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Blood Donation: Attitude and Beliefs Among Undergraduate Dental Students in Kanpur – A Cross Sectional Study

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Abstract

Background: Blood donation is a major concern to the society as donated blood is lifesaving for individuals who need it. The healthy, active and receptive huge student population can be a potential blood donor to meet the safe blood requirements. The objective of this study was to determine the knowledge, attitude and practices about blood donation among Undergraduate Dental Students in Kanpur, India. **Methods:** A cross sectional study was conducted in a private dental college in Kanpur. A total of 360 dental students were interviewed with the help of structured questionnaire. Data analysis was performed in SPSS version 19. Multiple regressions were used to examine the effect of different independent variables on a single dependent variable to test the statistical significance at 95% confidence level. **Results:** The majority of participants (92%) had appropriate knowledge regarding the various aspects of blood donation. Attitude domain showed that around 42% of students were positive about blood donation. Around 50% of students showed willingness to donate blood. After adjusting for potential confounders, male gender was associated with appropriate knowledge, positive attitude and willingness for blood donation when compared against female gender. **Conclusion:** Good knowledge about blood donation practices is not transforming in donating blood. Interactive awareness sessions on blood donation should be organized during undergraduate years and opportunities for blood donation should be created for the students, which can greatly ensure good quality of blood and safe modern medical care.

Keywords: Blood donation; Dental students; Knowledge; Attitude; Belief; Practice

Introduction

Every second for every day, people around the world of all ages need blood transfusions to survive. Millions of blood units were collected from donors every year but demands are increasing day by day that is pushing for sufficient and timely provision of blood [1]. Blood has always held secretive charm for all and is considered to be the living force of our body. In modern era, blood has been used since 1930 for various purposes [2]. After the introduction of blood banks, it becomes more widely used in patients. India's blood banks collect around 12 million units of blood annually. 70% of this blood comes from voluntary donors, while the remaining 30% comes from family and friends. 72% of the blood collected is through voluntary blood donation. Today, the use of whole blood is a well-accepted and commonly employed measure without which many modern surgical procedures could not

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be carried out [4].

The average donation rate in developed countries is 38.1 donations/1000 population (range 4.92–68.01) and in developing countries average 2.3 (range 0.40–7.46) donations per 1000 population. The average number of blood donations per 1,000 population is 12 times higher in high income countries than in low-income countries. An overwhelming 99 per cent of the 500,000 women who die each year during pregnancy and childbirth live in developing countries, with hemorrhage which invariably requires blood transfusion, the most common cause of maternal deaths.

The healthy, active and receptive huge student populations are potential blood donors to meet safe blood requirements. There is a paucity of studies on awareness, attitude and practices among medical students on voluntary blood donation. College students, particularly from medical colleges, can be a very good source of quality blood if they are motivated and are willing to be voluntary blood donors. Therefore, the objective of this study was to determine the knowledge, attitude and practices about blood donation among undergraduate dental students in Kanpur.

Materials and Methods

Study design, setting and study population

This was a cross sectional study conducted in Rama Dental College, Kanpur. All the Undergraduate Dental students included in the study were those who were present on the day of data collection and who provided informed consent.

Sampling technique and sample size

Sample size was calculated from WHO software for sample size determination in health studies. Using proportion of prevalence of appropriate knowledge 42% [6], bound on the error (B) 4%, Confidence level (CI) 95%, the sample size came out to be 320 students. A total 360 dental students were selected for the study.

Data collection procedure

Approval for the study was obtained from the Institutional Ethical Committee. From those who agreed to participate, written informed consent was taken. Data was collected using a pre-tested, close-ended questionnaire to obtained basic information like age, gender, class year, and place of residence whereas information regarding knowledge, attitude and practices of blood donation were also gathered through same questionnaire. To avoid non response bias and making students easy to contribute, we designed the questionnaire that was not too long and didn't take too much time to complete.

Data collection tool

The questionnaire comprised of four major parts. Part one was designed to measure socio-demographic data for example age, gender, class year and place of residence. Part two, three and four were about the knowledge, attitude and practices of undergraduate dental students regarding blood donation.

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Data analysis procedure

The data was entered and analyzed by using Statistical package for Social Science (SPSS version 19) for windows. Descriptive statistics was used to determine mean and standard deviation for continuous variables like age while frequency and percentage for qualitative variables (gender, class year, place of residence). Scoring was done, for knowledge; each right response was given a score of 1 while a wrong or unsure response was scored 0. Total knowledge scores can be ranged between 0-15. Knowledge scores from 0 to 9 were considered as inappropriate knowledge while knowledge scores more than 9 was considered as having appropriate knowledge regarding blood donation. Attitude towards blood donation patients was assessed using a 8-item questionnaire where attitude scores between 0 to 5 were considered as negative attitude, and scores from 6 to 8 were considered as positive attitude. Practice was assessed using a questionnaire where total scores can range between 0-5. Practice score from 0-3 were considered as unwillingness to donate blood and score more than 3 were considered as willingness to donate blood. Multiple regressions were used to examine the effect of two or more independent variables on a single dependent variable to test the statistical significance at 95% confidence level. P-value of < 0.05 was considered as significant.

Results

Table 1 shows social demographic characteristic of the study participants. A total of 360 students completed the questionnaire. The mean age of participants was 20 ± 1.33 years. Majority of respondents were females (69.8%), having age 21-25 years (58.6%). Distribution of participants was almost equal in all years of study.

Table 1: Socio demographic characteristic of undergraduate dental students of Kanpur (n=360).

Characteristics	Frequency (Percentage)
Age (years) mean (SD)	20 (1.3)
Age 17-20 21-25	 148 (41.1) 212 (58.9)
Gender Male Female	 138 (38.3) 222 (61.7)
Class year Year I Year II Year III Year IV Year V (internship)	 63 72 76 78 71
Place of Residence Kanpur Outside Kanpur	 186 (51.7) 174 (48.3)

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All the participants were questioned to assess their knowledge about various aspects of blood donation and blood transfusion. The sum of responses was summarized as a knowledge score and a logistic regression analysis was done for age, gender, class year, and place of residence. Majority of participants had appropriate knowledge regarding various aspect of blood donation (92.2%). There was no statistically significant difference between age groups, class year and place of residence regarding blood donation. Male gender (AOR: 2.0, 95% CI: 1.1-3.8) was associated with appropriate knowledge of blood donation when compared against female gender.

All the participants were questioned to assess their attitude towards blood donation and blood transfusion. The sum of responses was summarized as an attitude score and a logistic regression analysis was done for age, gender, class year and place of residence. There was no statistically significant difference between age group, class year and place of residence regarding blood donation. However, male gender (AOR: 1.5, 95% CI: 1.1-2.2) was associated with positive attitude towards blood donation when compared against female gender.

All the participants were questioned to assess their willingness towards blood donation and blood transfusion. The sum of responses was summarized as a practice score and a logistic regression analysis was done for age, gender, class year and place of residence. There was no statistically significant difference between age group, class year and place of residence regarding blood donation. However, male gender (AOR: 1.5, 95% CI: 1.0-2.1) was associated with willingness for blood donation when compared against female gender.

Discussion

This study was conducted in order to obtain information and inputs from undergraduate students of a private dental teaching institution which will be useful in implementing relevant donor recruitment strategies because this population can contribute to health promoting activities in the society. The hospital blood bank has two ways to meet this challenge, first to implement policies for appropriate use of blood [7] and next to increase healthy blood donor recruitment [8]. Blood donation decision making has been investigated worldwide for decades to understand the process better to increase donation efficiency [9-11].

This study among the dental undergraduate students, who are a very potential and accessible source of voluntary non-remunerated and safe blood by the virtue of its collectability by coordinated blood transfusion services, revealed that, parental education seemed to have an overall impact on the knowledge regarding blood donation among the students [11-12].

Most of the students who were willing to donate blood, but had not donated blood because of the lack of an opportunity to do so. This finding has been corroborated by the findings of past studies [12]. This showed that sufficient steps to involve students and to create opportunities for them to donate blood, is something that needs to be given due consideration, if we have to improve the voluntary collection of blood from them.

As compared to a previous study among college students, where there were a high number of respondents with a negative attitude towards blood donation [10], in our study, we found that equal number of both negative and positive attitude students about blood donation.

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Thus, the attitude of the students in our study was fifty percent positive attitude towards blood donation. This study also revealed that the unwillingness to donate blood was more among the female students and the major reasons were fear and perceived inconvenience which were associated with blood donation. This was also supported by the results of a past study [13].

This study suggests that there is sufficient basic knowledge regarding blood donation among undergraduate medical students. The score was also correlated to demographic characteristics within groups: younger individuals (18-40 years), males, residents of urban areas had significantly better scores than their counterparts. Many previous studies have shown that, compared to general population, healthcare students have a higher level of knowledge and a more positive attitude towards blood donation [14-16].

It is a proven fact that voluntary non-remunerated blood donation is the safest and the most ideal way for improving the quality of blood which is collected through the blood banking services across the country. The youth from healthcare institutions, who are a very potential group of readily available donors, have to be encouraged to participate voluntarily in the blood donation activities. In a dental college hospital, students are very much accessible to the teaching hospitals as a part of their training program and this fact can be made use of, to include awareness sessions as a part of their regular training, right in the beginning of their course itself, so as to diffuse any doubts and misconceptions that the students may have regarding voluntary blood donation. Our study which found a lot of lack of information among the dental students validates the need for such early awareness program.

Major limitation of our study was that inherent to most studies on knowledge, attitudes and practices. The responses could have been influenced by socially desirable attributes and there is the possibility of both recall bias and interviewer bias.

Conclusion

In conclusion, the information received in this study highlights the need for appropriate health promotional campaigns for blood donation. Convenience of approach to the blood center and comfort during the process increase the chances of having a good donation experience and hence aid donor retention. Donor recruitment efforts should target groups less willing to donate and simultaneously seek to reinforce the positive behavior of willing groups converting previous donors into regular practice.

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