

Understanding the Motives and Intention of Blood Donation during the Pandemic

Yusof J^{a*}, Ab Rahim S^a, Mohd Noor S^b, Panatik SA^a, Wan Husin WNI^c, Bungsu MS^a

^aSchool of Human Resource Development and Psychology, Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia, Malaysia

^bDepartment of Medical Transfusion, Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia

^cDepartment of Psychology and Counseling, Faculty of Human Development, Universiti Pendidikan Sultan Idris, Malaysia

ABSTRACT

INTRODUCTION: In every country, an adequate and reliable blood supply can be assured by a stable base of regular, voluntary, and unpaid blood donors. However, with the strike of COVID-19 around the world, fewer donors have come forward to donate blood since the government's movement control order. Therefore, to ensure the blood supply is always sufficient, this study discussed the Malaysians' motivation and intention to donate blood during the COVID-19. **MATERIALS AND METHODS:** The structural focus group discussion was conducted among nine informants. The informants are classified into four groups, which are non, first-time, regular, and lapsed (repeated/occasional) blood donors. **RESULTS:** It indicated that the regular and lapsed group of blood donors were motivated by the satisfaction of donating blood. Meanwhile, first-time donors are motivated to donate blood because of extrinsic rewards. However, the donors attested that the movement control order restricted their movement to go to the blood transfusion center. On the other hand, the non-donor group admitted that they do intend to donate blood. Still, several factors such as work commitment, location, and fear of being infected by COVID-19, hold them from doing so. **CONCLUSIONS:** These findings will serve as insights for future blood donation disruption remediation, especially during unexpected situations, as well as the success of the Malaysian blood campaign.

Keywords

Blood donation; Pandemic; Motivation; Intention; Attitude; Behaviour

Corresponding Author

Dr Junaidah Yusof
School of Human Resource Development
and Psychology, Faculty of Social Sciences
and Humanities, Universiti Teknologi
Malaysia, Malaysia

E-mail : junaidahy@utm.my

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INTRODUCTION

Blood is one of the most vital components in healthcare.¹ The rapid advancement of medical technology, the increased number of hospitals, and the growing population of citizens have resulted in a significant need for blood donation. Despite numerous years of government initiatives, particularly from the Ministry of Health, many people continue to refuse to donate blood.² The number of blood donor volunteers still seems below satisfaction, dropping yearly.³ The National Blood Centre (NBC) is Malaysia's primary organisation for blood donation campaigns and stocks. NBC reported a 40 percent decline in blood donation rates during the COVID-19 outbreak compared to previous months and years.⁴ It occurred due to the government's execution of the Movement Control Order (MCO) to limit the spread of the virus, which made it difficult for the public to go out and donate blood as usual.

A blood donation occurs when mentally and physically healthy people volunteer to be blood donors.⁵ In most developed countries, blood donation is voluntary, and no charge or transaction is applied.⁶ However, in third-world or underdeveloped countries, blood is an economic commodity that can be traded.⁷ In Malaysia, however, blood is still regarded as a social commodity that can be donated voluntarily. Given the variability of blood donation trends in Malaysia, it is reasonable to assume that blood donation is not a typical Malaysian lifestyle yet.⁴ Significant disruptions in blood donation activity may have severe serious effects on healthcare systems and should be avoided by closely monitoring blood supply and demand during the pandemic. As a result, understanding the motivators and intention for blood donation is critical, especially during the pandemic, and to keep the blood supply flowing to all hospitals.

It is critical to grasp numerous terminologies blood donors use to comprehend the psychosocial aspects of blood donation. A blood donor is someone who has donated blood once in their lifetime. In contrast, a non-blood donor has never provided blood once in their lifetime.⁸ Concerning this study, blood donors are classified into four groups based on the number of blood donations: non, first-time, regular, and lapsed (repeated/occasional). As the number of first-time and repeat donors is declining,³⁵ it is necessary to investigate their motivation to donate blood for better understanding. It will provide a basis to develop practical approaches to reaching them³⁶ in the future, especially during an expected situation such as the COVID-19 outbreak.

In Malaysia, voluntary, non-numerated blood donors donate blood of their own free will and receive no monetary or in-kind compensation. In exchange for voluntary, unpaid blood donation, small tokens, and refreshments are acceptable. These extrinsic rewards seem ineffective in attracting more volunteer blood donors during the pandemic. Thus, this study will provide insight into motivations that motivate blood donors and potential donors to donate blood and the factors that restrict them from coming forward for blood donation during the pandemic.

MATERIALS AND METHODS

This is a qualitative study, where the data was collected through in-depth interviews applying the focus group discussion technique as the Malaysian government still executed MCO to control the spreading of the coronavirus during this study. This method was implemented to gather Malaysians' perspectives on the motivating factors influencing their decision to donate or not donate blood during the COVID-19 pandemic using the Webex Cisco platform. This method enables more information, or broader perspectives gathered that other researchers may not discover. The ethical approval for this study has been received from the UTM Research Ethics Community with approval no UTMREC-2023-30. A purposive sampling method was applied where the potential informants were gathered from the blood transfusion database (with the help of the authorised

staff) according to their frequency of blood donation activity. As a result, a total of twelve potential Malaysian informants who were aged 18 and above and able to communicate well in English or Malay from multiple races (Malay, Chinese, and Indian) were chosen. These informants were classified into two blood donor groups: non-donor (never either with or without the intention to donate blood) and donor (first-timer, regular, and lapsed) groups, as defined in Table 1.

Table 1: Blood donor groups classification

Group of blood donor	Definition
Non	A healthy individual who has never voluntarily donated blood in their lifetime.
First-timer	An individual who successfully donates blood for the first time.
Regular	An individual who donates blood more than once a year and is considered three to four times a year.
Lapsed	An individual who donates blood more than once but does not consider it a habit in which the interval between each donation is more than a year.

These potential informants were contacted through email to inform them about this study (the objectives and its significance towards the Malaysian blood transfusion institution, the Malaysian health services, and the society) and also to persuade them to participate in this study with the opt-out. In the following weeks, a phone call from one of the research team members was made to inform about the focus group discussion platform, date and time, and estimated duration. However, only nine from twelve informants were able to participate, while the others dropped out due to unforeseen circumstances. All informants who agreed to participate in the study were emailed personal information and consent forms to fill in and return to the researcher before or by the time the focus group discussion took place. From the total number of nine confirmed participants, five represented the donor group (two relapsed and three regular donors), while the remaining four represented the non-donor group (two never donate but have the intention to, and another two were first-timer blood donors).

Before the focus group discussion began, the researcher checked whether the information was clear, and participants were allowed to ask questions regarding the study. Informants were asked to grant verbal agreement before the focus group session. After the focus group discussion, the researcher asked the informants whether

they had any remaining questions or concerns about the blood donation factors.

The focus group discussion took two hours with the supervision of a specialist medical officer from the blood transfusion center and three other researchers trained in qualitative research via Webex Cisco. The researcher prepared a semi-structured question as a guide to the primary research objective. This method allowed for open responses while ensuring that all relevant topics were covered. The focus group discussion guide was divided into seven domains: (i) motivation to donate, (ii) donor safety, (iii) facilities at the donation center, (iv) awareness program for blood donation, (v) cost implication to the donor, (v) donor locality or demographic, and (vi) effectiveness of blood donation interventions strategy. Every informant was asked all questions and was encouraged to provide further information for discussion. It was recorded with the informants' permission, from the beginning until the end, with a video and audio camera.

An external transcription service provider transcribed the recording by capturing and transcribing the focus group session verbatim. The transcript also included relevant data about the informants' non-verbal communication, such as body language and voice tonality. Field notes were taken during and shortly following the focus group discussion to facilitate the analysis and interpretation of the data. The researchers who participated in the focus group discussion double-verified the transcript before it was used as the primary data source.

Then, the data was examined using the Framework Method. It is a type of theme analysis effective when working in a multidisciplinary team, and focus group discussion transcripts were used to find similarities and differences in the informants' data.³² In the Framework Method, after the transcription of the focus group is done, it needs to undergo familiarisation with the transcripts, two writers opened and coded two transcripts in MS Word separately. Next is coding, where during the initial round of coding, the researchers gathered to review the codes discovered and develop a working analytical framework, a collection of codes organized into categories to help summarise the interview data. After that, the

transcripts were divided between two authors, who coded them in NVivo Version 11 utilising the analytical framework.

The data was then projected into the framework matrix in a spreadsheet by summarising the data from each transcript by codes, cases, and categories. The framework matrix also included personal information on the informants (such as age, gender, race, donor status, and return behaviour) to aid in finding trends in the data by comparing and contrasting informant groups. An analytical note was developed to identify potential themes influencing the donation experience and donor return behaviour. Throughout the data analysis, the researchers often met to discuss the analytical notes, make any adjustments to the analytical framework, and reach a consensus on recurring themes. Once the researchers have met the consensus on recurring themes, the informants have been contacted for confirmation and agreement.

RESULTS

From the focus group discussion, of the nine informants, three male and two female informants represented the donor group. Meanwhile, the non-donor group is represented by four informants, two males and two females. The informants were between 18 and 50 years old. The distribution number of races in both groups is equal, and three informants have represented each race. The demographic characteristics of informants involved in the focus group discussion are shown in Table 2.

Table 2: Demographic characteristics of informants (n=9) involved in focus group discussion

DONOR GROUP		NON-DONOR GROUP	
Information	Frequency	Information	Frequency
Sex		Sex	
Male	3	Male	2
Female	2	Female	2
Age (years)		Age (years)	
18 – 30	2	18 – 30	2
31 – 40	2	31 – 40	1
41 – 50	1	41 – 50	1
Race		Race	
Malay	2	Malay	1
Chinese	2	Chinese	1
Indian	1	Indian	2
Blood donation status during the pandemic		Intention to donate blood	
Regular donor	2	Had the intention	2
Relapsed donor	2	Never had the intention	2
First-time donor	1		
		Total of n = 9	

The study has been categorised into three main themes, which are (i) factors to donate blood during non-COVID-19, (ii) factors to donate blood during COVID-19, and (iii) suggestions to increase blood donation behaviour during the pandemic. The framework or themes discovered in this study are illustrated in Figure 1. For themes 1 and 2, each theme was divided into the donor and non-donor perspectives with a variety of themes for each perspective. Meanwhile, theme 3 was divided into three sub-themes that were blood donation from home, campaign advertisement, and blood bank sustainability.

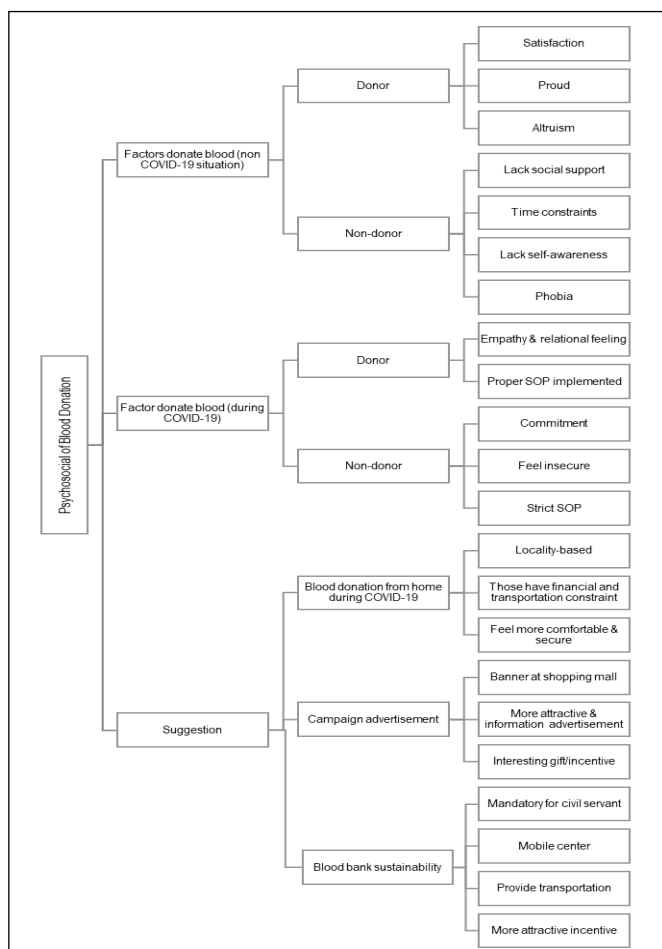


Figure 1: Themes of the study

DISCUSSION

Factors to Donate Blood During Non-COVID-19

As for this factor from the donors' perspective, psychological or personal factors seem to be the ultimate motivation for the informants to donate blood. In this study, the psychological factors themed into three that were feeling satisfied and proud to be able to help others in need also perceived it as good behaviour, which in turn, people also do the same towards them.

"Every time I donate blood, I feel satisfied with myself. I feel like I have safe so many lives, and you know I feel like a superhero" (D1)

"As a Malaysian citizen, I made a habit of donating blood, and I feel proud to be Malaysian because I know I can help someone who is really in need." (D3)

In addition, the informants also stated that they had donated blood frequently as they felt it was good behaviour, and one day, they might be the ones who needed the blood. Hence, in return, the informants hope other people will do the same when they need blood.

"I know that one day, I might be the one who needs the blood. Then, I hope that when it happens, there is available blood for me." (D5)

On the other hand, from the non-donor informants' perspective, four themes were identified that were phobia, time constraints, lack of self-awareness, and social support. These factors happened to hold them back from donating blood although they have the intention to do so.

"I have an intention to donate blood. However, due to workload and time constraints, it is hard for me to go to the blood donation center." (ND2)

"My parents are not supporting me to donate blood. So do my husband. They believe that if I donate blood, I will gain weight easily. Because of that, I feel no awareness to donate blood and not even raise my intention to my parents or husband again." (ND3)

Alas, the phobia of blood and needles can also be the contributor to not donating blood for the non-donor even though medically and physically they are fit to donate blood.

"I have a phobia of a needle since school time. That's the reason I don't want to donate blood." (ND1)

"I can't see blood because I feel like I want to fall, vomit, and anxious." (ND4)

This finding indicated that the psychological or personal factor is the ultimate factor that motivates Malaysians to donate blood, especially the donor group.^{10,11,13,14,25,33} Motivation could be defined as the process of activating the individual to achieve a goal, considering the conditions of the environment in which that person is situated.¹⁰ This study found that intrinsic motivation factors play an essential role. After several times donating blood, informants felt the satisfaction of being a help to one in need rather than receiving the rewards. Most studies feature altruism as the primary motivation for blood donation.¹⁴ Altruism is defined as contributing to the well-being of others without receiving or expecting anything in return.¹⁵ It is the most recurrent motivator correlated with the return of donors for more donations.^{16,17}

Besides altruism, empathy is the psychological or personal drive that motivates people's behaviour. Empathy is an emotional reaction in someone connected with the views of another person's welfare requirements and causes a person to feel sorrowful, sympathetic, and warm to others.¹⁸ It is concluded that those blood donors had a strong sense of empathy.¹⁹ Even though donating blood may not be pleasant, the donors would still like to donate. Moreover, the negative experiences of blood donors would not affect empathy.¹⁹ Besides that, it is found that individuals with high self-efficacy are more confident in their decisions.²⁰ It shows showing a person with knowledge and awareness of blood donation is likelier to become a blood donor.^{20,21}

In addition, a relational factor also affects people becoming blood donors. Relational factor refers to the relationship between the blood donor and their family and friends in which they shared life experiences. They encountered situations that made them more aware of blood donation and eventually influenced them to become a blood donor. Life experiences such as knowing a family member or friend who needs a blood transfusion increase the likelihood of blood donation.²² Individuals who have experience with the need for a valuable resource such as blood can empathize with the situation and, hence, are more inclined to supply blood in exchange for others.¹⁶ As a consequence, it is believed

that there would be a favourable association between blood donor status and individuals who have previously received blood. Based on the Theory of Planned Behaviour (TPB), the voluntary nature of the act aligns with behavioural control functions.^{6,8,27,28,29,30} A favourable relationship between blood donor status and individuals who have previously received blood is predicted.

Although the aspect of empathy and relational factors are reliable and related to motivating people to donate blood, at the same time, all informants seem to have empathy and are happy to help others regardless of their relationship. The love among human beings and the sake of being a helping hand may motivate these informants to be blood donors. On top of that, the satisfaction felt while being able to help others in need motivates them to donate blood even during the pandemic. They always put priority on others' well-being despite the obstacles they face. Even the increasing numbers of COVID-19 cases do not wobble their intention to donate blood as they perceive the well-being of others as significant as theirs. Nonetheless, psychological factors such as phobia somehow restrict people from donating blood, although they have strong intentions to do so. This finding perhaps will be a platform for other studies in the future to explore further.

Despite motivational factors to donate or not to donate blood during non-COVID-19 situations, informants also raised some of the motivational factors that affected them to decide to donate blood or not during the pandemic.

Factors to Donate Blood During COVID-19

Through the focus group discussion, this study found that individuals' behaviour and attitude affected their intention to donate blood during COVID-19 for both donor and non-donor groups. Fear of being infected by the coronavirus is one factor that holds individuals back from donating blood. However, informants from the donor group revealed that he met several donors who still actively donated blood during COVID-19. He also admitted that he still actively donates blood because of empathy and relational feelings towards need, especially when they knew blood collection during the pandemic dropped drastically compared to usual days.

"I was a regular donor since before COVID-19 attacked. Honestly, I feel afraid to donate blood during COVID-19. However, when I read the posting on social media asking for blood desperately, I felt so bad that I couldn't help. I try to put myself in their shoes and feel empathy. I can't imagine if one of my family members is in that position. Of course, I was hoping people would help us. After discussing with my spouse, I continue my intention to donate blood even if it is a pandemic." (D1)

Other than that, some donors stated that they are still donating blood during the pandemic because they have confidence in the Ministry of Health, especially among transfusion center staff, that they implement a proper standard of procedure (SOP) before, during, and after the blood donation process.

"If I am talking about fear, of course, I still feel afraid of being affected by the COVID-19 virus, but when I went through the SOP that the Ministry of Health has highlighted regarding blood donation activities, I relief and I believe that they will implement the proper SOP." (D5)

However, during the COVID-19 strike, the informants from the donor group admitted that they never donated because of several factors, such as busy work schedules and childcare issues. Besides, in the past two years of the pandemic, the insecurity of being infected while in public areas, roadblocks, and the need to set an appointment before coming to the center were their excuses for not donating blood at all.

"I used to donate blood regularly before the pandemic. However, I no longer donate blood because no one can look after my children at home during the pandemic. My husband works on the front lines at the hospital, leaving me home to care for the children. Schools and daycare centers were closed at the time. I did not go to donate during the pandemic because of the children's factor. I feel bad for not going to donate blood as usual, but I'm not allowed to take them to the blood donation center." (D2)

The donor group informants also show their frustration that the SOP to donate blood during the pandemic was too strict. For example, during the movement control order (MCO), they must fill in the form first to get permission to go to the blood center and follow the time given (appointment) by the blood center. Due to these, the informants feel they are giving up on donating blood during the pandemic.

"The SOP to donate blood is strict. We must fill in the form, get permission to go to the blood center and follow the appointment given by the blood center. It takes a lot of effort to reschedule my time accordingly." (D2)

Meanwhile, the non-donor group stated that they do have the intention to donate blood. However, because of several factors, their intention was suppressed. This intention seems far from achieved during the pandemic because of the work commitment and the insecurity of being infected by COVID-19.

"Just to be honest, I know that I'm fit to donate blood, but I have a high work commitment, and because I'm working from home with my kids, it is difficult for me to leave my house just to donate blood." (ND3)

The informants also mentioned that they do not donate blood during the pandemic because they feel insecure about going to blood centers such as hospitals because of the anxiety of being infected since some of the hospitals used to be quarantine centers for infected people.

"I have an imagination that I will get affected by COVID-19 if I go to the hospital to donate blood. When I start to think about that, my anxiety will get worse." (ND4)

Identifying the motivation to donate blood among Malaysians is crucial regardless of whether during the pandemic of COVID-19 or non-COVID-19 situation. It can provide insightful messages to increase blood donation awareness, intention, and activities among Malaysian citizens. To avoid the shortage of blood supply during the pandemic, a few suggestions have been given to increase blood donation behaviour during the pandemic.

Suggestion to Increase Blood Donation Behaviour

While investigating the motivation, the informants also being asked about the effectiveness of blood donation from home as one of the alternatives to attract more potential donors, especially during the pandemic. Only two informants agreed with the suggestion because it is convenient for others, especially those living in rural and sub-urban areas (who face financial and transportation constraints). On the other hand, the rest of the informants disagreed with the suggestion. Instead, they suggested mobile or fixed blood donation centers in their neighborhood.

"In my opinion, I am uncomfortable donating blood at home because, for example, I live with my parents, and I believe that the presence of many people inside will disturb my parents. As a result of our fear of infection by COVID-19, we may be unaware of whether we are infected by it. Second, while house-to-house blood donation is wonderful, perhaps we can adapt the concept of a mobile library. If there is a mobile blood donation bus, it would be exciting to do so regularly in a residential area every three months. So, I think more people will come forward voluntarily to donate blood since it is only a short distance away."(D5)

The informants also asked about the blood donation advertisement effectiveness. They find it sufficient for the donor group because they get the notification on their social media (Facebook, Instagram, or WhatsApp text). Meanwhile, the non-donor group stated that they became aware of the campaign when they saw the banner while visiting a shopping mall. The campaign on social media does not effectively attract their attention because they tend to scroll down the newsfeed intently. They also suggested putting more details in the advertisement, such as the procedures and time to donate blood. Alternatively, create video advertisements to illustrate the blood donation procedures for better understanding and, at the same time, to educate society.

"Even though I have never donated blood, I am constantly bombarded with blood donation advertisements despite having no "likes" on any Facebook

page. I occasionally see advertisements, for example, at traffic lights and the mall entrance. That's a great awareness. Because it makes people aware of those who might not have thought to donate before, it will influence me to know when I see the information on the mall's doorstep or around the place. Perhaps it is possible to explain a little bit in the ad about the donation process, such as the time needed to complete the blood donation. It will give the perception that the process isn't complicated."(ND3)

These findings suggested that to increase blood donation behaviour during the pandemic, promotional communications are effective motivators in attracting more people to donate blood. Advertisements and direct marketing were mentioned more often than blood drives and educational approaches as promotional communication motivators. Word of mouth and other communication factors may help encourage people to donate blood.²³ In the same way, people's willingness to donate is impacted by observing other people's behaviour (observer effect), which is also affected by word-of-mouth. For example, a first-time donor informant in this study stated that the advertisement banner is sometimes not placed properly or strategically. Sometimes, blood donation banners are displayed at the front door of a shopping mall, but the information on the banners is confusing and not detailed. In the end, the informant canceled the intention to donate blood.

Since the strike of COVID-19 worldwide, the use of social media and electronic devices has increased rapidly. People get connected and even get work done through the net. Hence, using social media to advertise the blood donation campaign seems relevant with the hope that people get noticed and are interested in participating. However, the non-donor group admitted that advertisements on social media are somehow unsuccessful in attracting their attention. Moreover, they also need more detailed information on blood procedures (from the start until the end of the blood donation process and the time consumed). The non-donor representatives suggested creating a video advertisement to attract more people and help them understand blood donation procedures better.

With the help of technology, Malaysians have become more aware and knowledgeable about blood donation. Hence, the number of donors will increase over time.

Overall, for the non-donor group, their lack of knowledge and awareness somehow contributes to their weak self-control. They let excuses such as friends, anxiety, and busyness suppress their intention to donate blood. That is why they keep having intentions, but concrete and proper action needs to be taken. Personal knowledge and skills help them do things their way regardless of the hardship. On top of that, Malaysians have different perspectives on attracting people's interest in becoming blood donors. As for the government, they tried to educate people to be volunteers (voluntarily donating blood without expecting anything in return). However, for the non-donor group, an incentive in the form of a gift, voucher, etc., helps to attract people's interest to become a donor for beginners.

After all, understanding the motivational factors of blood donation allows for better planning of the resources needed to avoid blood shortages and the recruitment of future donors, especially during emergencies and crises such as COVID-19. Among the best alternatives in the planning are increasing the media promotion, implementing practical and user-friendly blood donation appointment applications, improving the blood center facility, and increasing the mobile blood donation locations, mainly in rural areas. At the same time, targeting young people in universities and cutting the inefficient procedure in blood donation so the total time expended in blood centers can be lessened.

CONCLUSION

Understanding the reasons and challenges of blood donation during a pandemic is critical, as these factors influence a person's decision to donate blood, leading to increased donation rates during the pandemic. This study contributes to understanding Malaysian motivations and behaviours toward blood donation, especially during a pandemic. Future initiatives should encourage people to donate blood. These efforts should also address barriers that have been demonstrated to hinder donation behaviour, such as lessening the fear of negative health

consequences, publicizing steps to discourage blood donation, and improving awareness of and access to blood transfusion possibilities. Moreover, campaigns should specify whether their goal is to attract first-time donors or maintain regular donors. Based on non-donor responses, interventions to increase first-time donors may focus on improving public trust in the efficacy of donor cards, correcting misconceptions about donation's healthcare outcomes, and making blood donation more accessible during the pandemic, such as through a mobile blood donation bus. On the other hand, campaigns that urge existing donors to return as repeat donors should emphasize the selfless nature of blood donation by using testimonials from people who have successfully received a blood transfusion. These messages might be distributed at blood donation centers in the future to urge donors to give blood again. Understanding public opinions of blood donation and how information is disseminated may be used to raise donation rates and alleviate shortages in Malaysia utilising culturally acceptable and logistically achievable tactics. So, as the Malaysian government strives to ensure that its blood bank is always adequate for people's well-being, society needs to be educated about blood donation. Social solidarity on this matter could preserve the national blood bank and foster the spirit of humanity in the soul of each Malaysian.

INSTITUTIONAL REVIEW BOARD

Approval no.: UTMREC-2023-30 by UTM Research Ethics Committee

Title : Faktor Psikososial Derma Darah di Malaysia

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REFERENCES

1. Mansur, A., Vanany, I. & Indah Arvitrida, N. Challenge and opportunity research in blood supply chain management: a literature review. *MATEC Web of Conferences* 154, 01092 (2018).
2. Arcot, P. J., Kumar, K., Mukhopadhyay, T. &

- Subramaniam, A. Potential challenges faced by blood bank services during COVID-19 pandemic and their mitigative measures: The Indian scenario. *Transfusion and Apheresis Science* 59, 102877 (2020).
3. Sahu, K. K., Raturi, M., Siddiqui, A. D. & Cerny, J.' Because every drop counts': Blood donation during the COVID-19 Pandemic. *Transfus Clin Biol* 27, 105–108 (2020).
 4. Pusat Darah Negara. Laporan Kutipan Darah Pusat Darah Negara 2020. (2020).
 5. Sojka, N. B. & Sojka, P. The blood donation experience: Self-reported motives and obstacles for donating blood. *Transfusion Medicine* 94, 56–63 (2008).
 6. Rafiee, M. H., Kafiabad, S. A. & Maghsudlu, M. Analysis of blood donors' characteristics and deferrals related to COVID-19 in Iran. *Transfusion and Apheresis Science* 60, 103049 (2021).
 7. To, L. et al. The United States' potential blood donor pool: Updating the prevalence of donor-exclusion factors on the pool of potential donors. *Transfusion* 60, 206–215 (2020).
 8. Suen, L. K. P., Siu, J. Y., Lee, Y. M. & Chan, E. A. Knowledge level and motivation of Hong Kong young adults towards blood donation: a cross-sectional survey. *BMJ Open* 10, e031865 (2020).
 9. Mei Ling, L., Sheng Hui, T., Andrew K. G., T. & Sai Ling, G. Determinants of Blood Donation Status in Malaysia: Profiling the Non-Donors, Occasional Donors and Regular Donors. *Kajian Malaysia* 36, 43–62 (2018).
 10. Chandler, T. et al. Blood donation in times of crisis: Early insight into the impact of COVID-19 on blood donors and their motivation to donate across European countries. *Vox Sanguinis* 116, 1031–1041 (2021).
 11. Martin-Santaa, J., Robaina-Calderin, L., Reinares-Lara, E. & L., R.-D. Knowing the blood non-donor to activate behaviour. *Soc. Sci.* 8, 324 (2019).
 12. Ray, S., Singh, C. Z. & Banerjee, A. Psychosocial variables of voluntary blood bank of a medical college. *MJAFI* 61, 130–132 (2005).
 13. Wang, Y. et al. Impact of COVID-19 on blood centres in Zhejiang province China. *Vax Sanguinis* 115, 502–506 (2020).
 14. France, C. R., France, J. L., Ysidron, D. W. & Samstein, B. Assessing motivations for non-living and living organ donation among individuals with and without a history of blood donation. *Transfusion Medicine* (2022) doi:10.1111/tme.12854.
 15. Paraskevaidis, P. & Andriotis, K. Altruism in tourism: Social Exchange Theory vs Altruistic Surplus Phenomenon in host volunteering. *Annals of Tourism Research* 62, 26–37 (2017).
 16. Stock, B. & Möckel, L. Characterization of blood donors and non-blood donors in Germany using an online survey. *Health and Technology* 11, 595–602 (2021).
 17. Weidmann, C., Derstroff, M., Klüter, H., Oesterer, M. & Müller-Steinhardt, M. Motivation, blood donor satisfaction and intention to return during the COVID-19 pandemic. *Vox Sanguinis* (2021) doi:10.1111/vox.13212.
 18. Stosic, M. D., Blanch-Hartigan, D., Aleksanyan, T., Duenas, J. & Ruben, M. A. Empathy, friend or foe? Untangling the relationship between empathy and burnout in helping professions. *The Journal of Social Psychology* 162, 89–108 (2022).
 19. Saltzmann, C. & Boenigk, S. On consciousness of the decision to discontinue blood donation: Intention to return and effective recovery activities. *Transfusion Medicine* (2022) doi:10.1111/tme.12859.
 20. Rael, C. T. et al. Evaluating blood donor experiences and barriers/facilitators to blood donation in the United States using YouTube video content. *Transfusion* 61, 2650–2657 (2021).
 21. Thorpe, R., Masser, B. M., Nguyen, L. & Davison, T. E. Still willing and able to contribute: donor perspectives on donating blood in later life. *ISBT Science Series* 16, 139–146 (2021).
 22. Laermans, J. et al. Impact of disasters on blood donation rates and blood safety: A systematic review and meta-analysis. *Vox Sanguinis* (2022) doi:10.1111/vox.13255.
 23. Davison, T. E. Understanding, predicting and influencing blood donation: an introduction to the

- special issue on donor behaviour. *ISBT Science Series* 16, 128–131 (2021).
24. Ajzen, I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50, 179–211 (1991).
 25. Jovchelovitch, S. *Knowledge in Context*. (Routledge, 2007). doi:10.4324/9780203968895.
 26. Abdel Gader, A. G. et al. Attitude to blood donation in Saudi Arabia. *Asian Journal of Transfusion Science* 5, 121 (2011).
 27. Caramello, V. et al. Blood bank preparedness for mass casualty incidents and disasters: A pilot study in the Piedmont region, Italy. *Vox Sanguinis* 114, 247–255 (2019).
 28. Smith, A., Matthews, R. & Fiddler, J. Blood donation and community: Exploring the influence of social capital. *International Journal of Social Inquiry* 4, 45–63 (2011).
 29. Almalki, S. et al. Awareness about Coronavirus (COVID-19) and challenges for blood services among potential blood donors. *Transfusion and Apheresis Science* 60, 103211 (2021).
 30. Kasraian, L., Ashkani-Esfahani, S. & Foruozaendeh, H. Reasons of under-representation of Iranian women in blood donation. *Hematology, Transfusion and Cell Therapy* 43, 256–262 (2021).
 31. Zakaria, Z. & Som, H. M. *Analisis Data: Menggunakan SPSS Windows*. (Penerbit Universiti Teknologi Malaysia, 2001).
 32. Gale, N., Heath, G., Cameron, E., Rashid, S. & Redwood, S. Using the framework method for the analysis of qualitative data in multidisciplinary health research. *BMC Med. Res. Methodol* 13, 117 (2013).
 33. Ray, W. J. *Methods: Towards a Science of Behavior and Experience*. (Thompson Wordsworth, 2008).
 34. Zakaria, M. I. et al. Assessment of burnout among emergency medicine healthcare workers in a teaching hospital in Malaysia during COVID-19 pandemic. *Hong Kong Journal of Emergency Medicine* (2021) doi:10.1177/1024907921989499.
 35. Furgeson, E., Hill, A., Lam, M., Reynolds, C., Davison, K., Lawrence, C. & Brailsford, S.R. A typology of blood donor motivations. *Transfusion*, 1 – 11 (2020).
 36. Noor'ain Mohamad Yunus, Syukrina Alini Mat Ali & Siti Fatiany Abdul Kader Jailani. Understanding blood donor intention: Towards sustainable blood supply in Malaysia. *Malaysian Journal of Social Sciences and Humanities* 4 (4) 36 – 45.