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Blood donation amidst the COVID pandemic: knowledge, attitude and practice of non-medical professionals

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ABSTRACT

Background

The COVID-19 pandemic has affected blood transfusion services globally. A drastic reduction in blood donation has been observed with potential donors hindered by apprehension and confusion. This study was conducted to assess knowledge, attitude and practice related to blood donation among non-medical working professionals, with an emphasis on donation following COVID-19 infection and vaccination.

Methods

A prospective, non-randomized study was conducted between June and October 2021 among non-medical working professionals, with graduate and above education, in the 20–45 years age group. A questionnaire consisting of closed questions was emailed to the participants. Responses were recorded in a MS Excel spreadsheet and analyzed.

Results

A total of 238 participants were included in the study, and different occupations were represented. Engineers (40%) constituted the majority. More than half (144, 61%) of respondents had never donated blood before; one of the main reasons for this is that they had been not approached to donate (47%). 85% of the respondents felt that they could donate blood after receiving a COVID-19 vaccination but 65% responded that they should not if they had ever been infected with COVID-19. The primary source of information regarding blood donation was through academic training in colleges during their course (34%) followed by mass media (25%).

Conclusion

Several factors that hinder blood donation practice among non-medical working professionals, who are a potential source of blood donors, need to be addressed. These include low awareness of donation schemes and poor understanding of who is and is not eligible to donate. Awareness programmes and blood donation campaigns to motivate potential donors should be scheduled, not only to provide the opportunity to donate but also to help eliminate misconceptions related to blood donation and COVID-19.

Keywords: Blood Donation, Awareness, COVID-19, Vaccination, Donor

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INTRODUCTION

The COVID-19 pandemic has had major implications for the health sector, with transfusion services being no exception. A drastic reduction in blood donation has been observed and blood centres have struggled to maintain the supply/demand balance,[1,2] often hindered by suspension of blood donation by countries' regulatory authorities due to COVID-19 concerns. This has left challenges with building and maintaining blood stock.

The widespread incidence of COVID-19 and the introduction of new vaccines has resulted in considerable apprehension regarding the protocols of blood donation.[3] In one study, SARS-Cov-2 RNA was detected in the plasma or serum of approximately 15% of patients, but the presence of viruses with the ability to cause infection has not been confirmed and there remains no precedent for transfusion-transmitted respiratory viruses.[4]

Neither the American Association of Blood Banks (AABB), US Food and Drug Authority (FDA) nor the US Centers for Disease Control (CDC) recommend any change in action by blood collection establishments as there is neither evidence nor precedent to suggest a risk of developing COVID-19 from transfusion transmission.[4] A recent study by the Korean Red Cross Blood Services detected no transfusion transmission in recipients of blood components from donors diagnosed with SARS-CoV2 infection.[5]

In India, an expert group under the chairmanship of the Additional Director General of Transfusion Services/ National Blood Transfusion Council, Dr. Sunil Kumar Gupta, was constituted to review the current advice on blood transfusion. On 5th May 2021, it was decided to set the deferral period for blood donors to 14 days after receiving a dose of any of the currently available COVID-19 vaccines, subject to other norms for blood donation, with the advice to be reviewed regularly.[6,7] With this in mind, the authors recognized a need to establish the facts regarding blood donation during the COVID-19 pandemic.

This study explores knowledge, attitude and practice amongst educated non-medical professionals – a likely demographic for blood donation. The intended outcome was to build a strong information base and to circulate this information among the public in order to clear misconceptions regarding blood donation during the pandemic and also to motivate healthy and eligible donors to come forward to donate.

METHODS AND MATERIALS

This was a prospective, non-randomized study conducted in a region of southern India in June to October 2021, during the waning period of the country's second wave of COVID-19. A survey questionnaire was developed by three pathologists with experience of working as blood bank medical officers. The questionnaire consisted of closed questions to collect knowledge and attitudes of the participants regarding blood donation. The prepared questionnaire was peer-expert validated after providing the assessors with the validation criteria. Two of the blood bank experts validated the questionnaire with an acceptable content validity index (CVI) of 0.9. Reliability was measured by testing the stability and internal consistency by a split-half method. We prepared the survey questionnaire using Google forms online survey templates. A link to the questionnaire was emailed to the participants.

Men and women aged between 20 and 45 years of age, who were working professionals from non-medical fields with a graduate degree or above in their field of expertise, were included in the study. Responses were recorded in a Microsoft Excel spreadsheet and analyzed. Patient confidentiality was maintained. Required permissions for the study were obtained from the concerned authorities.

A review of the past literature shows that previous studies have targeted mainly medical students and other demographic groups from within the medical and health professions.[8-12] There has been very little (we found none) focus on non-medical or non-health science professionals. In the present study, we targeted non-medical working professionals including engineers, teachers, businessmen and the self-employed. This group is a potential donor population that can be encouraged to promote donation services.

RESULTS

Out of 320 people with whom the questionnaire was shared, 238 participants completed it and thus were included in the study. Professions represented amongst the respondents included engineers (40%), teachers/lecturers (29%) and businessmen (13%). More than half (61%) of the respondents had not donated blood previously, 22% had donated once in the past 2-3 years, 14% donated once a year, and 3% donated more than once a year (Table 1). When asked about the incentives they would prefer when donating blood, the distribution of responses is as shown in Table 2. When asked about the duration of a blood donation procedure, 44% thought it took 30 minutes, 21% thought 15 minutes, 18% thought 45 minutes and 17% thought 1 hour (17%). The time between the arrival of the donor and when he/she leaves is around an hour.

The participants were asked if they can donate blood after having receiving the COVID-19 vaccine: 15% felt that they should refrain from donating blood (Fig 1) but the correct response is that one can donate blood after receiving the COVID-19 vaccine. When asked their view on donating blood if they had ever been infected with COVID-19, 65% thought they should not (Fig 2). Donors can in fact donate blood after recovering from COVID-19 infection, according to Government of India guidelines. Common sources from which the study respondents had heard about blood donation are shown in Fig 3. Information regarding blood donation had been seen on social media by 68% (161) of the participants.

Table 1: Frequency of previous blood donation

Participants n/%	Frequency of Donation
144 (61%)	Not donated previously
53 (22%)	Once in 2-3 years
34 (14%)	Once a year
7 (3%)	>Once a year
Total 238	

Table 2: Incentives preferred by donors

Incentive	Preferred by (%)
Certificate	11%
Token gift (e.g. keychain, coffee mug	4%
Don't expect anything	80%
Day off from work	5%

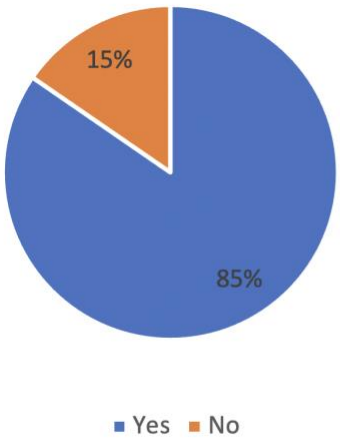

Fig 1: Can you still donate blood after receiving the COVID-19 vaccine?

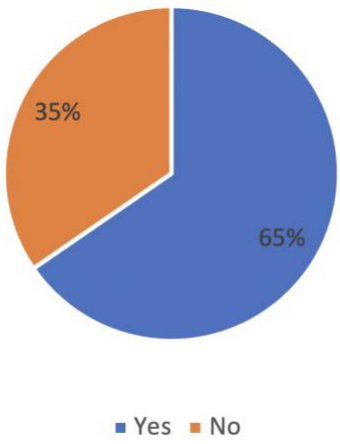

Fig 2: Should you refrain from blood donation after recovering from COVID-19 infection?

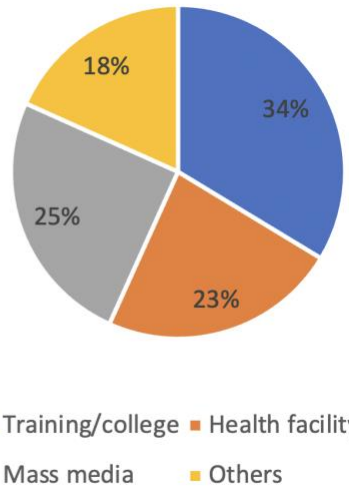

Fig 3: Where have you heard about blood donation?

DISCUSSION

Out of 238 participants in our study, more than half (144, 61%) had never donated blood before. Other studies have also found that a large proportion of blood donors are first-timers.[13–15] One of the main reasons reported by the study participants for not having donated blood before was that they had not been approached (47%), followed by thinking they were unfit for donation (40%), fear of needles (13%) and, for a small proportion, fear of finding out disease status on screening (1%). These findings are similar to a study conducted by Chauhan et al in 2018.[15] Similar concerns have also been expressed in other studies[16–20] while other concerns for not donating blood include non-renumeration, ignorance, concerns over the need to donate blood for a friend or relative in future, fear of donated blood being sold and lack of time.[19,21-23] When asked about incentives for blood donation, the majority of the study participants (80%) did not expect to receive anything.

The literature reveals a lack of studies on blood donation and its relation to COVID-19 infection and vaccination. The majority of our study participants (85%) correctly thought that a person can donate blood after COVID-19 vaccination. Only 15% of participants felt that they should refrain from blood donation after COVID-19 vaccination. Nearly two-thirds (65%) thought that they should not donate blood if at any time they have been infected with COVID-19 however; in fact, after receiving doses of currently available COVID-19 vaccines in India, subject to other norms for blood donation, any person can donate blood after 14 days of deferral according to the latest Government of India advisory.[6,7] The most recent amendment, which reduced the donor deferral period from 28 to 14 days, has definitely helped in preventing further worsening of the shortage in blood supply during the pandemic.

The Indian National Blood Transfusion Council (NBTC) has recommended 28 days deferral following a confirmed case of SARS-CoV-2 (laboratory confirmation of SARS-CoV-2 infection by RT-PCR test, irrespective of clinical signs and symptoms), after discharge from a treatment facility or 28 days after the end of home isolation.[24]

Therefore, even if a person has been infected with COVID-19, he/she can donate blood following the above guidelines of 28 days deferral. The primary source of information regarding blood donation for participants in the study was training/colleges (34%), mass media (25%) and health facilities (23%). In a 2019 study by Siddhanth Suresh et al, the main source of information regarding blood donation was friends and family (30%) followed by the internet (22%).[14] In another study, educational institutions such as schools and colleges (74%) were the most common sources of information, followed by television (36%), blood donation camps (31%), newspapers (28%), the internet (21%) and friends (19%).[15] When asked how they had heard about blood donation, the majority of the study participants had responded to advertisments on television and social media (62%) followed by reach-out by official portals (21%) and celebrity brand ambassadors (11.5%). Other literature has shown that mass media plays a big role in information dissemination regarding blood donation. [8,9,25]

CONCLUSION

The present study adds to the existing medical literature as very few or none of the studies that have been carried out during the ongoing phase of COVID-19 pandemic in India have focussed on the views of educated non-medical professionals regarding blood donation, with the emphasis on whether they understand donation to be possible after vaccination and infection.

We infer that there is relatively low involvement in voluntary blood donation among the study population. A more rigorous approach is needed to raise awareness, to motivate them to donate and to address the factors hindering their blood donation practice during the COVID-19 pandemic. Scheduling regular awareness programmes and blood donation campaigns at workplaces could aid in motivating potential donors, particularly those who usually lack the opportunity to donate blood. At the same time, such activity will help to eliminate confusion and misconceptions relating to blood donation and COVID-19.

REFERENCES

1. Almalki S, Asseri M, Khawaji Y, Alqurashi R, Badawi M, Yakout N et al. Awareness about Coronavirus (COVID-19) and challenges for blood services among potential blood donors. Transfus Apher Sci. 2021 Jul 6:103211. doi: 10.1016/j.transci.2021.103211. Epub ahead of print. PMID: 34246555; PMCID: PMC8257402.
2. Al-Riyami A.Z. The impact of COVID-19 pandemic on blood supplies and transfusion services in Eastern Mediterranean Region. Transfusion Clinique et Biologique. 2021:9. doi: 10.1016/j.tracli.2020.11.002. TRACLI-3159.
3. Shander A, Goobie SM, Warner MA, Aapro M, Bisbe E, Perez-Calatayud AA et al. Essential Role of Patient Blood Management in a Pandemic: A Call for Action. Anesth Analg. 2020 Jul;131(1):74-85. doi: 10.1213/ANE.0000000000004844. PMID: 32243296; PMCID: PMC7173035.
4. Update: Impact of 2019 Novel Coronavirus and blood safety, Feb 25 2020, by AABB's Transfusion Transmitted Disease Committee.
5. Kwon SY, Kim EJ, Jung YS, Jang JS, Cho NS. Post-donation COVID-19 identification of blood donors. Vox Sang 2020.
6. Deshpande C. Now, donate blood after 14 days of your Covid-19 jab. Mumbai Mirror 2021 [Available from: https://mumbaimirror.indiatimes.com/coronavirus/news/mumbaikarsheres-a-list-of-bmc-and-govt-vaccination-centres-functioning-today-for-45-plus people/articleshow/82423141.cms].
7. Agnihotri N, Chaturvedi YM, Agnihotri A. Impact Analysis of the National Guidelines for Blood Donor Selection in India: A Single Center Study. Indian J Hematol Blood Transfus 2019;35:726–30. Doi: http://dx.doi.org/10.1007/s12288-019-01100-1.
8. V. Kowsalya, R. Vijayakumar, R. Chidambaram, R. Srikumar, E. Prabhakar Reddy, S. Latha et al. A Study on Knowledge, Attitude and Practice Regarding Voluntary Blood Donation among Medical Students in Puducherry, India. Pakistan Journal of Biological Sciences. 2013;16: 439-42.Doi: 10.3923/pjbs.2013.439.442
9. Chopra D, Jauhari N. Knowledge Attitude & Practices towards Voluntary Blood Donation among Medical Students in Barabanki. Indian J Community Health [Internet]. 2015;27(3):386-90. Available from: https://www.iapsmupuk.org/journal/index.php/IJCH/article/view/590
10. Rajeshwari S, Katte NH. Perception on blood donation among engineering and medical students in Raichur: A cross-sectional study. Int J Med Sci Public Health. 2018;7(5):413-6.
11. Bosco RJ, Rock B, George N et al. Awareness about blood donation among engineering students. Int J Health Sci Res. 2018; 8(1):15-9.
12. Ponmari JS, Sivaraman M, Balasubramanian A. A study on knowledge, attitude and practice on blood donation among medical students in a tertiary care teaching hospital, Chennai, Tamil Nadu, India. Int J Basic Clin Pharmacol 2016;5:802-4.
13. Mulugeta Melku, Fikir Asrie, Elias Shiferaw, et al. Knowledge, Attitude and Practice Regarding Blood Donation among Graduating Undergraduate Health Science Students at the University of Gondar, northwest Ethiopia. Ethiop J Health Sci.2018;28(5):571. doi:http://dx.doi.org/10.4314/ejhs.v28i5.8
14. Siddhanth Suresh, Crysle Saldanha. A study of knowledge, attitude and practice towards voluntary blood donation among medical students. MedPulse International Journal of Pathology. 2019; 11(3): 134-6.
15. Chauhan R, Kumar R, Thakur S. A study to assess the knowledge, attitude, and practices about blood donation among medical students of a medical college in North India. J Family Med Prim Care. 2018 Jul-Aug;7(4):693-7. doi: 10.4103/jfmpc.jfmpc_54_17. PMID: 30234039; PMCID: PMC6132011.
16. Amatya M. Study on knowledge, attitude and practice of blood donation among students of different colleges of Kathmandu, Nepal. Int J Pharm Biol Achiev. 2013;4:424–8.
17. Devi HS, Laishram J, Shantibala K, Elangbam V. Knowledge, attitude and practice (KAP) of blood safety and donation. Indian Med Gaz. 2012;1:1–5.
18. Bharatwaj RS, Vijaya K, Rajaram P. A descriptive study of knowledge, attitude and practice with regard to voluntary blood donation among medical undergraduate students in pondicherry. India J Clin Diagn Res. 2012;6:602–4.
19. Kumari S, Raina TR. Knowledge, attitude and practices (KAP) regarding voluntary non-remunerated blood donation (VNRBD) among the students of colleges of Jammu, India. Int J Community Med Public Health 2015;2:45-50.
20. Anand N, Inban P. A study on knowledge, attitude and practice regarding blood donation in an urban community, Chennai. Public Health Rev Int J Public Health Res. 2018;5(1):35-44. Available From: https://publichealth.medresearch.in/index.php/ijphr/article/view/78
21. Chalachew M, Meaza T, Andualem D, Megdelawit T, Tesfalem TT, Hawult T. The level and associated factors of knowledge, attitude and practice of blood donation among health science students of Addis Ababa University. Int J Med Health Sci Res. 2014;1(10)105-18
22. Benedict N, Usimenahon A, Alexander IN. Knowledge, Attitude and Practice of Voluntary Blood Donation among Healthcare Workers at the University of Benin Teaching Hospital, Benin City, Nigeria. J Blood Transfu. 2013;1-6.
23. Sanayaima DH, Jalina L, Shantibala K, Vijaya EL. Knowledge, Attitude and Practice (KAP) of Blood Safety and Donation. Ind Med Gaz. 2012;145(1)1-5.
24. Voluntary Blood Donation Program: An operational guideline by NBTC.
25. Tadesse W, Ayalew Y, Yisma E, Liben ML, Wudu M. Knowledge, Attitude, Practice and Associated Factors towards Voluntary Blood Donation among Regular Health Science Students of Samara University, Ethiopia. Health Sci J. 2018;12(1):542. DOI:10.21767/1791-809X.1000542