

KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING BLOOD DONATION AMONG COLLEGE STUDENTS

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ABSTRACT

Blood donation is the process of collecting, testing, preparing and storing blood and their components. Blood helps to carry oxygen from the lungs to the rest of the body. Blood donation is a remarkably safe medical procedure. Blood can save millions of lives and young people are the hope and future of a safe blood supply in the world. The collection of blood donors is an important measure for ensuring the availability and safety of blood transfusion. Blood transfusion is one of the most important essential needs to manage patients suffering from various medical conditions. Nowadays, voluntary blood donors are the only source of blood in the blood banks. A descriptive cross sectional study was conducted among undergraduate dental college students aged 18-25 years to assess their knowledge, attitude and practice regarding blood donation. A total of 200 participants were involved in the study. Self administered questionnaire of close ended questions was prepared and it was distributed among undergraduate dental college students through online survey forms "GOOGLE FORMS". SPSS software was used to analyse the results. Chi square test was used as inferential statistics. In the present study, the majority of the study participants 87% agreed that blood donation is important. About 85.5% of the participants have positive feelings about blood donation and only 14.5% have negative feelings about blood donation. Interestingly, about 71.5% have donated blood voluntarily. About 82.5% were aware of the minimum weight required for donating blood and 17.5% were not aware of the minimum weight required for donating blood. 66% of the participants responded correctly to June 14th as World Blood Donor's Day. Only 22.5% responded to O negative group as universal blood donor group. In the present study, Knowledge, attitude, practice regarding blood donation is moderate among the dental undergraduate. For further augmentation, awareness should be created through various programs and published to the public.

KEYWORDS: Blood donation; blood banks; safe; transfusion

INTRODUCTION

Blood donation is the process of collecting, testing, preparing and storing blood and their components. Blood carries oxygen from the lungs to the other parts of the body. Blood donation is a remarkably safe medical procedure (Alfouzan, 2014). Blood can save millions of lives. In India, 50% to 60% of the

population falls between 18 and 65 years of age, still we have a blood crisis because day to day the number of patients increases more than blood donors (Kanani *et al.*, 2018). Blood donation is a major concern to the society as donated blood is lifesaving for individuals who need it (Ahmed, 2014). The collection of blood donors is an important measure for ensuring the availability and safety of blood transfusion (S, Verma and Sharma, 2016). Blood transfusion is one of the most essential needs to manage patients suffering from various medical conditions. Nowadays, voluntary blood donors are the only source of blood in the blood banks (Melku *et al.*, 2016). Blood donors were classified into 3 types. They are Voluntary, Replacement and Paid donors. Voluntary blood donor is a person who gives blood and receives no payment for it (AlBalawi, 2015). The lack of knowledge, fear, facilities, convenience and the quality of service are common factors in people's decisions on whether to donate blood repeatedly on a voluntary basis (Dubey, Sonker and Chaudhary, 2014). Developing countries including India are struggling to meet the growing demands of safe blood every year (Dohare *et al.*, 2018). The healthy, active and receptive huge student population can be potential blood donors to meet safe blood requirements (K *et al.*, 2018). According to WHO, 38% of reported voluntary blood donation are under the age of 25 years and WHO insist the countries to focus on young people to achieve 100% non-remunerated voluntary blood donation (Batiha and AlBashtawy, 2013). Hence the aim of the present study is to assess the knowledge, attitude and practice regarding blood donation among college students.

MATERIALS AND METHODS

A descriptive cross sectional study was conducted among undergraduate dental college students of age 18-25 years to assess their knowledge, attitude and practice regarding blood donation. Approval was obtained from the institutional review board prior to the start of the study. Simple convenient random sampling was done. A total of 200 participants were involved in the study. Self administered questionnaire of close ended questions was prepared related to knowledge, attitude and practice regarding blood donation and it was distributed among undergraduate dental college students through online survey forms "GOOGLE FORMS". Demographic details were also included in the questionnaire. The responses were collected, tabulated in excel sheet and analysed. Statistical analysis was done in SPSS software version 22. (Duraisamy *et al.*, 2019); (Ashok and Suvitha, 2016; Ganapathy, 2016; Ajay *et al.*, 2017; Jain, Ranganathan and Ganapathy, 2017). Descriptive statistics as percent were calculated to summarise qualitative data. Chi square test was used as inferential statistics. The confidence level was 95% and of statistical significance $P < 0.05$. The method of representation of data used in this study was bar charts.

RESULTS AND DISCUSSION

In the present study, the majority of the study participants 87% agreed that blood donation is important [FIGURE 1]. About 85.5% of the participants have positive feelings about blood donation and only 14.5% have negative feelings about blood donation [FIGURE 2]. Interestingly, about 71.5% have donated blood voluntarily [FIGURE 3]. About 82.5% were aware of the minimum weight required for donating blood and 17.5% were not aware of the minimum weight required for donating blood [FIGURE 4]. 66% of the participants responded correctly to June 14th as World Blood Donor's Day [FIGURE 5]. Only 22.5% responded to O negative group as universal blood donor group [FIGURE 6]. About 73% responded to AB positive groups as universal acceptors [FIGURE 7]. About 81% were aware of the test performed on donated blood [FIGURE 8]. About 39.5% agree that money should be paid to donors [FIGURE 9] and 63.5% agree that a token gift should be given to donors [FIGURE 10]. About 33.5% have donated blood because of organisation activity and 25% of the participants donated blood because of their free willingness [FIGURE 11]. Majority of the participants (43%) think that they don't have an opportunity to donate blood and regarding the reason for non donation 18.5% of the participants because of fear they do not donate blood [FIGURE 12]. 42 participants of the first year, 48 participants of the second year, 45

participants of the third year and 36 participants of the fourth year had positive feelings about blood donation. Among all the years, the majority of the second and third year college students had positive feelings about blood donation. There was a significant difference between the year of study and participants feeling about blood donation . Pearson chi square test- 14.412 , P value = 0.002 (<0.05) - statistically significant [FIGURE 13]. 27 participants of the first year, 39 participants of the second year , 46 participants of the third year and 20 participants of the fourth years responded June 14th as blood donor's day.Among all the years, second and third year college students had good knowledge on world blood donors day and responded to the correct answer accurately.There was a significant difference between the year of study and knowledge on world blood donor's day. Pearson chi square test- 40.753 , P value = 0.000 (<0.05) - statistically significant [FIGURE 14]. 17 participants of the first year, 5 participants of the second year , 4 participants of the third year and 19 participants of the fourth year responded to O negative blood group as universal donor. Among all the years, only fourth year college students responded to the correct answer more accurately. There was a significant difference between the year of study and knowledge on universal blood donor groups . Pearson chi square test- 41.124 , P value = 0.000 (<0.05) - statistically significant [FIGURE 15]. 31 participants of the first year, 41 participants of the second year , 44 participants of the third year and 30 participants of the fourth year responded to AB positive blood group as universal acceptor . Among all the years, the majority of the third year college students had good knowledge on universal acceptor blood groups and responded to the correct answer accurately. There was a significant difference between the year of study and knowledge on universal blood acceptor groups . Pearson chi square test- 27.918, P value = 0.001(<0.05) - statistically significant [FIGURE 16]. 37 participants of the first year, 45 participants of the second year , 48 participants of the third year and 32 participants of the fourth year were aware of the test performed on donated blood . Among all the years, the majority of the third year college students were well aware of the test performed on donated blood. There was a significant difference between the year of study and awareness on the test performed on donated blood. Pearson chi square test- 21.944 , P value = 0.000(<0.05) - statistically significant [FIGURE 17]. 17 participants of the first year, 15 participants of the second year , 20 participants of the third year and 15 participants of the fourth year have donated blood because of their free willingness . Among all the years, the majority of the second year college students donated blood because of their free willingness . There was a significant difference between the year of study and reason for last blood donation. Pearson chi square test- 48.502 , P value = 0.000(<0.05) - statistically significant [FIGURE 18].

In the study conducted by Mohammed A et al, 88.2% agreed that blood donation is important and in the study conducted by Keadnew Mulatu et al, 95% agreed that blood donation is important and in the present study 87% agreed that blood donation is important (Mulatu *et al.*, 2017). which is similar to our present study . In the present study 39.5% agreed that money should be paid to donors and 63.5% agree that a token gift should be given to donors which is similar to the study conducted by Sri Kumar et al 65% agreed that money or gifts should be given to the donors (Srikumar *et al.*, 2013) .Regarding the feeling about blood donation, By Mulugeta et al, 79.2% have positive feeling (Melku *et al.*, 2018) and by Keadnew Mulatu 93.8% have positive feeling (Mulatu *et al.*, 2017) and in the present study majority of the participants (87%) have positive feelings which are similar to the previous studies. In the study conducted by Habtom Woldeal et al, majority of the participants 70.5% have not donated blood and majority of the participants 70.5% have not donated blood (Gebresilase, Fite and Abeya, 2017) . In the study conducted by Urgesa et al, 22.6% donated blood(Urgesa, Hassen and Seyoum, 2017) , In the present study 71.5% have donated blood voluntarily which contrasts to previous study findings. In the present study 82.5% were aware of the minimum weight required for donating blood whereas in the study conducted Woldemichael et al, 55.8% were aware of the minimum weight required for blood

donation(Tadesse *et al.*, 2018) which is contrast to our present study.Regarding the reasons for non donation, in the study conducted by Shailesh et al., 24.4% think that they are unfit to donate blood, 52% because of pain, 59% of participants have no knowledge regarding blood donation(Sachdev *et al.*, 2016) whereas in the present study majority of the participants(41.9%) think that they don't have an opportunity to donate blood and regarding the reason for non donation 23.1% of the participants because of fear they do not donate blood which is similar to our present study. In the study conducted by Mousavi F 26% were donors, of whom 55% had donated blood more than once(Mousavi *et al.*, 2011). In the study conducted by Uma S et al 47.2% donors mentioned that the reason for their first time donation was that they had done it for their friends/relatives and in the present study , the reason for last donation is 33.5% have donated blood because of organisation activity and 25% donated blood because of their free willingness which contrasts with our present study (S, R and P, 2013).

In the study conducted by chaitanya Majority of the respondents (89.8%) were willing to donate blood in the future. Very few respondents (13.9%) had ever donated blood out of which 64.8% had donated within the last one year which is similar to finding.Main reason for not donating blood was that they claimed to not have ever had a chance to donate blood(K *et al.*, 2018) which correlates with our present study. The present research has origins from previous studies, where the investigators involved in studies which were based on clinical reports, interventional studies (Ashok *et al.*, 2014; Venugopalan *et al.*, 2014; Jyothi *et al.*, 2017; Ariga *et al.*, 2018), in vitro studies(Ganapathy, 2016; Ajay *et al.*, 2017; Jain, Ranganathan and Ganapathy, 2017; Duraisamy *et al.*, 2019) and systematic reviews (Selvan and Ganapathy, 2016; Subasree, Murthykumar and Dhanraj, 2016; Vijayalakshmi and Ganapathy, 2016; Ganapathy, Kannan and Venugopalan, 2017; Ariga *et al.*, 2018; Basha, Ganapathy and Venugopalan, 2018; Kannan and Venugopalan, 2018)

BAR GRAPH:

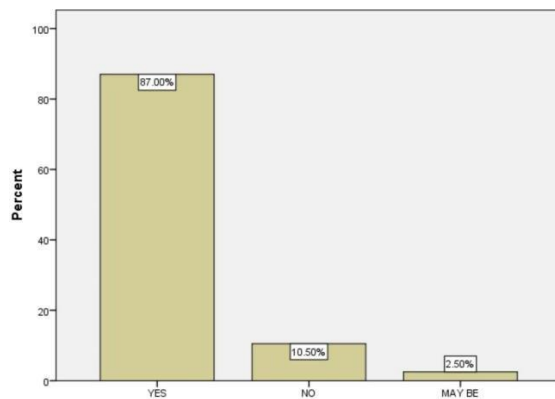


FIGURE 1: Bar graph representing percentage distribution of knowledge on blood donation is important. X axis represents the responses of participants and Y axis represents the percentage of responses. 87% agreed that blood donation is important.

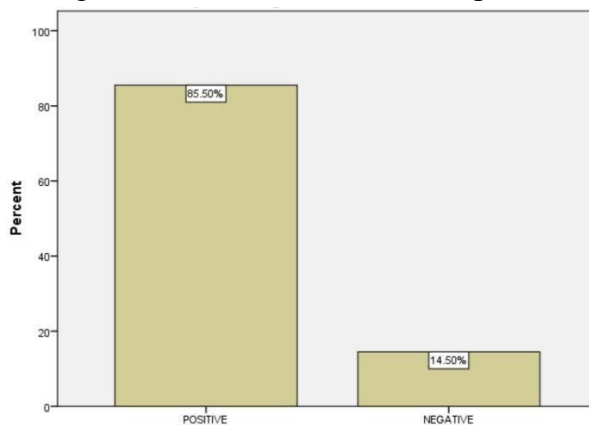


FIGURE 2: Bar graph representing percentage distribution on participants feelings about blood donation. X axis represents the responses of participants and Y axis represents the percentage of responses.85.5% of the participants have positive feelings about blood donation and 14.5% of the participants have negative feelings about blood donation.

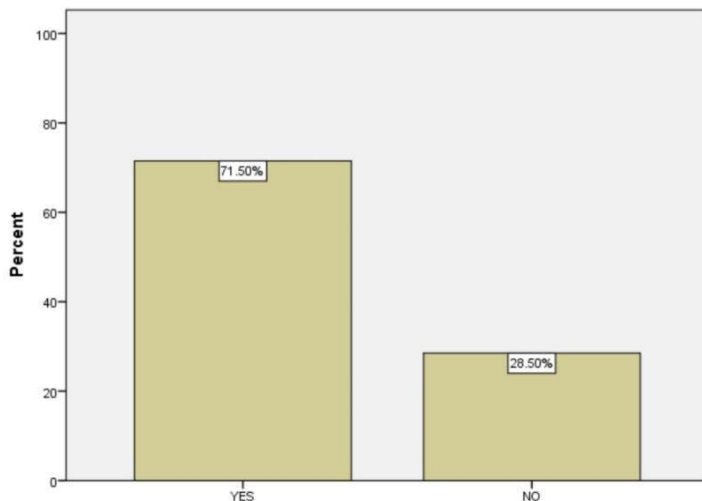


FIGURE 3: Bar graph representing percentage distribution on practice of blood donation. X axis represents the responses of participants and Y axis represents the percentage of responses. 71.5% have donated blood voluntarily.

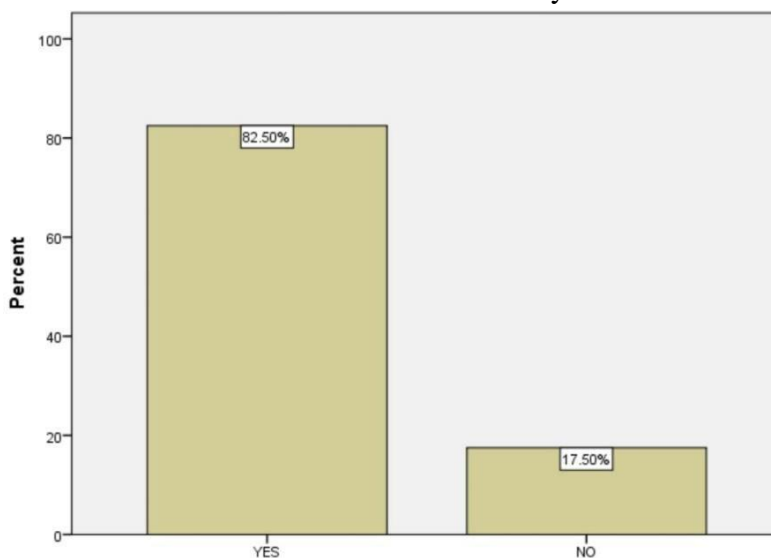


FIGURE 4: Bar graph representing percentage distribution of knowledge on minimum weight required for donating blood. X axis represents the responses of participants and Y axis represents the percentage of responses. 82.5% were aware of the minimum weight required for donating blood.

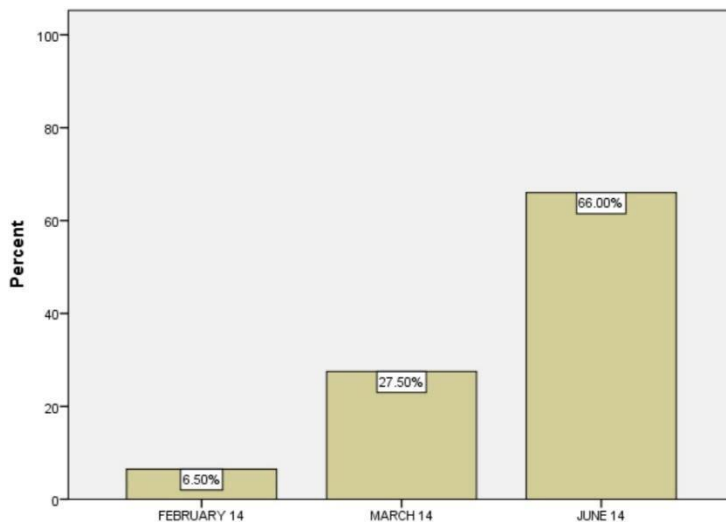


FIGURE 5: Bar graph representing percentage distribution of knowledge on world blood donors day. X axis represents the responses of participants and Y axis represents the percentage of responses. 66% responded correctly to June 14th as World Blood Donor's Day.

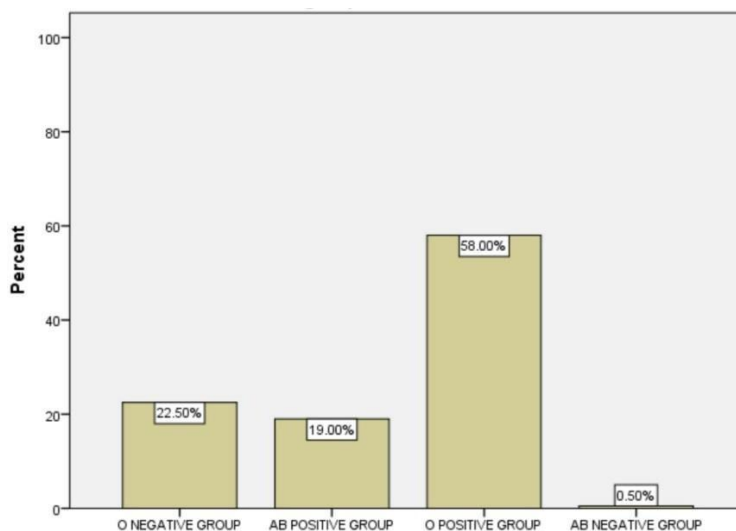


FIGURE 6: Bar graph representing percentage distribution of knowledge on universal blood donor groups. X axis represents the responses of participants and Y axis represents the percentage of responses. 58% of the participants responded to O positive group as universal donor

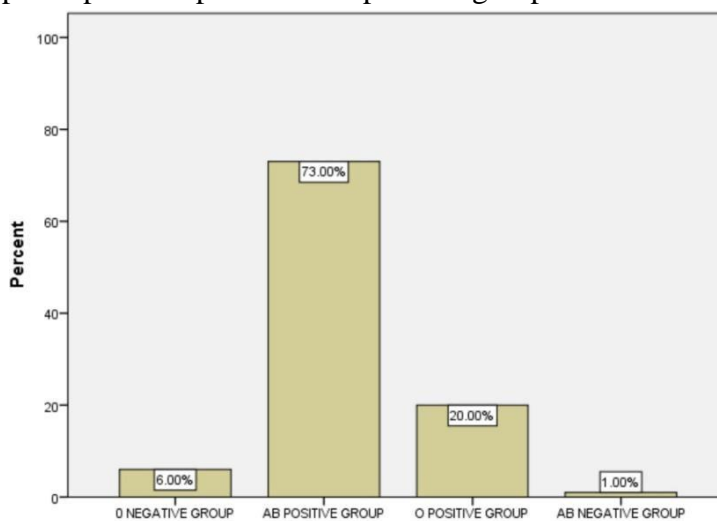


FIGURE 7: Bar graph representing percentage distribution of knowledge on universal acceptor blood groups. X axis represents the responses of participants and Y axis represents the percentage of responses. 73% of the participants responded to AB positive group as universal acceptor

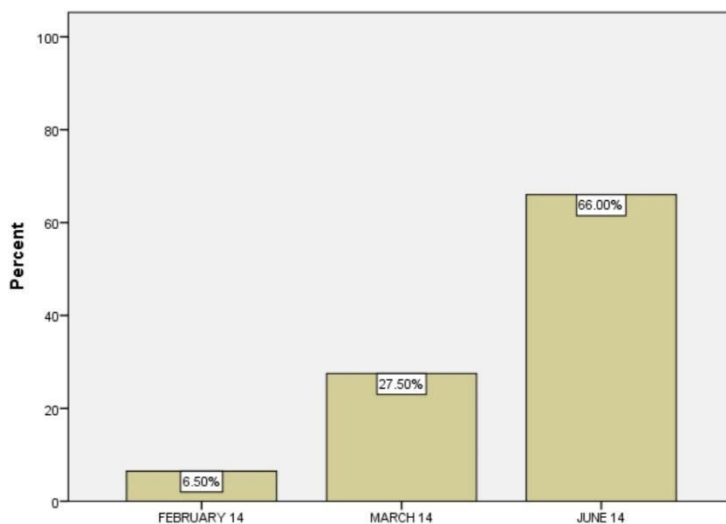


FIGURE 8: Bar graph representing percentage distribution of awareness on the test performed on the donated blood . X axis represents the responses of participants and Y axis represents the percentage of responses. 81% of the participants were aware of the test performed on donated blood

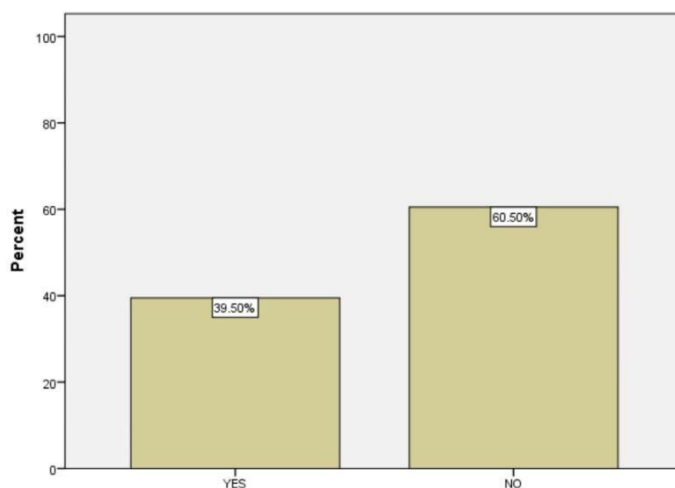


FIGURE 9: Bar graph representing percentage distribution on attitude of the participants regarding whether money should be paid to the donors.X axis represents the responses of participants and Y axis represents the percentage of responses. 39.5% of the participants agreed that money should be paid to donors

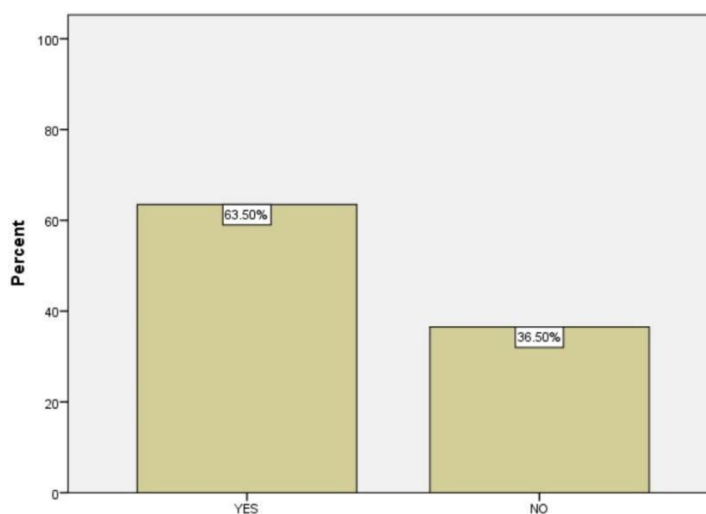


FIGURE 10: Bar graph representing percentage distribution on attitude of the participants regarding whether gift should be given to the donors.X axis represents the responses of participants and Y axis represents the percentage of responses.63.5% agree that a token gift should be given to donors.

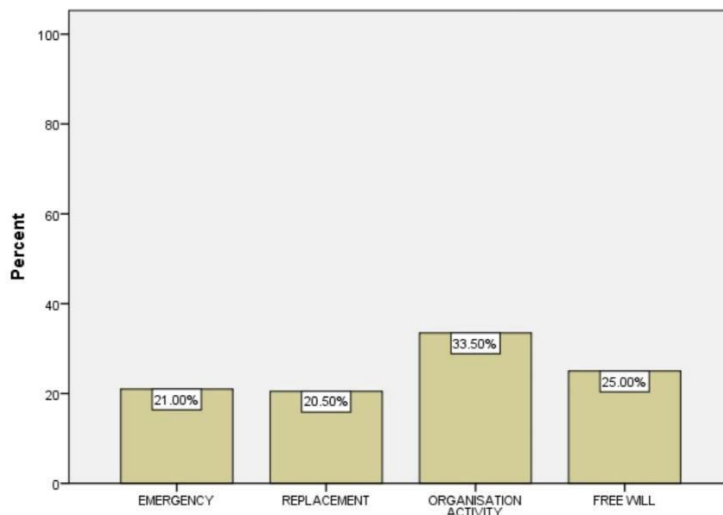


FIGURE 11: Bar graph representing percentage distribution on reasons for last blood donation. X axis represents the responses of participants and Y axis represents the percentage of responses. 35% have donated blood because of organisation activity and 25% donated blood because of their free willingness .

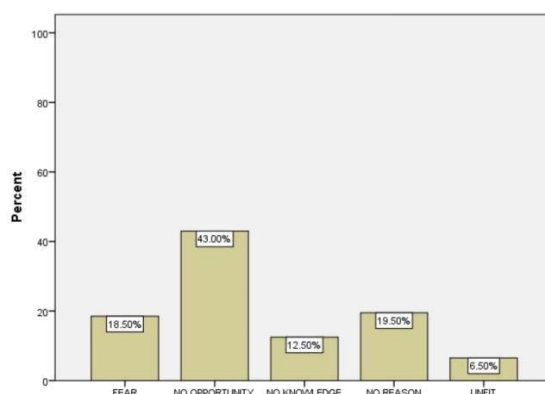


FIGURE 12: Bar graph representing percentage distribution on reasons for non blood donation. X axis represents the responses of participants and Y axis represents the percentage of responses. 18.5% of the participants because of fear they do not donate blood and 43% of the participants think that they don't have an opportunity to donate blood.

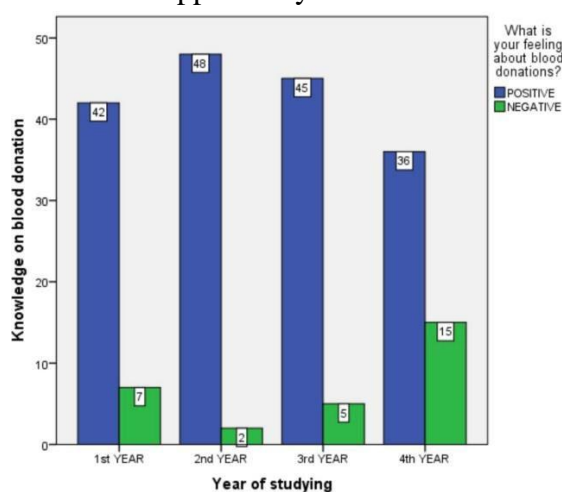


FIGURE 13: Bar graph representing the association of year of study and knowledge on blood donation. X axis represents the year of study and Y axis represents the number of participants responded, blue colour denotes positive and green colour denotes negative. Majority of second year and third year college students had positive feelings about blood donation. There was a significant difference between the year of study and attitude about blood donation . Pearson chi square test- 14.412 , P value = 0.002 (<0.05) - statistically significant

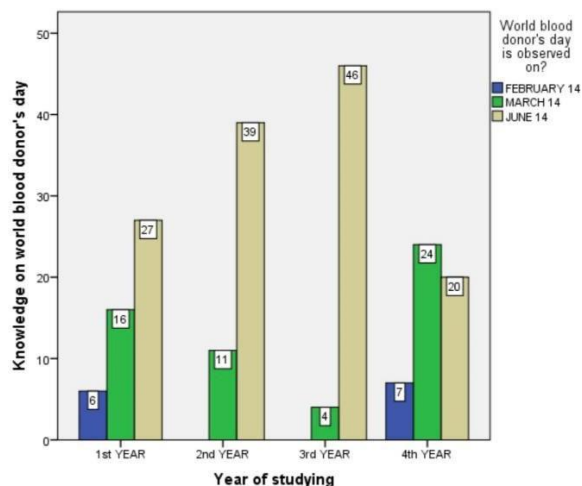


FIGURE 14 : Bar graph representing association of year of study and knowledge on world blood donor's day. X axis represents the year of study and Y axis represents the number of participants responded and blue colour denotes February 14, green colour denotes March 14, sandal colour denotes June 14. Majority of the second and third year college students had good knowledge on world blood donor's day. There was a significant difference between the year of study and knowledge on world blood donor's day. Pearson chi square test- 40.753 , P value = 0.000 (<0.05) - statistically significant .

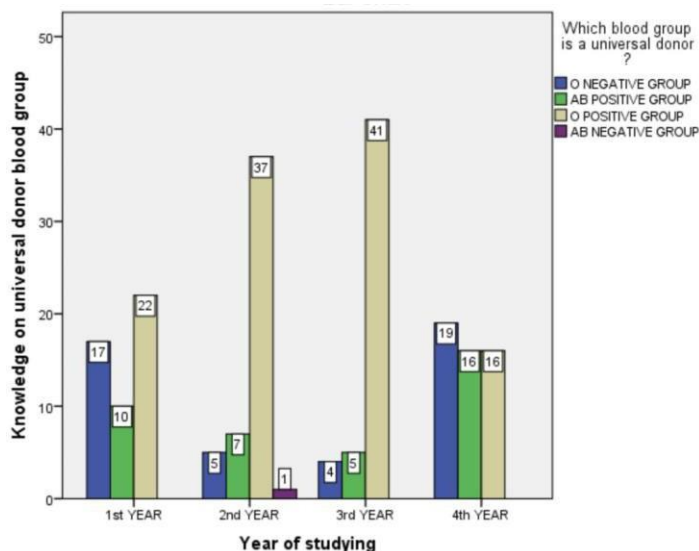


FIGURE 15 : Bar graph representing association of year of study and knowledge on universal blood donor groups. X axis represents the year of study and Y axis represents the number of participants responded, blue colour denotes O negative blood group ,green colour denotes AB positive blood group, sandal colour denotes O positive blood group, violet colour denotes AB negative blood group . Among all the years, only fourth year college students had good knowledge on universal blood donor groups and responded to the correct answer more accurately. There was a significant difference between the year of study and knowledge on universal blood donor groups . Pearson chi square test- 41.124 , P value = 0.000 (<0.05) - statistically significant .

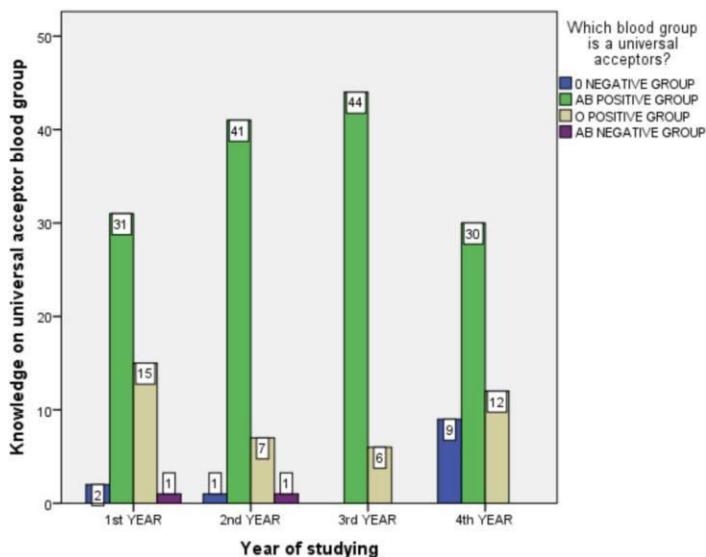


FIGURE 16 : Bar graph representing association of year of study and knowledge on universal blood acceptor groups. X axis represents the year of study and Y axis represents the number of participants responded , blue colour denotes O negative blood group ,green colour denotes AB positive blood group, sandal colour denotes O positive blood group, violet colour denotes AB negative blood group. The majority of the third year college students had good knowledge on universal blood acceptor groups. There was a significant difference between the year of study and knowledge on universal blood acceptor groups. Pearson chi square test- 27.918 , P value = 0.001(<0.05) - statistically significant .

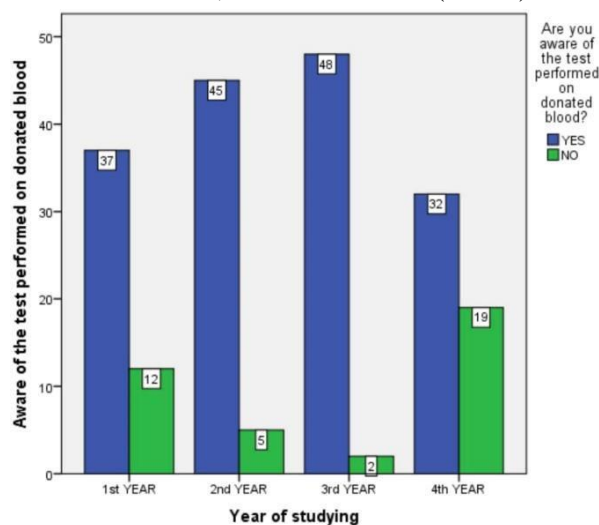


FIGURE 17 : Bar graph representing association of year of study and awareness on the test performed on donated blood . X axis represents the year of study and Y axis represents the number of participants responded , blue colour denotes yes and green colour denotes no. Among all the years, the majority of the third year college students(48 participants) were much more aware of the test performed on donated blood . There was a significant difference between the year of study and awareness on the test performed on donated blood. Pearson chi square test- 21.944 , P value = 0.000(<0.05) - statistically significant .

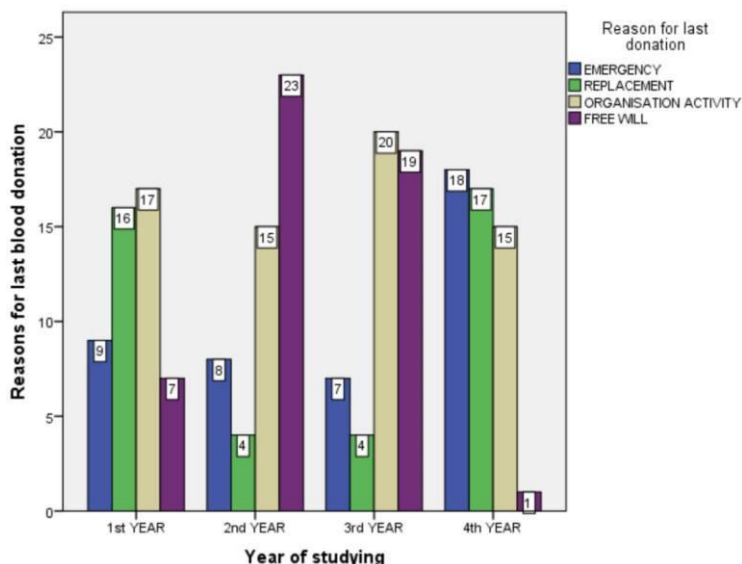


FIGURE 18 : Bar graph representing association of year of study and the reasons for last donation. X axis represents the year of study and Y axis represents the number of participants responded, blue colour denotes emergency, green colour denotes replacement, sandal colour denotes organisation activity and violet colour denotes free will. Among all the years, the majority of the second year college students donated blood because of their free willingness . There was a significant difference between the year of study and reason for last blood donation. Pearson chi square test- 48.502 , P value = 0.000(<0.05) - statistically significant.

Limitations

The present study was conducted on a small population.

Future scope

In future an extensive study with large sample size and varied population can be used to access the knowledge, attitude and practice regarding blood donation.

CONCLUSION

Blood donation is a remarkably safe medical procedure. Blood can save millions of lives and college students are the hope and future of a safe blood supply in the world. In the present study, Knowledge, attitude, practice regarding blood donation is moderate among the dental undergraduate. For further augmentation, awareness should be created through various programs about blood donation and published to the public.

AUTHOR CONTRIBUTIONS

Author 1 (Indumathi M), carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis. Author 2 (Dr. L. Keerthi Sasanka) aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation of the manuscript. Author 3 and author 4 (Dr. Kavitha S and Dr. Dhanraj Ganapathy) have participated in the study design and have coordinated in developing the manuscript. All the authors have discussed the results among themselves and contributed to the final manuscript.

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CONFLICTS OF INTEREST

None declared

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