



Improving safe blood availability at Baptist Hospital Mutengene (BHM). A cross-sectional study.

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Abstract

Background

Blood transfusion saves millions of lives worldwide. In sub-Saharan Africa, it plays a key role in managing malaria-related anaemia in children. However, blood shortages remain a pressing issue and thus threaten healthcare systems reliant on transfusion, which is very common in Africa. This study aimed to improve the safe blood availability at Baptist Hospital Mutengene (BHM).

Methodology

Kotter's and Lewin's models guided the strategic change management approach, focusing on awareness campaigns, stakeholder engagement, and donor motivation. Educational sessions were conducted in hospitals, schools, and communities to increase participation. Incentives such as transport and feeding allowances were introduced to encourage voluntary non-remunerated blood donors (VNBD). Challenges encountered, including resistance to change, were managed through communication and active participation. Data was collected from donor records, staff reports, and voluntary donor feedback to assess progress.

Results

The initiative increased VNBD numbers from 70 in 2022 to 172 in 2024, with an ultimate goal of reaching 500 donors to ensure a stable blood supply. Donor deferrals due to medical ineligibility dropped from 12 per month to 2, improving blood safety. Regular blood drives yielded up to 30 units per event. The introduction of transport and feeding allowances encouraged donors, leading to a 10% increase in unscheduled donations. Health education efforts reduced socio-cultural barriers to donation. However, staffing shortages and limited blood bank storage space remained challenges.

Conclusion

This change initiative has improved blood donation at BHM through structured frameworks, stakeholder collaboration, and education campaigns, with sustained progress driven by teamwork, staff commitment, and administrative support despite challenges.

Recommendation

Further change is recommended in the area of blood management so that the available blood does not expire while patients are in dying need of it.

Keywords: Blood transfusion, Voluntary donors, Change management, Stakeholder engagement, Baptist Hospital Mutengene (BHM).

Submitted: 2025-03-03 **Accepted:** 2025-05-20 **Published:** 2025-06-30

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Background of the study

All over the world, many lives are being saved through blood transfusion (Mohamed et al., 2020). For a long time

now, blood transfusion which from a historical stand point was introduced in to healthcare to save people bleeding to death as mentioned by (Garraud et al., 2020; Simon et al., 2022; Halpern, Truog, and Miller, 2020) has been



recognized as an essential component of health care infrastructure, although limited especially with the coming of the Covid 19 (McNally et al., 2021 and Kotlar et al., 2021). Lassina et al. (2018) have said recent developments may help meet local needs. In consonance with (Raymond, 2022), since in the USA, the donors are aging, and the younger ones are not replacing them quickly enough. In that light, Raymond (2022) explains they are exploring the possibility of setting up a Permanent blood donor program to overcome this crisis. Tests (Munoz-Valencia et al., 2023; Thibodeaux, 2021; and Simon et al., 2022). Moreover, surveys have been conducted in Africa to establish the status of blood availability and safety.

Richard et al. (2022) and Lassina et al. (2018) further explain that even though a lot has been done, there still remain important gaps in the attainment of the target of sufficient blood availability. In agreement with (Brown et al. 2012), the estimated blood requirement for a population of 773 million people all over is 8million units. Unfortunately, only 3,191,784 units are being collected. This is the reason why every nation, including Cameroon, is engaged in improving blood availability. More so, Custer et al. (2018) confirm that in low and middle-income countries, about 80% of the population has access to only 20% of the blood supply. Similarly, at BHM, the blood needs of the hospital could be handled with approximately 500 voluntary blood donors. Unfortunately, only 172 voluntary blood donors are available, making it difficult to make prompt transfusion decisions.

The need for revamping the voluntary blood donors' association has been identified, and different strategies are being used. Educational programs have been scheduled to create awareness and enlighten donors on the reasons and benefits of being a voluntary donor. These strategies are gradually and steadily improving safe blood availability at BHM. Donors are scheduled for donation, and each donor receives feeding/transport fees of 5000 FRS after donating. These have proven effective. Moreover, efforts in recruiting more donors are ongoing so that the target of 500 voluntary donors might be reached, which will meet the needs of the hospital and improve patient care. Therefore, the objective of this study was to improve the safe blood availability at Baptist Hospital Mutengene (BHM).

Project outcomes

The project outcomes provide an overview of the project implementation and successes so far, and discuss how the project has moved up till now through different headings.

To continue, after every two seconds, somebody needs blood in America, likewise in Africa, as stated by (Kotlar et al., 2021 and Meyerowitz, Richterman, Gandhi, and Sax (2021). Africa, from the point of view of Lassina et al., (2018), has made efforts in strengthening blood transfusion services too. The general efforts have gone as far as supporting member states to enhance the collection of blood from non-remunerated blood donors and testing for TTIs and other mandatory tests.

More so, it will explain how Kotter and Lewin's models have been used in the implementation.

Project approval

It is worth noting that not the change that determines the success or failure of a project. For him, change is situational while transitions are psychological. The process of change has led to a number of successes for the project. Most of which is the increase in the number of voluntary donors that was anticipated. For the mile 14 quarter, head to engage and doing regular sensitization is enough motivation for the project, as many donors have joined even through his effort. This recommendation was born from the EBNA of 2022, which has created a strong foundation for the proceeding improvement on safe blood availability.

Project implementation and design

According to Picciotto (2020) & Nicholas and Steyn (2020), Project implementation involves directly managing a project to ensure it meets the objectives outlined in the planning phase. In this project, influential leaders and change agents were identified and trained from BHM and the community of Mutengene to fully participate in the change process. The training was aimed at developing skills to deliver health talks that will help motivate people to intentionally become VNBD at BHM. The blood bank committee (BBC) was created to perform the following tasks: to facilitate discussions, answer questions, give mini-lectures, conduct advocacy, provide counseling, distribute materials, and motivate donors to donate more often.

Change management

Change management is the coordinated approach of applying systematic procedures to handle the human aspect of organizational change (Hitt & Duane, 2002). The key elements below can effectively manage change.

A- Change team performance

One of the first steps to successfully manage change is to put together a group of selected individuals with enough expertise and leadership skills (Eller et al., 2023 & Cutler white, 2022). These individuals are generally called change agents and are responsible for the formulation and implementation of change. The committee that was created at the beginning acted as change agents. They are working hard to see that the change emerges. They try to understand workers' reactions to the change and reduce resistance to the change, and also listen to team members to gain feedback and incorporate it in the implementation process.

B- Effective communication

Effective and constant communication is a key factor for change success (Sisson and Elshennawy, 2015 & Cheng, 2022). Effective communication starts with an assessment of the communication needs of all stakeholders and continues with the development of a communication strategy and detailed plan (Errida and Lotfi, 2021; Busch et al., 2022 & Lalani et al., 2023). The blood bank team has been actively communicating with the entire staff to ensure the process continues. This is done mostly during morning briefings.

C- Motivation of employees and change agents

The majority of the studied models emphasize the importance of the motivation process in mobilizing employees to be an active part of change (Mirabito and Berry, 2015). To this end, Kotter and Mento recommended creating short-term wins during the change process by advertising short-term visible improvements and anything that demonstrates progress toward the future desired state of change. The employees involved in those improvements should be recognized and appropriately rewarded. (Fredberg, T. and Pregmark, 2022 & Batalden et al., 2003). Motivation is implemented in this project through transportation and the provision of snacks during blood drives, and the provision of T-shirts to the staff in charge. This has often improved their desire to work. Moreover, donors are motivated during meetings with enough cooked food for them.

D- Stakeholder engagement

Change initiatives require the significant engagement and commitment of all relevant stakeholders (Idogawa,

Bizarrias, and Câmara, 2023; Stouten, Rousseau, and De Cremer, 2018 & Johnson-Cramer et al., 2022). Stakeholders of BHM have fully engaged in the improvement of blood donation by meeting the demands of the blood bank, like providing a comfortable donor chair and even a big blood bank for blood storage.

Models of change are used as a framework.

Change management models and frameworks are practically a requirement for any organization changing (Errida and Lotfi, 2021, p. 13; Kezar, 2018). Choosing the right framework is vital for success. Over ten years, the models used have influenced health behavior, and studies demonstrate that educational programs based on a cognitive framework which brought a positive impact on behavior change. Based on the concept of these models, a similar approach has been used in educating the community on voluntary blood donation and causing them to join the VBDA.

Kotter's change management theory and Lewin's change management model (Harrison et al., 2021: pp.85) have been used in this project. While other models exist, many of these models are extensions of Lewin's model by dividing its three stages into more steps. For example, "unfreezing" corresponds to the first four steps in Kotter's model, which are to create a Sense of Urgency, inspire people to act with passion and purpose, to achieve a bold, aspirational opportunity, build a Guiding Coalition, form a Strategic Vision, and enlist a Volunteer Army. The next is "moving," corresponding to the following three steps, which are: Enable Action by Removing Barriers, Generate Short-Term Wins, Sustain Acceleration, and "refreezing" to the eighth step, which is Institutional Change. Kotter's model is a straightforward set of process-related tasks designed to assist leaders in preparing their organizations for transformative change (Errida & Lotfi, 2021 merges Kotter's 8-step change management model, also corresponding to the 3 steps of Lewin's model, as the conceptual lens to explore strategies used in improving safe blood availability at BHM. Underneath are the steps. Like other change models, Kotter's traditional model includes a vision for what the organization intends to accomplish and a process to motivate individuals to change their behavior (Fredberg, T., and Pregmark, 2022). More so, Kotter's model addresses employee resistance as a significant obstacle and the leader's role in persuading the organization to achieve the organization's desired outcome (Kotter et al., 2014). Considering this, the goal of improving blood availability was shared with the general staff body, the administration, and some community heads, who all saw the urgency in improving

the voluntary blood donors association. The committee proposed a strategy to use every opportunity to work with the voluntary donors. This was to attend to voluntary donors even at midnight.

This decision brought some resistance from some staff as they considered bleeding donors in the night tiring and risky because by midnight, all food vendors and the canteen are closed, and the donor will hardly find where to buy food and eat before donating. And even the fact that the laboratory is further away from the consultation rooms. This means in case of any problem arising from bleeding a donor at night, there will be a delay, putting the donor's life at risk. This resistance was identified as carefully handled by the coalition in place through the provision of food, which was provided to the donors in the late hours of the night, as this was identified as one of the forces of resistance.

In the first step of Kotter's model, which is creating a Sense of Urgency, leaders take a series of actions or leverage a crisis to help others see and feel the problem (Kotter et al., 2014). Successful change initiatives begin with transformational leaders listening to more than just a few employees' concerns (Kotter et al., 2014). When handled effectively, people believe what they see and feel, and are ready for the change process (Kotter et al., 2014). A leader who communicates openly and honestly gives facts supporting the necessity and urgency for change.

At this stage, the general blood donation team conveyed a sense of urgency and vision, and the general staff body saw the need for improving blood availability. This was done in meetings held in the morning hours before work begins. Presenting the challenges patients have been going through every everyone was ready for the start. They all agreed on the urgent need to change the situation. Creating a guiding coalition, engaging the unit the quarter heads to be at the forefront of the campaigns has been done to pool the crowd to join the association. The quarter head of mile 14 has been very instrumental in the change process.

Step 2, which is to inspire people to act with passion and purpose to achieve a bold, aspirational opportunity, requires the guiding team to develop and shape effective strategies. The guiding team should include trusted and skilled change agents with an emotional commitment to do the job (Kotter et al., 2014). Guiding team members should be in a position of power and capable of translating the vision and strategy into a picture of a future state that appeals to employees. The goal and objectives of the project are in line with the national blood donation strategic plan for Cameroon in 2015, and all were discussed with the leadership, colleagues, and hospital administrators. All the key players are in the know, and

there is overwhelming support from them. At this stage team teamwork has been encouraged, and the blood bank has been separated from general serological testing in order to create more space and a comfortable working environment. More so, instead of assigning only one person to the blood bank, two persons are being assigned to reduce the donor waiting time, which has been one of the discouraging factors.

In step 3, which is to build a Guiding Coalition, the guiding team creates a sequential change management plan encompassing the vision, goals, budget, resources, deliverables, tasks, deadlines, and metrics. The plan should include measures to identify and mitigate employee resistance. The strategic plan is useless if the entire organization does not contribute and strive toward the same vision.

In this step, an action plan was drawn with the goal and objectives taken into consideration to ensure the project goal and objectives are well communicated and elaborated in line with the expectations of the clients, staff, and change agents. The resources, like the transportation fare and feeding allowance for the donors, were indicated, and the time frame for the activities.

In step 4, which is to enlist a Volunteer Army. The goal is to spend quality time explaining to as many individuals as possible why change is necessary and how it may benefit them. In line with step 4 a lot of health talks on improving blood donation have been given at the outpatient department area, chapel, clinical conferences, in the community especially secondary schools and the universities like University of Buea by the blood donation team and change agent. This has continually improved awareness, and more people are being recruited as voluntary donors. The project has ensured a collective responsibility for every stakeholder to have a role and task in the change process. The administration is there to ensure policy issues are implemented and also to provide funds to run the association. The change agents are to move around and give the health talks, the laboratory technicians are there to do the testing, and the community leaders are at the forefront of pooling the crowd.

Fifth Step: which is to Enable Action by removing barriers. This step empowers others to enact success. Step 5 is contingent on the change leader's and guiding team's skill in eliminating obstacles that impede change and empowering broad action through participation (Kotter et al., 2014). Here, people are given new authority, new responsibilities, motivation, and support (Kotter et al., 2014). According to Fredberg, T. and Pregmark (2022), empowerment should focus more on creating desire, a



trusting culture. To add to this, Fredberg and Pregmark (2022) believe managers should be skilled in letting the future emerge when the future is unclear.

In this project, much has been done by the blood bank management team in the area of eliminating obstacles, like clearing doubts from the minds of all staff through education. Moreover, obstacles like the unavailability of food at midnight, which could stop donors from donating, were handled by providing snacks that donors could take at midnight and make sure they donate, since some preferred coming at night so that donating does not interfere with their daily activities. Again, resistance from staff because of the overwhelming workload has also been handled by giving them extra financial motivation when they go out for blood drives. The inadequate supply of confirmatory test reagents like OraQuick has been resolved by making sure another second-line test is available when OraQuick is out of stock.

Sixth Step: Generate Short-Term Wins. This depends on leaders' ability to demonstrate desired results quickly. In our case, the short-term goals created were frequent blood drives that kept the bank full and permitted patients to receive blood freely without the stress of caregivers going about looking for donors. Another was the education and recruitment of family members who are now registered voluntary blood donors, therefore minimizing the risk of blood shortage at our facility. These small attainable goals, according to Kotter et al. (2014), have positively influenced those who still do not believe in the project. Given that change is a process and it takes time to achieve it, there is a need to build on lessons learnt and reflect on past mistakes to avoid repeating them. Donors were also encouraged to reflect and see what their challenges were so that they could adjust them and continue to donate.

Seventh Step Sustains Acceleration After some short-term wins. Success in step 7 depends on leaders' skill in remaining focused and sustaining momentum (Kotter et al., 2014). Employees' inability to stick with change is especially the case with disempowering managers and individuals who were never fully convinced that change was necessary. When employees identify with their organization and have a solid organizational commitment, they become culturally invested and motivated in the organization's success. Periodic and consistent reporting and incentives are essential for sustaining change. Since the process of improving blood availability at BHM is still ongoing, there is no discouragement yet. Blood drives are still being carried out, and a lot of sensitization is still being done at this stage. The only discouragement is the long working hours when more donors come and you cannot reject them. Also, during blood drives, closing

time is determined by how many people are ready to donate, making the process stressful.

Eighth Step: Incorporating Change into the Culture. Success depends on leaders' ability to keep a robust organizational culture with behavioral continuity and remind everyone why the change was and is still needed. Culture and habits do not fundamentally change until change agents fully implement the change and changes have roots (Kotter et al., 2014). The involvement of the entire team that is dedicated to selfless service to humanity in the change process is aimed at increasing blood donors and availability, and delivering services to the clients in need. Step 8 is the most preferred because if change is not anchored, the whole process of change would have been a mere waste of resources and time.

How resistance to change was managed

Considering the level of resistance, the following strategies were used to reduce resistance to change.

Firstly, Communication was used to take away their fears of the unknown and misunderstanding of why change is needed, as confirmed by Faisal (2022 & Lehtinen (2020). Just at the beginning stage, People were made to understand through education that the risk of not improving the voluntary blood donor association was more severe than letting each family look for their donors. The experience of some staff who had had patients in need of blood and the challenge they went through was good evidence that changed their beliefs.

Secondly, Participation is one thing that has greatly managed resistance; the change is not forced upon them, rather they have believed that the hospital can make effective change, as confirmed by (Malhotra et al., 2021 & Srivastava and Agrawal, 2020). Many studies have shown that participation has wide-ranging positive effects during periods of organizational change. They further explain that participation reduces resistance to change and leads to positive effects such as change readiness and acceptance.

The next strategy is Support (Pearce, 2004). It is time-consuming, requiring change agents to employ coaching tactics when managing change in an organization, but very essential. In line with this, both the staff and blood donors were given adequate support by providing detailed responses to reassure them that their concerns were heard. For example, voluntary donors have been advocating for free medical care when they are sick and also free transfusions when their biological relatives need blood.

That concern, though not yet granted, they are reassured that something might be done in regards to that shortly. Finally, another thing that precipitates resistance is when people feel they will be negatively affected by its consequences (Boso et al., 2020). This may be because of a perception that their earnings or career potential will be harmed or that the rewards of the change are not worth the effort required. Considering this incentive was allocated for staff who went out for blood drives, and also a feeding allowance to the donors. That helped motivate them to accelerate the change process. It is with this explanation that the management of resistance was considered successful, which led to the progress of the change process.

Evaluating issues that helped or hindered the change process

Change models have stressed the importance of clearly defining change and establishing a vision and strategy for change (Errida and Lotfi, 2021). The well-stated vision of blood donation is 'to provide safe and quality blood and blood components collected from voluntary donors (Urs et al., 2023). This is a factor that facilitated the change process as all the team members were versed in the common vision. The vision should be aligned with the organizational strategy and describe the characteristics of the future state, the reasons the change is needed, and the expected outcomes of the change (Ateş et al., 2020). Moreover, the acceptance of the vision by all employees and stakeholders is a prerequisite for change success. This has been the case with improving blood availability at BHM.

Change readiness and capacity for change

Individual readiness focuses on employees' skills and abilities, in addition to their motivation, perceptions, and behaviors toward change projects (Ferrari, F., 2023), and Organizational readiness focuses on the readiness of the organizational environment in which change is to be implemented. The issue of blood shortage in BHM was not only a worrisome issue to the leaders of the institution, but also an issue to the general staff body. The allocation of transport and feeding fees to each voluntary donor and the preparedness of the staff to go out for blood drives are an indication of a high level of preparedness. On the contrary, Staffing has also acted as a hindrance to the success of this change, as there are not enough staff all the time to work while others go out to the field. This is confirmed by Errida and Lotfi (2021). The blood bank unit is also not big enough. If the change process is successful

and a target of 500 VNBD is reached, the space will not contain the quantity of blood that will be bled. In line with this, some models emphasize the importance of the availability of change resources as a precursor to change readiness (Ferrari, F., 2023). Moreover, Prosci reveals that change management is likely to be more effective in change projects with dedicated resources than in those without them.

Factors that hindered and helped the change

Firstly, Okonko et al. (2012) carried out a study to detect the presence of HIV antibodies among intending blood donors. The overall prevalence rate of HIV was 17.5%. In line with the above statistics, BHM has an HIV prevalence rate of 5% for donors. Therefore, the HIV pandemic is one of the factors negatively influencing voluntary blood donation. This calls for the need for an extensive blood screening practice in our blood banks.

Furthermore, in another study on assessing the level of donor knowledge, the findings from (Peters and Oko, 2021) revealed that the majority of people have good knowledge of voluntary blood donation and also view the exercise as important, but do not take action to donate (Finda et al., 2022). On the contrary, daily interviews while working with donors who come for donation at BHM have revealed that a majority of donors do not have adequate knowledge about donation, and that is why campaigns have been intensified. Therefore, socio-cultural barriers to voluntary blood donation still exist in some parts of the world, giving room for misconception, but in some other areas, like BHM, need for intensified health education.

A report from Finda et al. (2022) reveals that turnaround time (TAT) in Tanzania is another factor influencing blood donation. In their research, they noticed that quick TAT motivated donors to keep donating. Similarly, at BHM, on our daily work and discussions with donors, many feel very discouraged and promise not to donate again when the donation process is delayed. On the other hand, those who have a minimum delay time regularly visit the hospital for donation.

Finda et al. (2022) continue by saying that many people have wrong beliefs regarding blood donation in Tanzania. In the report 74%, Tanzanians had never donated blood in their life because they fear exposure to diseases. Other reasons were a lack of knowledge of donation centers, and some people thought the blood was for sale, so they didn't donate for free. These are all misconceptions that are



similar to those of the community in Mutengene, thereby playing negatively in the change process in Mutengene.

Other factors in line with (Rhoads et al., 2021) in his study on Global variation in subjective well-being include health status, age, and religion. A similar situation is going on here as some people actually belong to the blood donors association but never donate due to below range haemoglobin levels all the time, and even some who are already above the age of donating, but are there just to encourage others to donate.

Above all, according to a study carried out by Kasraian et al. (2021) finding out the reasons for the underrepresentation of Iranian women in blood donation found that the most frequent reasons for blood donation were altruistic causes. Although a similar study hasn't been conducted at BHM, it should be noted that altruistic behaviors may be enhanced by societal changes that promote well-being. So, since very few women are involved in blood donation at BHM, it is possible that if changes are made in the blood donation program that promote their well-being, they will obviously participate more in donation. That is why education is intensified even during conferences where women are more.

Staff ownership of the change process

Involving employees and making them own the process of change can be challenging due to resistance and skepticism, conflict, and tension. Resistance and skepticism should be addressed by explaining the rationale and benefits of the change, involving them in the process, and providing support (Fredberg, T., and Pregmark, 2022).

At the beginning, the first step that was used to develop employee ownership was clearly defining the vision and goals of the change to the general staff body, which is supported by (Jewell and Kaufman, 2022). This was done by all the stakeholders, including the administration of BHM and the blood bank committee members of the BHM laboratory, in a compelling and inspiring way. Every explanation of why the change is necessary, what it will achieve, and how it aligns with the organizational mission and values was given in line with (Payne, Trumbach, and Soharu, 2023). Staff ownership of the change process has been a success because of this better start, even though regular reminders are still very necessary and ongoing.

Another thing that has not kept the staff away is that their opinions are being listened to. They are responded to promptly, and regular updates are given too, in line with

(Abbu et al., 2022). Moreover, they are empowered to take ownership and initiative in the change process, provide resources, tools, training, and guidance, recognize successes, and provide constructive feedback to the lab staff. For example, when the staff raised the concern of food not being available for donors who come late at night, the administration listened to them and immediately provided snacks to be kept for all donors who are willing and come late at night. Although this went on for some time, and was not sustainable.

When employees are part of the change process, they are more likely to understand the benefits of the change and to feel invested in its success in agreement with (Jewell and Kaufman, 2022). They can also contribute their insights, which can lead to more innovative solutions (Cardona and Rey, 2022). Moreover, they can communicate more effectively and transparently with each other and with the leaders. Furthermore, they can experience more satisfaction, recognition, and reward for their efforts and achievements, and develop new skills and competencies that can enhance their professional growth and development, as supported by (Brandes and Lai, 2022).

Stakeholder engagement

Change initiatives require the significant engagement and commitment of all relevant stakeholders, including employees, supervisors, and managers. Moreover, stakeholder participation in organizational change initiatives is considered an important success factor (Idogawa, Bizarrias, and Câmara, 2023). To ensure that all stakeholders are engaged in the change effort, it is recommended to establish a "stakeholder engagement strategy" that will identify the required engagement of the various stakeholders and the necessary activities to achieve the required engagement. Stakeholders of BHM have fully engaged in the improvement of blood donation by meeting the demands of the blood bank, like providing feeding and transport allowance for donors and a comfortable donor chair, and even a big blood bank for blood storage.

Evaluation and discussion of the change process

As earlier mentioned, insufficient blood supply has been a long-standing problem at BHM as well as most low-income countries, as explained. This has been the main reason behind some delayed surgeries, long patient stays in the hospital. Delaying transfusion is critical as it has led to the deterioration of some conditions Kaushik et al.,



2018). Low donor turnout due to knowledge deficit and Donor deferrals are some reasons behind insufficient blood at BHM, as also explained by Thibodeaux (2021, & WHO (2021).

Mindful of the fact that patients in need of blood will continue to suffer unsafe and delay transfusion action if the voluntary blood donor association is not increased this necessitated the onset of this project in BHM with the view in mind that interventions will successfully improve blood availability and solve the problem of delay transfusion and prolong patient stay at BHM.

The responsibility of the change agent has been to create awareness about blood donation using educational strategies and ways such as using social media and digital communication, connecting with influencers to spread the word, highlighting the impact of their donation, and offering incentives for blood donation with the intention of improving safe blood availability.

Kotter's model and Lewin's model used in this change process have a positive impact on the process of change, which would have been difficult without their implementation. In the first step of Kotter's model, which is creating a Sense of Urgency, leaders take a series of actions or leverage a crisis to help others see and feel the problem (Kotter et al., 2014). Successful change initiatives begin with transformational leaders listening to more than just a few employees', partners', or suppliers' concerns (Kotter et al., 2014). When handled effectively, people believe what they see and feel, realize change is required, and are ready for the change process (Kotter et al., 2014). A leader who communicates openly and honestly gives facts supporting the necessity and urgency for change. In this light, the entire team agreed on the urgent need to change the situation.

At step two, the goal and objectives of the project are in line with the (national blood donation strategic plan for Cameroon, 2015), and all were discussed with the leadership, unit staff, and hospital administrators. All the key players are in the know, and there is overwhelming support from them. At this stage team teamwork has been encouraged, and the blood bank has been separated from general serological testing in order to create more space and a comfortable working environment.

In step 3, an action plan was drawn right from the beginning with the goal and objectives taken into consideration to ensure the project goal and objectives are well communicated and elaborated in line with the For donors for the replacement of blood that they have been transfused with.

expectations of the clients, staff, and change agents. The resources, like the transportation fare and feeding allowance for the donors, were indicated, and the time frame for the activities was also indicated, as seen in the appendix.

In line with step 4, a lot of health talks on improving blood donation at BHM have been given at the outpatient department area, the chapel, clinical conferences, and in the community, and in secondary schools and universities, especially the University of Buea, by the blood donation and change agent. This has continually improved awareness, and more people are being recruited as voluntary donors thanks to this. The project has ensured a collective responsibility for every stakeholder to have a role and task in the change process. The administration is there to ensure policy issues are implemented and also to provide funds to run the association. The change agents are to move around and give the health talks, the laboratory technicians are there to do the testing, and the community leaders are at the forefront of pooling the crowd in the community.

In the fifth step, much has been done by the blood bank management team in the area of eliminating obstacles, like clearing doubts from the minds of all staff through education. Moreover, obstacles like in availability of food at midnight, which could stop donors from donating, were handled by providing snacks that donors could take at midnight and make sure they donate.

The sixth Step short-term goals created were frequent blood drives that kept the bank full and permitted patients to receive blood freely without the stress of caregivers going about looking for donors. Another was the education and recruitment of family members who are now registered voluntary blood donors, therefore minimizing the risk of blood shortage at our facility.

At step seven, since the process of improving blood availability at BHM is still ongoing, there is no discouragement yet. Blood drives are still being carried out, and a lot of sensitization is still being done at this stage. The only discouragement is the long working hours when more donors come and you cannot reject them.

Step eight Incorporates Change into the Culture. Success. The model has helped raise the number of voluntary blood donors from 70 in 2022 to 172 in 2024, and the evidence is clear, as some patients benefit from this by not looking. Another thing is that the number of deferrals for various reasons has reduced from 12 donors disqualified per month to 2, according to data, meaning that the risk of TTIs is lower in VNBD. Moreover, patients with rare

blood groups, like negative, who in the past suffered delayed transfusion, now readily have their blood type since more rhesus negative blood donors have been identified. Another thing is that motivation from 2000frs to 5000frs has increased donors' interest, and about 10% of them do not wait for the schedule before they come up to donate. The blood drive activity has been a major activity that keeps the bank full most of the time, as sometimes one blood drive could harvest about 30units of blood units which will greatly serve as it will contain all the blood group varieties, and patients with rare blood groups will benefit.

To continue among the factors that influenced the change process, the acceptance of the vision by all employees and stakeholders is vital and is a prerequisite for change success. This has been the case with improving blood availability. More so, the creation of a guiding coalition, by putting together a group of selected individuals with enough expertise, credibility, and leadership skills, as supported by (Eller et al., 2023 & Cutler white, 2022). This team has been effective, and that is the reason for the positive change that has been experienced.

Furthermore, this project has worked in line with the blood policy, which, according to (Beltrami et al., 2000), is a commitment to provide safe and adequate quantities of blood components and blood products. This was followed and constant availability of safe blood is becoming a reality at BHM.

The usage of different media to intensify health education has benefited a great number of voluntary donors, evidenced by the increased turnout out as supported by (Finda et al., 2022). Before now, a study by Peters and Oko (2021) revealed that 91.5% of people in Africa have good knowledge of voluntary blood donation and also view the exercise as important, but do not take action to donate due to socio-cultural barriers. Because of regular sensitization, these beliefs are gradually dying out, making blood donation successful. On the contrary, the community of Mutengene has inadequate knowledge that hinders them from donating according to EBNA, (2022). That is why this project is working on sensitizing the community.

Some adverse effects occur during donation that could negatively in the minds of donors. According to Newman & Bruce (2004), their review focuses on the common and uncommon adverse events that occur after whole-blood donation in the UK and Africa. They found out that fatigue, which could lead to fainting, was common. This similar critical incident where a donor fainted during the process would have scared many people from donating.

Fortunately, according to Eamonn et al. (2019), interventions designed to reduce fainting, like water pre-loading, have proven effective for blood donation. Education on this aspect and the fact that there are positive, long-lasting effects elicited in blood donors by blood donation has been of great importance for the recruitment of new blood donors, as it makes blood donation less frightening and perhaps even attractive. The positive effects are feelings of satisfaction, greater alertness, and increased well-being.

Change initiatives require the significant engagement and commitment of all relevant stakeholders for their success (Stouten, Rousseau, and De Cremer, 2018). BHM has fully engaged in the improvement of blood donation by meeting the demands of the blood bank, like providing a comfortable donor chair and even a big blood bank for blood storage.

Conclusion

The project was undertaken to improve safe blood availability at BHM through education and sensitization of the public. So far, a reflective discussion on different aspects concerning the project has been handled, even though the change is still in progress. However, it has utilized the models as a framework to bring about the change, explored critical incidents that occurred during the process, and the influence of existing policies on the project. The success evaluation has been based on the increased number of blood donors.

The process of change has not been without challenges, but the team spirit exhibited by the committee and commitment of the entire staff body, and above all, the support from the administration, have kept it in progress till now. Even though time is running out, there is hope that by the end of the project period, the goals and objectives will have been accomplished.

As a limitation, even though there is a lot of sensitization going on to improve safe blood availability through voluntary donation, there is likely going to be a problem of space towards the end if the project attains the right number of donors required. An adequate infrastructure and staff have not been put in place in preparation for the expected change. It is such that if the project meets its objective of 500VNBD, the bank will run into another crisis of inadequate space and staff to maintain the change, except the need is handled as a matter of urgency. More over there is use of evidence from a very short period, which might lead to increased error rate, and less precise information according to (Mair and Wilcox, 2020; Falkenström, Park, and McIntosh, 2023).



Recommendation

Further change is recommended in the area of blood management so that the available blood does not expire while patients are in dying need of it.

Upgrade the BHM blood bank to a central bank so that smaller health facilities will benefit from the services.

Build a new blood bank unit with a large capacity in preparation for an overflow of voluntary blood donors.

Increase the number of staff working in the blood bank.

Acknowledgement

I wish to acknowledge God Almighty for his sustaining grace over my life during this period of study. My sincere gratitude goes to the Cameroon Baptist Convention Health Board Administration for giving me time to study. I also thank greatly the staff and administration of the Baptist School of Public Health and Mildmay Uganda for the technical support rendered to me during the whole course.

I extend my sincere gratitude to my Supervisors at Mildmay for their tireless effort, for the great advice and guidance offered to me during this dissertation period. My sincere appreciation goes to Dr. Fokou Steve, the blood transfusion specialist of the Cameroon Baptist Convention Health Board (CBCHB), for his guidance. Equally, I thank the blood bank committee and the entire laboratory staff for their contributions to the change process. To all my family members and friends, I appreciate them for their moral support.

List of abbreviations

BHM – Baptist Hospital Mutengene

CBCHB – Cameroon Baptist Convention Health Board

EBNA – Evidence-Based Needs Assessment

HIV – Human Immunodeficiency Virus

TTIs – Transfusion-Transmissible Infections

VNBD – Voluntary Non-Remunerated Blood Donor

WHO – World Health Organization

Source of funding

This study was not funded.

Conflict of interest

No conflict of interest declared

Author contributions

JFN designed the study, conducted the data collection, cleaned and analyzed data and drafted the manuscript, EA supervised all the study from conceptualization of the topic to manuscript writing and submission, EO supervised the study conceptualization of the topic to manuscript writing and submission, DK supported in study conceptualization and general supervision as well as mentorship.

Data availability

Data is available upon request.

Ethical approval

Ethical approval for this study was obtained through formal procedures. An introductory letter from the principal of Mildmay Institute of Health Sciences and presented to the hospital administration, seeking permission to conduct the study, and was presented to the administration of BMP. The research team engaged with key stakeholders, including healthcare workers and blood bank staff, to ensure cooperation and adherence to ethical guidelines. Respondents were assured of strict privacy and confidentiality, with identification codes used instead of names. The study only commenced after the objectives were clearly explained to participants, and their informed consent was obtained.

Informed consent

Participants received clear and straightforward information about the study's purpose, objectives, procedures, potential benefits, and risks. They were informed that participation was voluntary, with the freedom to withdraw at any time without consequences. Confidentiality was strictly maintained, and all data collected was used solely for research purposes. Additionally, participants were made aware that their involvement would contribute to improving voluntary blood donation efforts, ultimately enhancing blood availability and saving lives at BHM.

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Student's Journal of Health Research Africa

e-ISSN: 2709-9997, p-ISSN: 3006-1059

Vol.6 No. 6 (2025): June 2025 Issue

<https://doi.org/10.51168/sjhrafrica.v6i6.1604>

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PUBLISHER DETAILS

Student's Journal of Health Research (SJHR)

(ISSN 2709-9997) Online

(ISSN 3006-1059) Print

Category: Non-Governmental & Non-profit Organization

Email: studentsjournal2020@gmail.com

WhatsApp: +256 775 434 261

Location: Scholar's Summit Nakigalala, P. O. Box 701432,

Entebbe Uganda, East Africa

