FROM WILLINGNESS TO WITHDRAWAL: UNDERSTANDING BLOOD DONATION BARRIERS AMONG YOUNG ADULTS

Syadiyah Abdul Shukor[1a]*

[1]*Islamic Financial Wealth Management Institute, Faculty of Economics and Muamalat, Universiti Sains Islam Malaysia, Negeri Sembilan, Malaysia*
[a]*syadiyahas@usim.edu.my*

*Corresponding Author: *syadiyahas@usim.edu.my*

Abstract**:** *This study investigates barriers that prevent young adults in Malaysia from donating blood. Data were gathered using a self-administered survey questionnaire distributed to individuals aged between 18 and 30, resulting in 311 valid responses from participants had never donated blood. The data were subjected to exploratory factor analysis (EFA) to determine the underlying dimensions of these barriers. The analysis revealed three main categories of barriers: 1) external constraints, such as time limitations, lack of opportunities, and inconvenient donation locations; 2) psychological and emotional barriers, including fear of needles and discomfort with medical procedures; and 3) health and medical eligibility concerns, such as anemia or other health related disqualifications. These findings highlight the factors influencing blood donation hesitancy and point to the need for targeted awareness campaigns and supportive strategies to encourage greater participation among young adults.*

Keywords: young adults, non-donor, barriers, Malaysia, blood donation

1. Introduction

Ensuring an adequate and safe blood supply is essential to the strength of any national healthcare system. In Malaysia, the need for donated blood remains high, with an estimated 2,000 bags needed daily to meet the needs of patients nationwide (Bernama, 2025). Despite regular contributions from Malaysia's donor, the supply often falls short of meeting demand, particularly during festive seasons and holidays when emergencies tend to rise. This shortfall requires a strategic focus on expanding the donor pool, especially by encouraging young adults as a sustainable source of blood donors.

This focus becomes more critical as Malaysia's population continues to age, with projections indicating that 15% will be 65 or older by 2040. As older donors gradually become ineligible due to age-related health issues, the responsibility of sustaining the nation's blood supply will increasingly rest on the shoulders of the younger generation. Positively, recent statistics indicate that young individuals make up a considerable number of new blood donors (Ova, 2025), confirming their potential as a vital demographic for sustaining future blood supplies. However, despite being physically fit and generally eligible, many young people either do not donate or fail to become repeat donors. This signals a clear gap between their potential and actual participation.

Given the importance of maintaining a long-term sustainability of Malaysia's blood supply, the Ministry of Health Malaysia has intensified efforts to attract young individuals to become

first time donors, recognizing that young engagement is vital to building a stable donor base (Berita Harian, 2025). While a large portion of donors are in the 17-24 age range, the actual number remains low when compared to the size of Malaysia's youth population, which accounts for approximately 11.2% of the total 35.13 million population. This gap is especially concerning considering that young individuals typically regarded as ideal blood donors due to their good health and physical fitness. Considering this, the present study aims to examine the barriers that prevent young adults in Malaysia from donating blood.

This paper is organized into six sections. Section 2 reviews existing literature on the challenges and barriers that prevent individuals from donating blood. Section 3 describes the methodology employed in the study, including the data collection process and analytical techniques used to examine the barriers to blood donation. Then, Section 4 provides the empirical findings of the study, offering insights into the major factors that emerged from the analysis. In Section 5, the results are discussed in relation to existing literature, with emphasis on the key insights and their practical implications for policy and practice. Finally, Section 6 concludes the paper by addressing its limitations and offering recommendations for future research aimed at enhancing young adults' participation in blood donation initiatives.

2. Literature Review

Previous research has examined barriers that hinder donation behavior, ranging from fears to accessibility constraints that limit individuals' ability to participate in blood donation. The following section reviews key findings from past studies that highlights the challenges, barriers, and obstacles to blood donation that provide fundamental for the present study.

2.1 Psychological Barriers

Psychological barriers especially those related to fear are among the most frequently reported factors that prevent individuals from donating. Typical fears include fear of needles, pain, fainting, or possible side effects following the donation (Galan et al., 2002; France et al., 2018). For instance, Galan et al. (2002) reported that many adolescents, particularly females, expressed fear of needles and fainting as primary reasons for not donating blood. Such psychological barriers often rooted in misinformation, lower donation intentions and emphasize the need for education and supportive measures to encourage blood donation among young people (France et al., 2018; Bednall et al., 2013).

2.2 Health and Eligibility Concerns

Health and eligibility concerns pose key barriers to blood donation among young people. Medical conditions like anemia, low weight, and medication use often lead to deferrals, while fears of adverse reactions such as dizziness discourage participation (JournalGrid, 2024; PMC, 2008; BMJ Open, 2024). These factors highlight the need for targeted education and health support to improve donor eligibility and retention in youth populations.

2.3 Knowledge and Awareness Gaps

Lack of knowledge and awareness presents another commonly obstacle to blood donation among young adults. Many of them lack accurate information about eligibility and procedures,

holding misconceptions about infection risks, age, and weight requirements (Frontiers in Public Health, 2024; PMC, 2024). Zainuddin et al. (2013) specifically examined knowledge, attitudes and practices toward blood donation among university students in Malaysia and highlighted gaps in awareness. This lack of understanding, combined with limited exposure to campaigns, hinders participation even among those willing to donate.

2.4 Social and Cultural Influence

Social and cultural norms significantly shape donation behavior. In many collectivist societies, including Malaysia, health behaviors are influenced by familial and peer encouragement. A lack of support or conversation about blood donation within families can discourage youth participation (Bednall & Bove, 2011). Religious considerations may also influence perceptions, although most major faiths support voluntary blood donation. The role of social influence is particularly important among youth, as studies show that peer-led initiatives, role modeling, and university-based campaigns can substantially increase motivation (Shaz et al., 2009). Despite this, many blood donation drives are still institutionally led, with limited peer involvement or student leadership.

2.5 Accessibility and Structural Challenges

Accessibility issues including inconvenient donation hours, limited transportation options, and rigid schedules, frequently hinder people from donating blood (Benedict et al., 2012). These obstacles are particularly significant for university students and young professionals who often juggle academic and work commitments. The scarcity of mobile blood drives, lack of effective collaboration between health authorities and educational institutions, and inadequate online appointment systems further reduce donation opportunities.

3. Methodology

This study employed a multistage research design to identify and validate the barriers to blood donation among young adults in Malaysia. In the first stage, an open-ended survey questionnaire was distributed to investigate the underlying factors contributing to non-donation behavior among young adults. From the responses gathered, 41 relevant items were developed. These items were then reviewed by three (3) subject matter experts to ensure clarity and relevance, resulting in the removal of two items and leaving 39 items for further analysis. A pilot study was then conducted with 49 young adult respondents to assess the reliability of the questionnaire. Minor revisions were made to improve item clarity based on the feedback and reliability results. The final version of the questionnaire was administered online, yielding 370 completed responses. Among these, 311 respondents who had never donated blood were identified as non-donor and included in the analysis. Exploratory factor analysis (EFA) was performed using data from these 311 non donors to identify the underlying factors that contribute the reluctance or hesitation of young adults to donate blood.

4. Results and Findings

4.1 Respondents' demographic profiles

A total of 370 completed responses were obtained for the study. Among these, 311 respondents (84.1%) reported that they had never donated blood and were classified as non-donors. Within this group, 32.2% were male and 67.8% were female. In terms of blood type, 10.9% reported having blood type A, 11.9% type B, 4.5% type AB, and 30.9% type O. Notably, a considerable number of the respondents (41.8%) were unsure of their blood type.

Table 1. Profile of respondents

Characteristics	Number of samples	%
Gender		
Male	100	32.2
Female	211	67.8
Blood Type		
A	34	10.9
B	37	11.9
AB	14	4.5
O	96	30.9
Not sure	130	41.8

4.2 Exploratory factor analysis

The present study explores barriers to donate blood through exploratory factor analysis using principal component and varimax rotation. The suitability of the data for factor analysis was confirmed by Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.907, suggesting that the data were suitable for factor analysis, and Bartlett's test of sphericity was significant ($p<0.001$), indicating that variables are adequately correlated among the variables. Through exploratory factor analysis, three factors were found that collectively explain 76.6% of the total variance. Table 2 provides a summary of the factor loadings and reliability coefficients for all extracted factors. For factor 1, representing external constraints, accounted for 54.3% of the total variance and demonstrated high internal consistency, with a reliability coefficient (Cronbach's $\alpha = 0.931$). The first component groups together barriers related to logistical and practical limitations, such as inconvenient locations, lack of time, and limited opportunities. Factor 2 (psychological and emotional barriers) accounts for 12.8% of the variance and reliability coefficient of 0.914. The component is characterized by items related to fear, anxiety, and emotional discomfort associated with the act of donating blood. Regarding Factor 3 (health and medical eligibility concern), the items related to physical or medical conditions that disqualify or discourage individuals from donating blood and the items' reliability coefficient was at 0.908 and this factor explained 9.5% of the variance.

Table 2. Results of exploratory factor analysis

Response item	Loading	Eigen value	Variance explained (%)	Cronbach's alpha
Factor 1		8.14	54.3	.931
a. Inconvenient location of blood donation center	.824			
b. Not enough donation programmes available	.817			
c. Inconvenient operating hours of blood donation center	.817			
d. Do not have enough time	.806			
e. Too busy	.797			
f. Never had the chance or opportunity to donate	.724			
Factor 2		1.916	12.8	0.914
a. The sight of blood makes me uncomfortable	.833			
b. Fear of seeing blood	.829			
c. Fear of needles	.821			
d. Dislike visiting health centres /	.718			
e. Dislike donating blood	.704			
Factor 3		1.438	9.6	0.908
a. Anemia (low red blood cell count)	.902			
b. Low blood pressure	.819			
c. Other medical reasons	.805			
d. High blood pressure	.803			

5. Discussion

The findings of this study indicate that barriers to blood among young adults can be classified into three main categories: 1) external constraints, 2) psychological and emotional barriers, and 3) health related eligibility. The first category includes items such as inconvenient donation locations, time constraints, and insufficient opportunities to donate. Similar barriers have been reported in other regional studies, suggesting that young adults, particularly students and working individuals, face practical difficulties in accessing donation services (Zainuddin et al., 2013; Masser et al., 2009). The results suggest that public health institutions should consider implementing more flexible and more mobile donation strategies, such as organizing on-campus blood donation drive, donation booths at company premises or establishing donation centers with extended operating hours while simultaneously strengthening outreach efforts through digital platforms that are widely used by young adults.

The second component highlights the dominance of psychological and emotional factors, such as fear of dizziness, needles, and health deterioration post-donation. This aligns with previous studies that have consistently identified anxiety and fear as key deterrents, particularly among first-time and young donors (Bani & Giussani, 2010; France et al., 2013). These psychological responses, often exacerbated by a lack of experience and misinformation, underscore the need for emotional reassurance and targeted educational campaigns that address common fears in a relatable and youth-sensitive manner.

The third and final component, focusing on health-related eligibility, emphasizes that physical health concerns—such as anemia, low or high blood pressure, and other medical issues—remain a significant source of self-exclusion among potential donors. While some of these conditions legitimately disqualify individuals, many are based on self-perception or lack of knowledge about actual eligibility criteria (Alam et al., 2014). This highlights a pressing need for more transparent and accessible pre-screening guidelines, as well as educational efforts to correct misconceptions about donation fitness.

6. Conclusion

This study examined the barriers that discourage young adults from donating blood, providing valuable insights into the complex factors behind donor reluctance. Through exploratory factor analysis, three key dimensions emerged: (1) external constraints, (2) psychological and emotional barriers, and (3) health-related eligibility concerns. Together, these factors explained a significant portion of the variation in donation hesitancy, demonstrating that multiple interconnected challenges influence young donors' decisions. The results emphasize the importance of tailored interventions that address emotional fears, improve convenience and access, and clarify eligibility standards to boost blood donation rates among young people.

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