

# Blood Banks in Kumasi, Ghana: Social Barriers Preventing Volunteer Blood Donations

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*Aims/Objectives:* To explore the attitudes and beliefs toward voluntary blood donation within a Ghanaian Christian community as a first step in developing a sustainable blood supply.

*Background:* The shortage of donated blood available for emergency transfusions in the developing world is a critical issue that can significantly affect the prognosis and recovery of hemorrhage patients. In the case of some local hospitals in Kumasi, Ghana, although the proper technology is in place to sustain an adequate blood bank, there have been periods of donated blood shortages.

*Materials and Methods:* Members of Faith Gospel Church, Kumasi, Ghana, participated in a pilot case study. Study participants completed written surveys, based on the Theory of Planned Behavior model, which explored their attitudes and beliefs toward voluntary blood donation.

*Results:* A total of 50 church members participated in the survey. While 94% expressed the importance of voluntary blood donation and thought it was a good idea, 62% articulated some sort of health concern as a barrier.

*Conclusions:* The study revealed that religious, cultural, or tribal beliefs were not a major factor in this sample deciding to volunteer to donate blood. Health concerns were the largest issue that needs to be addressed when developing blood drives for a sustainable blood bank supply in the future.

## Introduction

The fifth United Nations Millennium Development Goal is focused on reducing the maternal mortality ratio by 75% between 1990 and 2015 and achieving universal access to reproductive health care by 2015 (UN Development Group, 2010). The leading cause of maternal mortality is obstetric hemorrhage, accounting for up to 44% of deaths in some areas, 26% of which can be attributed to the lack of blood units available for emergency transfusions (Bates, 2008). In 2008, the worldwide deficit of blood units needed for transfusion was estimated at 40 million. Up to 80% of patients who require a blood transfusion in sub-Saharan Africa cannot receive one without providing their own donor in the form of a family member (Bates, 2008). If a family member is not available or the patient requires additional transfusions, he or she may not receive the necessary blood. This complicates the efforts of clinicians in resource-limited hospitals to save women suffering from postpartum hemorrhage or ruptured ectopic pregnancy, which is the largest contributor to maternal mortality occurring during the first trimester of pregnancy (Tenore, 2000). One step to prevent these deaths is having available donated blood for transfusion.

Although storing donated blood is not an option in much of sub-Saharan Africa, Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana, Africa, has the necessary facilities. In the developing world, 50% of blood donations are either direct—e.g., from a family member—or paid for, which is the situation that often occurs

at KATH (Al-Drees, 2008). KATH has developed a blood bank in its new Accident and Emergency Center that is comparable to those existing in the United States. However, even though all the proper technology is in place to sustain an adequate blood bank, there are periods of time where shortages in donated blood supply occur. The periodical shortages of donated blood impede the daily work of many hospital staff and medical administrators at KATH and can result in the unnecessary death of their patients. They often must scramble to secure the proper blood type for donation or find enough family members to donate what blood is needed for the patient.

Previous research conducted in Saudi Arabia has shown that perceived risk of contracting HIV, preference of direct donations from relatives, lack of knowledge that a blood bank is in need of blood, and mistrust of modern medicine and hospitals all contribute to a population not donating a sufficient amount of blood (Al-Drees, 2008). Additional belief barriers may include the perception that the procedure is painful or could make the donor weak, as well as a fear of needles or becoming anemic. Logistical barriers, such as the effort it takes to go to the location and perform the act of donating blood, also have been shown to be impediments in other locations (Zago, Freitas de Silveira, & Dumith, 2010). Sometimes, the simplest barrier may be that an individual has never been approached about donating blood and therefore doesn't know how to go about the act itself, which can be a critical dynamic (Al-Drees, 2008).

The goal of this study was to investigate the social, cultural, personal, and knowledge barriers that prevent citizens from donating blood at the modern and capable blood bank at KATH. Using a series of semi-structured and culturally sensitive surveys, the thoughts, attitudes, knowledge and beliefs about blood donation among members in a Christian Ghanaian community were explored. This design allowed us to identify what community members perceive to be the reason that people might or might not donate blood. We used the results of the surveys to design a sustainable strategy between the church study population and KATH in an effort to increase voluntary blood donation and to replicate the process with other local churches in order to maintain a sufficient supply of blood to treat patients.

## Study Design and Methods

### *Study Participants*

Fifty Faith Gospel Church youth group members at two separate branches of Faith Gospel Church in Kumasi volunteered to enroll in the survey study during June 2011 after being recruited by a committee created by the church to oversee the research process. Informed consent was obtained from all participants. Youth Group members targeted for this study ranged between 17 to 25 years of age. To test the theory that religious beliefs are one of the hypothesized factors in donating blood, we ensured that participants were from a Ghanaian Christian community. Local Kumasi blood banks might be interested in targeting Christian churches and communities for blood-donation programs because Christianity composes 69% of the population in Ghana (“The World Fact,” 2011). No identifying information or characteristics were recorded in the survey about the individual participants. The University of Michigan’s Health Sciences and Behavioral Sciences Institutional Review Board in Ann Arbor, Michigan, United States, exempted this study from any further approval. There was no review board for the area of study in Kumasi, but the local Faith Gospel Church leadership approved and monitored the completion of the research.

### *Survey Investigations*

The consent form of the survey was read aloud in English and then signed by each participant before completing the written survey. All study participants were fluent in English. Each participant completed the survey individually and privately and then returned the survey to the administrator within 30 minutes in the same location where the survey was distributed. As an incentive, once participants returned the survey, they were entered into a raffle for University of Michigan apparel. After all participants at the site were finished with their surveys, numbers were drawn and prizes were distributed. If translation was needed for any part of the survey, a translator for the local language, Twi, was provided.

### *Statistical Methods*

The survey questionnaire used was based on the Theory of Planned Behavior model and a previous survey developed by University Putra Malaysia. This methodology was used to assess the variables of attitudes toward the behavior, subjective norm (social pressure to perform behavior), assessed knowledge, past behavior,

and self-efficacy (the belief that one is capable of successfully performing task) of the participants toward blood donation (Jalalian et al, 2010).

Because this was a pilot study, descriptive quantitative and qualitative analyses were performed on the study data. Means and percentages of the survey questions were summarized and reported. The first section of the survey questions explored intention, attitude, subjective norm, and self-efficacy. The wording of the questions explored positive versus negative, general versus specific, and worthwhile versus waste-of-time approaches.

Themes were extracted from the participants’ responses during the qualitative analysis of the open-ended questions. This section of the survey considered the assessed knowledge, normative beliefs, and behavioral beliefs of the participants regarding donating blood. Participants answered open-ended questions investigating their beliefs concerning the advantages and disadvantages of volunteering to donate blood, in addition to explaining which trusted people or organizations they thought would approve or disapprove of them doing so.

## Results

### *Survey Results*

The responses to the closed-ended questions in the survey (yes/no; selecting from several specified choices) show a clear understanding that blood donation is important (Table 1). The participants also indicated a strong aspiration to meet the desires and expectations of the church, family and friends (Table 2).

On the open-ended questions, when asked about the perceived advantages for donating blood, the most common response was “donating blood saves lives,” with a 90% consensus among participants. All other advantages expressed were no greater than 2%. The recurring perceived disadvantages were weight loss (12%), anemia (10%), weakness (22%), death (8%), or disease (16%), such as HIV. Sixty-two percent of participants articulated some sort of health concern in the disadvantages section. Only 2% of participants stated that blood donation was against their religious beliefs. When asked who would approve of the participant donating blood, 36% indicated members of Faith Gospel Church or other Christians, and almost the same number indicated family members or friends. In contrast, 24% said that a family member or friend would disapprove, and 18% replied that a Christianity sect important to them would disapprove. The only other form of perceived disapproval offered was from the participant’s physician (4%).

### *Interview Data*

Some study participants believed that their health-care providers would not approve of them donating blood, and we hypothesize that many of these providers may have concerns because they aren’t aware of the high level of sanitation at KATH and/or because they know that the patient isn’t healthy enough to donate blood.

*Table 1. Results from the survey section in which participants selected multiple answers exhibiting their direct attitude toward donating blood and their indirect attitude as a function of behavioral beliefs and outcome evaluations.*

Statement	Percent agreeing with the statement
Overall, donating blood is a good idea	94
Overall, donating blood is pleasant	4
Overall, donating blood is the wrong thing to do	2
Overall, donating blood is unnecessary	2
If you donate blood, you will save a patient's life	96
If you donate blood, you will be doing something beneficial for yourself	4
If you donate blood, you will become anemic	2
If you donate blood, you will feel that you're doing something harmful to yourself	2
Doing something to save a patient's life is desirable to you	86
Doing something beneficial to yourself is desirable to you	14
Becoming anemic is desirable to you	4
Losing weight is desirable to you	2

*Table 2. Results from yes/no survey section, which further examined the issues in terms of direct and indirect measures of subjective norm, self-efficacy, intention, and past behavior.*

Statement	Percent agreeing with the statement
Doing what your church wants is important to you	91
Your church would want you to donate blood	86
You would donate blood if your church wanted you to	78
You think you would be able to donate blood if asked to do so	78
You are expected to donate blood	76
People who are important to you want you to donate blood	64
It would be easy for you to donate blood	58
You think you would be too weak to donate blood	50
You think you don't have enough blood to donate blood	48
You don't want to donate blood because you're afraid of needles	42
You feel under social pressure to donate blood	38
You have donated blood before	22
People who are important to you think you should not donate blood	18
Your church would disapprove of donating blood	6

The head of KATH's Child Health Directorate has declared that the shortage of blood is one of the major causes of maternal and infant mortality in hospitals and that the shortage also results in palpitations, poor memory, poor cognitive development, heart failure, and other health-related diseases among patients. He also stressed the need for school leaders to organize counseling services for students, teaching the importance of blood in health care ("Educational Institutions Urged," 2011).

The medical director of KATH further clarified, stating that intermittent blood shortages at the hospital's blood bank have been one of the hindrances of health-care delivery at the hospital ("Educational Institutions Urged," 2011). A constant—not intermittent—supply of donated blood is essential to maintain the needs of patients and health-care providers at a health facility the size of KATH. The head of KATH's Hematology Department has said that Ghana's national health insurance scheme, which requires hospitals to prescribe blood, puts additional pressure on the blood bank, thus requiring an intensive campaign to try to ensure a regular supply at the blood bank ("Educational Institutions Urged," 2011).

It can be theorized from the high concentration of Christians in Ghana that the second-largest gathering place in Kumasi, after educational institutions, are churches and other religious sites. The head of KATH's Hematology Department has suggested that blood-drive workshops need to be extended to still more organizations, such as businesses and the media, as a means of creat-

ing even greater awareness and encouraging voluntary donation ("Educational Institutions Urged," 2011). The blood-drive teams at KATH are working diligently to provide enough blood for the patients in need, but more education and more cooperation from schools, religious institutions, and all citizens of Ghana are vital.

**Discussion**

It is apparent from the survey results that the social and belief barriers preventing Kumasi citizens from donating blood is associated less with religious and tribal beliefs and more with (often erroneously) presumed medical and health concerns residents may ascribe to blood donation. Some of these health concerns, however, are valid, likely resulting from negative stereotypes concerning the sanitation of health-care facilities and of the medical equipment in economically developing countries. For the purposes of this study, it is important to note that the Accident and Emergency Hospital at KATH, which houses the hospital's blood bank, is held to the same, high sanitation standards of hospitals in the economically developed countries, such as the United States.

The lack of education and knowledge of facts about sanitary blood donation, as described in the data, is another key stumbling block. To counteract these beliefs, it is essential for the leadership in the communities that could be targeted for blood drives to endorse the act of volunteering to donate blood and to collaborate with health-care workers to educate the population. Another

health-related concern is some local residents' fears of learning their HIV status during the mandated pre-screening process.

The possibility of increased blood donation in Kumasi, Ghana, looks promising. It is apparent that citizens and church members realize the importance of volunteering to donate blood and understand that it saves patients' lives. Barriers may continue to exist concerning family members and friends not approving of blood donation, but increased education about health and safety concerns may prove effective.

Although this study was focused on a particular setting in Kumasi, Ghana, donated-blood supply shortages occur in health-care facilities in both economically developing and developed countries all around the world. Religious institutions can be a reliable target for blood drives because of their strong beliefs concerning morals, helping their fellow human, and the sacred gift of life. It is important for health-care institutions to reach out and collaborate with the leadership of religious communities, encouraging them to endorse the practice of safely volunteering to donate blood when possible. Religious leaders can address the spiritual and moral aspects of donating blood. Health-care providers can address the health concerns through presentations and question-and-answer sessions and by discussing the fears of becoming weak, anemic, or ill, losing weight, or dying. Unlike the Ghanaian Christian church that volunteered to participate in this study, some religious institutions, tribes, or cultures still may firmly oppose the practice of donating blood, and that belief must be recognized and respected.

### Acknowledgments

The authors wish to thank Charles Okrah, Edmund Quainoo, Bernard Obeng, Gabriel Fofie, Millicent Amankwah, Prince Owusu Kyenkyehene, and the rest of the Faith Gospel Church community for their full support in implementing this research. They also extend their appreciation to A.T. Odoi and the rest of the Obstetrics and Gynecology Department at KATH for their collaboration and support throughout the research process the past few years. The research of Kathleen Sienko and Global Health Design Specialization of the University of Michigan's Department of Mechanical Engineering should also be acknowledged for inspiring this research effort. This study was supported by grants from the Center for Global Health and the Department of Sociology at the University of Michigan.

Alexander Harrington and Sarah Rominski designed the research study. Alexander Harrington and Michael Jacobson performed the research. Alexander Harrington and Rajesh Balkrishnan analyzed the data. Alexander Harrington authored the paper, which was edited by Rajesh Balkrishnan and Diane Benson Harrington.

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