association with the practise of blood donation.

2. To assess the association between hospital/health system factors and blood donation among health care providers at the Cape Coast Teaching Hospital.

3. To assess the association between community factors and blood donation among health care providers at the Cape Coast Teaching Hospital.

4. To assess the association between the practice of blood donation and future blood donation intention.

1.3.3. Research questions

The research questions addressed were;

1. What is the knowledge of, and attitude towards blood donation among health care providers at the Cape Coast Teaching Hospital and their association with the practise of blood donation?

2. What is the association between hospital/health system factors and blood donation among health care providers at the Cape Coast Teaching Hospital?

3. What is the association between community factors and blood donation among healthcare providers at the Cape Coast Teaching Hospital?

4. What is the association between the practice of blood donation and future blood donation intention?

1.4. Outline of the dissertation

The dissertation is presented in six chapters. Chapter one presents the introduction of the study, which includes the background to the study, problem statement, justification, general objectives, specific objectives and the research questions. The second chapter presents the literature review of existing work on the subject under discussion and a conceptual framework. The methods applied in collecting empirical data for analysis are presented in chapter three. Chapter four summarizes the results of the findings from analysis of the data generated from CCTH. The fifth chapter is where discussion of the study findings was compared to findings from other literature of similar studies. The summary, conclusion and recommendations of the study are captured in the sixth chapter.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0. Introduction

This chapter presents the literature review of studies pertaining to the topic and it is divided into five sections. The first section focuses on participation in blood donation and the availability of blood. Section two talks about factors that may affect the accessibility to blood in hospitals. These include knowledge of, attitude towards and practice of blood donation; how individual (socio-demographic characteristics), community and hospital / health system factors relate to blood donation. Section three presents the theoretical perspective underlying the choice of the conceptual framework for the study. The fourth section presents the conceptual framework where key elements underpinning the study are reviewed in relation to literature and the researcher's conceptualization. The fifth section presents the chapter summary where the main ideas in the chapter are summarised.

2.1. Participation in blood donation

Globally, there is an increased requirement for blood products to meet the incessant demand (Yahia, 2021). The general availability of blood in a country is estimated using the whole blood donation rate (WHO, 2022). The World Health Organisation (WHO, 2022) proposes that a consistent, healthy donor base is crucial to maintaining an adequate supply of blood at the blood banks and this can be assured by a stable regular voluntary, unpaid donors. It is recommended that 3-5% of the populace should donate blood to meet a country's need (WHO, 2022). The WHO (2022) classifies blood donors into three major groups: voluntary unpaid, family/replacement, and paid donors. The voluntary unpaid blood donors are considered as the safest group of donors because the risk of bloodborne infections is minimal

among this group (WHO, 2022). The whole blood donation rate is woefully inadequate in low-middle income countries as estimated to be around 6.6 per 1000 people (WHO, 2017a).

Health professionals are supposed to be the population to appreciate the benefits and the need for blood donation more in their day-to-day activities. Surprisingly, the practice of blood donation has been woefully inadequate among health professionals as evidenced by several studies (Bantayehu, 2015; Nwogoh, Aigberadion & Nwannadi, 2013; Tadesse *et al*., 2018).

Tadesse *et al*. (2018) found that only 47.8% of health professionals surveyed had ever donated blood in their lifetime. The participation of healthcare workers in blood donation was 21.6% in Ethiopia (Malako *et al*., 2019). Of the 427 Ethiopian health professionals sampled, 33.2% had practiced blood donation (Arage *et al*., 2017). The percentage of nurses in Komfo Anokye Teaching Hospital, Kumasi-Ghana who had donated blood before was 27.1% (Nuako *et al*., 2016). None of the studies reviewed had at least 50% of the respondents participating in blood donation exercises, corroborating the fact that participation in blood donation exercises is problematic even among health professionals.

2.1.1. Availability of blood

As stated earlier, blood availability in a country is estimated by the quantity of whole blood that is donated in a specified period (WHO, 2022). There is a huge gap between blood availability in high income countries (31.5/1000 people) and low-middle income countries (6.6/1000 people) which form majority of the world's population (WHO, 2022). The low blood availability in sub-Saharan Africa can be directly linked to poor donation behaviour as the blood donation rate is used as a proxy measure to estimate the overall blood availability in a country (WHO, 2022). Blood availability is also affected by the rational use of blood in that

clinicians understand the clear indications where transfusion is needed so as not to misuse blood (Cholette & Lerner, 2011).

2.1.2. Access to blood

Generally, access to blood in LMICs is poor due to low blood donation rates and poor patient blood management compared to developed countries (Yahia, 2021). Without a stable voluntary donor base, the blood banks would not be able to process blood for use when needed. Access to blood is also hampered by unfavourable policy environments in a country as well as the hospital. In addition to this, certain health system factors can militate against access to blood and blood products. Yahia (2021) contends that this may be related to shortage of trained blood bank staff or test kits, the use of low-quality reagents, lack of appropriate cold chain facilities, and poor-quality assurance. Another crucial hospital/health system related factor that can influence access to blood is the effectiveness of Patient Blood Management (PBM) (Mbanya, 2012). Mbanya (2012) identified low policy implementation rates; inadequate financial resources; high prevalence of Transfusion Transmissible Infections (TTIs) and lack of quality human resources as some of the main barriers to appropriate patient blood management (PBM).

2.2. Factors Associated with Blood Donation

This section presents an analysis of related literature on factors associated with blood donation among health providers. These cover knowledge of, attitude towards and practices of blood donation, sociodemographic characteristics, community factors and hospital/health system factors.

2.2.1. Socio-demographic characteristics and blood donation

This subsection presents an analysis of individual (socio-demographic characteristics) factors associated with blood donation.

Age

Arage *et al.* (2017) found an independent association between age and the practice of blood donation. Shebu, Langmaack, Felchle and Clement (2015) found age to have the highest impact on the practice of blood donation. It was reported that, for every 1% increase in age, the probability of an individual donating blood would drop by 1.4% (Shebu *et al.*, 2015). In addition, Melku *et al.* (2016) found age to be significantly associated with the practice of blood donation among an adult population in Gondor Town in Northwest Ethiopia.

Sex

Malako *et al.* (2019) showed that only sex was significantly associated with donation of blood among healthcare workers in Ethiopia, which was similar to a study where male healthcare workers were found to be more likely to donate than their female counterparts (Nwogoh *et al.*, 2013). Batayehu (2015) found that being a male could increase the odds of having a favourable attitude towards blood donation which in turn may culminate in improved blood donation behaviour. This was similar to a study, which found that gender was the single most important factor that was associated with blood donation intention (Abd Hamid, Basiruddin, & Hassan, 2013).

Marital status

Marital status was not associated with the intention to return for blood donation among blood donors in China (Li *et al*., 2021). However, a study in Gondar Town, Northwest Ethiopia found that marital status was statistically associated with the practice of blood donation (Melku *et al*., 2016).

Religion

Harrington (2012) found that religion could be a major barrier to blood donation as some of the respondents did not participate in blood donation because it was against their religious beliefs. Sekoni *et al*. (2014) found an association between being a Christian and willingness to donate blood. Peters and Oko (2021) found that the majority of the respondents (58.9%) strongly agreed that their religion had a strong impact on voluntary blood donation.

Profession

Nwogoh *et al*. (2013) found no significant disparity between the knowledge, attitude and practice of blood donation among the different cadre of health care providers. Teferi *et al*. (2021) showed that health professionals had an increased blood donation practice, almost two-fold as compared to non-health professionals. Yirgu *et al*. (2021) also found that clinical staff were eight times more likely to practice blood donation as compared to non-clinical staff. Although the different cadres of health care providers were not assessed, both studies showed that those working closely with patients had a higher blood donation practice as compared with those who did not work closely with patients. This difference could be due to the fact that clinical staff had a good awareness of the importance of blood donation and work closely with individuals who need blood.

2.2.2. Knowledge, attitude and practice of blood donation

The knowledge of blood donation may differ between different populations based on several characteristics. Getie, Wondmieneh, Bimerew, Gedefaw and Demis (2020) found that knowledge of and attitude towards blood donation was significantly associated with blood donation practice. Checkley *et al.* (2019) found that knowledge was poor (<50% correct) regarding age, weight, and volume of blood to be able to donate among community members in Eastern Uganda. These researchers observed that respondents' overall knowledge of general characteristics that would disqualify individuals from being eligible to donate blood was good. This was in contrast to similar studies performed where most of the health care workers (82.6% and 72.7% respectively) had good knowledge of blood donation (Malako *et al.*, 2019; Bantayehu, 2015). Arage *et al.* (2017) found a significant association between health professionals' knowledge of and attitude towards blood donation and their practice of blood donation.

However, Nwogoh *et al.* (2013) found that there was a huge disparity between the knowledge, attitude and voluntary unpaid blood donation amongst healthcare workers in Nigeria. This was analogous to the finding that most of the healthcare workers (82.6%) had good knowledge of blood donation but regrettably only 21.6% had ever donated blood in their life-time (Malako *et al.*, 2019). A study showed that nurses had limited knowledge of blood donation, but their overall attitude towards blood donation was positive at the Komfo Anokye Teaching Hospital in Ghana (Nuako *et al.*, 2016).

2.2.3. Hospital/health system factors and blood donation

This sub section presents an analysis of studies on how hospital factors associate with blood donation. Blood donation behaviour is influenced by several factors that are hospital related as presented below.

Human Resource

Mohammed and Essel (2018) noted that the good attitude of donation clinic staff had an influence on blood donation in about four-fifth of the donors while a poor attitude of staff deterred about three-fifth of the respondents from blood donation. The attitude of the staff was important to both first time donors and repeat donors (Mohammed & Essel, 2018). Negative staff attitude was a deterrent to blood donation in another study (Muthivhi *et al.*,2015).

Remuneration/Incentives

Mohammed and Essel (2018) revealed that the offer of compensation on the other hand was the least motivation factor for blood donation as only about half of the donors found this to be a motivation factor. Reimbursement of the cost of transportation was an important motivator to blood donation in a study (Asamoah-Akuoko *et al.*, 2017). Incentives such as gift items and money were found to be a motivator to blood donation (Sekoni *et al.*, 2014; Muthivhi *et al.*, 2015). Sueming *et al.* (2017) found that remuneration was more important to repeat donors than first time donors.

Wait time

Wait time has been shown to be an important factor that affects patient satisfaction and could lead to a high reduction in the utilisation of health services including blood donation services

(Biya *et al.*, 2022). In a study, wait time defined as time from reception to end of blood donation was an important consideration for blood donors for repeat donation in the future (Martinez, Tamaribuchi, Zucoloto & Trovão, 2021).

Privacy/ Confidentiality during donation

Mohammed and Essel (2018) showed that the level of privacy during screening was another hospital related factor that contributed to a donor's willingness to donate in a little over half of the respondents. In a study, about a third of previous donors sampled stated lack of privacy as the reason for them not donating blood again (Manikandan, Srikumar & Ruvanthika, 2013). In a similar study, approximately 40% of those who ever donated once stated that they were deterred from further donation due to the lack of privacy during their previous donation exercise (Desai & Satapara, 2014).

Other hospital factors

The fear of contagion was a major barrier identified that could deter certain donors from blood donation (Harrington, 2012; Mohammed & Essel, 2018; Rolseth *et al.*, 2014). One could then infer that a hospital's Infection Prevention and Control (IPC) systems could affect donors' decision to donate. The hospital sending a reminder to donors to participate in blood donation was another motivator for blood donation amongst 70% of respondents in a study (Mohammed & Essel, 2018).

2.2.4. Community Factors and blood donation

This subsection presents an analysis of community factors that could associate with blood donation among health providers.

Religious beliefs

Discouraging spiritual, religious and cultural perception of blood donation could influence the practice of blood donation amongst individuals (Asamoah-Akuoko *et al*., 2017). Appiah (2013) revealed that aspects of culture that were found to influence blood donation in Sub-Saharan Africa included blood donation-related misconceptions, religious beliefs and influence of relatives.

Misconceptions

Asamoah-Akuoko (2018) observed that some people were discouraged from blood donation because they believed in certain myths and misconceptions in the community such as donated blood being used for occultism. In Ghana, beliefs and attitude of the public that were noted to have impeded voluntary unpaid donation of blood included the erroneous belief that hospital authorities were using donated blood for rituals (Appiah, 2013).

Media

Appiah (2013) noted that another perceived barrier identified was the negative reporting by the media such as indicating the percentage of donors found to be HIV-positive. Appeals from radio, television or from a famous person within the community has been an important factor that influences the decision of people to donate blood in about 70% of the respondents in a study (Mohammed & Essel, 2018). Muthivhi *et al*. (2015) revealed that social norms like "my colleagues give blood a lot" was found to be a motivator to blood donation among respondents of a study.

2.3. Theoretical perspective

Numerous theories and models linked to behaviour change have been adapted by several researchers to the context of health to aid in constructing behaviour change interventions (Sardi, Idri, Carrillo de Gea, Toval, & Fernández-Alemán, 2019). Munro, Lewin, Swart, and Volmink (2007) showed that the two theories most utilised recently are those within stage and cognitive perspectives. The cognitive perspective encompasses theories that look at beliefs and attitude as the source of people's behaviour. The Theory of Planned Behaviour is the most commonly cited and applied theory to predict blood donation and behaviour (Ferguson, 1996). Conversely, stage-based theories argue that people go through different stages as they learn and develop (Sardi *et al*., 2019). Among the stage-models, the Trans-Theoretical Model (TTM) is the most well-known and widely adapted theory (Whitelaw, Baldwin, Bunton, & Flynn, 2000).

The Theory of Planned Behaviour (TPB) stems from the Theory of Reasoned Action (Ajzen, 1985) which contends that the intention to perform a particular behaviour acts as the best determinant and the most consistent predictor of the behaviour" (Fishbein, Ajzen, & Belief, 1975).

The TTM has been successfully applied over several health behaviours (Hall, & Rossi, 2008) such as dietary fat reduction, prevention of diabetes, exercise promotion, organ donation, etc. Broadly, the theory can be divided into two main components: "Stages of Change and Process of Change" (Ferguson, 1996). The stages of change have been grouped into five: "Pre-contemplation, Contemplation, Preparation, Action and Maintenance" (Ferguson, 1996). The different stages set out the willingness of the individual to change a behaviour. The Pre-contemplation stage for instance is the beginning stage where behaviour modification is

unlikely to take root while maintenance stage is at the other end of the spectrum where the individual is more certain to maintain the desirable behaviour and is less likely to relapse.

The processes of change are thought to enable the transition from one stage to the next and were broadly categorised into two; experiential and behavioural with five processes for each category (Prochaska, Velicer, DiClemente & Fava, 1988). The experiential processes are mainly utilised for the early-stage transitions, and these include: "a) Consciousness Raising, b) Dramatic Relief, c) Environmental Re-evaluation, d) Social Liberation and e) Self Re-evaluation". The later stage transitions utilise five behavioural processes and these include: "f) Stimulus Control, g) Helping Relationships, h) Counter Conditioning, i) Reinforcement Management and j) Self-Liberation" (Prochaska *et al*., 1988). Every transition has a unique process of change which intervenes.

In addition, the TTM was expanded to encompass two extra core constructs namely: Self – efficacy and Decision balance (Sardi *et al*., 2019). In situations where self-efficacy has been applied, it has been found to have several implications in predicting blood donation behaviour. Self-efficacy is expected to increase as people advance through the stages. Decisional balance shows the relative importance the individual ascribes to a specified behaviour in terms of the advantages and disadvantages (Sardi *et al*., 2019). Current literature suggests that the advantages are most likely to increase during the earlier stages while the disadvantages decrease at the later stages (Hall, & Rossi, 2008). Specifically, individuals in the later stage of behaviour change approve more positive aspects of change. Conversely, the negative aspects of change tend to be endorsed in the earlier stages (Sardi *et al*., 2019). Due to the fact that behaviour change is a function of increase in perceived advantages and

decrease in disadvantages, decision balance is crucial in designing interventions to predict and promote behaviour change of those eligible to donate.

This study adapted the decision balance in designing the data collection instrument (questionnaire) to identify some factors that may influence blood donation so as to help design interventions which will predict and enhance blood donation behaviour change.

2.4. Conceptual Framework of Practice of Blood Donation Among Health Care Providers

The conceptual framework in Figure 2.1 demonstrates the relationship between the independent variables and dependent variable. The influence of knowledge, attitude, individual (socio-demographic characteristics) factors, community factors and hospital factors on the practice of blood donation and vice versa has been illustrated.

Studies have shown an association between individual factors (sociodemographic characteristic) and the practice of blood donation (Arage *et al.*, 2017; Malako *et al.*, 2019; Melku *et al.*, 2016; Sekoni *et al.*, 2014; Yirgu *et al.*, 2021). This shows how important sociodemographic factors such as age, sex, marital status, religion and profession affect the practice of blood donation.

Further, the conceptual framework has shown the inter-relationship between knowledge, attitude and the practice of blood donation. Some studies have shown that the level of knowledge of people of blood donation and their attitude have a huge influence on their practice of blood donation (Arage *et al.*,2017; Getie *et al.*, 2020). Thus, a high knowledge of and positive attitude towards blood donation is likely to lead to increased practice of blood

donation. Conversely, the practice of blood donation could lead to better knowledge of and improved attitude towards blood donation (Arage *et al*., 2017).

Furthermore, the conceptual framework highlights how hospital factors affect the practice of blood donation. Mohammed and Essel (2018) showed that attitude of donation clinic staff affected the practice of blood donation. Other studies have demonstrated the importance of incentives, wait time, privacy/confidentiality as key hospital factors that independently affect the practice of blood donation (Asamoah-Akuoko *et al*., 2017; Biya *et al*., 2022; Desai & Satapara, 2014; Mohammed & Essel, 2018).

Again, the bidirectional relationship between community factors and the practice of blood donation has been reported by studies which found culture, religious beliefs, peer influence and discouraging spiritual perception to be a major influence on the practice of blood donation (Appiah, 2013; Asamoah-Akuoko *et al*., 2017; Muthivhi *et al*., 2015).

Literature has established the association between practice of blood donation and blood donation intention (Kassie, Azale & Nigusie, 2020). The researcher acknowledges that the independent variables reviewed in the conceptual framework relate to blood donation intention as well but elects to explore the relationship between the independent variable with the practice of blood donation only as the dependent variable. In addition to this, the researcher would be making suggestions in relation to how the outcome could be reflected in health policy.

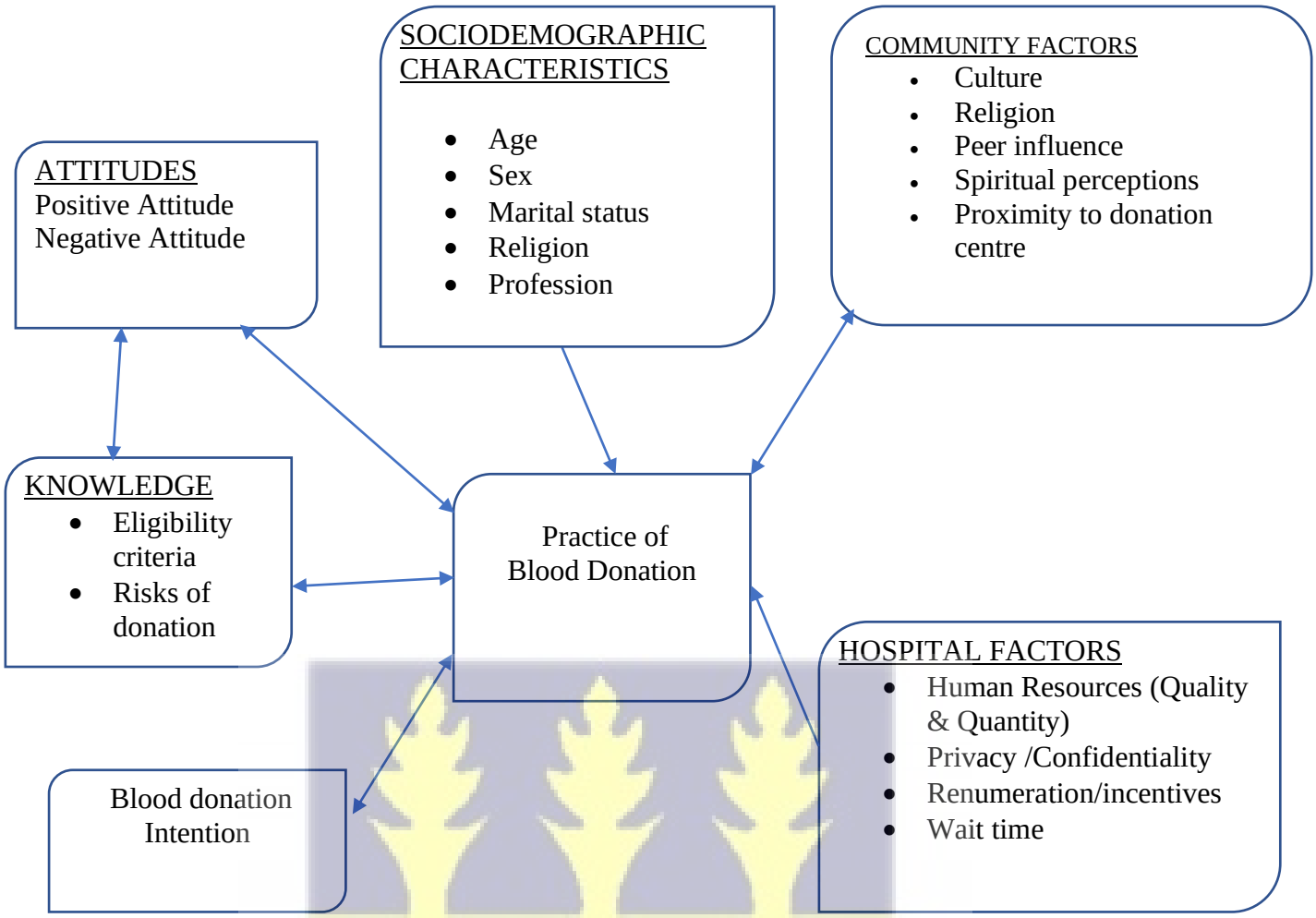

Figure 2.1: Conceptual Framework of Practice of Blood Donation among Health Providers.

Source: Researcher's conceptualisation.

2.5. Summary of the chapter

Most studies explored the individual factors associated with blood donation amongst healthcare providers but very few studies looked at hospital or community factors that were associated with the practice of blood donation among healthcare providers (Tadesse *et al.*,

2018; Teferi *et al*., 2021). Moreover, these factors associated with blood donation have not been studied at CCTH. Hence, the need to undertake this important research to unearth the problems militating against blood donation among healthcare providers. Finding the right answers would be the first step to developing pragmatic interventions that would go a long way to addressing the problem and help to accrue a stable blood donation base to meet the demands in the hospital and country as a whole.

The chapter reviewed literature on the prevalence of blood donation among healthcare providers in sub-Saharan Africa and other parts of the continent. Literature was also reviewed on the individual, community and health system factors that influence blood donation. The conceptual framework of factors associated with the practice of blood donation was also presented in the chapter. The gaps identified in literature which provided the pivot for the conduct of this study have been summarised under the section on justification of the study in chapter one. The next chapter presents the methods used to collect data in the study.

CHAPTER THREE

METHODS

3.0. Introduction

This chapter presents the methods applied in collecting data from CCTH for the study. There are eight sections in this chapter. The first section consists of the philosophical perspective of the study. The second section consists of the study design. The study area and study population are included in the third and fourth sections respectively. The sampling strategies, study variables and data collection instrument are captured in the fifth, sixth and seventh chapters respectively and the ethical considerations in the last chapter.

3.1. Philosophical Perspective

The researcher's choice of quantitative research method for this study was based on philosophical assumption as a positivist which aligns with the hypothetico-deductive model of science (Park, Konge & Artino, 2020). Positivism has dominated the work of most researchers in basic and clinical science for the past 150 years (Schrag, 1992). This research paradigm was put forward by Auguste Comte (1856). Comte (1856) explained that experimentation, observation and assumptions that are rooted in experience should form the foundation on which human behaviour is understood, thus forming the only authentic way of extending knowledge of human behaviour. The aim of positivist inquiry is generally to generate explanatory associations that invariably culminate in prediction and control of the said phenomena (Kopala & Suzuki,1999; Gergen, 2001).

The positivist paradigm was considered the best approach by the researcher for this study owing to the fact that it permits the researcher to analyse and interpret observations by means of quantifiable entities and facts. This paradigm is frequently employed to find cause-and-

effect association between the variables (dependent and independent variables) under study. In addition, positivism uses deductive logic, formulates hypothesis for testing to arrive at acceptable conclusions, the outcomes which are deterministic, empirical and worthy of generalisation (Cohen, Manion & Morrison, 2000).

3.2. Study Design

A research study design refers to a framework, or a set of methods and procedures that are used to collect and analyse data on specified variables for a particular research problem (Ranganathan, & Aggarwal, 2018). The study adopted an analytic cross-sectional study design using quantitative research methods. A cross-sectional study is a study design where the researcher measures the exposure and outcome variables in the study participants at the same time (Setia, 2016). This study design was adopted because it is simple, cheap and fast way of measuring exposure and outcome variables amongst the study participants in the limited time that the researcher had to complete this dissertation. This design also allowed the researcher to assess the association between dependent and independent variables, thus, enabling the investigator to meet the study's objectives successfully.

3.3. Study Area

The study was carried out at the Cape Coast Teaching Hospital (CCTH) located in Cape Coast in the Central Region.

Geography and Demography

Cape Coast is the only Metropolis out of the Twenty (23) districts in the Central Region. Cape Coast Metropolis lies within latitudes 5◦ 20' and longitudes 1◦ 11' to 1◦ .41' West of the Greenwich Meridian (Cape Coast Metropolitan Assembly (CMA), 2021). The

Metropolis is bounded to the south by the Gulf of Guinea, west by the Komenda Edina Eguafo Abrem, East by the Abura Asebu Kwamankese District, and to the north by the Twifu Heman Lower Denkyira District. It occupies an area of approximately 122 square kilometres, with the farthest point at Brabedze, about 17 kilometres from Cape Coast, the capital of the Metropolis as well as the Central Region. The Metropolitan Assembly (CCMA) was established initially as a municipal Assembly by L.I. 1373 in 1987 and after twenty years of existence elevated to Metropolitan status by L.I. 1927 in February, 2007 (CMA, 2021).

Economic status

More than half (54.7%) of persons 15 years and older within the metropolis are economically active with 90.7% employed by the public and private sectors (Ghana Statistical Service, 2014). A majority of those who are not economically active are students engaged in full time education. A majority of those gainfully employed are in service and sales with a minority in skilled agriculture, fishery and forestry (Ghana Statistical Service, 2014).

Healthcare provision

The Central Region has a total of 618 health care facilities that provide healthcare services (Ghana Health Service, 2018). Of this number, 414 are CHPS facilities, 132 are Health Centres and Clinics, maternity homes are 25, hospitals and polyclinics are 45, one Regional Hospital (Trauma and Specialist Hospital, Winneba) and one Teaching Hospital (Cape Coast Teaching Hospital) (Ghana Health Service, 2018). The Cape Coat Teaching Hospital has a staff strength of 1792 (an increment of 10.1% from 2019) (CCTH, 2020). The hospital had a total of 291 doctors, 713 professional and enrolled nurses, 25 pharmacist and pharmacist technicians, 164 midwives and 51 laboratory and lab technicians in 2020 (CCTH, 2020). The

Trauma and Specialist Hospital, Winneba has 24 doctors (specialist, medical officers and physician assistants) and 228 professional nurses and midwives (Trauma and Specialist Hospital, 2020).

3.3.1. The Cape Coast Teaching Hospital

The CCTH is one of the agencies of the Ministry of Health (MOH) and it is the sole tertiary institution in the Central Region of Ghana (CCTH, 2020). The hospital is geographically located at the northern part of Cape Coast (capital town of the Central Region) and bounded on the North by Abura township, on the south by Pedu Estates and 4th Ridge, Nkanfoa on the East and Abura/Pedu Estate on the West (CCTH, 2020). It has a current bed capacity of 400. The institution has the mandate to provide tertiary clinical services, serve as a training facility for medical and post graduate programmes and to undertake research to improve the lives of people (CCTH, 2020).

The Hospital was established in 1998 as a Regional Hospital and later upgraded to a Teaching Hospital status on 21st March 2014, with a Board following the establishment of the School of Medical Sciences at the University of Cape Coast, Ghana. The hospital is also accredited by the Ghana College of Physicians and Surgeons for postgraduate training. CCTH works in close collaboration with the University of Cape Coast College of Health and Allied Sciences and it is the main training facility for students of the School of Medical Sciences of the University. CCTH provides health care to the entire Central Region and the Western Region of Ghana (CCTH, 2020).

3.4. Study Population

The study population included healthcare workers at the CCTH, who were employees during the period of data collection.

3.4.1. Inclusion Criteria

The study included healthcare workers who were 18 years and above in CCTH, were directly involved in clinical aspect of healthcare and had worked in the facility for at least 6 months. Thus, the study also included health workers on permanent contract with the CCTH who were available at the time of the study.

3.4.2. Exclusion Criteria

The study excluded health care workers who were below 18 years, directly involved in patient care but were visiting staff or doing internship at the facility. Thus, the study also excluded health workers not on permanent contract with the CCTH and those unavailable at the time of the study.

3.5. Sampling strategies

This section presents the sample size determination and sampling method.

3.5.1. Sample size determination

The sample was drawn from the population of health care providers working at CCTH. Sample size was determined using a single population proportion formula by taking the prevalence rate of blood donation (47.8%) from a similar study (Tadesse *et al*., 2018). Using a confidence interval of 95% and 10% of margin of error, the sample size was calculated to be 458 after considering 10% non-response rate using the formula below;

$$n = \frac{Z^2_{1-\frac{\alpha}{2}} P(1-P)}{(MOE \times P)^2}$$

Where;

n= required sample size,

Z= z value, selected critical value of the desired confidence level (95%) which is 1.96.

α=0.05

P= 0.48 (from similar study conducted by Tadesse *et al.*, 2018)

MOE = 0.1

Hence,

$$n = \frac{1.96^2 x 0.48(1-0.48)}{(0.1x0.48)^2}$$

Therefore, n=416.17 plus 10% non-response rate = 0.1x 416.17+ 416.17 = 41.62 + 416.17 = 457.79 ≈ 458

Final Sample size **n= 458**

3.5.2. Sampling methods

The study employed a multi-stage sampling to recruit participants into the study.

Stratified sampling method

The healthcare workers were stratified by job profession as: midwives, nurses, doctors, laboratory scientists and pharmacists. A sampling fraction (*k*) was calculated, which was then used to multiply the total number of healthcare providers in each professional category to generate the number of professionals in each category that was sampled. This is illustrated in the calculation below:

Sampling fraction k = estimated sample size / total population of healthcare professionals.

Sampling fraction, k = 458/1244= 229/622 =0.368167

The defined category of heath care providers and their respective number according to CCTH (2020) were midwives (164), nurses (713), doctors (291), pharmacists (25) and laboratory scientists (51) summing up to a total of 1244 healthcare professionals.

The required sample size for each category of healthcare professionals was computed as shown below:

Midwives: k x total number of midwives = 0.368167x 164 =60.38~60

Nurses: k x total number of nurses = 0.368167 x 713 =262.50~263

Doctors: k x total number of doctors = 0.368167x 291 = 107.14~107

Pharmacist: k x total number of pharmacists = 0.368167x 25 = 9.20~9

Laboratory scientists: k x total number of laboratory scientists= 0.368167 x 51= 18.78~19

Thus, the sample sizes for midwives, nurses, doctors, pharmacists and laboratory scientists were 60, 263, 107, 9 and 19 respectively.

Furthermore, within each category of healthcare providers, proportionate stratified sampling technique was employed to select participants based on their rank. For instance, samples were drawn from House Officers, Medical Officers, Senior Medical Officers, Specialists and Senior Specialists to make up the 107 doctors that were sampled. Similar strategy was repeated for the other cadre of healthcare providers to make up the sample size estimated.

Systematic Random Sampling

Systematic random sampling is a sampling technique that involves selecting the first unit of the sample using simple random sampling and the remaining units of the sample are selected by a fixed period, thus the sampling interval (Belhouse, 2005; Etikan, 2017). This sampling approach was selected because it is a probability random sampling and gives each healthcare provider an equal chance of being selected for the study and due to the fact that the sample size for most of the categories of healthcare providers was large and a simple random sampling might prove cumbersome and difficult.

The Human Resource Manager was contacted to furnish the researcher with the staff list of healthcare workers in each category of healthcare provision. Those who met the eligibility criteria were alphabetically listed and numbered to form a sampling frame for each category. The sampling interval used for each category was defined by k= total number of healthcare providers / sample size = 1244/458 = 2.7, thus the sampling interval was 2.

Simple Random Sampling

A simple random sampling was used to determine the starting point from each sampling frame by balloting between 1 and 2. The selected number during balloting was then used as the starting point of the systematic selection. The selected healthcare workers for each category were contacted subsequently, their consent sought and questionnaire sent to them at their various departments to be filled it out.

3.6. Study Variables

The study variables were categorised as dependent variable and independent variables.

3.6.1. Dependent Variable

The dependent variable was Blood Donation/Practice of blood donation (thus having donated blood in the past).

3.6.2. Independent Variables

The independent variables were;

1. Knowledge, attitude and blood donation intention among health care providers.
2. Individual factors (socio-demographic characteristics): Age, sex, marital status, educational status, religion, profession.
3. Hospital/health system factors: Attitude of blood collection staff, waiting time, presence of incentives, privacy and confidentiality.
4. Community factors: Cultural acceptance, religious acceptance, influence from colleagues, friends and relatives and donation exercises within the communities.

3.7. Data Collection: Questionnaire design and administration

A structured questionnaire was designed and administered to the selected health care providers at CCTH between the months of november and december 2022. The questionnaire was adopted following a review of similar studies (Karobi, 2014; Nigatu & Demissie, 2014). The questionnaire was divided into six sections. Section A sought information on participants' individual (socio-demographic characteristics) factors: age, sex, religion, profession, ethnicity and marital status. Section B assessed the participants' knowledge of blood donation. Questions in this section were set with "Yes", "No" and "Do not know" responses. All "Yes" responses which were the right answer were

categorized as "correct knowledge" while all "Yes" responses which were the wrong answer were categorized as "incorrect knowledge".

The same categorization was done for "No" responses. All "Do not know" responses however were categorized as "incorrect knowledge". Section C focused on participants' attitude towards blood donation. Section D collected data on participants' practice of blood donation, the outcome measure - blood donation and the level of willingness of blood donation among participants. Section E assessed hospital factors that were associated with blood donation. Section F assessed the community factors that were associated with blood donation. Sections C, E and F of the questionnaire included close-ended questions using Likert Scale format (see Appendix B). Two research assistance were trained to help with the interviewer-administered questionnaires. Duration for each questionnaire was between 10-15 minutes at the Cape Coast Teaching Hospital.

3.7.1. Quality Assurance

The researcher complied with all the necessary quality assurance strategies involved in data collection as follows.

Training of research assistants

To ensure uniformity and accuracy of data collected, two days were devoted to training four research assistants on appropriate data collection skills and data entry.

Pretesting of the questionnaire

As part of ensuring quality control, validity and reliability of results obtained, a pretesting of the questionnaires was undertaken at the Cape Coast Metropolis Hospital. This was done so as to refine the data collection instrument to meet the objectives of the study as well as

identifying the challenges with the questionnaire for redress. Thus, the questionnaire was pretested to 10 respondents.

Validity and Reliability

Validity refers to how well the data collected covers the intended area of investigation (Ghauri, Grønhaug, & Strange 2020). The data was entered into MS Excel and settings were made to only admit values within a pre-programmed accepted values and an error code displayed if the accepted limits were exceeded.

Reliability refers to the extent to which a measurement of a certain phenomenon yields stable and consistent results (Heale & Twycross, 2015). It is a measure of the reproducibility of results of the instrument in use. This was achieved through pretesting the questionnaire. Ideally, the study could have been repeated to verify the reliability but owing to the limited time that was available for collecting and analysing the data to meet the deadlines of the academic calendar, the study was conducted once. However, reliability was assured since the study instrument had been validated in an earlier study (Abolfotouh *et al.*, 2014; Checkley *et al.*, 2019)

3.8. Data Management and Analysis

This section explains the data management and analysis strategies.

Data management

The returned questionnaires were coded, cleaned and edited before analysis. Primary data collected was entered into Microsoft Excel sheet and coded. To ensure the accuracy of the data entered, it was cross-checked by research assistant(s) and the researcher. The cleaned data was then imported into STATA version 17 for analysis.

Data analysis

The dependent variable of this study (blood donation) has a binary outcome-Yes/No. Respondents were asked whether they had donated blood in the past. Some of the respondents agreed to have donated blood while some had not donated before. The overall knowledge of blood donation was measured using 12 questions. Each correct response for a question was scored '1' mark and wrong answer scored '0'. The scores were summed up to generate the total knowledge of blood donation accrued by each respondent. Respondents who scored 6 and more were classified as having adequate knowledge while those who had less than 6 were categorized as having inadequate knowledge.

The overall level of attitude of CCTH health care providers towards blood donation was measured using 10 questions. The positive response to a question was scored '1' mark while a negative response was scored '0' mark. The total score was then summed up to generate the overall level of attitude of each respondent towards blood donation. A score of 5 and above was deemed a positive attitude while a score below 5 was adjudged a negative attitude towards blood donation. Respondents who 'strongly disagreed' or 'disagreed' to the statements at section C, E and F of the questionnaire were combined and those who 'strongly agreed' or 'agreed' to the statements were also merged. A third category of respondents who neither agreed nor disagreed with the statements were categorized as 'Neutral'

Data were analysed using STATA version 17 and the association between study variables was determined using Pearson's Chi-square test or Fisher's exact test where appropriate. The Chi-square test was used to establish the associations between the dependent and

independent variables. Statistically significant variables were further analysed using multivariate logistics regression to determine the strength of association. A p-value of <0.05 at 95% confidence interval was considered as statistically significant.

3.9. Ethical considerations

Appropriate strategies were applied to conform to the ethical considerations in this study.

Ethical clearance

Ethical Clearance for this study was sought from the Cape Coast Teaching Hospital Ethics Review Committee with reference number: **CCTHERC/EC/2022/166**.

Permission from the study site

Permission to collect data was sought from the management of the CCTH via a letter of introduction written by the Head of Department of Population, Family and Reproductive Health- School of Public Health, College of Health Sciences, University of Ghana.

Participant consent form

A consent form was designed and presented to each participant to read and give their voluntary consent by signing to partake in the study. Participants were also informed of their right to withdraw from the study at any point in time without any punitive measures taken against them.

Risks and Benefits

This study did not pose any harm to participants as they were not exposed to any form of risk. The participants' involvement in this study only included disclosing information

regarding their knowledge, attitude and practice of blood donation. The findings of the study will help to strengthen public health advocacy and education on blood donation.

Confidentiality and anonymity

To ensure participants confidentiality, name and identity of the respondents were not collected during the study. Information provided were only identified by a code which could not be traced to the respondents.

Voluntary withdrawal

Participants were informed of their right to opt out from any part of the study or the entire study without any form of penalty.

Compensation

There were no financial or materialistic benefits for respondents in the study.

COVID-19 Protocols

All hospital COVID-19 protocols were adhered to. Both respondents and researcher/research assistants wore facemasks and maintained social distancing during data collection. Alcohol-based hand sanitizers were made available and were applied before and after handling questionnaires.

Data storage and usage

All filled questionnaires were handled with absolute confidentiality and kept in a personal drawer at home and locked. Data from the questionnaires were entered into Microsoft Excel

and STATA version 17. The saved data was password protected and a copy was kept on an external hard drive and locked.

Dissemination of expected results

Results would be disseminated through PowerPoint presentations to key stakeholders including healthcare staff, management of CCTH and other healthcare facilities within the metropolis. A manuscript would be written for publication after this dissertation has been approved by the University of Ghana so that this contribution to knowledge would be shared nationwide and worldwide.

Conflict of interest

There was no conflict of interest whatsoever in relation to the study. This survey was exclusively for academic purposes and responses to the questionnaires were utilized for the aforementioned purpose only.

3.10. Chapter summary

The chapter presented the quantitative methods that were adopted in collecting data for analysis for the study. The next chapter presents the results that emerged from the analysis of data collected.

CHAPTER FOUR

RESULTS

4.0. Introduction

This chapter summarizes the results of the study on the factors associated with blood donation among the healthcare providers at the Cape Coast Teaching Hospital. The chapter is divided into eight sections. The first section presents the socio-demographic characteristics of the respondents. Section two presents the knowledge of healthcare providers of blood donation. Section three presents the attitude of the health care providers at CCTH towards blood donation. Section four presents the practice of blood donation among the healthcare workers at CCTH including the recency of their blood donation. This section also presents the outcome variable of interest – the practice of blood donation as well as the willingness to donate in the future and the urgency of the intention to donate.

Section five presents the results of the influence of cultural factors on blood donation. Section six focuses on the influence of hospital factors on blood donation. The seventh section presents the relationship between socio-demographic characteristics, knowledge, attitude, and practice of blood donation and blood donation intention. The section also analyses the results to assess the associations between cultural factors and hospital factors and blood donation. Section eight presents analysis of the logistic regression results to ascertain the predictors of blood donation. Section nine presents a summary of the key ideas of the chapter and indicates what the next chapter seeks to present.

4.1. Socio-demographic characteristics of respondents

The study recruited 458 heath care providers and obtained 455 responses resulting in a response rate of 99.3% (455/458). The results showed that majority, 291 (64.0%) of the respondents were females. while the rest, 164 (36.0%) were males. The ages of the respondents (N=363) ranged from 20 years to 43 years (M=29, IQR=26-32). A significant proportion, 300 (65.9%) of the respondents were unmarried. More than half, 255 (56.0%) of the health care providers who took part in the study were nurses with almost a quarter, 108 (23.7%) of the respondents being doctors. The remainder of the responders consisted of pharmacists, 10 (2.2%), midwives, 63 (13.9%), and laboratory scientists 19 (4.2%). Christianity was the main religion, 374 (82.2%) practiced by the health care providers. Nearly half, 211 (48.4%) of the health care workers who took part in the study were of the Ashanti ethnic group while close to a quarter, 106 (24.31%) were of the Fante ethnic group. A little over 10% of the study participants were of the Ewe 44 (10.1%) and Ga, 49 (11.2%) ethnic groups. Results of the socio-demographic characteristics of the respondents are depicted in Table 4.1.

Table 4.1: Socio-demographic Characteristics of Respondents

Characteristics	Frequency	Percentage (%)
Sex		
Male	162	35.92
Female	289	64.08
Age Range		
18-25	71	19.56
26-30	182	50.14
31-35	83	22.87

36-40	24	6.61
41-45	3	0.83
Marital Status		
Single	290	63.74
Married	155	34.07
Divorced	5	1.10
Cohabiting	5	1.10
Job Category (Profession)		
Midwives	63	13.85
Nurses	255	56.04
Doctors	108	23.74
Laboratory Scientists	19	4.18
Pharmacists	10	2.20
Religion		
Christianity	374	82.20
Islam	57	12.53
Traditionalist	2	0.44
Other	22	4.84
Ethnicity		
Ashanti	211	48.39
Ewe	44	10.09
Fante	106	24.31
Ga	49	11.24
Other	26	5.96

4.2. Knowledge of blood donation

A question assessed the health care providers at CCTH's knowledge of blood donation. The results showed that almost all of the healthcare providers 422 (92.8%) who took part in the study knew that donated blood should be screened for HIV, hepatitis B and C and syphilis. As high as 399 (87.7%) of the 455 respondents knew that pregnant women were prohibited from blood donation. About three-quarters 341(75%) of the respondents were aware that people with any blood group could donate blood. However, only a quarter 116 (25.5%) of the respondents were aware that menstruation was not an impediment to blood donation. Majority of the participants, 302 (66.4%) did not know that blood donated was not screened for malaria. Results of health workers' knowledge of blood donation are detailed in Table 4.2.

Table 4.2: Knowledge of blood donation

Statement	**Correct Knowledge n (%)**	**Incorrect knowledge n (%)**
Is there any age limitation on blood donation?	313(68.8)	142(31.2)
Can women donate blood while menstruating?	116(25.5)	339 (74.5)
Can people with any blood group donate blood?	341(75)	114(25.1)
Does blood donation cause anaemia?	204(44.8)	251(55.2)
Could blood donation cause transmission of infection to the donor?	207(45.5)	248(54.5)
Could blood transfusion cause transmission of infection to the receiver?	361(79.3)	94(20.7)

Is someone with a history of drug abuse allowed to donate blood?	314(69.0)	141(31.0)
Is someone with a history of an unsafe sexual relationship allowed to donate blood?	250(55.0)	205(45.0)
Are diabetic and hypertensive patients allowed to donate blood?	260(57.1)	195(42.9)
Are pregnant women allowed to donate blood?	399(87.7)	56(12.3)
Is donated blood screened for malaria?	153(33.6)	302(66.4)
Is donated blood screened for HIV, hepatitis and syphilis?	422(92.8)	33(7.2)

4.2.1. Overall level of knowledge of blood donation

The results of the study showed that the overall level of knowledge of the healthcare providers at CCTH of blood donation was high, with majority 379 (83.3%) of them having adequate knowledge of blood donation against 76 (16.7%) with inadequate knowledge of blood donation. Results of the overall level of knowledge of blood donation are summarised in Table 4.3.

Table 4.3: Overall level of knowledge of blood donation

Knowledge level	Frequency	Percentage (%)
Adequate knowledge	379	83.30
Inadequate knowledge	76	16.70
Total	455	100.00

4.3. Attitude towards blood donation

A question was asked to ascertain the attitude of health workers towards blood donation. The results revealed that majority, 309 (67.9%) of respondents considered that blood donation was an altruistic act. Quite a substantial number and proportion, 372 (81.8%) of the health workers sampled believed that laboratory tests performed on donated blood might help them to evaluate their health, while as many as 347 (76.3%) of the respondents strongly agreed or agreed to the statement that 'blood donation makes me feel like I have helped one of my family members or friends'. Only 181 (39.8%) of the health care providers sampled at CCTH agreed that blood donation was a national duty.

As many as 343 (75.4%) of the respondents considered that blood donation was a religious duty. About two-fifth 195 (42.9%) of the respondents suggested that they would only donate blood if they were assured the donated blood would be given to their relations in the future. Approximately, three-fifth, 261 (57.4%) of the respondents were of the positive opinion that their blood donation could influence others to donate blood. Roughly three-fifth, 274 (60.2%) of respondents were of the positive opinion that their blood donation isn't dependent on whether they are given leave from work. Results of the health workers' attitude toward blood donation are depicted in Table 4.4.

Table 4.4: Attitude towards blood donation

Statement	Positive Attitude n (%)	Negative Attitude n (%)
I think blood donation is an altruistic (unselfish) act.	309(67.91)	146(32.09)
I do not think that my donation will encourage others to donate	261(57.36)	194(42.64)
I would donate blood only if I was assured that the donated blood would be given to me or to one of my family in the future	260(57.14)	195(42.86)
My family and friends consider blood donation as an important act and encourage me to donate	225(49.45)	230(50.55)
I do not think that blood donation is a religious duty	112(24.64)	343(75.38)
I think that blood donation is a national duty	181(39.78)	274(60.22)
I would donate blood if there were incentives or rewards	216(47.47)	239(52.53)
Blood donation makes me feel like I have helped one of my family members or friends	347(76.26)	108(23.74)
I would donate blood if given leave from work	274(60.22)	181(39.78)
A laboratory test performed on the donated blood may help me to evaluate my health	372(81.76)	83(18.24)

4.3.1. Overall level of attitude towards blood donation

The results indicated that 335 (76.6%) of the respondents had a positive attitude while 120 (26.4%) had a negative attitude towards blood donation. Results of the overall level of attitude towards blood donation are summarized in Table 4.5.

Table 4.5: Overall level of attitude towards blood donation

Attitude level	Frequency	Percentage
Positive Attitude	335	76.63
Negative Attitude	120	26.37
Total	455	100

4.4. Blood Donation among the workers

Another question assessed whether the health workers had ever donated blood prior to the period of the study. The results showed that amongst the 455 healthcare providers sampled at CCTH, only 165 (36.3%) of them had ever donated blood against 290 (63.7%) who had never donated before. Results of the practice of blood donation have been represented in Tables 4.6.

Table 4.6: Blood donation among the health workers

Ever donated blood	Frequency	Percentage (%)
Yes	165	36.26
No	290	63.74
Total	455	100.00

4.4.1. Recency of Blood Donation among Blood Donors at CCTH

Following their response to blood donation, the study also inquired about the recency of blood donation amongst the 165 respondents who had ever donated blood. The results revealed that almost half of the respondents, 81 (49.1%) who had ever donated blood did so more than 2 years ago. While 38 (23%) had donated blood between one and two years, only 24 (15%) of previous donors donated blood in the last 6 months. Results of the recency of blood donation are depicted in Figure 4.1.

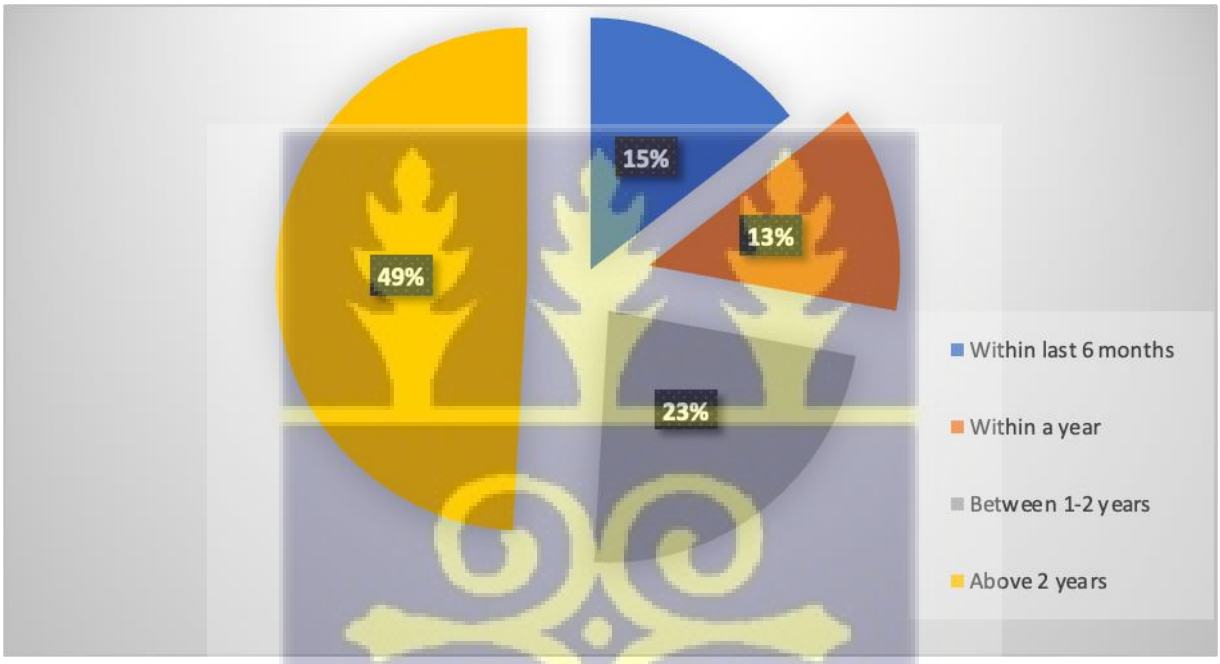

Figure 4.1: Recency of blood donation among blood donors at CCTH.

4.4.2. Reasons for blood donation

Respondents in the study were asked to indicate their reasons for the donation of blood. The results showed that majority, 110 (66.7%) of the respondents who had ever donated blood were voluntary donors while a little over a quarter, 43 (26.1%) were replacement donors, who donated blood to be used to replace the one which had been used for a family or friend. A total of 12 (7.3%) of those who had ever donated blood stated that remuneration was their

reason for the donation exercise. The results of the reasons for blood donation are illustrated in Figure 4.2.

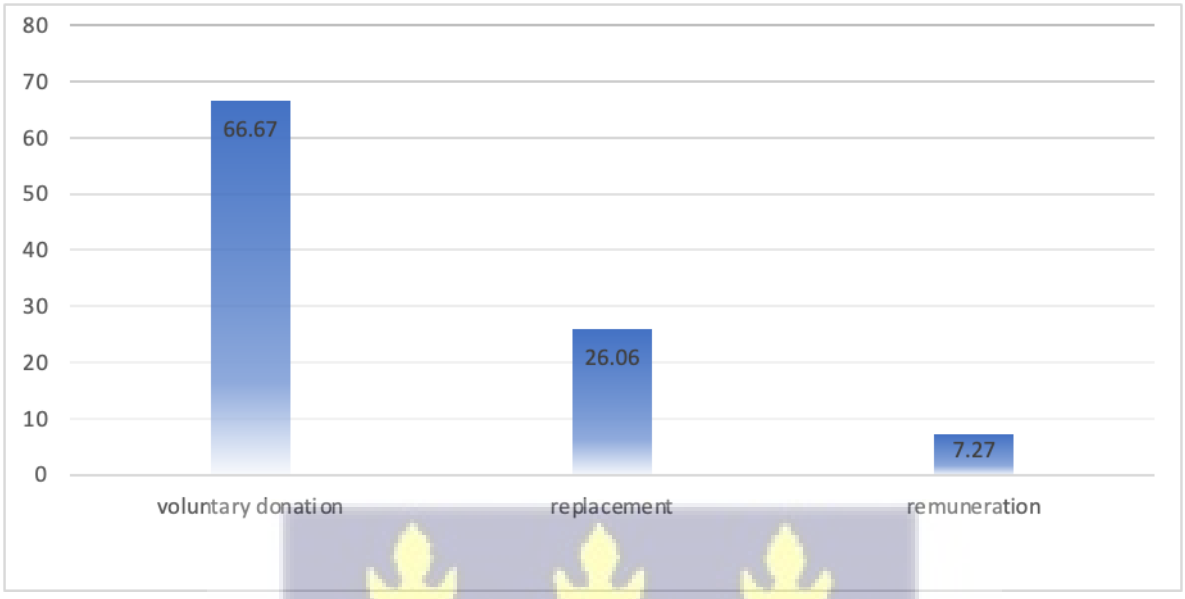

Figure 4.2: Reasons for blood donation.

4.5. Blood Donation Intention/willingness among Health Workers

A question was asked to assess whether the health workers had the intention/willingness to donate blood in the future. The results showed that out of the 455 healthcare providers sampled at CCTH, 355 (78.0%) of them indicated their willingness to donate blood at some time in the future. Results of the blood donation intention among the health workers have been detailed in Table 4.7.

Table 4.7: Blood Donation Intention/willingness among Health Workers

Intention to donate blood	Frequency	Percentage (%)
Yes	355	78.02
No	100	21.98
Total	455	100.00

4.5.1. Urgency of blood donation intention/willingness

A follow up question ascertained the urgency of blood donation intention/willingness among the health workers. The results revealed that while a large number or proportion of the respondents, 355 (78.0%) had the intention to donate blood, only a small number or proportion 61 (17%) of them had a definite timeframe about their intention to donate blood. The results of how soon the respondents intended to donate blood are illustrated in the Figure 4.3 below.

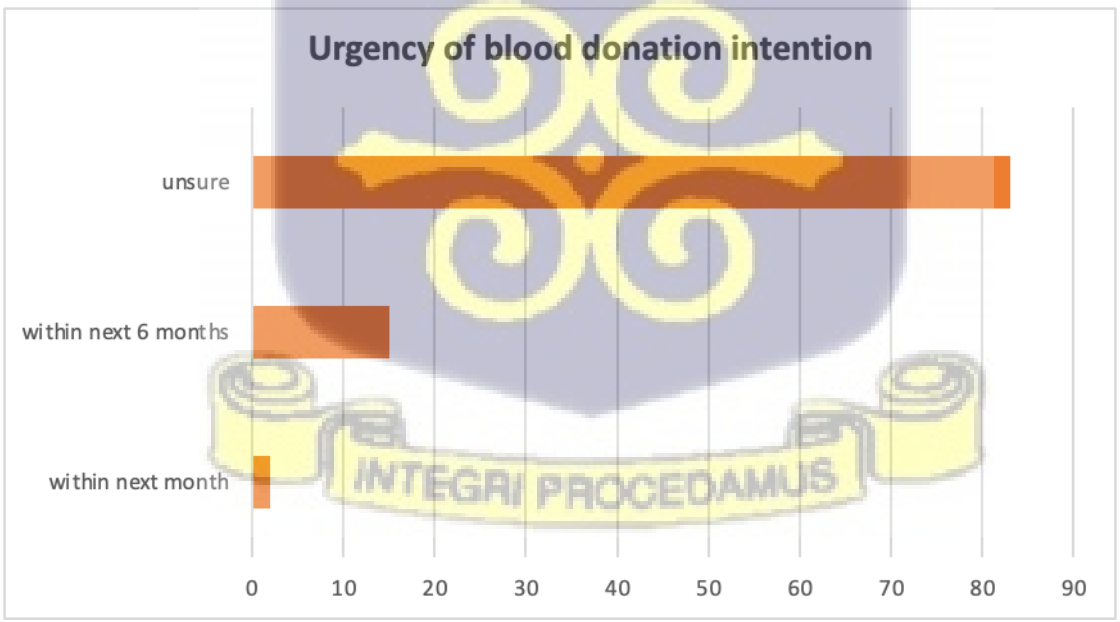

Figure 4 3: Urgency of blood donation intention (percentage).

4.6. Community factors and blood donation

The results showed that about two-third 194 (42.6%) of the health practitioners at CCTH disagreed or strongly disagreed to the statement that "I am likely to donate blood if my culture permits it" while about a quarter, 115 (25.3%) of the respondents were neutral to the statement. A similar number or proportion of the respondents (two-third), 186 (40.9%) 'disagreed to or strongly disagreed' that they would only donate if their religion would accept it.

Furthermore, the results revealed that 273 (60.0%) of the respondents 'disagreed or strongly disagreed' that discouraging spiritual perceptions in the community would hinder them from blood donation. About 145 (31.9%) of the health care workers thought that their blood donation behaviour somewhat hinges/hinged on whether their peers and family were donating blood as well. Two-third, 276 (60.7%) of the health care workers sampled 'agreed or strongly agreed' that they were likely to donate blood if blood donation exercises were organised within their community. The results of the community factors that would affect their blood donation are summarized in table 4.8 below.

Table 4.8: Community factors and blood donation (N= 455)

Community Factor	***Strongly Disagree/ Disagree*** **n(%)**	***Neutral*** **n(%)**	***Strongly Agree/ Agree*** **n(%)**
Likely to donate blood if my culture permits.	194(42.64)	115(25.27)	146(32.09)
Likely to donate blood if my religion accepts it.	186(40.88)	110(24.18)	159(34.95)
Would not donate blood if there are discouraging spiritual perceptions on blood donation.	273(60.00)	98(21.54)	84(18.46)
Likely to donate blood if my colleagues, friends and family donate blood.	212(46.59)	98(21.54)	145(31.87)
donate blood if donation exercises are organized in my community.	83(18.24)	96(21.10)	276(60.66)

4.7. Hospital/health system factors and blood donation

The study also sought to find the health system/hospital factors that would affect blood donation. The results showed that close to half, 215 (47.3%) of the respondents 'agreed to or strongly agreed' that attitude of the staff at the blood donation centres was an important factor that would influence their decision to donate blood. A similar number or proportion, 208 (45.7%) of the respondents also believed that the 'wait time' during donation was an important consideration they would make if they were to donate blood. More than half 243 (53.4%) of the health care providers at CCTH believed that incentives and rewards were not important for blood donation while about a quarter, 116 (25.5%) of the respondents thought otherwise. A total of 317 (69.7%) of the respondents thought that privacy during blood

donation was an important consideration while a similar number or proportion, 324 (71.2%) also thought that the confidentiality of the pre-donation tests was equally important to them if they were to donate blood. Results of the hospital/health provider that could influence blood donation intention are depicted in Table 4.9.

Table 4.9: Hospital factors and blood donation

	Disagree	**Neutral**	**Agree**
Hospital Factor	**n (%)**	**n (%)**	**n (%)**
My decision to donate blood would be influenced by the attitude of blood collection staff.	169(37.14)	71(15.60)	215(47.25)
Waiting time/ duration of blood collection would affect my decision to donate.	158(34.73)	89(19.56)	208(45.71)
Presence of incentives or rewards would **not** affect my intention to donate blood	116(25.49)	96(21.10)	243(53.41)
Privacy during donation is very important to me if I am to donate blood	58(12.75)	80(17.58)	317(69.67)
Confidentiality of pre-donation tests results is **not** important to me if I am to donate blood	324(71.21)	41(9.01)	90(19.78)

4.8. Association between individual (socio-demographic characteristics) factors and blood donation

An association between individual (socio-demographic characteristics) factors and practice of blood donation among health workers was ascertained using a Chi square test. It would be recalled that 165 of the respondents had donated blood before whilst 290 indicated that they had never donated blood. The results indicated that sex was the only sociodemographic characteristic of the respondents that was significantly associated with blood donation ($p=0.003$, $\alpha=0.05$). A higher proportion of males had donated blood in the past compared to

females. The results of the difference in blood donation among the different individual characteristics of the respondents have been tabulated in Table 4.10.

Table 4.10: Association between socio-demographic characteristics and Blood Donation

Variable	Blood Donation		
	Yes (N=165)	No (N=290)	P-value
	n (%)	n (%)	
Sex			
male	74(45.12)	90(54.88)	**0.003***
female	91(31.27)	200(68.73)	
Age Range			
18-30	87(34.39)	166(65.61)	0.235
31-45	45(40.91)	65(59.09)	
No Response	33(35.86)	59(64.12)	
Marital Status			
Married	60(38.71)	95(61.29)	0.435
Unmarried	105(35.00)	195(65.00)	
Religion			
Christianity	128(34.22)	246(65.78)	0.132
Islam	25(43.86)	32(56.14)	
Other religion	12(50.00)	12(50.00)	
Ethnicity			
Akan	75(34.56)	142(65.44)	0.512
Fante	42(37.84)	69(62.16)	
Ewe	22(45.83)	26(54.17)	
Ga	19(35.85)	34(64.15)	
Others	7(26.92)	19(73.08)	
Occupation			
Nurses/midwives	115(36.16)	203(63.84)	0.981
Doctors	39(36.11)	69(63.89)	
Pharmacist/Lab Scientist	11(37.93)	18(62.07)	

**Statistically significant*

4.9. Association between Knowledge, Attitude and Practice of Blood Donation

The main objective of this study was to assess the factors that were significantly associated with blood donation. Thus, a Pearson's Chi-square test was used to ascertain whether there was an association between Knowledge, Attitude and Practice of blood donation. A greater proportion of study respondents with adequate knowledge had donated blood before compared with those with inadequate knowledge. However, this association was not statistically significant ($p>0.05$). In a similar vein, having a larger proportion of study respondents with positive attitude towards blood donation had donated blood in the past compared to those with a negative attitude. However, the association was not statistically significant. ($p>0.05$). The results of the Pearson's Chi-square analysis of knowledge, attitude and blood donation are illustrated in Table 4.12.

Table 4.11: Association between Knowledge, Attitude and Practice of Blood Donation

Factor/Variable	Blood Donation		P-Value
	YES (N=165) n (%)	NO (N=290) n (%)	
Knowledge of Blood Donation			**0.683**
Adequate knowledge	139 (36.68)	240(63.32)	
Inadequate knowledge	26(34.21)	50(65.79)	
Attitude towards Blood Donation			**0.578**
Positive Attitude	124(37.01)	211(62.99)	
Negative Attitude	41(34.1)	79(65.83)	

4.10. Association between Community Factors and Blood Donation

An association between community factors and blood donation among health workers was determined using a Chi square test. The results showed that there was a significant association between cultural acceptability of blood donation and the practice of blood

donation (p=0.008, α= 0.05). Furthermore, the results showed that there was a significant association between religious acceptability of blood donation and the practice of blood donation (p=0.01, α= 0.05). In addition, the study also showed that discouraging spiritual perceptions of blood donation was significantly associated with blood donation practice (p=0.009, α= 0.05). Again, the findings of this study showed a significant association between peer and family influence and blood donation (p=0.001, α= 0.05).

The last community factor assessed was the influence of community donation exercises on blood donation. There was a significant association between community donation exercises and the practice of blood donation (p<0.001, α= 0.05). Results of the association between community factors and blood donation are depicted in Table 4.13.

Table 4.12: Association between Community Factors and Blood Donation

Community Factor	Blood Donation		
	YES (N=165)	NO (N=290)	P-Value
	n (%)	n (%)	
I am likely to donate blood if my culture permits			
Disagree	76 (39.18)	118(60.82)	**0.008***
Neutral	28 (24.35)	87 (75.65)	
Agree	61 (41.78)	85 (58.22)	
I am likely to donate blood if my religion accepts it			
Disagree	71 (38.17)	115 (61.83)	**0.010***
Neutral	27 (24.55)	83(75.45)	
Agree	67(42.14)	92 (57.86)	
I will NOT donate blood if there are discouraging spiritual perceptions about blood donation			
Disagree	114 (41.76)	159 (58.24)	**0.009***
Neutral	25 (25.51)	73 (74.49)	
Agree	26 (30.95)	58 (69.05)	

I am likely to donate blood if my colleagues, friends and family donate blood			
Disagree	71 (33.49)	141 (66.51)	**0.001***
Neutral	25 (25.51)	73 (74.49)	
Agree	69 (47.59)	76 (52.41)	
I am more likely to donate blood if donation exercises are organized in my community			
Disagree	31 (37.35)	52 (62.65)	**<0.001 ***
Neutral	15 (15.62)	81(84.38)	
Agree	119(43.12)	157(56.88)	

4.11. Association between Hospital Factors and Blood Donation

The study ascertained the health system/hospital factors that would affect blood donation. No significant association was found between hospital/health system factors assessed and blood donation ($p>0.05$). Results of the association between hospital factors and blood donation are shown in the Table 4.14.

Table 4.13: Association between Hospital Factors and Blood Donation

Hospital Factor	**Blood Donation**		**P-value**
	YES (N=165) n (%)	**NO (N=290) n (%)**	
My decision to donate blood would be influenced by the attitude of blood collection staff			
Disagree	57 (33.73)	112(66.27)	0.105
Neutral	20(28.17)	51(71.83)	
Agree	88 (40.93)	127 (59.07)	
Waiting time/ duration of blood collection would affect my decision to donate			
Disagree	58 (36.71)	100(63.29)	0.057
Neutral	23(25.84)	66(74.16)	
Agree	84(40.38)	124 (59.62)	
Presence of incentives or rewards would NOT affect my intention to donate blood			
Disagree	41(35.34)	75 (64.66)	0.571
Neutral	31(32.29)	65 (67.71)	
Agree	93 (38.27)	150(61.73)	

Privacy during donation is very important to me if I am to donate blood			
Disagree	20(34.48)	38 (65.52)	
Neutral	24(30.00)	56(70.00)	0.380
Agree	121 (38.17)	196(61.83)	
Confidentiality of pre-donation tests results is NOT important to me if I am to donate blood			
Disagree	263 (81.17)	61 (18.83)	0.290
Neutral	29 (70.73)	12 (29.27)	
Agree	63 (70.00)	27 (30.00)	

4.12. Association between future blood donation intention/willingness and the practice of blood donation

The results showed that there was an association between blood donation intention/willingness and the practice of blood donation ($p < 0.001$, $\alpha = 0.05$). Results of the association between future blood donation intention and practice of blood donation are shown in Table 4.15,

Table 4.14: Association between Future Blood Donation Intention/Willingness and Practice of Blood Donation

Factor/Variable	**Practice of Blood Donation (N=455)**		**P-value**
	Yes, n (%)	**No, n (%)**	
Future Blood donation Intention			
Yes	158 (44.51)	197 (55.49)	**<0.001***
No	7 (7.00)	93 (93.00)	

**Statistically significant*

4.13. Multiple Logistic Regression Analysis: Factors Associated with Blood Donation

The strength of the association between the factors which were significantly associated with blood donation in the bivariate analysis using Chi square test was determined using a logistic

regression model. However, it would be recalled that sex was the only socio-demographic characteristic that was significant in the chi-square model. The logistics regression results showed that females were 45% less likely to have ever donated blood compared with their male counterparts (OR=0.55, 95% CI:0.37-0.82, p=0.003). In a multivariable logistic regression model, the relationship between sex and blood donation remained significant.

The logistic regression results also showed that health care workers who were willing to donate blood in the future were 10.7 times more likely to have donated blood in the past compared to those who were not willing to donate blood in the future (OR=10.66, 95% CI:4.81-23.62, p< 0.001). After adjusting for other significantly associated factors, this relationship remained significant.

With respect to community factors, the results showed that health care workers who agreed that they would not donate blood if there were discouraging spiritual perceptions of blood donation were 38% less likely to have ever donated blood compared to those who were willing to donate in the midst of discouraging spiritual perceptions. This relationship was not statistically significant. However, after adjusting for other variables, the results showed that health workers who agreed that discouraging spiritual perceptions of blood donation would hinder them from blood donation were 52% less likely to have ever donated blood compared to those who said discouraging spiritual perceptions would not impede them from donating blood and this was statistically significant (AOR=0.62, 95%CI: 0.26-0.88, p<0.05).

Furthermore, respondents who agreed that their peers and family donating blood would encourage them to donate blood had a 1.8 times increased odds of blood donation compared

to those who said they would not donate blood even if their friends, colleagues and family did so (AOR=1.82, 95%CI: 1.03-3.22, p<0.05). This relationship was statistically significant.

Generally, it could be observed that predictors of blood donation were sex, blood donation intention, discouraging spiritual perceptions of blood donation as well as influence from peer and family. Cultural and Religious acceptance although significantly associated with blood donation in the binary logistics regression, these factors lost their significance after adjusting for all other factors in the multiple logistics regression. Results of the logistic regression analysis of the association between associated factors and blood donation are summarized in Table 4.16.

Table 4.15: Multiple Logistic Regression Analysis: Factors Associated with Blood Donation

Factors	Crude OR (95% CI)	P-value	AOR (95% CI)	P-value
Sex				
Female	0.55(0.37-0.82)	**0.003***	0.63 (0.41-0.98)	**0.041***
Male(ref)				
Future Blood Donation Intention				
Yes	10.66 (4.81-23.62)	**<0.001***	8.68 (3.82-19.73)	**<0.001***
No (ref)				
Cultural Acceptance Important				
Agree	1.11 (0.71-1.73)	0.628	0.80(0.38-1.68)	0.551
Neutral	0.49 (0.29-0.83)	**0.008***	0.77 (0.36-1.65)	0.499
Disagree (ref)				
Religious Acceptance Important				
Agree	1.17 (0.76-1.82)	0.454	1.53 (0.72-3.23)	0.265
Neutral	0.52 (0.31-0.89)	**0.017***	0.87 (0.39-1.94)	0.741
Disagree (ref)				

Spiritual Perceptions a hinderance				
Agree	0.62 (0.37-1.05)	0.077	0.48 (0.26-0.88)	**0.017***
Neutral	0.48 (0.29-0.80)	**0.005***	0.69 (0.37-1.29)	0.243
Disagree (ref)				
Peers and Family Influence my intention				
Agree	1.80 (1.17-2.78)	**0.008***	1.82 (1.03-3.22)	**0.040***
Neutral	0.68 (0.40-1.16)	0.159	0.94 (0.48-1.84)	0.866
Disagree (ref)				
Community Donation Exercises				
Agree	1.27 (0.77-2.11)	0.351	1.87 (0.46-1.62)	0.650
Neutral	0.31 (0.15-0.63)	**0.001***	0.343 (0.19-0.96)	**0.040***
Disagree (ref)				

**Statistically significant*

4.14. Chapter Summary

This chapter summarised the major results of the study by describing the socio-demographic characteristics of the health care workers who took part in the study. Results for the overall knowledge, attitude and practice of blood donation have also been presented. The chapter also presented the community and hospital factors that could affect the blood donation of the respondents. A Pearson's Chi-square analysis was then used to ascertain the association between socio-demographic factors, knowledge of and attitude towards blood donation, community factors, hospital factors and blood donation. A further analysis using logistic regression was used to test the strength of association between the various factors significantly associated with blood donation. This applied a multivariable logistic regression to identify the factors that were predictive of blood donation and the AOR tabulated accordingly.

The analysis in the chapter has shown that sex was the only sociodemographic characteristic that was significantly associated with blood donation. Blood donation intention was

associated and predictive of the practice of blood donation. There was no association between attitude and knowledge of the health care providers and blood donation. Community factors associated with blood donation intention included cultural acceptance, religious acceptance, discouraging spiritual perceptions, peer and family influence and the presence of community donation exercises. However, some of these variables lost their significance in the logistic regression model. None of the hospital factors assessed were significantly associated with blood donation. The next chapter presents an analysis of the findings in this chapter and their relationship with current literature evidence.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0. Introduction

This chapter presents an analysis of the findings of the study on blood donation among the healthcare providers at the Cape Coast Teaching Hospital and their relationship with current literature. The chapter is divided into sections. The first section presents the socio-demographic characteristics and blood donation among health workers at CCTH. Section two presents the knowledge, attitude, and practice of blood donation among health care providers at CCTH. Section three presents the practice of blood donation and future blood donation among the health care workers at CCTH. Section four presents cultural factors and blood donation. Section five presents hospital/health system factors and blood donation. Section six presents a summary of the chapter where the main ideas have been summed up and an effort made to project what is contained in the next chapter.

5.1. Socio-demographic Characteristics and Blood Donation

Sex was the only sociodemographic characteristic that was shown in this study to be significantly associated with blood donation. A significantly higher proportion of males had donated blood in the past compared to females. This finding was analogous to a study where sex was the only sociodemographic factor significantly associated with blood donation amongst health care workers in Ethiopia with males more likely to donate blood compared to females (Malako *et al.*, 2019). This was also similar to a study where gender was the single most important factor associated with blood donation intention and hence, actual blood donation practice (Abd Hamid *et al.*, 2013). This male preponderance for blood donation may be explained by the findings of a study where being male could increase the odds of having a

favourable attitude towards blood donation which may in turn result in better blood donation behaviour among this gender (Batayehu, 2015). However, a further analysis in this study showed that females were more likely to be voluntary blood donors as opposed to other type of blood donors (replacement/paid) compared to their male counterparts.

Although this study did not find any association between age and blood donation, earlier studies had showed a significant association between this individual factor and blood donation (Arage *et al.*, 2017; Shebu *et al.*, 2015; Melku *et al.*, 2016).

Furthermore, while this study did not find marital status to be significantly associated with blood donation, another study found marital status to be statistically associated with blood donation in a multivariate logistic regression of factors associated with the practice of blood donation (Melku *et al.*, 2016).

In addition, this study parallels what was found with respect to blood donation practice not varying by different cadre of health care providers (i.e Nurses/Midwives, Doctors, Pharmacists/Laboratory Technicians) in a previous study (Nwogoh *et al.*, 2013).

5.2. Prevalence of Blood Donation

The prevalence of blood donation amongst the health care providers of CCTH was low with only about 36.3% of the study respondents had ever donated blood in their lifetime. Policy makers should be concerned that a high proportion of 63.7% of health care providers had never donated blood before. By their training, health care providers are supposed to be advocates of positive healthcare interventions. Since word of mouth is an effective communication tool, it is expected that when healthcare providers participate in blood

donation excecises, they would be able to convince patients to do same. However, this model of encouraging voluntary blood donaton campaing is missed out in this context. In terms of recency, only 15% of the respondents who had ever donated blood did so recently (within the last 6 months) with approximately 50% of them donating blood for more than 2 years ago. This meant that most of the previous blood donors were not in a stable donor-pool, which is crucial if challenges with blood donation were to be addressed.

This low prevalence was way below what was found in a study where 48% of the health professionals sampled had ever donated blood (Tadesse *et al*., 2018). Nonetheless, this prevalence was higher than the prevalence documented where only about 22% of the healthcare workers had ever donated blood (Malako *et al*., 2019). The prevalence of blood donation in this study was similar to what was documented in a different study as 33% (Arage *et al*., 2017). In a similar study amongst nurses at Komfo Anokye Teaching Hospital, Kumasi (Ghana), the prevalence of blood donation was estimated to be as low as 27% (Nuako *et al*., 2016).

5.3. Blood Donation Intention/Willingness and Practice of Blood Donation

Although the prevalence of blood donation amongst the health workers at CCTH was low (36.3%), the intention to donate blood was relatively high (78.0%). This study found a strong association between previous blood donation and future blood donation intention/willingness. In addition, a multivariable logistic regression established an increased odds (AOR 9.21, 95% CI 4.00-21.21, α=0.05) of future donation intention/willingness amongst participants who had ever donated blood compared to those who had never donated blood. Hence, previous blood donation was a strong predictor of future blood donation which was similar to findings earlier documented (Kassie *et al*, 2020).

This means that individuals who intended to donate blood in the future were likely to be those who had had an experience of blood donation in the past. This independent association was also seen in a study where most of the respondents with future blood donation intention were previous blood donors (Abd Hamid *et al.*, 2013). Kassie *et al.* (2020) also found a significant association between the mean intention to donate blood and past blood donation behaviour. Hence, factors that affect blood donation intention/willingness could by extension affect the actual practice of blood donation. This is an important finding that would aid in planning and implementation of blood donation behaviour change campaigns.

5.4. Knowledge, Attitude and Practice of Blood Donation

Knowledge of blood donation among the health care providers at CCTH was generally high. Most of the participants (68.8%) knew that there was an age limitation to blood donation. Almost three-quarters (74.9%) of the health care providers sampled knew that people of any blood group could donate blood. Approximately, 80% of the respondents were aware that blood transfusion could cause transmission of infection to the recipient. Correct knowledge of pregnant women being ineligible for blood donation was 87.7%. Conversely, the knowledge of the respondents was quite low with respect to certain questions. Only a quarter (25.5%) of the study respondents were aware that women could donate blood during their menses.

Generally, the high knowledge of eligibility criteria for blood donation was analogous to the findings in the work done by earlier researchers (Checkley *et al.*, 2019). The overall knowledge of the health care workers in this study of blood donation was high (83.3%) which was similar to the proportions recorded in studies where the overall knowledge of the health care providers were 82.6% and 72.7% (Malako *et al.*, 2019; Bantayehu, 2015). A plausible

reason for the high level of knowledge of blood donation amongst health care providers is the obvious fact that blood donation is a health-related activity, hence, the respondents were likely to be exposed to blood donation information either during their training period or while working as health professionals. However, Checkley *et al.* (2019) found that the overall knowledge of blood donation was poor amongst the respondents in Uganda.

In this study, knowledge of blood donation had no association with the practice of blood donation meaning knowledge of blood donation alone was not enough to affect blood donation behaviour change. This finding is in contrast to what was found in previous studies where knowledge of blood donation was significantly associated with the practice of blood donation (Getie *et al.*, 2020; Arage *et al.*, 2017).

The overall attitude of the health care workers at CCTH towards blood donation was mostly positive with 76.6% of them having a positive attitude towards blood donation. As high as 68% of the study respondents believed that blood donation was an altruistic act while 76% said it made them feel they had helped one of their family members or friends. About 82% of the respondents thought that laboratory tests performed on donated blood might help them to evaluate their health. This study did not find an association between attitude and blood donation. The finding contradicts what was found in a study where attitude towards blood donation was significantly associated with blood donation (Arage *et al.*, 2017). However, this finding was similar to what had been found in another study (Melku *et al.*, 2016).

5.5. Community Factors and Blood Donation

This study found an association between certain community factors and blood donation. Cultural acceptability of blood donation influenced the practice of blood donation of the

health care providers at CCTH. As evidenced in a study, cultural perception of blood donation could influence the practice of blood donation amongst individuals (Asamoah-Akuoko *et al.*, 2017). This study revealed that respondents who thought their donation behaviour would be influenced by cultural acceptability had donated blood more in the past than those who considered cultural acceptability unimportant.

These findings were similar to what was observed for religious acceptance of blood donation. Respondents who thought that their donation would be influenced by religious beliefs had a greater practice of blood donation compared to those who thought that their religion's acceptance of blood donation would not affect their blood donation behaviour. Findings from this study showed how important it was to address discouraging religious perceptions of blood donation as it was clearly seen to have the potential to hinder blood donation practice as shown in an earlier study (Appiah, 2013; Asamoah-Akuoko *et al.*, 2017).

Furthermore, another community factor, which was significantly associated with blood donation was discouraging spiritual perceptions of blood donation. Health care workers who did not consider discouraging spiritual perception of blood donation as an influential factor in their decision to donate blood had donated blood more in the past compared to those who thought that discouraging spiritual perceptions would deter them from blood donation, consistent with what had been established in Ghana (Asamoah-Akuoko *et al.*, 2017). This association may be explained by the fact that those who believed in discouraging spiritual perceptions of blood donation feared unfavourable outcomes, hence, decided to stay as remote as possible from voluntary blood donation. Asamoah-Akuoko (2018) observed that some people were discouraged from blood donation because they believed that certain myths and misconceptions in the community such as donated blood being used for occultism. It is,

therefore, imperative that behavioural change campaigns target dispelling such myths and discouraging spiritual perceptions of blood donation.

In addition, peer and family influence was found to be associated with blood donation. Study respondents who thought that the blood donation activities of their friends, and colleagues and family would encourage them to donate blood had practiced blood donation more than those who thought otherwise. Appiah (2013) also found an association between blood donation and influence of relatives. This highlights the importance of community blood donation campaigns as other members of a household are likely to donate blood if a member volunteers/volunteered.

Respondents who said they were likely to donate blood if donation exercises were organised in their community practiced blood donation more than those who thought that community donation exercises would not influence their blood donation practice. Hence, it would be very beneficial if blood donation activities were decentralised such that most donation exercises take place at the community level. This would improve participation in blood donation activities because the geographical barrier and to some extent the financial barrier to easy voluntary donation are removed as donation exercises would be in close proximity to most of the volunteers.

5.6. Hospital/health system Factors and Blood Donation

The study did not find an association between any hospital factor and blood donation. Although nearly half of the participants agreed that attitude of blood collection staff would influence their practice of blood donation, there was no association between this hospital factor and blood donation. Mohammed and Essel (2018) indicated that a good attitude of

donation clinic staff had an influence on four-fifth of the donors and attitude of the staff was important to both first time donors and repeat donors.

Further, majority of the respondents (53.4%) thought that the offer of incentives was important for blood donation howbeit, there was no association between this hospital factor and blood donation. This was similar to a study where reimbursement of cost of transportation was an important motivator to blood donation (Asamoah-Akuoko *et al.*, 2017). Previous studies had reported that incentives such as gift items and money were found to be a motivator to blood donation (Sekoni *et al.*, 2014; Muthivhi *et al.*, 2015).

In addition, this study found no association between privacy during donation and blood donation practice. Nevertheless, approximately 70% of the respondents thought that privacy during donation activities would influence their decision to donate blood. This was similar to a previous study where privacy during screening was a crucial hospital related factor that contributed to a donor's willingness to donate in more than half of the respondents (Mohammed & Essel, 2018).

Another hospital factor assessed was the confidentiality of pre-donation screening results. Although more than 70% of the respondents considered this factor to be very important in their decision to donate blood, there was no significant association between it and blood donation.

The TTM as earlier explained postulates that individuals move through several stages from pre-contemplation, contemplation, preparation, action and maintenance before a behaviour change is said to have taken root (Ferguson, 1996). Findings from the study conform to this

theory as a strong association was established between blood donation intention/willingness and the actual practice of blood donation comparable to individuals moving from the stage of 'contemplation' to the stage of 'action'. Furthermore, this study also found that those who had future blood donation intention/willingness were likely to be those who had practiced blood donation in the past, which aligns with the TTM movement from stage of 'action' to 'maintenance'.

5.7. Chapter Summary

The chapter discussed the major findings of the study and compared with existing literature. Sex was the only sociodemographic characteristic found to be significantly associated with blood donation practice which was consistent with most of the available literature on the practice of blood donation. The association between previous blood donation and future blood donation intention has also been discussed in the chapter. All community factors assessed in this study were found to be significantly associated with blood donation and this was compared and contrasted with existing literature as well. However, none of the hospital factors assessed in this study was found to be statistically associated with blood donation practice. The next chapter presents the summary, conclusion, and recommendations of the study.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0. Introduction

This chapter presents an analysis of the findings of the study on blood donation among the health care providers at the Cape Coast Teaching Hospital. The chapter is divided into sections. The first section presents the summary of the study. Section two presents the conclusion of the study focusing on the specific objectives: knowledge, attitude, and practice of blood donation and blood donation intention/willingness among health care providers at CCTH, cultural factors and blood donation and hospital factors and blood donation. Section three presents the contribution to knowledge covering policy and practice, methodology and theory. Section four presents the recommendations of the study. Section five presents the limitations to the study. Section six presents future research for consideration by researchers.

6.1. Summary of the study

This study was conducted to assess factors associated with blood donation amongst the healthcare providers at CCTH. The study adopted a cross-sectional design using quantitative methods to collect data from the health care providers at CCTH. A structured questionnaire validated by earlier similar studies was adapted, pretested and administered to respondents who were recruited using proportionate stratified random sampling technique and systematic random sampling technique. STATA version 17 was used to analyse the data collected. Descriptive statistics were presented in tables and graphs. Chi-square test and logistic regression were used to ascertain the association between the dependent and independent variables using a level of significance of $p<0.05$ at 95% Confidence Interval (CI). There was an association between sex and the practice of blood donation. No association was found

between hospital factors assessed and the practice of blood donation. Cultural acceptability, religious acceptance, discouraging spiritual perceptions, peer and family influence and presence of community donation exercises were the community factors independently associated with the practice of blood donation. The study also found an association between the practice of blood donation and future blood donation intention/willingness. Factors predictive of the practice of blood donation include sex, future blood donation intention, discouraging spiritual perception on blood donation as well as peer and family donation of blood.

6.2. Conclusion of the study

This section presents the conclusions in relation to the specific objectives of the study. The specific objectives were; to assess the knowledge of and attitude towards blood donation among healthcare providers at the Cape Coast Teaching Hospital and its association with the practice of blood donation; to assess the association between hospital/health system factors and blood donation among health care providers at the Cape Coast Teaching Hospital; to assess the association between community factors and blood donation among health care providers at the Cape Coast Teaching Hospital; and to assess the association between the future blood donation intention/willingness and the practice of blood donation. Conclusions related to these specific objectives have been presented below.

6.2.1. Socio-demographic Characteristics and the Practice of Blood Donation

Sex was an important socio-demographic characteristic that affects the practice of blood donation with males more likely to donate blood compared to females. This was consistent with findings from a similar study (Malako *et al.*, 2019) where male sex was significantly

associated with the practice of blood donation. Likewise, Abd Hamid *et al*., (2013) also found males to be the major contributor group in blood donation as compared to females.

6.2.2. Level of Blood Donation and Blood Donation Intention

Having the intention/willingness to donate blood in the future invariably leads to the actual practice of blood donation and vice versa. Hence, previous practice of blood donation was a strong predictor of future blood donation intention/willingness. A similar conclusion was drawn in a study in Perlis population, Malaysia (Abd Hamid *et al*., 2013) where it was shown that individuals who have ever donated blood in the past had a higher intention to donate again in the future compared to individuals who had never donated blood.

6.2.3. Knowledge, Attitude, and Practice of Blood Donation and Blood Donation

Knowledge of blood donation and attitude towards blood donation alone were inadequate to improve blood donation behaviour change according to the findings from this study. However, other studies found an association between knowledge, attitude and the practice of blood donation (Arage *et al*., 2017; Getie *et al*., 2020). A systematic review and meta-analysis found that, having a favourable or good attitude and good knowledge of blood donation were significantly associated with the practice of blood donation in Ethiopia (Getie *et al*., 2020). A cross-sectional studyamong health professionals of the University of Gondar Hospital found that healthcare professionals' knowledge of and attitude towards blood donation was significant and independently associated with blood donation practice amongst these health professionals (Arage *et al*., 2017).

6.2.4. Community factors and blood donation and blood donation intention

The main factors that could affect blood donation practice were community based. There was an association between every community factor assessed and blood donation practice. Blood donation practice will likely improve if it is culturally and religiously accepted. Furthermore, blood donation practice will improve if society does not believe in discouraging spiritual perceptions of blood donation. These discouraging spiritual perceptions are an impediment to blood donation practice as concluded in a previous study (Asamoah-Akuoko, 2016). The practice of blood donation was greatly influenced by peer and family donation behaviour, thus, getting a single person to donate blood goes to have a rippling effect on close relations to participate in blood donation as well. In addition, the prevalence of blood donation would most likely increase amongst healthcare providers if donation exercises could take place in the communities.

6.2.5. Hospital factors and blood donation and blood donation intention/willingness

None of the hospital factors assessed were independently associated with blood donation. Although attitude of blood collection staff, "wait time", incentives or rewards, privacy during donation and confidentiality of pre-donation tests were considered important by majority of the respondents, these factors did not independently influence the practice of blood donation. Although this study did not find a significant association between these hospital factors and blood donation practice, a study found incentives as a great motivator for blood donation (Sekoni *et al*., 2014). Likewise, Mohammed and Essel (2018) also reported that the attitude of blood collection staff was an important factor that could influence practice of blood donation and blood donation intention.

6.3. Contribution to knowledge

This section presents the contribution of this study to knowledge in the areas of policy and practice. Methodology and theory as presented below.

6.3.1. Contribution to policy and practice

The findings of this study suggest that blood donation campaigns should be intensified at the community level. As such, a policy review is necessary to ensure that health facilities at the subdistrict level (including health centres, CHPs compounds) are equipped to undertake blood donation activities. This will decentralize blood donation activities and improve donation behaviour of most blood donors and potential blood donors. Findings in this study also proved that future donors were likely to be previous donors, hence, a special attention needs to be paid to data management with regards to blood donors towards building a stable donor pool.

Furthermore, findings from this study have highlighted the importance of paying attention to community factors associated with blood donation practice. Even though the hospital factors assessed in this study were important for blood donation practice, only the community factors were significantly associated with the practice of blood donation. This implies that more work needs to be done at the community level to enhance blood donation practice in order to increase the blood donation rate in the country.

Attaining a sustainable national supply of safe blood that completely relies on voluntary unpaid blood donors is the principal goal of Ghana's National Blood Policy (Ministry of Health (MOH), 2020). Key strategies enumerated to achieve this goal included promoting public education on blood donation, increasing blood collection from voluntary unpaid

donors from low-risk populations and expanding blood service infrastructure nationwide (MOH, 2020). This study's findings would be pivotal in the microplanning of these strategies as well as revamping the policy to meet the intended goals.

6.3.2. Contribution to theory

The findings in this study have contributed to the theory of decision balance (Sardi *et al*., 2019). Most of the study participants who perceived religious and cultural benefits to blood donation were willing to donate blood and had actually practiced blood donation more than those who did not perceive such benefits. Conversely, those who perceived disadvantages with blood donation practice such as believing discouraging spiritual perceptions were deterred from future blood donation and the practice of blood donation. This study adapted decision balance in designing the data collection instrument (Sardi *et al*., 2019). To the best of the researcher's knowledge, this is the only study which adapted this theory for answering the research questions pertaining to blood donation at CCTH.

6.3.3. Contribution to Methodology

The quantitative method used in this study was helpful in answering the research questions and to some extent, it has helped to explain the blood donation behaviour of the study population. However, as a health care provider who has seen the incessant challenges with availability and access to blood and blood products, the researcher strongly believes some of the hidden problems pertaining to blood availability and access can only be revealed using a qualitative research approach. The researcher recommends the qualitative approach for future research pertaining to blood access and availability in order to explore the reasons behind the responses given by the respondents as shown in others studies (Joshi & Meakin, 2017; Siromani *et al*., 2015).

6.4. Recommendations

Based on the findings of the study, the following recommendations have been made for consideration by appropriate stakeholders in the healthcare environment.

Management of Cape Coast Teaching Hospital

The CCTH blood management committee should improve data collection and management of blood donors to build a stable donor pool. Findings from this study confirm that future blood donors are most likely to be previous blood donors, thus, an improved blood donation data base would go a long way in recruiting donors for regular blood donation exercises. The study findings have demonstrated the invaluable impact of religious and cultural acceptability of blood donation in improving the prevalence of voluntary blood donation. The CCTH Blood Management Committee should also make conscious efforts to engage key stakeholders such as religious leaders and traditional leaders (Pastors, Imams, Chiefs) incessantly in planning, implementation and evaluating/evaluation of blood donation campaigns. The Committee should also engage the media and use it as a tool in changing the discouraging spiritual perceptions of blood donation.

Ministry of Health / Ghana Health Service

The Ministry of Health/ Ghana Health Service should make it a policy for every sub-district to have a community blood donation centre to improve participation in blood donation. The efforts of the mobile blood donation programmes should also be intensified to bring blood donation to the community level to enhance participation. Furthermore, the Ministry of Health should design an effective electronic data base which could be used to generate a stable voluntary data pool as most future blood donors are most likely to be previous donors.

This would help prevent the situation where blood donors are lost to follow up and serve as an active outreach mechanism by which voluntary blood donor base can be built.

Community Members - Blood Donors

Community members need health education on blood donation for them to appreciate the benefits and importance of voluntary blood donation and improved blood availability to a community. This education would also include dispelling myths and misconceptions about blood donation. This study showed that respondents who did not believe in discouraging spiritual perceptions of blood donation had practiced blood donation more than those who thought that the discouraging spiritual perceptions would hinder their blood donation activities. Using the mass media, social media and educational campaigns to demystify blood donation would go a long way to improve the prevalence of blood donation and hence, blood availability in the country.

6.5. Limitations to the study

The study was faced with a few limitations as stated below:

1. This study was limited in the sense that it was performed in a single teaching hospital in Ghana. It would have been very beneficial to explore the same outcome variable at other hospitals in the country to increase the external validity of the study. This could not be achieved due to the limited time available for completion of this dissertation.
2. Since the study used only a quantitative research approach using a structured questionnaire, it was difficult to examine the practice of blood donation from the perspectives of the health workers themselves through researcher-participant interactions.

3. The sample size of the study was small as the study focused on only health workers and this makes it difficult to generalize the findings of this study to the population outside the hospital.

6.6. Future Research

Some areas that require attention have been suggested here. Further studies should be conducted on blood donation and blood donation intention. Future research should be a multi-center study and should explore the operational and health system challenges that affect blood availability and access in the country. A qualitative research method would most likely unearth the hidden problems militating against blood availability and access in the country.

REFERENCES

Abd Hamid, N. Z., Basiruddin, R., & Hassan, N. (2013). The intention to donate blood: an analysis of socio-demographic determinants. *International Journal of Social Science and Humanity*, *3*(6), 503-507. https://doi.org/10.7763/IJSSH.2013.V3.292

Abolfotouh, M. A., Al-Assiri, M. H., Al-Omani, M., Al Johar, A., Al Hakbani, A., & Alaskar, A. S. (2014). Public awareness of blood donation in central Saudi Arabia. International Journal of General Medicine, 2014(7), 401–410. https://doi.org/10.2147/IJGM.S67187

Ajzen, I. (1985) From Intentions to Action: A Theory of Planned Behavior. In: Kuhl, J. and Beckmann, J., Eds., Action-Control: From Cognition to Behavior, Springer-Verlag, Heidelberg, 11-39. http://dx.doi.org/10.1007/978-3-642-69746-3_2

Appiah, B. (2013). *Promoting blood donation in Sub-Saharan Africa: Role of culture and interventions* (Doctoral dissertation). https://core.ac.uk/download/pdf/147238885.pdf

Arage, G., Ibrahim, S., & Adimasu, E. (2017). Blood donation practice and its associated factors among health professionals of University of Gondar Hospital, Northwest Ethiopia: A cross sectional study. *BMC Research Notes*, *10*(1), 1–6. https://doi.org/10.1186/s13104-017-2618-5

Asamoah-Akuoko, L., Hassall, O. W., Bates, I., & Ullum, H. (2017). Blood donors' perceptions, motivators and deterrents in Sub-Saharan Africa – a scoping review of evidence. In *British Journal of Haematology* (Vol. 177, Issue 6, pp. 864–877). John Wiley & Sons, Ltd. https://doi.org/10.1111/bjh.14588

Asamoah-Akuoko, L. (2018). *Evolving strategies to encourage repeat donations among first time voluntary and replacement blood donors in southern Ghana*. The University of Liverpool (United Kingdom). https://core.ac.uk/download/pdf/186329381.pdf

Bantayehu, D. (2015). Knowledge, Attitude, and Practice of Voluntary Blood Donation and Associated Factors among Health Care Providers in Addis Ababa health Facilities, Ethiopia. *Occupational Medicine & Health Affairs*, *03*(04), 1-17. https://doi.org/10.4172/2329-6879.1000209

Bellhouse, D. R. (2005). Systematic Sampling Methods. In *Encyclopedia of Biostatistics*. John Wiley & Sons, Ltd. https://doi.org/10.1002/0470011815.b2a16077

Biya, M., Gezahagn, M., Birhanu, B., Yitbarek, K., Getachew, N., & Beyene, W. (2022). Waiting time and its associated factors in patients presenting to outpatient departments at Public Hospitals of Jimma Zone, Southwest Ethiopia. *BMC Health Services Research*, 22(1), 1–8. https://doi.org/10.1186/s12913-022-07502-8

Cape Coast Metropolitan Assembly (CMA). (2021) *About- Cape Coast Metropolitan Assembly*. Retrieved 20 November, 2022, from: https://ccma.gov.gh/aboutccma.

Cape Coast Teaching Hospital. (2020). *2020 Annual Performance Report*. Cape Coast, Ghana: Cape Coast Teaching Hospital.

Checkley, L., Motwani, G., Wange, I. C., Nwanna-Nzewunwa, O., Kirya, F., Ajiko, M. M., Juillard, C., & Dicker, R. A. (2019). Assessment of blood donation and transfusion in Eastern Uganda: A mixed-methods study. *Annals of Global Health*, *85*(1). https://doi.org/10.5334/aogh.2426

Cholette, J. M., & Lerner, N. B. (2012). Use of Blood Products. *Pediatric Critical Care Study Guide*, 427–450. https://doi.org/10.1007/978-0-85729-923-9_20

Cohen, L., Manion, L., & Morrison, K. (2000). Research Methods in Education (5th ed.). *RoutledgeFalmer 11 New Fetter Lane, London EC4P 4EE*

Comte, A. (1856). A general view of positivism. London: Smith Elder & Co.

Desai, K. N., & Satapara, V. (2014). A study on knowledge, attitude, and practice on blood donation among health professional students in Anand: Gujarat. *Journal of Applied Hematology*, *5*(2), 51-53. http://doi.org/10.4103/1658-5127.137140

Etikan, I. (2017). Sampling and Sampling Methods. Biometrics & Biostatistics International Journal, 5(6), 215-217. https://doi.org/10.15406/bbij.2017.05.00149

Ferguson, E. (1996). Predictors of future behaviour: A review of the psychological literature on blood donation. *British Journal of Health Psychology*, *1*(4), 287-308.

Fishbein, M. & Ajzen, I., (1975). Belief, Attitude, Intention and Behavior: An introduction to theory and research. *Addison-Wesley Publishing Company.*

Getie, A., Wondmieneh, A., Bimerew, M., Gedefaw, G., & Demis, A. (2020). Blood donation practice and associated factors in Ethiopia: a systematic review and meta-analysis. *BioMed Research International*, (Vol. 2020, Issue 8, pp. 1-8) https://doi.org/10.1155/2020/8852342

Ghana News Agency (GNA). (2021). *Cape Coast Teaching Hospital calls for more blood donors*. News Ghana. Available at https://gna.org.gh/2021/06/cape-coast-teaching-hospital-calls-for-more-blood-donors/. Accessed on 27/8/2022

Ghauri, P., Grønhaug, K., & Strange, R. (2020). *Research methods in business studies*. University Printing House, Cambridge CB2 8BS, United Kingdom. https://doi.org/10.1017/9781108762427

Gergen, K. J. (2001). Psychological science in a postmodern context. *American Psychologist*, *56*(10), 803-813. https://doi.org/10.1037/0003-066X.56.10.803

Ghana Statistical Service. (2014). *Population and housing census: District analytical report, Mfantseman Distict*. Retrieved 12 November, 2021, from: https://www2.statsghana.gov.gh/docfiles/2010_District_Report/Central/Cape Coast.pdf

Hall, K. L., & Rossi, J. S. (2008). Meta-analytic examination of the strong and weak principles across 48 health behaviors. *Preventive Medicine*, *46*(3), 266-274.

Harrington, A. H. (2012). Blood banks in Kumasi, Ghana: Social barriers preventing volunteer blood donations. *University of Michigan Undergraduate Research Journal* |, (9), 2010–2013.

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. In Evidence-Based Nursing (Vol. 18, Issue 3, pp. 66–67). https://doi.org/10.1136/eb-2015-102129

Jenny, H. E., Saluja, S., Sood, R., Raykar, N., Kataria, R., Tongaonkar, R., & Roy, N. (2017). Access to safe blood in low-income and middle-income countries: Lessons from India. *BMJ Global Health*, *2*(2), 1–7. https://doi.org/10.1136/bmjgh-2016-000167

Joshi, D., & Meakin, R. (2017). Views and attitudes towards blood donation: a qualitative investigation of Indian non-donors living in England. *BMJ open*, *7*(10), e018279. https://doi.org/10.1136/bmjopen-2017-018279.

Karobi, D. (2014). Knowledge attitude and practices of blood donors toward blood donation. *J Postgrad Med Educ Res*, *48*(3), 123-7.

Kassie, A., Azale, T., & Nigusie, A. (2020). Intention to donate blood and its predictors among adults of Gondar city: Using theory of planned behavior. *PloS One*, *15*(3), e0228929. https://doi.org/10.1371/journal.pone.0228929

Kopala, M., & Suzuki, L. A. (Eds.). (1999). *Using qualitative methods in psychology*. SAGE Publications, Inc.London. https://doi.org/10.4135/9781452225487.

Kralievits, K. E., Raykar, N. P., Greenberg, S. L. M., & Meara, J. G. (2015). The global blood supply: a literature review. *The Lancet*, *385(4)*, S28. https://doi.org/10.1016/s0140-6736(15)60823-6

Li, Z., Lei, S., Li, X., Zhao, Y., Dai, Y., Jin, S., ... & Tu, X. (2021). Blood Donation Fear, Perceived Rewards, Self-Efficacy, and Intention to Return Among Whole Blood Donors in China: A Social Cognitive Perspective. *Frontiers in Psychology*, *12*. DOI: https://doi.org/10.3389/fpsyg.2021.683709.

Malako, D., Yoseph, F., & Bekele, M. L. (2019). Assessment of knowledge, attitude and practice and associated factors of blood donation among health care workers in Ethiopia: A cross-sectional study. *BMC Hematology*, *19*(1), 1–8. https://doi.org/10.1186/s12878-019-0140-9

Manikandan, S., Srikumar, R., & Ruvanthika, P. N. (2013). A study on knowledge, attitude and practice on blood donation among health professional students in Chennai, Tamil Nadu, South India. *International Journal of Scientific and Research Publications*, *3*(3), 1-4.

Martinez, E. Z., Tamaribuchi, R. A., Zucoloto, M. L., & Trovão, A. C. G. B. (2021). Recommendations for application and interpretation of the Blood Donor Satisfaction Questionnaire (BDSQ). *Hematology, Transfusion and Cell Therapy*, 43(3), 236–242. https://doi.org/10.1016/j.htct.2020.03.007

Mbanya, D. (2012). Barriers and enablers to introducing comprehensive patient blood management in the hospital. *Biologicals*, *40*(3), 205–208. https://doi.org/10.1016/j.biologicals.2012.01.003

Melku, M., Terefe, B., Asrie, F., Enawgaw, B., Melak, T., Tsegay, Y. G., ... & Shiferaw, E. (2016). Knowledge, attitude, and practice of adult population towards blood donation in Gondar Town, Northwest Ethiopia: a community based cross-sectional study. *Journal of Blood Transfusion*, Vol. *2016*, Issue 7, pp. 1–10. doi: 10.1155/2016/7949862.

Ministry of Health. (2020). National Blood Policy: Safe and Adequate Blood For All. Retrieved 20 Janurary, 2023, from: https://ghanamedassoc.org/wp-content/uploads/2021/09/NATIONAL-BLOOD-POLICY.pdf.

Mohammed, S., & Essel, H. B. (2018). Motivational factors for blood donation, potential barriers, and knowledge about blood donation in first-time and repeat blood donors. *BMC Hematology*, *18*(1), 1-9.

Munro, S., Lewin, S., Swart, T., & Volmink, J. (2007). A review of health behaviour theories: how useful are these for developing interventions to promote long-term medication adherence for TB and HIV/AIDS? *BMC Public Health*, *7*(1), 1-16.

Muthivhi, T. N., Olmsted, M. G., Park, H., Sha, M., Raju, V., Mokoena, T., ... & Reddy, R. (2015). Motivators and deterrents to blood donation among Black South Africans: a qualitative analysis of focus group data. *Transfusion Medicine*, *25*(4), 249-258.

National Blood Service Ghana (NBS). (2020). *Organisation of the Blood Transfusion Services in Ghana*. Retrieved June 1, 2022, from https://nbs.gov.gh/wp-files/Organisation%20of%20the%20Blood%20Transfusion%20Services%20in%20Ghana.pdf

Nigatu, A., & Demissie, D. B. (2014). Knowledge, Attitude and Practice on Voluntary Blood Donation and Associated Factors among Ambo University Regular Students, Ambo Town, Ethiopia. *Journal of Community Medicine & Health Education*, *04*(05), 6-6. https://doi.org/10.4172/2161-0711.1000315

Nuako, I., Bedu Addo, G., & Ansong, D. (2016). Knowledge, attitude and practice on blood donation among nurses in Komfo Anokye Teaching Hospital, Kumasi. *Africa Sanguine*, *18*(2), 8–12.

Nwogoh, B., Aigberadion, U., & Nwannadi, A. I. (2013). Knowledge, attitude, and practice of voluntary blood donation among healthcare workers at the University of Benin

Teaching Hospital, Benin City, Nigeria. *Journal of Blood Transfusion, 2013*, 1-6. Article ID 797830. http://dx.doi.org/10.1155/2013/797830

Park, Y., Konge, L., & Artino, A. R. (2020). The Positivism Paradigm of Research. *Academic Medicine: Journal of the Association of American Medical Colleges*, 95(5), 690-694. http://dx.doi.org/10.1097/ ACM.0000000000003093

Peters, G. E., & Oko, N. I. (2021). Evaluation of Factors affecting voluntary blood donation in South-South Nigeria: Focus on Akwa Ibom State. *Archives of Preventive Medicine*, *6*(1), 007-011.

Prochaska, J. O., Velicer, W. F., DiClemente, C. C., & Fava, J. (1988). Measuring processes of change: applications to the cessation of smoking. *Journal of Consulting and Clinical Psychology*, *56*(4), 520-528. https://doi.org/10.1037/0022-006X.56.4.520

Ranganathan, P., & Aggarwal, R. (2018). Study designs: Part 1–An overview and classification. *Perspectives in Clinical Research*, *9*(4), 184-186. https://doi.org/10.4103/picr.PICR_124_18

Raykar, N. P., Makin, J., Khajanchi, M., Olayo, B., Munoz Valencia, A., Roy, N., … & Rudd, K. (2021). Assessing the global burden of hemorrhage: The global blood supply, deficits, and potential solutions. In *SAGE Open Medicine* (Vol. 9). SAGE Publications Ltd. https://doi.org/10.1177/20503121211054995

Rolseth, S., *et al*., (2014). The acceptability of volunteer, repeat blood donations in a hospital setting in the Adamaoua region of Cameroon. *Transfusion Medicine*, *24*(6), 372-378.

Sardi, L., Idri, A., Carrillo de Gea, J. M., Toval, Á., & Fernández-Alemán, J. L. (2019). Applying trans-theoretical model for blood donation among Spanish adults: a cross-sectional study. *BMC Public Health*, *19*(1), 1-13.

Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., ... & Alkema, L. (2014). Global causes of maternal death: a WHO systematic analysis. *The Lancet Global Health*, 2(6), e323-e333.

Setia M. S. (2016). Methodology Series Module 3: Cross-sectional Studies. *Indian Journal of Dermatology*, *61*(3), 261–264. https://doi.org/10.4103/0019-5154.182410.

Schrag, F. (1992). In Defense of Positivist Research Paradigms. *Educational Researcher*, *21*(5), 5–8. https://doi.org/10.2307/1176838

Sekoni, A. O., Balogun, M. R., Odukoya, O. O., Inem, V., & Onigbogi, O. O. (2014). Blood donation practices and willingness to donate among residents of an urban slum in Lagos Nigeria. *Nigerian Postgraduate Medical Journal*, *21*(1), 21-27. https://doi.org/10.4103/1117-1936.163665

Shehu, E., Langmaack, A. C., Felchle, E., & Clement, M. (2015). Profiling donors of blood, money, and time: a simultaneous comparison of the German population. *Nonprofit Management and Leadership*, *25*(3), 269-295. https://doi.org/10.1002/nml.21126

Siromani, U., Thasian, T., Isaac, R., Selvaraj, K. G., Daniel, D., Mammen, J. J., & Nair, S. C. (2015). A qualitative study of identifying factors which contribute and non-contribute to voluntary blood donation through Focus Group Discussions (FGD's) among blood donors and non-blood donors. *International Journal of Emergency Mental Health*, 17(1), 337–340. https://doi.org/10.4172/1522-4821.1000168

Statistical Service Accra, G. (2018). *Ghana Maternal Health Survey 2017*. Retrieved 17 November, 2022, from: www.DHSprogram.com.

Suemnig, A., Konerding, U., Hron, G., Lubenow, N., Alpen, U., Hoffmann, W., ... & Greinacher, A. (2017). Motivational factors for blood donation in first-time donors and repeat donors: a cross-sectional study in West Pomerania. *Transfusion Medicine*, *27*(6), 413-420.

Tadesse, T., Berhane, T., Abraha, T. H., Gidey, B., Hagos, E., Grum, T., & Gerensea, H. (2018). Blood donation practice and associated factors among health professionals in Tigray regional state public hospitals, northern Ethiopia. *BMC Research Notes*, *11*(1), 1-6.

Teferi, M. Y., Woldesenbet, S. G., Feleke, S. A., Abebe, E. H., Adane, H. T., & Alemayehu, C. M. (2021). Assessment of the level and factors associated with knowledge, attitude and practice of blood donation among medical and paramedical personnel in ALERT Hospital, Ethiopia. *Journal of Public Health Research*, *10*(1), 1-7. https://doi.org/10.4081/jphr.2021.1860

Trauma and Specialist Hospital, Winneba. (2020). *TSH WINNEBA*. 2020. Retrieved 14 October, 2022, from: https://www.traumahospitalgh.com/.

United Nations (2021). Goal 3- Ensure healthy lives and promote well-being for all at all ages | Department of Economic and Social Affairs. Retrieved 22 November, 2022, from: https://sdgs.un.org/goals/goal3.

Vos, T., Allen, C., Arora, M., Barber, R. M., Brown, A., Carter, A., …& Zuhlke, L. J. (2016). Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, *388*(10053), 1545–1602. https://doi.org/10.1016/S0140-6736(16)31678-6

Whitelaw, S., Baldwin, S., Bunton, R., & Flynn, D. (2000). The status of evidence and outcomes in Stages of Change research. *Health Education Research*, *15*(6), 707-718.

WHO (2012). WHO recommendations for the prevention and treatment of postpartum haemorrhage. In World Health Organization. www.who.int/maternal_child_adolescent

WHO (2016). Global status report on blood safety and availability. https://apps.who.int/iris/bitstream/handle/10665/254987/9789241565431-eng.pdf

WHO (2018). *Global Status on Road Safety*. https://apps.who.int/iris/bitstream/handle/10665/276462/9789241565684-eng.pdf

WHO (2022). *Blood safety and availability*. Retrieved 23 October, 2022, from: https://www.who.int/news-room/fact-sheets/detail/blood-safety-and-availability.

WHO (2019). *Ghana commemorates World Blood Donor Day; Safe blood for all. | WHO | Regional Office for Africa*. Retrieved 23 October, 2022, from: https://www.afro.who.int/news/ghana-commemorates-world-blood-donor-day-safe-blood-all.

World Health Organization. (2017a). *Blood safety and availability - Facts sheet*. Retrieved 23 October, 2022, from: http://www.who.int/mediacentre/factsheets/fs279/en/.

World Health Organization. (2017b). *Blood transfusion safety*. Retrieved 23 October, 2022, from: https://www.who.int/health-topics/blood-transfusion-safety#tab=tab_1.

Yahia, A. I. O. (2021). (2021). Management of Blood Supply and Blood Demand to Ensure International Health Security. In *Contemporary Developments and Perspectives in International Health Security - Volume 2*. IntechOpen. https://doi.org/10.5772/intechopen.96128

Yirgu, N. A., Mohammed, H. K., Diriba, D. S., Babso, K. A., & Abdo, A. A. (2021). Blood Donation and Associated Factors Among Employees Working at Negele Arsi General Hospital and Medical College, Southeast Ethiopia: A Cross-sectional Study. *Journal of Blood Medicine*, 12, 475-482. https://doi.org/10.2147/JBM.S301826

APPENDICES

SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

APPENDIX A: PARTICIPANT'S CONSENT FORM

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Participant’s Consent Form

Tittle: Factors Associated with Blood Donation Among Health Care Providers at The Cape Coast Teaching Hospital (CCTH), Central Region.

Purpose of the study: The study aims to assess factors that are associated with blood donation intention amongst health care providers at CCTH so as to inform policy reviews in order to implement interventions that would culminate in blood donation behaviour change. This would be helpful in addressing the challenges the country face with regards to access to blood and blood products.

Name of principal investigator: Selorm Makafui Kwashie

Address: School of Public Health, College of Health Sciences, University of Ghana,

PO Box LG 43, Legon

Thank you for showing interest in partaking in this study. My name is Selorm Makafui Kwashie. I am a Master of Public Health student of the School of Public Health, University of Ghana, Legon.

I am conducting a study to identify the factors associated with blood donation among health care providers at CCTH.

Your participation in this research is completely voluntary. Whatever information you give is totally confidential, restricted to the purpose of this study only. The information will not be disclosed to anyone. You have the right to change your mind at any time about your participation in this survey. Your answers will not be used against you in any facility or organization.

I would be very grateful if you give answers which show a true reflection of your knowledge, attitude and practice of blood donation.

Kindly append your signature to indicate your consent to participate in this study.

Thanks

…….
Name of participant Signature

Date……

Name of Researcher: Selorm Makafui Kwashie

Signature:
Date:……

Address: Nii Kodia Street, House Number 7, Adenta-West, Accra
Contact No: 0245445674 / 0504972914

In case of any concern, you can contact the Administrative Manager, Ms. Doreen Addai, ERC CCTH on 0544863842.

APPENDIX B: QUESTIONNAIRE

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QUESTIONNAIRE FOR FACTORS ASSOCIATED WITH BLOOD DONATION AMONG HEALTHCARE PROVIDERS AT THE CAPE COAST TEACHING HOSPITAL

Directions: *Please answer each question below, by ticking the appropriate option.*

SECTION A- Sociodemographic characteristics

1. Sex	Male ☐ Female ☐
2. Age in years	……..
3. Marital status	Single☐ Married☐ Divorced ☐ Separated ☐ Co-habiting ☐
4. Profession	Midwife☐ Nurse☐ Doctor☐ Lab Scientist☐ Pharmacist☐
5. Rank of Profession	……..
6. Religion	Christianity ☐ Islam ☐ Traditionalist☐ Other(specify)……
7. Ethnicity	Akan☐ Ewe☐ Fante ☐ Ga ☐ Other (specify)……..

SECTION B -Knowledge of blood donation

QUESTION	RESPONSE		
	YES	NO	Do not know
8. Is there any age limitation on blood donation?			
9. Can women donate blood while menstruating?			
10. Can people with any blood group donate blood?			
11. Does blood donation cause anaemia?			
12. Could blood donation cause transmission of infection to the donor?			
13. Could blood transfusion cause transmission of infection to the receiver?			
14. Is someone with a history of drug abuse allowed to donate blood?			
15. Is someone with a history of an unsafe sexual relationship allowed to donate blood?			
16. Are diabetic and hypertensive patients allowed to donate blood?			
17. Are pregnant women allowed to donate blood?			
18. Is donated blood screened for malaria?			

19. Is donated blood screened for HIV, hepatitis and syphilis?			

SECTION C- Attitude towards blood donation

QUESTION	RESPONSE				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20. I think blood donation is an altruistic (unselfish) act.					
21. I do not think that my donation will encourage others to donate.					
22. I would donate blood only if I was assured that the donated blood would be given to me or to one of my family in the future.					
23. My family and friends consider blood donation as an important act and encourage me to donate.					
24. I do not think that blood donation is a religious duty.					
25. I think that blood donation is a national duty.					
26. I would donate blood if there were incentives or rewards.					
27. Blood donation makes me feel like I have helped one of my family members or friends.					
28. I would donate blood if given leave from work.					
29. A laboratory test performed on the donated blood may help me to evaluate my health.					

SECTION D- Practice of blood donation

QUESTION	RESPONSE	INSTRUCTION
30. Have you ever donated blood?	Yes ☐ no ☐	If **Yes** answer Q. 30 & 31, if **No** skip to Q32.
31. If yes, when was the last time you donated blood?	within last 6 months ☐ Within one year ☐ Between 1-2 years ☐ Above 2 years ☐	
32. What was the reason for your donation?	Voluntary donation (Unpaid) ☐ Replacement for family/friend/patient ☐ For Remuneration ☐	
33. Are you willing to donate blood in the future?	Yes ☐ No ☐	If yes, please answer Q.33, If no, skip to Q.34
34. How soon do you intend to donate blood?	Within the next month ☐ Within the next 6 month ☐ Unsure about the time ☐	

SECTION E-Community factors and blood donation

QUESTION	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
35. I am likely to donate blood if my culture permits.					
36. I am likely to donate blood if my religion accepts it.					
37. I will **NOT** donate blood if there are discouraging spiritual perceptions on blood donation.					
38. I am likely to donate blood if my colleagues, friends and family donate blood.					
39. I am more likely to donate blood if donation					

exercises are organized in my community.					

SECTION F- Hospital factors and blood donation

Hospital Factor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
40. My decision to donate blood would be influenced by the attitude of blood collection staff.					
41. Waiting time/ duration of blood collection would affect my decision to donate.					
42. Presence of incentives or rewards would **NOT** affect my intention to donate blood.					
43. Privacy during donation is very important to me if I am to donate blood.					
44. Confidentiality of pre-donation tests results is **NOT** important to me if I am to donate blood.					

THANK YOU

APPENDIX C: ETHICAL CLEARANCE

In case of reply the reference number
and the date of this
Letter be quoted

P. O. Box CT.1363
Cape Coast
CC-071-9967
Tel: 03321-34010-14
Fax: 03321-34016
Website:
www.ccthghana.org
email:
info@ccthghana.com

Our Ref.: CCTH

Your Ref.:

9th November, 2022

Dr. Selorm Makafui Kwashie
School of Public Health
College of Health Sciences
University of Ghana
Legon, Accra

Dear Sir,

ETHICAL CLEARANCE – REF: CCTHERC/EC/2022/166

The Cape Coast Teaching Hospital Ethical Review Committee (CCTHERC) has reviewed your research protocol titled, **'Factors Associated with Blood Donation Intention among Healthcare Providers at the Cape Coast Teaching Hospital, Central Region'** which was submitted for ethical clearance. The ERC is glad to inform you that you have been granted provisional approval for implementation of your research protocol.

The CCTHERC requires that you submit periodic review of the protocol and a final full review to the ERC on completion of the research. The CCTHERC may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the CCTHERC for review and approval before its implementation.

You are required to report all serious adverse events related to this study to the CCTHERC within ten (10) days in writing. Also note that you are to submit a copy of your final report to the CCTHERC office.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours sincerely,

INTEGRI PROCEDAMUS

Prof. Ganiyu Rahman
Chairman, ERC

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