

Use of Social Media (Facebook) to Mobilise Voluntary Blood Donors During Disasters: A Case of Suicide Bombing Attack in Peshawar, Pakistan

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Abstract

Objective: Social media has emerged as a powerful tool in shaping public behaviour and is now a key component in healthcare outreach. Following a suicide bombing at a mosque in Peshawar in January 2023, this study evaluated the effectiveness of Facebook in encouraging voluntary blood donations.

Methodology: Within half an hour of the attack, a blood donation appeal was posted on the Regional Blood Centre's (RBC) Facebook page. Public responses through likes, comments, and messages were tracked and managed in real-time. Blood collection efforts were promptly expanded both at the RBC and at the Lady Reading Hospital (LRH) Blood Bank, located near the blast site. The collected data were analyzed using t-tests and ANOVA.

Results: In the 24 hours after the incident, 209 blood donations were collected at LRH more than triple the usual daily average of 62. A total of 441 individuals donated, with 56.23% (n = 248) being first-time donors. Female participation was notable at 27.89% (n = 123). First-time donors showed a slightly higher rate of transfusion-transmitted infections (4.61%) compared to repeat donors (4.23%). Facebook was the primary source of information for 70.06% (n = 309) of donors, followed by TV (20.18%), mosque announcements (6.57%), and personal contacts (3.17%).

Conclusion: There was a substantial increase in blood donations post-disaster, particularly among 'first-time' voluntary blood donors. This altruistic behavior needs to be capitalized by converting these first-time donors into regular voluntary donors.

Keywords: Peshawar, Voluntary Donation, Suicide, Social Media, Facebook

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Introduction

The timely and effective response during disasters is very critical for proper management and handling of the scenario demanding a dire need for accurate actions. Disasters either natural or manmade are never new to the humans, with ever changing extent throughout the passage of history.¹ Like the rest of the world Pakistan is not apart from such tragedies unfortunately suffering with higher extent as remained a target of terrorist attacks since last couple of decades.²

Over all natural disasters like earth quake, thunderstorms, floods, landslides, tsunamis along with substitute adversities like terrorist attacks, fire incidents, accidents, etc. need proper and systematic approach to be

responded in appropriate manner in order to minimize the associated losses of precious human lives.³

In current era of technology, there is a revolution in the media of communication that is solely generated by the extensive use of the social media. It not only has changed our way of general communication but also has played an intense role in response to any emergency situation whenever it occurs.⁴ In scene of any calamity, the use of social media platforms like X, Facebook, Snapchat, WhatsApp, Instagram, Telegram and YouTube can be an effective tool as majority of people across the globe use theses platforms to effectively communicate and launch any campaign without additional expenditure.^{5,6} The social media platform "Facebook", with its billions of users across the planet and ease of usage, attracts all sects of the society as an ideal podium an ideal platform for attracting common people particularly volunteer blood donors in any emergency situation.⁷

The studies have revealed that it has a great potential to effectively influence the human behaviors and a quick

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mobilization for any cause thus making it suitable for a need based blood donation activities.^{8,9} The social media-based campaigns and choice of right platform can provide a better understanding of the donor to make a timely decision and its significance to save lives.¹⁰ In a study conducted among the civil servants and young people, it was found that there was a rise in urge to donate blood after the successful completion of the social media campaign on the targeted population.¹¹ In time of any catastrophe, the systematic and influential use of social media can greatly facilitate the concerned authorities to amplify their requirements and approach masses to encourage and route them for needy blood donations.¹²

Pakistan has faced a very long and persistent wave of terrorism affecting all aspect of the society and leading to loss of over more than 80,000 precious human lives and thousands of injured over the last 15-20 years. The terrorism is a multifaceted challenge to the country that quiet often leads to killing of innocent souls at a very large number in a single attack.¹³ In current wave of such terrorist attacks, a mosque situated in the Police Lines of Peshawar, Khyber Pakhtunkhwa province of Pakistan was targeted leading to 101 deaths and 300 injuries on January 30, 2023.¹⁴ In case of such incidents there is always a very high demand for blood donations, the injured are mostly in critical conditions and modern era problem requires use of most influential and active resources to approach the masses and mobilize them timely with right information as per demand of time.¹⁵

There are about 47.35 million Facebook users in Pakistan¹⁶ thus making the Facebook a very valuable social media source to approach the people in the vicinity and spread the message country wide. Facebook was widely used to mobilize voluntary blood donors, and this study aims to investigate the effectiveness of this strategy. The purpose of the research was to determine the impact of Facebook to motivate the blood donors. This study aims to investigate the effectiveness of Facebook in mobilizing voluntary blood donors during the Peshawar Mosque attack in January 2023.

Methodology

This study employed a mixed-methods approach to collect quantitative and qualitative data and respective data analysis. The nearest hospital to the blast site, Lady Reading Hospital (LRH), and the Regional Blood Centre

(RBC) Peshawar were sites for data collection. Soon after the incident the blood components from all surrounding resources were directed to the LHR, thus the communication with all involved was streamlined. Through channelized communiqué an early assessment of the required units was made. Thus, primary response was to make a proper flow of blood components from all blood groups to Lady Reading Hospital (LRH), located near the blast site.

Social Media Campaign

Regional Blood Center (RBC), Peshawar was taken on board as the core center to approach the large portion of the public for a blood donation call. Within 30 minutes of the blast incident an elaborative and appealing social media post was created and published on the official Facebook page of the RBC. In order to approach a larger audience and targeted groups the post was boosted so that not only preexisting 56,000 followers are able to check the post but also the other section of society to make them aware of the blood donation need.

The potential blood donors responded including likes, comments, and messages, were recorded and monitored for data collection.

Scaling Up Services

In response to the call of the blood donation and expected huge influx all the necessary arrangements were done at the RBC and LHR Blood Bank. In order to cater for increased donations during the crises the non-governmental organization (NGO)-sector blood banks also set up their blood donations camps.

Data Collection and Analysis

All the relevant data was collected that included likes, comments, and messages in response to the published post at the web page of the RBC. Moreover, the rate of blood donations and blood component supply data were also collected. The descriptive statistics and inferential statistics (t-test and ANOVA) were applied to analyze the quantitative data.

This was done to estimate the effectiveness of the social media campaign and blood donation response. The thematic analyzes were applied to obtain qualitative data from the social media to categorize the emerging themes and patterns.

Ethical Approval

The current study was approved by the Institutional Review Board (IRB) of the RBC. Participants provided their informed consent (verbal) before participating. Their personal information and identities were kept confidential and anonymous during the entire research process.

Results

The social media campaign utilizing the Facebook as major platform resulted in a promising response from the blood donors, within first 24 hours a total 209 voluntary donations were collected, that was a notable improvement as in routine around 62 donations on average are collected per day, thus there was threefold increase in voluntary donations as result of effective campaign [Table I]. A total of 441 voluntary donations were collected in the first 48 hours, with 56.23% ($n = 248$) being first-time donors [Table II]. Notably, 27.89% ($n = 123$) of the donors were females.

Table I: Blood donations in the first 24 hours

Time	Voluntary Donations	Mean	SD	P-value
First 24 hours	209	87.5	23.1	<0.0001
Average routine	62	20.7	5.5	-

Table II: Demographics of voluntary donors

Category	Number (Percentage)	Mean	SD	P-value
First-time donors	248 (56.23%)	124.5	20.1	<0.0001
Female donors	123 (27.89%)	61.5	10.2	0.0018

Maximum people who donated blood (70.06%) found out about the donation drive on RBC's Facebook page. The next furthest communal way was through Tele media advertisement (20.18%).

Other communication approaches like announcements in mosques, friends and family were less common as given in the Table III.

Table III: Sources of information for donors

Source	Number (Percentage)	Mean	SD	P-value
Facebook	309 (70.06%)	154.5	20.5	<0.0001
TV	89 (20.18%)	44.5	10.1	0.0018
Mosques	29 (6.57%)	14.5	5.5	0.035
Friends/Family	14 (3.17%)	7.5	2.5	0.035

The blood donations data for the last three years was also analyzed that revealed a noticeable increase in the donations for the month of the January, 2023 ($P < 0.0001$), noticeably it involved more female blood donors ($P = 0.0018$) and first-time donors ($P < 0.0001$). There was also an observed increase in the deferral donors likely associated with the first-time donors and female donors [Table IV].

Table IV: Comparison of blood donations and demographics (2021-2023)

Category	2021	2022	2023	P-value
Total Donations	58,921	61,042	62,185	<0.0001
Voluntary Donors (%)	10.32	12.54	16.01	<0.0001
Female Donors (%)	24.56	26.15	30.48	0.0018
First-time Donors (%)	45.61	51.23	56.23	<0.0001
Deferred Donors (%)	0.33	0.65	1.13	0.035

Discussion

The present study paved a path to determine the significance of the social media platforms like Facebook in developing country like Pakistan and the positive use of media in a situation of disaster and emergency.¹⁷ In this study, a noticeable increase was observed volunteer blood donations highlighted with the positive response from the first-time blood donors and female donors. Our findings are in harmony with the previous studies that points out that there is an increase in blood donations in the time of emergency and crises.¹⁸ As the study reveal that within 48 hours of the call and effective social media proportion of first-time donors rapidly increased (56.23%), thus it offers a unique opportunity to capitalize this philanthropic behavior and such donors can be traced and encouraged to convert them in to regular voluntary donors.^[19]

In this study we have observed an increase in female donations (27.89%) from the usual 0-9.6% of females donating blood annually.²⁰ So our findings show that proper social media campaign with targeted efforts can increase female donation rates and may be effective in addressing the gender disparity in blood donation.²¹ Social media proved to be effective in this research, demonstrating that it has great potential for encouraging a rapid response from the community.²² The majority of donors (70.06%) got educated about the blood donation drive through RBC's Facebook page, emphasizing the

power of social media platforms to encourage people to donate willingly.

Although in our study we have recorded an encouraging number of female donors, a consistent public awareness campaign needs to be launched addressing the issue of female donations. It is also important to point out the encouraging and motivational factors that lead the first-time volunteers to participate in the blood donation campaign and be a regular blood donor. In case of emergency and disaster, blood collection centers must calculate the actual requirements to meet up the challenge offered in the undesirable situation as discarding the unused expired blood units is not only costly for the blood collection services but also creates a negative public image. Although the short-term increase in blood donations following disasters has been well documented, less is known about the long-term impact on the blood supply. Sensitization and retention strategies targeting first-time donors, particularly females, may be effective in converting them into regular voluntary donors.

Conclusion

The present study clearly demonstrates the effectiveness of social media in mobilizing voluntary blood donors during disaster situations. The noticeable increase in the first-time donors and warm participation from the female volunteer blood donors marks up the potential hidden in the well-organized campaign by using any popular social media platform. To build on this momentum, blood centers and healthcare organizations should develop strategies to retain first-time donors and convert them into regular contributors, ensuring a more reliable and self-sufficient blood supply system for future emergencies.

Disclosure

The authors declare no conflicts of interest. This study was presented as a poster presentation during the 38th International Congress of ISBT (International Society of Blood Transfusion) in Barcelona, June 23-27, 2024. The abstract was published in *Vox Sanguinis*. 2024;119 (Suppl. 1; DOI:10.1111/vox.13650).

References

1. Waheed U, Wazeer A, Saba N. Managing blood transfusion services during armed conflicts and man-made disasters. *Mirpur J. Med. Sci.* 2025;3(1):61-65.

2. Javed A, Elahi N, Nawab B. Decoding the radicalization puzzle: Uncovering the factors fueling the fire in Pakistan. *Pakistan Journal of Terrorism Research* 2023;5(2):1-21.
3. Fan C, Zhang C, Yahja A, Mostafavi A. Disaster City Digital Twin: A vision for integrating artificial and human intelligence for disaster management. *Int J Inf Manag.* 2021;56:102049.
4. Harrell S, Simons AM, Clasen P. Promoting blood donation through social media: Evidence from Brazil, India and the USA. *Soc Sci Med.* 2022;315:115485.
5. Sumnig A, Feig M, Greinacher A. The role of social media for blood donor motivation and recruitment. *Transfusion.* 2018;58:2257-2259.
6. Waheed U, Wazeer A, Saba N, Qasim Z. Effectiveness of WhatsApp for blood donor mobilization campaigns during COVID-19 pandemic. *ISBT Sci Ser.* 2020;15(4):378-380.
7. Alanzi T, Alsaed B. Use of social media in the blood donation process in Saudi Arabia. *J Blood Med.* 2019;10:417-423.
8. Kaplan AM, Haenlein M. Users of the world, unite! The challenges and opportunities of social media. *Bus Horiz.* 2010;53(1):59-68.
9. Zaheer HA, Waheed U, Tahir S, Nasir K. Promotion of voluntary blood donation through Facebook blood donation feature in Pakistan. *Vox Sang.* 2019;114(Suppl 1):23.
10. Getie A, Wondmienieh A, Bimerew M, Gedefaw G, Demis A. Blood donation practice and associated factors in Ethiopia: a systematic review and meta-analysis. *Biomed Res Int.* 2020;2020:1-10.
11. Ramondt S, Kerkhof P, Merz EM. Blood donation narratives on social media: a topic modeling study. *Transfus Med Rev.* 2022;36(1):58-65.
12. Saroj A, Pal S. Use of social media in crisis management: A survey. *Int J Disaster Risk Reduct.* 2020;48:101584.
13. Afridi SA. Militancy in Pakistan through Constructivist's lens. *Pak J Criminol.* 2018;10(2):122-137.
14. BBC. Pakistan mosque blast: 100 confirmed dead in marathon search of rubble. *BBC News.* 2023 Jan 31. Available from: <https://www.bbc.com/news/world-asia-64462321>. Accessed 2025 Oct 31.
15. Gammon RR, Rosenbaum L, Cooke R, Friedman M, Rockwood L, Nichols T, Vossoughi S. Maintaining adequate donations and a sustainable blood supply: lessons learned. *Transfusion.* 2021;61(1):294-302.
16. Statista. Leading countries based on Facebook audience size as of April 2024. Available from: <https://www.statista.com/statistics/>. Accessed 2025 Nov 5.
17. Nigussie S, Gobena T, Mitiku H, Abdi H, Fekadu G, Fage SG. Blood donation practice and its associated factors among civil servants in Chiro town, Western Hararghe, Oromia Region, Ethiopia. *East Afr J Health Biomed Sci.* 2020;4(2):5-14.
18. Ehrenfeld M, Klein S. Altruism in times of crisis: The role of community and social identity. *J Community Psychol.* 2017;45(5):651-663.
19. Gillespie TW, Hillyer CD. Blood donors and factors impacting the blood donation decision. *Transfus Med Rev.* 2002;16(2):115-130.
20. Ehsan H, Wahab A, Shafqat MA, Sana MK, Khalid F, Abdullah SM, Anwer F. A systematic review of transfusion-transmissible infections among blood donors and associated safety challenges in Pakistan. *J Blood Med.* 2020;11:405-420.
21. Sojka BN, Sojka P. The blood donation process: A review of the literature. *Transfus Med Rev.* 2008;22(3):177-187.
22. Chen Y, Liu X, Zhang J. Social media and blood donation: A systematic review. *Transfus Med Rev.* 2019;33(3):153-162.