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Students' Awareness Regarding Blood Donation Measures at Menoufia University

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Abstract

Background: blood donation is a vital procedure of worldwide healthcare and a form of therapeutic phlebotomy as a primary medical intervention. So, it requires attention from health care providers to increase awareness regarding it especially among youth**. Aim:** the study aimed to assess students 'awareness regarding blood donation measures at Menoufia University. **Design:** A descriptive research design was used in this study that was conducted in Faculty of Commerce and Faculty of Law. **Subject** A multi-stage random sample of 350 students. **Tools:** 2 tools were used, tool 1: Structural Interviewing Questionnaire including four parts: Part I: Students` demographic characteristics. Part II: Students' blood donation history. Part III: Students' knowledge about blood donation measures. Part IV: Students' reported practices measures. Tool II: University students` blood donation attitude scale. **Results**: 65.7% of students had unsatisfactory level of total knowledge regarding blood donation measures. Also, 57.7% of students had inadequate total reported practices regarding blood donation measures. In addition, 52.0% of the studied students had negative attitude toward blood donation measures. **Conclusion:** less than two thirds of studied students had unsatisfactory level of total knowledge, more than half of them had negative attitude and more than two thirds of them had inadequate reported practices regarding blood donation. In addition, there was highly statistically significant positive correlation between total knowledge, attitude and reported practices of studied students regarding blood donation. **Recommendation:** Implementing health educational programs to improve knowledge, attitude, and safety practices regarding blood donation among university students.

Keywords: *Blood donation, ,Menoufia University ,Students' awareness.*

Introduction

Blood is one of the vital body fluids containing special four components as plasma, white blood cells, red blood cells, and platelets. Blood has many different functions including: transporting oxygen and nutrients to the lungs and tissues, forming blood clots to prevent excess blood loss, carrying cells and antibodies that fight infection, bringing waste products to the kidneys and liver, which filter and clean the blood, regulating body temperature **[Schaller et al., 2021].**

Blood donation is a simple medical procedure that contributes to save lives by a healthy person who voluntarily donates blood that examined. Then, the blood is preserved to be used to treat another person in emergency cases that require blood transfusion or for people who need long-term treatment. Blood donation is important to save lives by transfusing blood to the following cases: people in emergencies, people with severe accidents such as car accidents, burns, and disaster, patients in many medical procedures and surgeries, children with severe anemia often caused by malnutrition, pregnancy complications and oncology patients **[Zhu & Avsievich, 2023].**

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Blood donation has many certain benefits for both of recipient and the donors. For the recipient, it maintains the people`s lives during any critical conation, illness or accident. While for the donors, it ensures free health screening, reduces the risk of heart diseases, gives satisfied inner feeling of saving lives. Also, it decreases blood cells count in the body which motivates the bone marrow to produce new red blood cells to replenish the loss. In addition, it helps the human body to reduce iron on regular basis, which invariably helps to reduce the chances of heart attack to one-third **[Anoop & Abinaya, 2023].**

Blood donation measures can be classified into three phases. The first one is the blood donation preparation phase, in which the blood donor has a brief physical exam to check vital signs and hemoglobin level. The second one is the blood donation phase in which a sterile needle is inserted into the donor`s arm or vein to withdraw the needed blood under aseptic technique. The third phase is the post donation phase in which the donor sits in an observation area to have a rest, eat a light snack and finally able to go home after 15 minutes **[Rizwan, et al., 2022]**

Students` awareness regarding blood donation process is very important because this procedure can be started safely from the age of 17 years. Therefore, it is important to motivate young generation to perform this harmless task through determining their knowledge, attitude and practices towards blood donation. In addition, identifying the potential reasons that restrict them from doing this simple procedure, and the reasons that motivate the donors to donate blood **[Tadesse et al., 2020)].**

Blood donation process is very affected by the students` perception regarding this process. This is due to that the university students have their own skills, thoughts and feeling too able to communicate and share their opinions to the others. So, many scientific literatures and lectures in many university focus on providing them with adequate education and necessary information about donation to increase their awareness about donation positively and motivate them to donate more blood **[Alcaina et al., 2021]**.

Community health nurse (CHN) has a vital role regarding blood donation among university students through the following: nurses are responsible for leading blood donation sessions, monitoring the donor caretakers, plays an important part in the care and selection of donors. In addition, providing clear good communication with those donors to ask any questions, removing any misconception about the blood donation process to ensure no risk can be happened. The role of nurses in blood donation is unique and very important. CHN must also focus on maintaining friendly attitude and a good relationship with the students to motivate the young donors to donate more and more **[Mendes et al., 2022].**

Significance of the study

World Health Organization (WHO) recommends that blood collection for any country should be at least from 1% of the populationto meet the minimum demand and the continuous need for blood. High income countries have nine times higher donation rate compared to low-income countries. Globally, about 118.5 million blood units are collected annually, yet the demand exceeds the existing capacity **[Tucker et al., 2023].**

In Egypt, every year blood banks need approximately three million blood bags. But only about 50 % of this amount is collected. An advocacy campaign should be initiated to spread awareness about the importance of donating blood on a regular basis to fill the gap and save lives **[WHO, 2022].**

University students have lack of knowledge and misconception about blood donation recruitment that lead to limited number of voluntary blood donors. So, a university student should have adequate knowledge with the right attitude and practices related to blood donation as all these impact patient's life in a very critical manner. There is a need to create awareness among general population about blood donation to maintain a regular blood supply **[Zhu & Avsievich, 2023].**

Aim of the study

This study aimed to assess students` awareness regarding blood donation measures at Menoufia University through the following objectives:

1- Assessing students' knowledge regarding blood donation measures.
2- Determining students' attitude toward blood donation measures.
3- Appraising students' reported practices regarding blood donation measures.

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I. Research questions

- What are the students' knowledge regarding blood donation measures?
- What are the students' reported practices regarding blood donation measures?
- What are the students' attitudes toward blood donation measures?
- Is there a relation between demographic characteristics of students and their knowledge, attitude, and reported practices regarding blood donation measures?

II. Subject and Methods

Research design:

A descriptive research design was used in this study.

Setting:

This study was conducted in 2 theoretical Faculties at Menoufia University named Faculty of Commerce and Faculty of Law.

Subject:

Multistage random sample was used to select 350 of the university students by the following stages:

1st stage:

The total number of theoretical faculties in Menoufia University is 4 faculties, the study was conducted in 50% of these theoretical faculties (2 faculties).

2nd stage:

These two faculties were chosen randomly. The investigator wrote the name of the theoretical faculties in a separate papers and put them in bowel to select two faculties. The selected two faculties were faculty of commerce and faculty of law. The number of students in Faculty of Commerce was 2554 and Faculty of Law was 1550.

3rd stage:

A list that contains all academic years in each of the two faculties were done. Then, the academic year that chosen randomly was second years. The students enrolled in second year were chosen randomly from each Faculty after writing a list of all students name of each faculty and select the students systematic randomly by choosing even numbers (2, 4, 6, ...etc).

Sample size:

The sample size was calculated by adjusting the power of the test to 80% and the confidence interval to 95% with margin of error accepted adjusted to 5% using the following equation:

$$n = \frac{4104*(0.5*0.5) = \mathbf{1.026}}{\left[\left[\frac{N \times p(1-p)}{N-1 \times \left(d^2 \div z^2\right)}\right] + p(1-p)\right]} \times 350$$

Where,

N= Total size=4104

Z= Class standard corresponding to confidence level 95% which is (1.96).

d= The error rate is equal to 0.05.

p= Ratio provides a neutral property = 0.50 **[Thompson, 2012].**

n= Sample size=350

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Based on the sample size equation 350 students were participated in the study as the following:

Faculty name	Total number	Sample size
Faculty of Commerce	2554	218
Faculty of Law	1550	132
Total	4104	350

Tools for data collection:

Two tools were used to carry out the current study.

- **1st tool: A structured interviewing questionnaire;** it was developed by the investigator after reviewing the related literature about blood donation. It included four parts:
  - **Part 1: University students` demographic characteristics** as age, faculty name, gender, place of residence, marital status and source of information about the blood donation.
  - **Part 2: University students` blood donation history** as history of donating blood, numbers of blood donation times, place of blood donation, side effects of blood donation and type of blood group.
  - **Part 3: University students` knowledge about blood donation measures** consisted of 2 main parts as university students` knowledge about blood and university students` knowledge about the blood donation

a. University students` knowledge about blood; this subpart consisted of 4 questions such as components of blood, function of blood, types of blood groups, and the universal type of blood groups

b. University students` knowledge about the blood donation; this subpart consisted of 15 questions such as meaning of blood donation, the indication of blood transfusion, necessary investigation before blood donation, benefits of blood donation for the donor....etc.

Scoring system for knowledge items:

The knowledge items included 19 questions, Knowledge questions were scored as the following:

- Complete correct answer = two points.
- Incomplete correct answer = one point.
- Wrong answer/Don`t know= zero.

The total score of knowledge items were as follow:

The total score of knowledge equal 38 points and were calculated for each student by adding the score of all items of the questionnaire.

The total score ranged from 0- 38 points and classified in two categories:

- Satisfactory level if score ≥ 60% (≥ 23 points)
- Unsatisfactory level if score < 60% (< 23 points).

- **Part 4: University students` reported practices regarding blood donation measures:** This part included 3 main parts as measures before blood donation, measures during blood donation and measures after blood donation

1- **Measures before blood donation** included 7 items as: Eating more of iron-rich foods as meat, fruits, and fish, drink plenty of fluids and avoiding eating fatty food...etc.

2- **Measures during blood donation** consisted of 8 items as: Wearing wide-sleeved clothes to be raised above the elbow, maintaining proper position and stability of the limb when the blood is drawn and asking the health care provider about the ability to choose the preferred arm for donation ...etc.

3- **Measures after blood donation** included 7 items as: Drinking a lot of fluids and juices, avoiding hard physical exercise immediately after donation and eating simple carbohydrates to gain energy and restore blood sugar levels ...etc.

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Scoring system for reported practices:

The university students` reported practices included 22 items were scored as the following:

- Done = 1 point.
- Not done = zero.

The total reported practices score was calculated for each student by adding the score of all items of the questionnaire.

The total score ranged from 0-22 points were classified into two categories:

- Adequate practices; if score ≥ 60% (≥ 13 points).
- Inadequate practices; if score from <60% (< 13 points).

❖ **2nd tool: University students` blood donation attitude scale. This scale adapted from Manikandan et al.,(2013) and not modified by the researcher,** It consisted of 16 items such as:

If the student thank the following; blood donation is a good action, blood donation is a charitable and voluntary action, blood donation weaken immunity system, blood donation causing anemia and donating blood is necessary,...etc.

Scoring system for attitude items:

The university students` attitude consisted of 16 items were scored as the following;

- Agree = 2 points.
- Neutral = 1 point.
- Disagree = zero.

The total attitude score was calculated for each student by adding the score of all items of the scale.

The total score ranged from 0-32 points were classified in two categories:

- Positive attitude if score ≥ 60% (≥19 points).
- Negative attitude if score from <60% (<19 points).

Operational item:

The operational item included preparatory phase, testing validity, tools reliability, pilot study and field work.

Preparatory phase:

This phase included reviewing of past, current, national and international related literature and the theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to get a clear picture of the research problem and to develop tools for data collection.

Content validity:

The validity of tools referred to relevance of the measuring tools as to whether the items in the tool appeared to be complete, reasonable, unambiguous and clear. The study tools were tested for validity through the judgments of three experts in Community Health Nursing, Faculty of Nursing to assess the content validity.

Tools reliability:

Reliability of the tools was tested to determine the extent to which the questionnaire items were related to each other. The internal consistency Cronbach's alpha in this study found that the reliability of this questionnaire was 0.86 for knowledge, 0.88 for practices and 0.86 for attitude.

Ethical considerations:

An official permission to conduct the proposed study would be obtained from the Scientific Research Ethics Committee, Faculty of Nursing, Helwan University. Participation in the study is voluntary and subjects would be given

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complete full information about the study and their role before signing the informed consent. The ethical considerations would include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information not be accessed by any other party without taking the permission of the participants. Ethics, values, culture and beliefs would be respected.

Pilot study:

A pilot study was carried out on 10% (35 students) of the sample under study to evaluate the applicability, clarity, efficiency and feasibility of the tools, as well as, to estimate the time allowed to fulfill the developed tools. No modifications were done in the tool. Therefore, those who participated in the pilot study were included in the main study sample.

Fieldwork:

- The study was conducted within the academic year 2023-2024.
- The data collection was done within the given period of three months from beginning of October to the end of December 2023 in Menoufia University using the developed tools.
- Data collection of this study was carried out once permission was granted from Dean of Faculty Helwan University and Menoufia responsible authority of Faculty of Commerce and Faculty of Law to proceed with the study.
- After establishing a trustful relationship, the investigator started data collection by introducing herself to the students in their faculties and explained the aim of the study and its importance.
- The investigator was assured that the information collected would be treated confidentially and was used only for the purpose of the study.
- Informed consent had been obtained from each student prior to data collection after explanation of the aim of the study.
- Data pertinent to the study variable were collected through structured face to face interview and all the tools filled by the investigator through interviewing the students in their faculties, it took about 20-25 minutes to be fully filled.
- Data was collected in the morning from 9:00 am to 1:00 pm, 2 days / week (Sunday and Wednesday).

Administrative item:

After explanation of the study aim and objectives, an official permission was obtained from the Dean of Faculty of Nursing, Helwan University. Then, it directed to Menoufia responsible authority of Faculty of Commerce and Faculty of Law asking for cooperation and permission to conduct the study.

Statistical items:

Up on completion of data collection, data would be computed and analyzed using Statistical Package for the Social Science (SPSS), version 24 for analysis. The P value would be set at 0.05. Descriptive statistical tests as numbers, percentage, mean ± standard deviation (± SD), would be used to describe the results. Appropriate inferential statistics such as "f" or "t" would be used as well.

Significance of the results:

- Highly statistically significant at P-value < 0.001.
- Statistically significant at P-value ≤ 0.05.
- No significant at P-value > 0.05.

Results:

Table (1) reveals that, 42.9% of the studied students were in age group 20-21 years with mean age was 19.53±1.17years. Also, 62.3% of them are from the Faculty of Commerce. As regard to gender and marital status, 66.3% were females and 56.0% of the students reside in rural areas. Also 87.7% of the studied students were female and single respectively. Additionally, 82.3% of the studied students don't attend seminars on the importance of blood donation.

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Table (2) presents that, 31.4% of the studied students had donated blood before, 58.2% of them had donated once. Also, 50.0% studied students had donated via mobile blood donation vehicles and 32.7% of them didn`t had physical fatigue after donating blood. Moreover, 50.6% of them didn`t know their blood group.

Fig. (1) shows that, 65.7% of the studied students had unsatisfactory level of total knowledge about blood donation measures. While, 34.3% of them had satisfactory level of total knowledge.

Fig. (2) reveals that, 57.7% of the studied students had inadequate total reported practices regarding blood donation measures. While, 42.3% of them had adequate total reported practices regarding blood donation measures.

Fig. (3) reveals that, 52.0% of the studied students had negative attitude toward blood donation measures. While, 48.0% of them had positive attitude toward blood donation measures.

Table (3) shows that, there were highly statistically significant relation between total level students' knowledge about blood donation measures and their demographic characteristics as, age, residence, marital status, attendance of seminars on the importance of blood donation and history of blood donation at P-value=<0.001. While, there were no statistically significant relation with their faculty name and gender at P-value = >0.05.

Table (4) displays that, there were highly statistically significant relation between total level of students' reported practices regarding and their demographic characteristics as, age, residence, attendance of seminars on the importance of blood donation and history from blood donation at P-value = <0.001. While, there were no statistically significant relation with their faculty name, gender and marital status at (P- value > 0.05.

Table (5) illustrates that, there were highly statistically significant relation between total level of attitude and their demographic characteristics as, age, gender, marital status, attendance of seminars on the importance of blood donation and history of blood donation at P- value = <0.001. While, there were no statistically significant relation with their faculty name and residence at P- value = >0.05.

Table (6) indicates that, there were highly statistically significant positive correlation between total knowledge, total reported practices and total attitude toward blood donation measures among the studied students at p-value = <0.001.

Table (1): Frequency Distribution of the Studied Students according to their Demographic Characteristics (n=350).

Demographic characteristics	No.	%
Age (year)		
18<19	82	23.4
19<20	118	33.7
20-21	150	**42.9**
Mean ± SD **19.53±1.17**		
Faculty name		
Faculty of Commerce	218	**62.3**
Faculty of Law	132	37.7
Gender		
Male	118	33.7
Female	232	**66.3**
Residence		
Urban	154	44.0
Rural	196	**56.0**
Marital status		
Single	307	**87.7**
Married	43	12.3
Attended seminars on the importance of blood donation		
Yes	62	17.7
No	288	**82.3**

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Table (2): Frequency Distribution of the Studied Students according to their Blood Donation History (n=350).

Blood Donation History	No.	%
History of blood donation		
Yes	110	**31.4**
No	240	68.6
If the answer is yes, number of times of donating blood (n=110).		
Once	64	**58.2**
Twice	19	17.3
Three times	3	2.7
More than three times	24	21.8
The place of donating blood (n=110).		
Hospital	43	39.1
The main center for blood transfusion	12	10.9
Mobile blood donation vehicles	55	**50.0**
Side effects were experienced after donating blood (n=110).		
Vertigo or dizziness	31	28.2
Fainting	31	28.2
Other physical effects	12	10.9
There is no physical fatigue	36	**32.7**
Type of blood group of the student.		
A	68	19.4
AB	35	10.0
O	20	5.7
B	50	14.3
Don't know	177	**50.6**

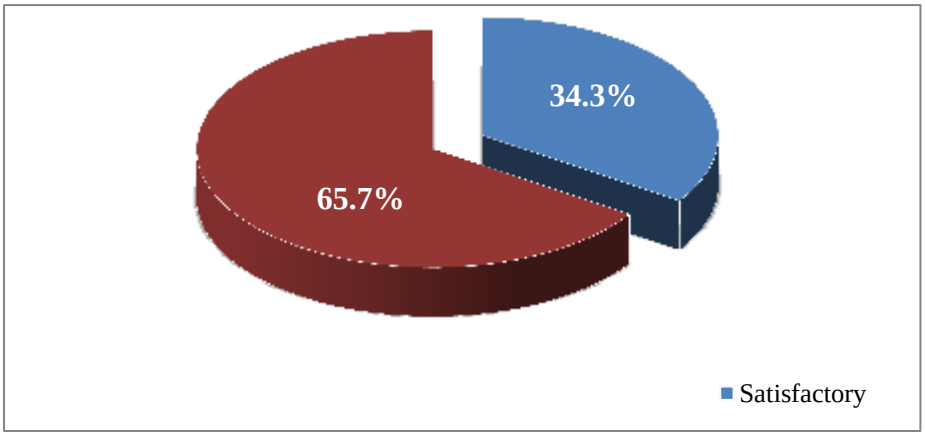

Figure (1): Percentage Distribution of the Studied Students Total Knowledge regarding Blood Donation Measures (n=350).

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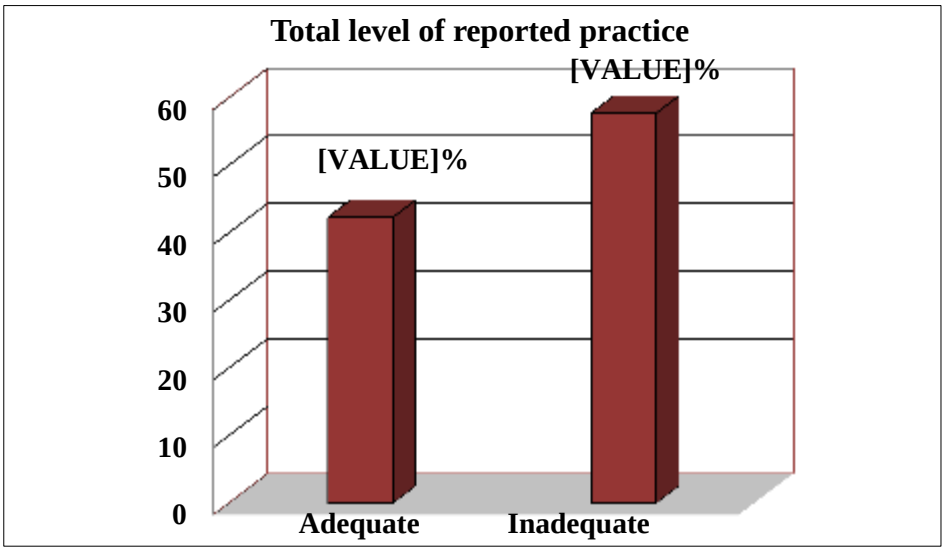

Figure (2): Percentage Distribution of the Studied Students Total Reported Practices regarding Blood Donation Measures (n=350)

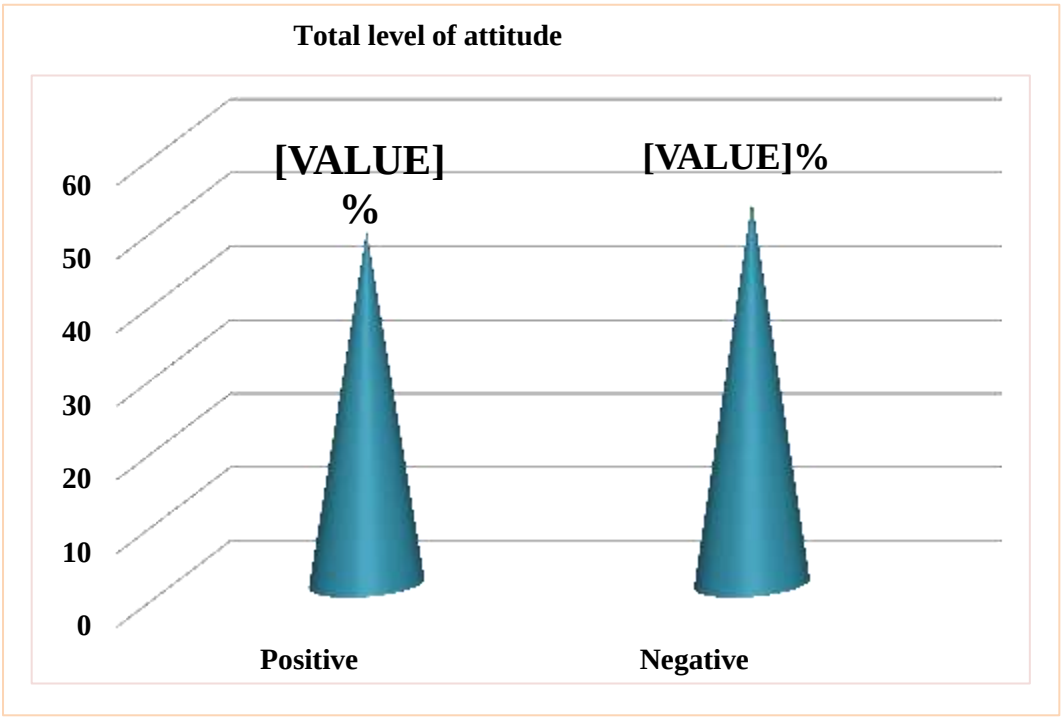

Figure (3): Percentage Distribution of the Studied Students Total Attitude toward Blood Donation Measures (n=350).

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Table (3): Relation between Demographic Characteristics of the Studied Students and their Total Knowledge regarding Blood Donation Measures (n=350).

Demographic characteristics		Total level of knowledge				X^2	P-Value
		Satisfactory (n=120)		Unsatisfactory (n=230)			
		No.	%	No.	%		
Age (year)	18<19	30	25.0	52	22.6	10.540	**0.005****
	19<20	52	43.3	66	28.7		
	20-21	38	31.7	112	48.7		
Faculty name	Faculty of Commerce	51	42.5	167	72.6	2.639	**0.069**
	Faculty of Law	69	57.5	63	27.4		
Gender	Male	39	32.5	79	34.3	0.120	**0.729**
	Female	81	67.5	151	65.7		
Residence	Urban	73	60.8	81	35.2	21.000	**0.000****
	Rural	47	39.2	149	64.8		
Marital status	Single	97	80.8	210	91.3	8.023	**0.005****
	Married	23	19.2	20	8.7		
Attended seminars on the importance of blood donation	Yes	54	45.0	12	5.2	30.56	**0.000****
	No	70	55.0	218	94.8		
History of blood donation	Yes	73	60.8	37	16.1	25.63	**0.001****
	No	47	39.2	193	83.9		

X^2= Chi-square test. No statistically significant at p > 0.05. ** Highly statistically significant at p ‹ 0.001.

Table (4): Relation between Demographic Characteristics of the Studied Students and their Total Reported Practices regarding Blood Donation Measures (n=350).

Demographic characteristics		Total level of reported practices				X^2	P-Value
		Adequate (n=148)		Inadequate (n=202)			
		No.	%	No.	%		
Age (year)	18<19	19	12.8	63	31.2	20.20	**0.000****
	19<20	65	43.9	53	26.2		
	20-21	64	43.3	86	42.6		
Faculty name	Faculty of Commerce	92	62.2	126	62.4	0.002	**0.967**
	Faculty of Law	56	37.8	76	37.6		
Gender	Male	48	32.4	70	34.7	0.189	**0.664**
	Female	100	67.6	132	65.3		
Residence	Urban	88	59.5	66	32.7	24.87	**0.000****
	Rural	60	40.5	136	67.3		
Marital status	Single	131	88.5	176	87.1	0.152	**0.697**
	Married	17	11.5	26	12.9		
Attended seminars on the importance of blood donation	Yes	50	33.8	12	5.9	15.25	**0.000****
	No	98	66.2	190	94.1		
History of blood donation	Yes	100	67.6	10	5.0	26.69	**0.000****
	No	48	3.4	192	95.0		

X^2= Chi-square test. No statistically significant at p > 0.05. ** Highly statistically significant at p ‹ 0.001.

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Table (5): Relation between Demographic Characteristics of the Studied Students and their Total Attitude toward Blood Donation Measures (n=350).

Demographic characteristics		Total level of attitude				X^2	P-Value
		Positive (n=168)		Negative (n=182)			
		No.	%	No.	%		
Age (year)	18<19	27	16.1	55	30.2	15.71	**0.000****
	19<20	72	42.8	46	25.3		
	20-21	69	41.1	81	44.5		
Faculty name	Faculty of Commerce	85	50.6	133	73.1	7.255	**0.065**
	Faculty of Law	83	49.4	49	26.9		
Gender	Male	82	48.8	36	19.8	32.942	**0.000****
	Female	86	51.2	146	80.2		
Residence	Urban	67	39.9	87	47.8	2.225	**0.136**
	Rural	101	60.1	95	52.2		
Marital status	Single	129	76.8	178	97.8	35.80	**0.000****
	Married	39	23.2	4	2.2		
Attended seminars on the importance of blood donation	Yes	60	35.7	2	1.1	71.81	**0.000****
	No	108	64.3	180	98.9		
History from blood donation	Yes	74	44.0	36	19.8	23.87	**0.000****
	No	94	56.0	146	80.2		

X^2= Chi-square test. No statistically significant at p > 0.05. ** Highly statistically significant at p ‹0.001.

Table (6): Correlation between Total Knowledge, Total Reported Practices and Total Attitude toward Blood Donation Measures (n=350).

Items	Total knowledge	Total Attitude
Total knowledge		r = 0.564 P = 0.000**
Total Reported Practices	r = 0.636 P = 0.000**	r = 0.380 P = 0.000**

r= Pearson correlation coefficient test. P= p-value **highly statistically significant at p ‹ 0.001.

Discussion:

Blood is vital fluid that acts as nutrients transport throughout the body to perform its functions. Blood donation occurs when a person has blood drawn and used for transfusions or made into biopharmaceutical medications by a process called fractionation **[Thorpe et al., 2024]**. Increasing demand for blood, maintaining an adequate and safe blood supply continuously is an alarming issue to health planners **[Mishra, 2024]**.

Therefore, understanding the knowledge, attitude, and factors associated with the practice of blood donation is essential. Hence, the aim of this study was to assess students` awareness regarding blood donation measures at Menoufia University.

Part I: Demographic Characteristics of the Studied Students.

Regarding demographic characteristics of the studied students, the results of the present study revealed that less than half of the studied students were in age group20-21 years with mean age was 19.53±1.17 years, nearly two third of them were female, and the majority of them were single. Also, the finding indicated that

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more than half of the studied students were from the faculty of commerce, reside in rural areas and the majority of them didn`t attend seminars on the importance of blood donation **(Table 1).**

These findings were consistent with **Khadilkar et al., [2022]** who conducted their study in North India, New Delhi about "knowledge, attitudes and practices among medical students on blood donation" **(n=350)**. They found that 54.5% of the studied students aged between 20- 21 years, 74.2% of them were females, 27.5% of them was in 3rd academic year and 68.7% of them comes from rural area.

In this concern, these findings were agreed with **Chaturvedi et al., [2021]** who conducted their study in south India, New Delhi about " The barriers and facilitators of blood donation among university students" (n=318). They showed that 43.4% were male and 56.5% female. The age range was 17–25 years, the mean age being 20.42 ± 1.38 years and 72.0% of them were from rural area.

From the investigator point of view, this could be due to similarities in sample characteristics and similarities in population characteristics of other community.

Part II: Blood Donation History of the Studied Students.

Regarding blood donation history of the studied students, the findings of the current study revealed that nearly one third of the studied students had donated blood before, more than half of them had donated once. Also, the findings indicated that one half of studied students had donated via mobile blood donation vehicles, and one third of them didn't had physical fatigue after donating blood. Moreover, one half of them didn't know their blood group **(table 3)**. These findings were in agreement with **Kanani et al., (2018)** who conducted their study in Jamnagar, Gujarat about "Knowledge and awareness about blood donation amongst government medical, para-medical and nursing undergraduate students" (n=500). They showed that 75.0% of the studied students didn't donate blood previously, 25% of them denoted previously, about 74% of nursing students donated onetime only and didn't report a fatigue.

Also, these results were in similarities with **Sreeranga et al., (2021)** who carried out their study in a teaching hospital, Hassan, Karnataka in India about " Assessment of knowledge, attitude and practice regarding blood donation among paramedical personnel" (n=285). They mentioned that 47.7% of them only had donated blood in their lifetime.

From the investigator point of view, these results might be due to inadequate awareness and teaching to the students about the importance of blood donation to themselves and the others.

Part (III): Students' knowledge regarding blood donation measures.

According to research Q1: what are the students' knowledge regarding blood donation measures?

Regarding total level of students, knowledge regarding blood donation measures, the current study results illustrated that more than half of the studied students had unsatisfactory level of total knowledge about blood donation measures. While, one third of them had satisfactory level of total knowledge **(Figure 1).**

This result was in the same context with the results of study performed by **Rizwan et al., [2022]** who conducted their study in Taif University of Saudi Arabia, Riyadh about "knowledge, attitude, and blood donation practices among medical students" (n=318). They stated that the 36.5% had poor knowledge related to blood donation. As well as, **Shama et al., [2022]** who conducted their study in Wollega Universityof Ethiopia, Addis Ababa about "assessment of blood donation practice and its associated factors among undergraduate students" (n=387). They revealed that 71.0% of the studied students had lack and unsatisfactory level of total knowledge about blood donation measures.

From the investigator point of view, this finding might be due to that all governmental institutions including the universities didn`t interest in blood donation knowledge especially among voluntary blood donors.

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Part (IV): Students' reported practices regarding blood donation measures.

According to research Q2: What are the students' reported practices regarding blood donation measures?

Concerning total reported practices regarding blood donation measures among the studied students, the present study revealed that more than one half of the studied students had inadequate reported practices regarding blood donation measures. While, less than one half of them had adequate reported practices **(Figure 2)**.

This result was congruent with the study conducted by **Salem et al., [2024]** who conducted their study in Syria, Damascus about "knowledge, attitude, and practice of blood donation among undergraduate medical students" (n=673). They mentioned that88.0% of the studied sample had inadequate level of practice regarding blood donation. On the contrast, this result was incongruent with the study conducted by **Javaeed et al., [2020]** conducted their study in Azad Kashmir, Gamo about "knowledge, attitude, and practice of blood donation among undergraduate medical students" (n=318). They revealed that 68.5% of the respondents had good level of practice related to blood donation.

From the investigator point of view, there is gap at level of practice of the studied students from one area to another area due to lack of awareness regarding importance of blood donation measures among the studied samples.

Part (V): Students' attitude towards blood donation measures

According to research Q3: What are the students' attitude toward blood donation measures?

Regarding total attitude toward blood donation measures among the studied students, the present study clarified that more than one-half of the studied students had negative attitude regarding blood donation measures. While, less than one half of them had positive attitude **(Figure 3).** This result was in the same line with **Majdabadi et al., [2020]** who conducted a study in Semnan University of Medical Sciences, Iran about "awareness of and attitude towards blood donation in students " (n=749). They found that 33.59% had negative attitude, 48.71% of participants had moderate attitude, and only 17.69% had good attitude towards blood donation. While, this result was inconsistent with **Alsarafand et al., [2023**] who conducted their study in gaza strip, Palestine about "knowledge, attitude, and practice among medical students towards voluntary blood donation: a cross-sectional study"(n=329). They stated that 81.0% of the studied subjects had positive attitude toward blood donation.

Also, this result was in contrast with a study done by **Alsalmi et al., [2019]** who conducted their study in Saudi Arabia reported that 83% of the health professions students delivered a positive attitude regarding blood donation and **Melku et al., [2018]** mentioned that 79.2% of undergraduate health science students had positive attitude regarding blood donation.

From the investigator point of view, this finding might be due to the fact that the studied students had low level of knowledge about the importance of blood donation.

Part (VI): Relation and correlation between studied variables.

According to research Q4: Is there relation between demographic characteristics of students and their knowledge, attitude, and reported practices regarding blood donation measures?

Regarding relation between demographic characteristics of the studied students and their total knowledge regarding blood donation measures, the present study revealed that there were highly statistically significant relation between total level students' knowledge about blood donation measures and their demographic characteristics as, age, residence, marital status, attendance of seminars on the importance of

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blood donation and history of blood donation. While, there were no statistically significant relation with their faculty name and gender status at (P- value > 0.05) **(Table 3).**

This findings were supported with a study performed in Pakistan by **Qayyum et al., (2023) who** conducted their study in Gujarat city**,** India about "knowledge, attitude and practices regarding blood donation among young people "(n=329). They stated that significant connection between total level participants' knowledge about blood donation measures and their personal characteristics as, age, marital status, place of residence, history of attending educational programs and history of blood donation. On the contrast, with **Idris et al., [2024]** who illustrated that there was no statistically significant connection between the research sample's demographic characteristics such as age, height, nationality, sex, and social class, attending training courses and the participants' knowledge of blood donation.

From the investigator point of view, this result might be due to the difference of culture and demographic characteristics which can play an important role in determining the ability to have enough information about blood donation.

According to demographic characteristics of the studied students and their total reported practices regarding blood donation measures, the present study clarified that there was highly statistically significant relation between total level of students' reported practices regarding blood donation measures and their demographic characteristics as, age, residence, attendance of seminars on the importance of blood donation and history from blood donation at P-value <0.01. While, there was no statistically significant relation with their faculty name, gender and marital status at (P- value >0.05 **(Table 4).**

These findings were similar with **Enawgaw et al., [2019]** who conducted their study in North Gondar district blood bank, Northwest Ethiopia about "blood donors' knowledge, practice and attitude towards blood donation: a cross-sectional study" (n=401). They revealed a statistical relationship between most items of the demographic characteristics of the research sample and the practice level toward blood donation. While, these results were consistent with **Gill et al., [2021]** who conducted their study in Jamshoro, Sindh about "the statistical analysis of factors explaining the intention of public for blood donation"(n=400). They found a statistical relationship between age, sex, residence and practice toward blood donation.

From the investigator point of view, this finding might be due to the level of knowledge, attendance of seminars have strong impact on the student`s practice regarding blood donation.

Concerning relation between demographic characteristics of the studied students and their total attitude toward blood donation measures, the present study revealed that there were highly statistically significant relation between total level of attitude and their demographic characteristics as, age, gender, marital status, attendance of seminars on the importance of blood donation and history of blood donation at P- value = <0.01. While, there were no statistically significant relation with their faculty name and residence at P- value= > 0.05 **(Table 5).**

This result was congruent with the study conducted by **Zucoloto et al., [2020]** who conducted their study in Brazil about "knowledge, attitude and practice of blood donation and the role of religious beliefs among health sciences undergraduate students" (n=550). They showed that there were statistically significant association between demographic characteristics of the studied students and their attitude level. One the other hand, this result is in difference with **Ezeldain et al., [2020]** who illustrated that there was no statistically significant difference between the studied nursing students' attitude and their demographic data.

From the investigator point of view, this finding might be attributed to that demographic data of students as place of residence provide them with religious issues towards blood donation. Additionally, attendance of educational seminars help to improve their awareness about importance of blood donation at all aspects.

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Concerning correlation between total knowledge, total reported practices and total attitude toward blood donation measures, the present study revealed that there was highly statistically significant positive correlation between total reported practices and total attitude toward blood donation measures among the studied students at p-value = < 0.01 **(Table 6).** These findings in the same line with **Khan et al., [2024]** who conducted their study in Khulna city, Bangladesh about "knowledge, attitude, and practice of blood donation: A cross-sectional survey " (n=720). They showed that there was positive correlation between knowledge, practice and total attitude of the studied subjects toward blood donation. This result is in harmony with **Salem et al., [2024]** who illustrated that there was a statistically significant correlation between knowledge, practice and attitude.

From the investigator point of view, this finding might be due to level of knowledge has a strong impact on improving of level of practice, and enhancing beliefs and attitude.

Conclusion:

On the light of results of the current study and answered of research questions, it concluded that, less than two thirds of studied students had unsatisfactory level of total knowledge, more than half of them had negative attitude and more than two thirds of them had inadequate reported practices regarding blood donation. Also there was a highly statistically significant relation between students` knowledge, attitude and their demographic characteristics. As well, there was a highly statistically significant relation between students` total reported practices regarding blood donation and their demographic characteristics. In addition, there was highly statistically significant positive correlation between total knowledge, attitude and reported practices of studied students regarding blood donation.

Recommendations:

On the light of finding of the current study, the following recommendations are suggested:

- Dissemination of colored booklets, posters, brochures and pamphlets to increase student`s awareness regarding blood donation measures at Menoufia University.
- Periodic educational campaigns, seminars or workshops should be regularly organized to university students regarding blood and blood donation.
- Implementing health educational programs to improve knowledge, attitude, and safety practices regarding blood donation among university students.
- Further researches are needed to study factors and barriers that affect spread of blood donation on a large sample size and other settings.

References

1. Alcaina, P. (2021). Platelet transfusion: and update on challenges and outcomes. Journal of blood medicine, 19-26
2. Alsalmi, M. A., Almalki, H. M., Alghamdi, A. A., &Aljasir, B. A. (2019). Knowledge, attitude and practice of blood donation among health professions students in Saudi Arabia; A cross-sectional study. Journal of family medicine and primary care, 8(7), 2322-2327.
3. Alsarafandi, M., Al-Karim Sammour, A., Elijla, Y., Aldabbour, B., Muhaisen, D., Shiha, H. A.,...&Abuhaiba, A. (2023). Knowledge, attitude, and practice among medical students in gaza strip towards voluntary blood donation: a cross-sectional study. BMC Health Services Research, 23(1), 1333.
4. Anoop, M. A., &Abinaya, M. V. (2023). Android App for Blood Donation. EPRA International Journal of Research and Development (IJRD), 8(5), 35-39.
5. Chaturvedi, A., Kumar, A., Tiwary, B., Roy, P., Khullar, L., Guru, A., &Majumdar, P. (2021). A study to assess the barriers and facilitators of blood donation among university students of south India. Asia Pacific Journal of Health Management, 16(3), 202-210.

ISSN 2786-0183
Helwan International Journal for Nursing Research and Pratctice
Vol. 3, Issue 7, Month: September 2024, Available at: https://hijnrp.journals.ekb.eg/

6. Ezeldain, A. Y., Hossein, Y. E. S., Mohammed, E. S., &Amein, N. M. (2020). Assessment of Knowledge and Attitude among Faculty of Nursing Students Regarding Blood Donation. Minia Scientific Nursing Journal, 8(1), 39-47.
7. Gill, N. P., Panhwar, F. P., Cheema, S. N., &Ilyas, R. M. (2021). The Statistical Analysis of Factors Explaining the Intention of Public for Blood Donation in Jamshoro, Sindh. Journal of Business and Social Review in Emerging Economies, 7(2), 231-238.
8. Idris, A., & Omer, Z. (2024). Knowledge, Attitude, and Practice of Blood Donation among Najran population Kingdom of Saudi Arabia. Egyptian Journal of Health Care, 15(1), 180-190.
9. Javaeed, A., Kousar, R., Farooq, A., Hina, S., Ghauri, S. K., &Tabbasum, T. (2020). Knowledge, attitude, and practice of blood donation among undergraduate medical students in Azad Kashmir. Cureus, 12(4).
10. Khadilkar, N. P., Mamatha, B. V., Bhat, B. M., &Crasta, P. S. (2022). Knowledge, attitudes and practices among medical students on blood donation. Biomedicine, 42(6), 1228-1232.
11. Khan, M. S., Islam, K. N., Rana, S., & Sarkar, N. K. (2024). Knowledge, attitude, and practice of blood donation: A cross-sectional survey in Khulna city, Bangladesh. Public Health in Practice, 100488.
12. Majdabadi, H. A., Kahouei, M., Taslimi, S., &Langari, M. (2018). Awareness of and attitude towards blood donation in students at the Semnan University of Medical Sciences. Electronic physician, 10(5), 6821.
13. Melku, M., Asrie, F., Shiferaw, E., Woldu, B., Yihunew, Y., Asmelash, D., &Enawgaw, B. (2018). Knowledge, attitude and practice regarding blood donation among graduating undergraduate health science students at the University of Gondar, Northwest Ethiopia. Ethiopian journal of health sciences, 28(5).
14. mEnawgaw, B., Yalew, A., &Shiferaw, E. (2019). Blood donors' knowledge, practice and attitude towards blood donation at North Gondar district blood bank, Northwest Ethiopia: a cross-sectional study. BMC research notes, 12, 1-6.
15. Mendes, P. A. T., Matias, D. D. O., Berlitz, M. M., &Aguiar, B. G. C. (2022). Nursing in hemotherapy services: considerations on public policies associated with blood and blood components. RevistaBrasileira de Enfermagem, 75.
16. Mishra, S. K. (2024). Assessment of Beliefs, Behaviors and Attitude about voluntary, non-remunerated blood donation among College going students: A prospective study in a tertiary care medical college from North India. Journal of Health Promotion and Behavior, 9(1), 86-92.
17. Qayyum, A., Azmat, M. A., Khan, R. M. A. A., Sattar, R., Ahmad, S., Akram, M., ...& Ahmed, M. (2023).Knowledge, attitude and practices regarding blood donation among young people of gujratcity.Sial Journal of Medical Sciences, 2(6), 26-30.
18. Rizwan, F., Al-Amri, R., Al-Harthi, A., Al-Otaibi, N., & Al-Otaibi, R. (2022).Knowledge, attitude, and blood donation practices among medical students of Taif University, Saudi Arabia. Saudi Journal for Health Sciences, 11(1).
19. Salem, M., Kahwaji, A., Owais, T. A., Attia, M., Abdulhadi, A., Tassabehji, O., ...&Alsuliman, T. (2024). Knowledge, attitude, and practice of blood donation among undergraduate medical students in Syria. Medicine, 103(8), e37086.
20. Schaller, J., Gerber, S., Kaempfer, U., Lejon, S., &Trachsel, C. (2021). Human blood plasma proteins: structure and function. John Wiley & Sons.
21. Shama, A. T., Teka, G., YohannesLemu, S., Tesfaye, B., Ebisa, H., Gebre, D. S., &Terefa, D. R. (2022). Assessment of blood donation practice and its associated factors among Wollega University undergraduate students, Ethiopia. Journal of Blood Medicine, 711-724.
22. Tadesse, W., Ayalew, Y., Yisma, E., Liben, M. L., &Wudu, M. (2020). Knowledge, Attitude, Practice and Associated Factors towards Voluntary Blood Donation among Regular Health Science Students of Samara University, Ethiopia. Health Science Journal, 12(1).
23. Thorpe, R., Masser, B., Coundouris, S. P., Hyde, M. K., Kruse, S. P., & Davison, T. E. (2024). The health impacts of blood donation: a systematic review of donor and non-donor perceptions. Blood Transfusion, 22(1), 7.
24. Tucker WD, Arora Y, Mahajan K. Anatomy, Blood Vessels. In: StatPearls. StatPearls Publishing, Treasure Island (FL); 2023. PMID: 29262226.
25. World health organization (2022). Blood safety and availability. Available from: https://www.who.int/news-room/fact-sheets/detail/ blood-safety-and-availability. Accessed July 26, 2022.
26. Zhu, R., Avsievich, T., Popov, A., &Meglinski, I. (2023).Optical tweezers in studies of red blood cells.Cells, 9(3), 545.
27. Zucoloto, M. L., Bueno-Silva, C. C., Ribeiro-Pizzo, L. B., & Martinez, E. Z. (2020). Knowledge, attitude and practice of blood donation and the role of religious beliefs among health sciences undergraduate students. Transfusion and Apheresis Science, 59(5), 102822.