



Factors Influencing Blood Donation Interest in Makassar City Society

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<p>Track Record Article</p> <p>Accepted: 11 Oktober 2024 Revised: 28 November 2024 Published: 30 December 2024</p> <p>How to cite : Akram, S. R., Rahmita, Yunus, M., & Rusdi, A. M. P. (2024). Factors Influencing Blood Donation Interest in Makassar City Society. <i>Contagion : Scientific Periodical of Public Health and Coastal Health</i>, 6(2), 1461–1473.</p>	<p style="text-align: center;">Abstract</p> <p><i>The demand for blood continues to increase each year. The lack of interest in blood donation among the public leads to insufficient blood supply at blood banks, especially in Makassar city. This study was conducted to identify the factors that influence the public's interest in blood donation in Makassar. This is a quantitative research with a cross-sectional design and an analytical observational approach, using a sample of 100 people who reside in Makassar. The sampling technique used was accidental sampling, and primary data was collected using a questionnaire that had been tested for validity and reliability. Data analysis was conducted using univariate and bivariate analysis with the chi-square test. Overall, the results of the study showed that the public's interest in blood donation in Makassar was very good, with 75% (75 people) of the total 100 respondents expressing interest. The frequency based on gender and age was dominated by females at 76%, and the age range of 20-29 years accounted for 40%. The frequency of employment status showed that 45% were employed, while 55% were unemployed. Respondents' knowledge level was found to be good, with 95% demonstrating good knowledge. Based on the chi-square test, it was found that there was no significant relationship between knowledge ($p = 1.000 > p = 0.05$), gender ($p = 1.000 > p = 0.05$), and occupation ($p = 0.357 > p = 0.05$) and the interest in blood donation. However, age ($p = 0.010 < p = 0.05$) was found to have an effect on the public's interest in blood donation in Makassar. Interviews also revealed that there are other factors affecting blood donation interest, such as attitude, medical history, body weight, and other external factors.</i></p> <p>Keyword: Interest in Donation, Blood Donation, Makassar Community</p>
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INTRODUCTION

Blood donation is the voluntary collection of blood from an individual to be stored in a blood bank (Handayani & Usiono, 2023). The purpose of blood donation is to provide blood for medical treatment and health recovery, encompassing issues related to the procurement, processing, and delivery of blood to patients (Shinta et al., 2022).

The demand for blood continues to increase each year. It is recorded that one in seven patients undergoing hospital treatment worldwide requires a blood transfusion. This highlights the urgent need for adequate attention to the availability of blood stock in blood service providers. In fact, there is still an imbalance between blood supply and demand (Wardati et al., 2019). The minimum blood demand in Indonesia is approximately 5.2 million bags per year, or 2% of the population, based on WHO standards, whereas the current blood and blood component supply is only around 4.7 million bags. Indonesia faces a national shortfall of approximately 500.000 blood bags (Huriani et al., 2023).

According to current data from the Blood Transfusion Unit (UPT) of the South Sulawesi Provincial Health Office, blood stock remains very limited and is considered critically low (Prayitno et al., 2022). The Indonesian Red Cross (PMI) in South Sulawesi targeted a blood stock of 20,000 bags throughout 2022. Data from the Blood Donor Unit (UDD) of PMI Makassar shows an average annual blood demand of 3,500 bags, equivalent to approximately 200 to 300 bags per month (Lira et al., 2022). The availability of blood heavily depends on the willingness and awareness of the community to donate blood voluntarily and regularly. However, the low interest of the public in participating in blood donation activities has resulted in insufficient blood bag stocks available in blood banks (Novianingsih et al., 2021).

Factors that contribute to the imbalance between blood supply and demand include a lack of knowledge about blood donation (Handayani & Usiono, 2023). According to the research by Manalu et al. (2024), factors such as knowledge, social support, the quality of blood transfusion services, and donor facilitators have an impact on blood donation interest at the PMI Blood Transfusion Unit (UDD) in Tomohon City. Similarly, the study by Wardati et al. (2019) found that knowledge and attitude influence an individual's blood donation behavior.

Based on an initial survey conducted through interviews and discussions with 5 (five) blood donation service officers and 5 (five) visitors who came to the PMI Blood Transfusion Unit (UTD) to request blood, the results of the interviews indicated that, generally, the public who visited were not aware of the benefits of blood donation for themselves, and their knowledge about blood donation was still very limited. This lack of awareness also affects their motivation and understanding of the importance of blood donation. While many individuals have a good level of knowledge and attitude about blood donation, a significant number still refuse to donate blood (Manalu et al., 2024). Based on this, there is a need for research to identify the factors that influence the interest in blood donation among the people of Makassar.

METHODS

This study is a quantitative research using a cross-sectional design with an analytical observational approach to identify the factors influencing community interest in blood donation. It was conducted in October 2024. The influencing factors are the independent variables, which include age, gender, occupation, and knowledge level about blood donation, while the dependent variable is the interest in blood donation. The research was conducted in Makassar City, covering 15 districts: Makassar, Biring Kanaya, Bontoala, Tamalanrea, Tallo, Ujung Tanah, Kepulauan Sangkarrang, Manggala, Panakkukang, Mamajang, Mariso, Ujung Pandang, Rappocini, Tamalate, and Wajo.

The population in the study was the city community totaling 1.474.393 million people based on data from the Makassar City Central Statistics Agency in 2023. The calculation of the number of samples used the Slovin formula, so that the number of samples was 100 people. The sample selection used the Accidental Sampling Technique and the sample met the research inclusion criteria, namely people aged 17-60 years and people domiciled in Makassar City. Other criteria such as health conditions and donor history will be required in the donor selection process by blood service technicians or health workers in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 91 of 2015.

Data collection was conducted using primary data, which was obtained directly by the researcher through a data collection instrument in the form of a questionnaire with a measurement scale of "Yes," "No," and "Uncertain," consisting of 24 items. The questionnaire used had undergone validity and reliability testing to ensure that each item was appropriate and could produce accurate data. Data analysis in this study utilized two types of statistics: univariate analysis to determine descriptive statistics and bivariate analysis with the chi-square test to determine whether there was a relationship between the independent variables and the dependent variable, as well as Fisher's exact test for expected values below 5, using SPSS Version 24. Ethical approval for this study was obtained from the Ethics Commission of the Faculty of Public Health, Hasanuddin University, with protocol number 91024105042, signed by the Chair of the Ethics Commission, Prof. Dr. Veni Hadju, M.Sc., Ph.D.

RESULTS

This study was conducted in Makassar City in October 2024, with a sample size of 100 individuals residing in Makassar City. The characteristics of the respondents in this study include age, gender, occupation, level of knowledge about blood donation, and interest in blood donation. The study was carried out using a primary data collection process, utilizing a questionnaire on knowledge and interest in blood donation among the community of Makassar City.

Tabel 1. Frequency Distribution of Gender

Gender	f	%
Female	76	76
Male	24	24
Total	100	100

Based on Table 1 of the data distribution, it is shown that 76 individuals (76%) are female, and 24 individuals (24%) are male.

Table 2. Frequency Distribution of Age Range

Age (Years)	f	%
< 20	15	15
20 – 29	40	40
30 – 39	27	27
40 – 49	7	7
50- 59	9	9
> 60	2	2
Total	100	100

Based on Table 2, the results show that 15 respondents (15%) are aged <20 years, 40 respondents (40%) are in the 20-29 age range, 27 respondents (27%) are in the 30-39 age range, 7 respondents (7%) are in the 40-49 age range, 9 respondents (9%) are in the 50-59 age range, and 2 respondents (2%) are aged >60 years. It can be concluded that the majority of the population in Makassar City is in the 20-29 age range and is predominantly female.

Table 3. Frequency Distribution of Employment

Category	f	%
Employed	45	45
Unemployed	55	55
Total	100	100

Based on the results from Table 3, it is found that 45 respondents (45%) are employed, while 55 respondents (55%) are not employed.

Table 4. Frequency Distribution of Blood Donation Knowledge

Category	f	%
Poor	5	5
Good	95	95
Total	100	100

From Table 4, the results show the level of knowledge about blood donation among respondents. There are 95 individuals (95%) who have good knowledge regarding blood donation, while 5 individuals (5%) fall into the category of having insufficient knowledge.

Table 5. Frequency Distribution of Blood Donation Interest

Category	f	%
Not Interested	25	25
Interested	75	75
Total	100	100

Based on Table 5, the results show that out of 100 respondents, 75 individuals (75%) have an interest in blood donation, while 25 individuals (25%) do not have an interest in donating blood.

Table 6. Relationship Between Knowledge, Gender, Occupation, Age Group, and Interest in Blood Donation

Variables that Affect		Donor Interest				Total		<i>p- value</i>
		Interested		Not Interested		n	%	
		n	%	n	%			
Knowledge	Good	71	74.7	24	25.3	95	100	<i>p</i> = 1.000
	Poor	4	80	1	20	5	100	
Gender	Male	18	75	6	25	24	100	<i>p</i> = 1.000
	Famale	57	75	19	25	76	100	
Employment	Employed	36	80	9	20	45	100	<i>p</i> = 0.357
	Unemployed	39	70.9	16	29.1	55	100	
Age Group	Old	68	80	13	20	85	100	<i>p</i> = 0.010
	Young	7	46.7	8	53.5	15	100	

Based on the data in Table 6, it is known that the number of respondents with good knowledge and an interest in donating blood is 71 individuals (74.7%), while 24 individuals (25.3%) with good knowledge do not have an interest in donating blood. Among respondents with insufficient knowledge, 4 individuals (80%) have an interest in donating blood, while 1 individual (20%) with insufficient knowledge does not have an interest in donating blood. The statistical test results show a significance value of $p=1.000$, which is greater than $p=0.05$ ($1.000 > 0.05$). Therefore, it can be concluded that there is no significant relationship between the level of knowledge and the interest in blood donation among the community in Makassar City.

Based on the respondents' gender and their interest in blood donation, the results show that 18 male respondents (75%) are interested in donating blood, while 6 male respondents (25%) are not interested. Among female respondents, 57 individuals (75%) are interested in donating blood, while 25 individuals (25%) are not interested. The statistical test results show $p=1.000 > p=0.05$, which leads to the conclusion that there is no significant relationship between gender and interest in blood donation among the community.

The data for respondents who are employed shows that 36 individuals (80%) are interested in donating blood, while 9 individuals (20%) are not interested. For respondents who are not employed, 39 individuals (70.9%) are interested in donating blood, while 16 individuals (29.1%) are not interested. Based on the statistical test results, $p=0.357 > p=0.05$, indicating that there is no significant relationship between occupation and interest in blood donation.

Table 6 also shows data based on the age group of respondents, where the younger age group with an interest in donating blood consists of 68 individuals (80%), while 13 individuals (20%) in this group are not interested. Among the older age group, 7 individuals (46.7%) are interested in donating blood, while 8 individuals (53.5%) are not interested. The statistical test results show a significance value of $p=0.010$, which is less than $p=0.05$ ($0.010 < 0.05$).

Therefore, it can be concluded that there is a significant relationship between the respondents' age and their interest in blood donation.

DISCUSSION

Voluntary blood donation is essential to help meet the demand for safe blood for those in need. There are many factors that drive the willingness to donate blood, but there are also barriers that make individuals reluctant to donate. In this study, the results showed that out of four factors analyzed—age, gender, occupation, and level of knowledge about blood donation—only age had a significant relationship with the willingness to donate blood. Table 6 indicates that respondents in the younger age group had a high interest in donating blood, with 68 individuals (80%) expressing willingness.

Other studies have shown that age influences the interest in blood donation due to informational, intrinsic, spatial-temporal, and procedural barriers (Romero et al., 2021). As noted by Suemnig et al. (2017), the factors influencing donor and non-donor behavior can vary by age group. This aligns with the findings of Ibrahim et al. (2021), which revealed that individuals aged 24 are among the highest blood donors. Research conducted in Zimbabwe also showed that 89.2% of blood donors were from the younger age group (16–29 years) (Chideme et al., 2024). Moore et al. (2020) and Shaz et al. (2009) also explained that young and young adult individuals are more likely to have the intention to donate blood.

This is because younger generations are perceived to have more access to information, greater responsibility, and better understanding of the importance of blood donation compared to older generations (Mecha & Baley, 2022; Jannah et al., 2023). Health issues are another factor for older individuals in blood donation. As people age, they are more prone to various health conditions such as hypertension and hemoglobin level disorders, which can serve as contraindications for donating blood. These declining health conditions often result in rejection during the blood donor screening process, reducing the interest in attempting to donate (Situmorang et al., 2020). Roopadevi et al. (2017) stated that age affects the willingness to donate, with blood donation prevalence decreasing as individuals age. Additionally, as people grow older, family responsibilities increase, causing individuals to tend to neglect social responsibilities. On the other hand, younger individuals who do not have an interest in donating blood may be influenced by negative perceptions about the potential risks to health during blood donation. This can occur due to a lack of accurate information that individuals receive (Huriani et al., 2023).

The study found that knowledge level, gender, and occupation did not show a relationship that could influence the interest in blood donation. Table 3 shows that 95% of respondents have good knowledge, but this does not prove that good knowledge about blood donation directly influences someone's willingness to donate blood, as seen in Table 6. This aligns with previous studies by Ibrahim et al. (2021), which found no significant relationship between knowledge level and blood donation interest in the community of Karanganyar Village, East Kutai Regency. However, this contrasts with other studies, such as Stock et al. (2021) and Yosef et al. (2021), which found a relationship, likely due to differences in sample size and distribution. Other research also suggests that a person's knowledge is influenced by their attitudes. Therefore, to increase awareness and interest in blood donation, it is essential to foster a positive attitude toward blood donation (Getie et al., 2024; Moree et al., 2020; Mecha & Belay, 2022).

Several studies have explained that gender influences blood donation interest in some countries. For instance, a study in Nigeria showed a higher percentage of male blood donors compared to females (Alla et al., 2019). This suggests that males have a higher interest in blood donation than females. However, our study produced different results, showing no significant relationship between gender and interest in blood donation, in line with the findings of Suen et al. (2020). This difference could be due to the number of respondents, with 76 female respondents and 24 male respondents as seen in Table 1.

Carver et al. (2018) and Saeed et al. (2024) further explain the gender differences in blood donation. Men are more likely to think about the benefits and positive health effects of donating blood, while women tend to be motivated by emotional factors, such as a sense of voluntary action. Additionally, men are less likely to experience side effects from blood donation, such as vasovagal reactions, fatigue, or discomfort in the arm, compared to women.

Other research, such as the study in Semarang by Khalidah et al. (2024), also shows that the majority of blood donors are male, comprising 72% of donors. This difference could be attributed to physiological factors, where women experience menstrual cycles, pregnancy, and breastfeeding, which can affect the frequency and eligibility for blood donation (Jannah, 2023).

The relationship between occupation and interest in blood donation, as shown in Table 6, indicates no significant connection. Studies regarding occupation and interest in blood donation have produced varying results. Research conducted in Peru found that occupation itself was not a significant factor; however, age, income level, religion, and previous donation experience significantly influenced an individual's interest in donating blood (Agurto & Nino,

2024). Other studies have also identified that lack of time is often associated with occupation as a barrier to blood donation. This suggests that while occupation may not directly influence blood donation interest, the time constraints associated with work can affect an individual's ability to donate blood (Samreen et al., 2021).

Overall, the results of the study in Table 5 indicate that the interest in blood donation among the people of Makassar is very high, with 75% (75 people) of the 100 respondents showing interest in donating blood. The factors influencing an individual's interest in blood donation are not limited to psychological factors such as knowledge, but also include religion, education level, income, marital status, attitudes, and comprehensive knowledge (Mecha & Belay, 2022; Bhuiyea et al., 2022; Saeed et al., 2024).

Another factor influencing an individual's interest in blood donation is sociodemographic factors, including age, gender, education level, and knowledge (Moree et al., 2020). This study concluded that the main reasons for not donating blood are the lack of demand to donate and insufficient information. Information sources, not only close acquaintances, can play a role in increasing an individual's interest in blood donation. Public awareness campaigns by authorities can also boost the willingness to donate blood by providing information and educating the public to help change their behavior toward blood donation (Sugesty et al., 2019).

An individual's interest in blood donation is also influenced by their awareness of the health benefits of donating blood regularly, knowing the health condition of the potential donor, helping save lives, and assisting those in need (Maria et al., 2022). Other factors affecting interest in blood donation include the communication process, the quality of service, and the time involved in the donation process, all of which can reduce an individual's interest in donating blood for the first time or repeatedly (Guglielmetti et al., 2021).

Previous studies have also highlighted internal and external barriers, such as the fear of blood donation, including the fear of needles, blood flow, pain from the blood collection procedure, poor service, dizziness after donation, and physical disqualification (Li et al., 2021). In line with this, Ahmed et al. (2020) explained that factors affecting younger people's reluctance to donate blood include parental rejection, rude behavior by healthcare workers, and fear of side effects. The negative perceptions identified in Ahmed et al.'s (2020) study included concerns that blood donation could transmit diseases, fear of infection risks, loss of blood volume, pain from the blood collection procedure, and fear of side effects.

From the data obtained, interviews were conducted with respondents who were not interested in donating blood to identify other factors or causes that influenced their interest in

blood donation. The interview results indicated that some respondents were unwilling to donate blood due to factors such as being overweight, which led to unsuccessful donation attempts. These individuals had several failed attempts at blood donation because the staff could not locate the veins after multiple needle insertions. Another factor mentioned was insufficient body weight and age. According to the Ministry of Health Regulation (Permenkes) 2015, the minimum weight for blood donors is 45 kg, and the minimum age is 17 years.

Other respondents cited health issues such as a history of anxiety disorder, requiring them to take sedative medication daily. For individuals on medication, a medical assessment is necessary, and regular evaluations are required (Permenkes, 2015).

Additionally, the location of the data collection in Makassar plays a role. According to the 2024 data from the Central Statistics Agency of Makassar, the poverty rate in the city is 4.97%, or approximately 78,590 individuals. Furthermore, the education level data from the 2023 report of the Central Statistics Agency of Makassar shows that 0.15% of the population is illiterate, with educational distribution indicating that 4.58% of the population has no diploma, 13.09% have completed primary school, 19.85% have completed junior high school, and 62.48% have graduated from senior high school or higher. Education level and poverty can be significant factors influencing the interest in blood donation in Makassar. This is in line with the research by Mussema et al. (2024), which highlighted the role of education in influencing blood donation behavior. Indirectly, an individual's education level is also influenced by their economic status. Research by Maharani et al. (2024) further indicated that poverty impacts access to and the quality of education. Therefore, it can be concluded that there are additional factors influencing the interest in blood donation in the community of Makassar.

To increase the interest in blood donation among the people of Makassar and help meet the blood supply in the city, it is essential to enhance community involvement and awareness. This will support the health system in improving and maintaining a steady blood supply (Saeed et al., 2024). Initiatives must be taken to raise awareness about voluntary blood donation in the community through various strategies and periodic outreach (Mecha & Belay, 2022).

Providing information related to blood donation and the donation process should not only be carried out through traditional methods such as counseling or field visits. It can also involve utilizing various platforms, such as social media, by leveraging available technology. Social media can reach a wide audience, especially the younger generation, and serve as an effective tool to disseminate information, correct misconceptions, and encourage blood donation. This approach, combined with direct engagement and educational efforts, can help foster a more significant and sustained interest in blood donation within the community.

CONCLUSIONS

The community in Makassar has a good interest in blood donation. From this study, it can be concluded that there is no significant relationship between factors such as knowledge, gender, and employment status with the interest in blood donation, while age does affect the interest in blood donation in the city of Makassar. Therefore, it can be concluded that the factors influencing an individual's interest in donating blood are not only limited to knowledge, gender, employment, and age, but also include educational level, attitudes, economic status, and other external factors.

Thus, it is essential to conduct socialization, counseling, or information dissemination through social media by relevant authorities, in collaboration with universities, particularly those specializing in blood bank technology. This approach will help provide a better understanding to the public about blood donation and its health benefits, encouraging more people to participate in blood donation activities.

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