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RESEARCH ARTICLE

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The impact of facemasks on blood donation process: The professionals' perspective

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Abstract

Facemasks represent an essential measure of prevention against the spread of COVID-19; however, they lessen the ability to convey and understand emotions through facial expressions. In blood donation settings, facemasks may interfere with professionals' tasks. This qualitative study aims to describe healthcare staff's experiences, beliefs, and attitudes toward facemask wearing and strategies used to overcome communication and relational barriers along the blood donation process. Semistructured qualitative interviews were conducted with 25 healthcare professionals (14 physicians and 11 nurses) working in Italian blood donation centers. The framework analysis method was used to organize the data and identify emerging themes. More than 70% of participants reported discomfort and a negative impact on communicating effectively with donors and building empathic relationships. The difficulty to detect early signs of adverse reactions was reported by almost all nurses, and physicians were concerned that facemasks limited the identification of donors and the detection of deferral criteria. Facemasks have changed the blood donation process, reducing the healthcare professionals' ability to build empathic relationships and communicate with donors effectively. New strategies should be developed to overcome these limitations.

KEYWORDS
blood donors, communication, empathy, facemasks, N95 respirators, nurses, physicians, qualitative research

Key points

- Facemasks affected nurses' and physicians' clinical activity in the blood donation process.
- Most professionals reported that facemasks affected the ability to communicate and build a good relationship with donors.
- New communication strategies should be used to overcome communication barriers.

1 | INTRODUCTION

Blood and blood products are essential resources for healthcare systems worldwide, and in times of crisis and health emergencies, the demand for these products becomes much more compelling. The COVID-19 pandemic resulted in a serious shortage of blood products because of the reduction of active blood donors for COVID-19 positivity or the concern of getting infected in healthcare facilities. A systematic review on the impact of COVID-19 on blood transfusion services revealed a 38% decrease in blood donation compared to the prepandemic period (Chiem et al., 2021). Chandler et al. (2021) surveyed 1205 European blood donors and found a decrease in the frequency of blood donation and a reduced likelihood to donate in donors with higher adherence to COVID-19 preventive measures. During the pandemic, a reduction in personal-moral norms (one of the leading factors supporting blood donation intentions and behaviors) was found both in nondonors and donors but it was significantly higher in the former group (Veseli et al., 2021).

As for the motivational drivers to donate blood during the pandemic, some studies reported that altruistic motivations, such as donating as a way to fight against the pandemic, were the main driver for blood donors (Chandler et al., 2021; Veseli et al., 2021; Weidmann et al., 2022).

Despite the disruptive effects of the COVID-19 pandemic on blood donation behaviors, satisfaction with the donation experience was confirmed to be one of the main determinants of future donation behaviors in donors (Nguyen et al., 2008; Weidmann et al., 2022). In particular, healthcare professionals' interpersonal skills in predicting adverse reactions in blood donors have been found to be of paramount importance (Hanson & France, 2009; Stewart et al., 2006). The occurrence of adverse reactions during the donation process is another well-known factor predicting both the intention to donate and the actual future donations (Thijsen & Masser, 2019; Wiersum-Osselton et al., 2014). Several measures to reduce the risk of COVID-19 infections and to guarantee the health of blood donors and recipients are in place, including scheduling donations and doing "triage" when scheduling, limiting the number of donors in waiting rooms, distancing of chairs and beds, routinely sanitizing the hands of donors, equipment and mobile units disinfection, surgical mask wearing for donors, personal protective equipment for staff, and limiting close contact between donor and medical staff (<15′ min) (Centro Nazionale Sangue, 2022). The introduction of mandatory use of facemasks and the reduction of time spent with donors was essential to improve the safety of the blood donation process but could have negatively affected the quality of relationship between healthcare staff and blood donors. Previous studies have shown that facemasks disrupt the ability to read facial expressions in the general population (Carbon, 2020) and healthcare students (Bani et al., 2021); facemasks also impair the ability to reidentify unmasked faces (Marini et al., 2021) and detect the intensity of emotions (Tsantani et al., 2022) and garble the perception of closeness (Grundmann et al., 2021).

Functional and efficient communication and relationship between donors and healthcare staff are extremely important in blood donation settings. Physicians have to register the donors' identity, check against exclusion criteria, and take medical history and perform a mini-physical and nurses have to confirm the identity of the donors, support them during the donation process, and detect any early signs of adverse events or discomfort to prevent and treat adverse reactions (World Health Organization, 2014). To perform these tasks adequately, reading donors' facial expressions correctly is essential. Little is known about the impact of pandemic-related facemask wearing on interpersonal relationships in healthcare and blood donation contexts.

This qualitative study aimed to describe the impact of the mandatory introduction of facemasks for both healthcare staff and blood donors during the blood donation process (from registration and a mini-physical examination to the actual blood donation procedure). In particular, we wanted to describe whether and how facemask wearing has changed physicians' and nurses' activities and the steps of the donation process that have been more affected. Furthermore, we wanted to describe the strategies implemented by healthcare professionals to overcome relational and communication barriers imposed by facemasks.

2 | METHODS

2.1 | Participants and procedure

The sample size for the semistructured interviews was set at a minimum of 20 participants as a sample size ranging between 20 and 50 participants (according to the level of structure of questions) has been proven to ensure the quality of the research findings in qualitative interviewing (Francis et al., 2010; Ritchie; Green & Thorogood, 2018). Participants were recruited through purposive sampling and snowballing recruitment techniques (Given, 2008). An email invitation was sent by the Italian Society of Transfusional Medicine and Immunohenatology (Società Italiana di Medicina Trasfusionale e Immunoematologia - SIMTI) society to their members. To maximize the heterogeneity of the sample in terms of professional role (physicians/nurse), professional seniority in blood donation settings, and representativeness of the national situation (north/center/south Italy), participants were recruited from different blood donation services.

Professionals who completed the online form to express their availability to take part to the study received via email (a) the written informed consent to sign and return, (b) the topics covered during the interview, and (c) a proposal of appointment. Written and oral informed consent was obtained from all participants who agreed to participate in the study, before the interviews. The interviews were conducted via telephone and took about 20 min (ranging from 9 to 35 min). The interviews were conducted in Italian by two interviewers trained in qualitative methodologies and were audio-recorded. Semistructured interviews were based on a topic guide including attitudes and beliefs about the introduction of facemasks in blood donation settings and changes in relational/communication approach with new and regular donors, providing a flexible interview

structure. The interviewers varied questions based on respondents' answers to initial questions.

The interviews took place between June and September 2021. This study was approved by the Ethical Committee of the University of Milano–Bicocca (protocol *n* 624/2021).

2.2 | Analysis

Audio-recordings were transcribed verbatim and framework analysis (Dixon-Woods, 2011; Gale et al., 2013) was applied to identify emerging themes. According to Gale et al. (2013), the framework analysis process includes the following steps: verbatim transcription, familiarization with the interview, coding, developing a working analytical framework, applying the analytical framework, charting data into the framework matrix, and interpreting the data.

Owing to the inductive type of research question, an open coding was used and three researchers (ER, MR, and MB) with different backgrounds (psychological and nursing) independently coded the first three transcripts. A fourth researcher (SR), with a good experience in framework analysis, further reviewed the coding. The involvement of researchers with different backgrounds ensured that different perspectives were used in the coding, enriching the inclusion of different viewpoints.

The analytical framework was then developed comparing the codes used by different researchers and the data were interpreted for patterns, consensus, and critical observations. The coding framework was then systematically applied to the data and concurrently modified and refined until no additional codes emerged. Two investigators (MR and ER) summarized themes and supporting quotes from each transcript to discuss key areas with the research team. To identify overarching themes and relationships, the framework was examined within and across themes and by participant groups (physicians/nurses).

3 | RESULTS

In total, out of the 28 professionals who expressed their availability to take part in the study, 25 (14 physicians and 11 nurses; 9 males and 16 females) completed the interviews and were included in the analysis. Two nurses and one physician declined their availability. The mean age of interviewees was 50.68 ± 11.41 years (range 27–73). All were Italian, with a variability in the experience in blood donation settings ranging from 5 months to 44 years (mean 16.98 ± 12.94 years). Fourteen participants worked in the Northern Italy blood donation services, four in Southern Italy and seven were located in Central Italy; the mean length of interviews was 50.68 ± 11.41 min (range 9:15–34:30). Health professionals' responses were clustered around three themes: (1) experience and attitude toward facemasks; (2) impacts of facemask use on the donation process; and (3) strategies used to cope with changes due to facemask use.

3.1 | Experience and attitudes toward facemasks

Healthcare professionals described their experiences taking into account different aspects and their personal feelings were linked to both physical and psychological aspects of facemask wearing. Attitudes toward future facemask usage in blood donation settings varied across participants.

The most common reported reactions toward facemask wearing in the initial phases of the pandemic were linked to the fear of potential shortage of supply with 36% of professionals ($n = 9$) experiencing fear and a sense of uncertainty related to a potential shortage of supply.

> "*Pandemic was unexpected and we, as health professionals, were frightened by a thing that was unknown and also PPE [personal protective equipment] supply was an issue*" [24-NUR].

> "*The issue was not so much wearing them but having them available for use*" [13-PHY].

Furthermore, 44% of participants ($n = 11$ out of 25) reported feeling safe wearing facemasks and recognized the protective function of PPE for both healthcare professionals and donors.

> "*There was fear of contagion, and wearing facemasks made us feel safer*" [03-PHY].

> "*The facemask was useful, it helped us, and it saved us from bad times, even though it covers our face*" [15-NUR].

A majority (72%) of professionals ($n = 18$) linked the major challenges of facemasks to physical discomfort. In particular, 20% of professionals ($n = 5$) reported feeling airless and experiencing shortness of breath, and 8% of participants ($n = 2$) reported headaches caused by facemask use.

> "*I remember that in the first period there was a lot of physical tiredness; it wasn't easy*" [10-PHY].

> "*It was a bit difficult to breathe with the facemask on*" [17-NUR].

Although attitudes toward facemasks were mostly positive and associated with feeling safe, more than half of participants' (56%, $n = 14$) expressed the desire to discard them and return to prepandemic situations.

> "*I am dreaming of going back to a time when facemasks could be taken off. Facemasks actually make the world more complicated*" [01-PHY].

A total of 32% of professionals ($n = 8$) were against the idea of removing the mandatory facemask wearing, and they believed facemasks will be an essential protective measure for both healthcare staff and donors in the long term, even in non-healthcare emergency situations.

> "*I would rather keep it; facemask is an added element because it protects donors and professionals. The idea of taking it off doesn't make me feel safe*" [24-NUR].

> "*We noticed that airway diseases' transmission among professionals is drastically reduced: we had zero cases of sick leave for colds and for other viral infections*"" [06-PHY].

3.2 | Impacts of facemask use on the donation process

The main reported effects of facemask wearing on the donation process were clustered around impact on communication and relations with donors and on interferences with daily professional activities. Participants reported facemasks altered how they related to and liaised with donors and 80% of interviewees ($n = 20$) highlighted mask-related communication barriers.

> "*Normally you can understand what someone is saying by observing the person; you can understand by lip-reading; with facemasks you miss some words, comprehension gets worse, and you take one word for another*" [15-NUR].

> "*Sometimes it is impossible to understand at first glance*" [02-PHY].

Furthermore, 68% of professionals ($n = 17$) noticed a change in the relationship with blood donors, which turned out to be more "cold" and less "jovial" than what it used to be before facemasks were mandatory.

> "*We try our best to reassure patients, despite social distancing and the impossibility to see each others' face: they found an environment that is much colder than how it used to be few years ago*" [13-PHY].

> "*In the blood donation room the relationship between nurse and donor used to be more jovial. With the facemask this relationship has changed*" [14-PHY].

How facemask wearing affected empathic skills was also taken into account: one nurse experienced a reduced ability to recognize and acknowledge donors' emotions properly, whereas another nurse focused on the deprivation of physical contact, which made her less able to give reassurance.

> "*Touching donors while reassurancing is used to be part of a nurse's strategies, and we lost it. We did not lose it because we are not able to but because of the donor's behavioral response to the pandemic. In my opinion, the touch amplifies the verbal reassurance I can give to a donor*" [23-NUR]

> "*It's hard to see the emotional state underneath the facemask*" [19-NUR].

Participants reported changes in the relationship with both new and usual donors with nurses more focused on changes in the relationship with usual donors, whereas physicians tended to focus more on changes noticed in the relationship with new donors. A total of 27% of nurses ($n = 3$ out of 11) perceived a loss of closeness in the connection, and another 27% of nurses ($n = 3$) noticed a lack of motivation and emotional involvement in regular donors.

> "*Donors miss our smiles, our hugs. Donors report that hugs were part of the donation process as you become a big family*" [22-NUR].

> "*Some donors were struggling to come; they were much colder*" [21-NUR].

> "*PPE made the situation colder for many people*" [21-NUR].

Because of facemask wearing 36% of physicians ($n = 5$ out of 14) reported that when liaising with new donors, they were more suspicious of whether or not donors were being truthful about their health. At the same time, 29% of physicians ($n = 4$) noticed a reduction in their ability to sense new donors' emotions.

> "*The donor must be sincere; if the donor is not wearing the facemask, I can see facial reactions to my questions, the facemask prevents that… the facemask hides, while the face could tell us something more*" [14-PHY].

When it comes to the impact of facemask wearing on practical daily activities, healthcare professionals described it in terms of challenges.

A total of 40% of professionals ($n = 10$), primarily nurses ($n = 9$ out of 10), focused on how facemasks were making it more difficult to recognize signs of adverse reactions.

> "*With the facemask on it is difficult to notice changes in donors such as pallor, sweating, and general adverse reactions to donation*" [17-NUR].

> "*Pallor of face and lips are the first things you can notice, and facemasks cover them so you can't see*" [19-NUR].

Among the participants 20% ($n = 5$), primarily physicians (4 physicians, 1 nurse), mentioned difficulties in detecting some deferral factors such as herpes labialis because of facemask wearing.

> "*There are some dermatologic manifestations such as the outline of the mouth that may escape one's attention. Herpes Labialis and other forms of erythema cannot be identified if the donor doesn't mention them.*" [6-PHY]

> "*The impossibility to see a lesion on the mouth, which is a ground for suspension, such as herpes labialis. In a pre-facemask stage, donors enter the room, and you could see them, while now with the facemask on you cannot tell if they have herpes labialis or not*" [10-PHY].

Only doctors (29% of them, $n = 4$) brought up the difficulty of identifying the donor because of the mandatory use of facemasks.

> "*If I have to verify the picture reported on the ID, it's obviously not easy with the facemask*" [01-PHY].

As an additional challenge, a small portion of professionals (12%, $n = 3$) reported challenges in making donors follow guidelines for using facemasks.

3.3 | Strategies used to cope with changes due to facemasks use

Healthcare professionals adapted to the mandatory introduction of facemasks by organizing new ways to communicate and interact with donors. A total of 60% of participants ($n = 15$) reported they felt the need to intensify their eyes' expression, and 56% ($n = 14$) spoke more loudly and tried to better articulate words.

> "*We let our eyes speak more than our mouth*" [04-PHY].

> "*Personally I feel that the tone of my voice has changed because I nearly scream when I wear a facemask in order to let others understand what I'm saying*" [24-NUR].

As a compensation strategy, 48% of professionals ($n = 12$) tended to repeat concepts to better communicate.

> "*It often occurs that I have to ask donors to repeat what they are saying and vice versa*" [11-PHY].

A majority of professionals (72%, $n = 18$) found themselves spending more time talking to donors. Nurses reported that talking was the only way to reassure donors when wearing facemasks, considering they cannot use nonverbal language, such as smiling. Doctors talked more to donors to explain themselves and make sure that donors understood. Therefore, physicians reported that blood donor selection visits and mini-physical sessions lasted longer than usual.

> "*Now, when you are inserting the needle, it's important to talk a lot more to donors in order to put them at ease, while before a smile was enough*" [21-NUR].

> "*It occurred many times that the donor said they didn't understand, therefore the session took more time, in order to express concepts*" [05-PHY].

Another strategy often used by interviewees (64%, $n = 16$) to compensate for the impact of facemask wearing was paying more attention to details.

> "*You need to be more attentive towards donors in order to notice things that, if the donor wasn't wearing the facemask, you would notice right away*" [01-PHY].

> "*With the facemask, you must seize even the most suffused manifestations*" [22-NUR].

Furthermore, the source of information to detect early signs of adverse events had to shift as reported by 27% of nurses ($n = 3$ out of 10) who paid attention to details such as donors' ear complexion in place of the lips, which was the main indicator before the introduction of facemasks. Then, in case warning signals of adverse reactions occurred, 72% of professionals ($n = 18$) asked donors to take off the mask to do clinical observations.

> "*We ask donors to report symptoms at their first sign, so that donors could take the facemask off and we can check on them*" [07-PHY].

4 | DISCUSSION

To our knowledge, this is the first study exploring the impact of facemask wearing on the blood donation process and provides important information on healthcare professionals' experiences and their emerging needs.

According to previous studies in different healthcare settings (Back et al., 2020; Díaz-Agea et al., 2022; Rubinelli et al., 2020), our results confirm that, although facemasks contributed to increase the feeling of safety of blood donation staff at the beginning of the pandemic, their impact on professional tasks and relationship with blood donors is relevant. In line with existing data (Rapisarda et al., 2021), most healthcare professionals in our study reported discomfort and fatigue related to the continuous use of facemasks, with shortness of breath and headache the most mentioned disturbances.

Healthcare professionals reported difficulties in giving information, listening to and understanding blood donors, and building warm and trust-based relationships. Some physicians reported difficulties in taking medical history and checking against potential deferral criteria (particularly with new donors) because of the limited readability of facial expressions. Facemasks were furthermore perceived as a barrier for correctly identifying donors and for communicating with hearing-

impaired donors. Previous studies have shown that facemasks reduced the speech intelligibility in people both with or without hearing loss (Atcherson et al., 2017; Rahne et al., 2021; Yi et al., 2021), and this effect can be amplified by context conditions (such as background noise). Overall, physicians reported an increase in the duration of the counseling visit, especially with new donors, caused by the need to repeat information or ask donors to repeat or confirm information during the visit. Blood collection agencies should consider modifying the length of counseling visits to compensate for this delay or take off masks when conducting the first part of the visit (according to the eligibility criteria) and using a Plexiglas barrier, but using facemasks when physically visiting the donor.

Because facemasks prevent the possibility of detecting some early signs of vasovagal prodromes such as lips and face paleness, nurses were required to make a greater effort during the whole blood donation procedure to correctly detect early signs of discomfort or adverse effect in donors minimizing the risk of late intervention.

Both physicians and nurses reported that facemask wearing negatively changed how they related and communicated with blood donors. They described relationships with blood donors as less empathic, more impersonal, and with an overall relational impoverishment.

As for the strategies used to counteract the detrimental effects of facemask wearing, healthcare professionals in our study spent more time talking with donors, used a higher tone of voice, and repeated/rephrased questions or information. Nurses tried to find other sources of information to detect early signs of adverse reactions as the traditional ones were impaired by facemasks.

The majority of professionals (both physicians and nurses) were in favor of dismissing facemasks when the pandemic ends; however, one third of them were in favor of maintaining the use of facemask in the future, at least for professionals, considering the advantages greater than disadvantages. In particular, the most common reasons reported were the reduced occurrence of no COVID-19 respiratory infections among healthcare staff and the feeling of being more protected during professional tasks.

At the outbreak of the pandemic and in the subsequent months, it has been suggested to implement communication strategies that rely on nonverbal and paraverbal strategies and to modify contexts to maximize the quality of the communication process in order to overcome communication and relational barriers posed by facemask wearing (Knollman-Porter & Burshnic, 2020; Mheidly et al., 2020; Schlögl et al., 2021). These strategies should also be advocated for blood donation settings, considering the emerging needs and barriers reported by healthcare professionals. Some supplementary strategies that can help to strengthen the relationship between health professionals and blood donors include the use of a smiling unmasked face picture on the white coat, the use of the first name of the donor during the blood donation process, and a more frequent verbal description of the different steps of the process.

Recent studies have implemented technological applications to detect early signs of vasovagal reactions through facial image analysis (Rudokaite et al., 2022) or the use of smart facemasks for wireless CO2 monitoring (Escobedo et al., 2022). Although these devices might not be cost effective, they offer possible solutions to overcome the barriers posed by facemask wearing. Among other strategies, the use of telemedicine for the selection visit could help to overcome some of the barriers posed by facemasks and the possibility for the donor to complete his/her health history questions in advance and to check it with the physician.

The changes in professional tasks and discomfort linked to facemask wearing lead to an increase in the demand of personal resources for healthcare professionals that, in the mid-long period, can turn in an increased workload and an augmented risk of burnout (Campagne, 2021; Rosner, 2020).

4.1 | Limitations

Some limitations must be considered. First, the sample size is limited but adequate for the qualitative analysis; however, owing to the lack of nurses from blood donation services of the south of Italy, results should be generalized with caution. Another limitation is the lack of the donors' perspective, a further investigation with blood donors with different experiences (novice vs. regular) could help to give a comprehensive picture of the impact of facemask wearing on the donation process. Ultimately, a quantitative study is needed to verify if the perception of professionals in terms of increase in the length of the process and difficulties in detecting early signs of adverse reactions has a measurable impact on the process.

5 | CONCLUSION AND PRACTICAL IMPLICATIONS

In conclusion, facemask wearing affected the blood donation process, requiring more time and effort by healthcare professionals and limiting their perceived ability to build empathic relationships with donors and communicate effectively with them. New strategies should be developed to overcome these limitations, considering some telehealth applications.

The present work also highlights the need to strengthen the relationship between healthcare staff and donors before and after the blood donation to counterbalance the detrimental effect of facemask wearing on relational aspects. Strategies that can serve this purpose could include keeping contact with donors before and after the donation experience or asking for feedback through email or messages.

AUTHOR CONTRIBUTIONS

Study design: MB, ER, MR, SR, SA, GR, MGS. Data collection: MB, MR. Data analysis: MB, ER, MR, SR. Manuscript writing: MB, ER, MR, SR, SA, GR, MGS.

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CONFLICT OF INTEREST

None declared.

DATA AVAILABILITY STATEMENT

The data underlying this article will be shared upon a reasonable request to the corresponding author.

ETHICS STATEMENT

This study was approved by the Ethical Committee of the University of Milano–Bicocca (protocol n° 624/2021).

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