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Original Research Article

A questionnaire based cross-sectional study on knowledge, attitude and practice of haemovigilance among the postgraduates at a tertiary care hospital

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ABSTRACT

Background: Haemovigilance plays a critical role in ensuring the safety and efficacy of blood transfusion practices by systematically monitoring, reporting and analysing adverse transfusion reactions. In India, the Haemovigilance Programme was initiated in December 2012, to enhance transfusion safety through a structured national surveillance system.
Methods: This observational questionnaire-based cross-sectional study was conducted among postgraduates at a tertiary care institute. A total of 100 postgraduates participated in the study. The questionnaire covered aspects of knowledge regarding the haemovigilance attitudes towards adverse event reporting and actual reporting practices. Data collection was carried out electronically using google forms.
Results: Our study was conducted among 100 postgraduate medical students. A significant majority (86%) reported being familiar with the Haemovigilance programme of India. Furthermore, 69% of respondents were aware that any transfusion reaction is eligible for reporting, Encouragingly, 94% of the participants agreed that reporting adverse transfusion reactions contributes positively to patient safety and care. Despite this high level of awareness and a favourable attitude toward haemovigilance, only 30% of the participants had ever reported a transfusion reaction, highlighting a noticeable gap between knowledge and actual practice.
Conclusions: The findings reveal that while postgraduate medical students demonstrate substantial awareness and a positive attitude toward haemovigilance. These results emphasize the need for further training and reinforcement of hemovigilance practices to enhance patient safety and effective blood transfusion monitoring.

Keywords: Hemovigilance, Knowledge, Attitudes, Practice, Cross-sectional studies, Teaching hospitals, Patient safety

INTRODUCTION

Haemovigilance is a systematic program aimed at monitoring, evaluating and enhancing the safety of blood transfusion practices. The term combines the Greek word *haema* (blood) and the Latin word *vigilans* (watchful), first introduced in France in 1991 as an extension of the principles of pharmacovigilance.[1,2] Haemovigilance functions as a comprehensive surveillance system encompassing all stages of the transfusion process, beginning with blood collection and component preparation and extending to post-transfusion monitoring of recipients. The primary aim of this system is to systematically identify, document and analyse transfusion-related adverse events, thereby reducing their recurrence and enhancing overall patient safety.[3,4] As part of a broader

quality assurance framework, haemovigilance plays a vital role in risk management and supports clinical decision-making.[5] Globally, developed countries have well-established haemovigilance programs. For instance, the European Union requires all member states to ensure full traceability of blood and blood components and to report any adverse transfusion reactions through directives such as 2005/61/EC.[6]

Similarly, the United States, Japan and Canada have integrated haemovigilance into national health policies involving collaboration between healthcare professionals, blood services and regulatory authorities.[7,8] Launched in December 2012, the Haemovigilance Programme of India (HvPI) was developed by the Indian pharmacopoeia commission in partnership with the National Institute of biologicals as a national initiative to enhance the safety and quality of blood transfusion practices.[9]

The program encourages reporting by healthcare workers to monitor trends, identify risk factors, and provide feedback to improve practice. Although haemovigilance plays a crucial role in ensuring transfusion safety, underreporting continues to be a persistent issue in several regions, primarily attributed to limited awareness, workload pressures and apprehension regarding blame or legal consequences.[10] Therefore, it is essential to evaluate the current knowledge, attitudes and practices regarding haemovigilance among healthcare professionals, particularly postgraduate students. Such information can guide the development of targeted educational interventions, enhance reporting behaviours and ultimately contribute to safer transfusion practices.

METHODS

Study design

A cross-sectional, questionnaire-based study was conducted among postgraduate students at Mysore Medical College and Research Institute, Mysore, Karnataka, to evaluate their knowledge, attitudes and practices regarding haemovigilance from January 2025 to March 2025. The study was divided into four sections: demographic information, knowledge of haemovigilance, attitude and practices toward haemovigilance.

Data collection

A structured questionnaire was administered to 100 postgraduate students at Mysore Medical College and Research Institute via Google Forms, with responses recorded in a multiple-choice format to ensure ease of participation and efficient data management.

Statistical analysis

The collected data were manually entered and analysed using Microsoft Excel 2019, with quantitative variables expressed as percentages.

Ethical considerations

The study was conducted after obtaining approval from the Institutional Ethical Committee (IEC) of MMCRI, ensuring adherence to established ethical standards.

RESULTS

Table 1 shows that the study included 100 postgraduate students, comprising 48 males and 52 females.

Table 1: Demographic information (n=100).

Gender	N (%)
Male	48
Female	52
Total (postgraduate students)	100

Table 2: Knowledge about haemovigilance.

Knowledge about haemovigilance	Yes (%)	No (%)
Do you know that transfusion reactions can be prevented	98	2
Do you know that blood transfusion reactions can be reported	90	10
Do you know about hemovigilance programme	74	26
Which type of transfusion reaction should be reported		
Serious transfusion reactions	16	
Any transfusion reaction	69	
Only proven transfusion reactions	15	
To whom transfusion reaction should be reported		
Head of unit	6	
Department of pathology	5	
Regional hemovigilance centre	52	
Blood bank	37	

Out of 100 postgraduates, 66% were from clinical 25% were from paraclinical and 9% were from preclinical department. Table 2 shows knowledge among postgraduates about haemovigilance. Our study indicate that a substantial proportion of respondents (98%) recognized that transfusion-related adverse events are largely preventable, suggesting a strong foundational understanding of transfusion safety principles. Furthermore, 90% acknowledged the necessity of reporting blood transfusion reactions, though a minority (10%) remained unaware of this critical aspect of haemovigilance. Awareness of the national or institutional haemovigilance programme was reported by 74% of participants, while 26% lacked familiarity with such initiatives. In terms of reporting criteria, 69% correctly opined that all transfusion reactions, irrespective of severity or confirmation, should be reported, However,

16% felt only serious reactions should be reported and 15% believed only confirmed cases should be documented. Regarding reporting hierarchy, 52% appropriately identified the Regional haemovigilance centre as the primary recipient of transfusion reaction reports. Nonetheless, 37% preferred reporting to the blood bank, and smaller fractions opted for the Head of unit (6%) or the Department of pathology (5%), reflecting inconsistencies in understanding institutional reporting mechanisms.

Table 3: Attitude toward haemovigilance.

Attitude toward haemovigilance	Agree (%)	Disagree (%)
Reporting adverse transfusion reactions are necessary	99	15
Reporting adverse transfusion reactions benefit patient	84	65
Hemovigilance should be included in undergraduate curriculum	91	9

Table 3 highlights postgraduates' attitudes towards haemovigilance. A strong majority (99%) agreed that reporting transfusion reactions is essential for patient safety and improving practices. Additionally, 84% believed that such reporting benefits patients, reflecting an understanding of its clinical value. Notably, 91% supported including haemovigilance in the undergraduate medical curriculum, emphasizing the importance of early education to promote a safety-oriented mindset.

Table 4: Practices in haemovigilance.

Practices in haemovigilance	Yes (%)	No (%)
Had you ever found any transfusion reaction during your clinical practice	30	70
Have you documented any transfusion reaction?	14	86
Have you reported any transfusion reaction to the hemovigilance centre	5	955
Have you attended any CME's /workshops/seminars on hemovigilance?	12	88
Have you ever been trained on how to report transfusion reactions	10	90

Table 4 reveals significant gaps in the practical implementation of haemovigilance despite positive attitudes. Only 30% had encountered transfusion reactions during clinical work, and just 14% documented them. Formal reporting was rare, with only 5% having submitted a report to a haemovigilance centre. Participation in educational events was limited (12%), and only 10% received formal training on reporting. These findings highlight a disconnect between awareness and practice, emphasizing the need for structured training and better institutional support.

Table 5: Reasons for not reporting blood transfusion reactions.

Reasons for not reporting	Yes (%)	No (%)
Busy schedule to fill form	85	15
Legal liability issue	41	59
Busy to look actively for transfusion reaction	44	56

Table 5 outlines key reasons for underreporting transfusion reactions. Most participants (85%) cited a busy schedule as the primary barrier to filling reporting forms. Legal concerns were noted by 41%, while 44% felt too occupied to actively monitor for reactions. These results highlight time constraints and legal apprehensions as major obstacles, suggesting a need for streamlined, efficient reporting systems.

DISCUSSION

90% of participants in our study acknowledged the need for reporting transfusion reactions, consistent with research by Bhattacharya et al, where 88% of postgraduate residents supported the importance of such reporting in enhancing patient safety and system accountability.[11] However, it is noteworthy that a small proportion (10%) remained unaware of this essential reporting responsibility, indicating the need for reinforced sensitization during medical training.

Awareness of haemovigilance programs, both at the national and institutional level, was observed in 74% of participants. This is slightly higher than the 68% reported by Bansal et al in their study among clinical residents in a Northern Indian teaching hospita.[12] This could reflect an improvement in dissemination of programme information in recent years or variability in institutional emphasis on haemovigilance policies. Regarding knowledge of reporting criteria, 69% of participants correctly responded that all transfusion reactions should be reported irrespective of severity.

This finding is similar to the 65% correct response rate observed in the study by Kaur et al, highlighting that while awareness is improving, there remains a knowledge gap in specific haemovigilance protocols among future prescribers.[13] This study highlights a strong positive attitude among postgraduates regarding haemovigilance. A

striking 99% agreed that reporting transfusion reactions is essential for patient safety and quality improvement. This aligns with findings by Deb et al, where 96% of healthcare professionals emphasized the role of reporting in improving transfusion practices.[14] Despite encouraging attitudes towards haemovigilance, the present study reveals notable gaps in its practical implementation. Only 30% of postgraduate respondents reported encountering transfusion reactions during clinical work, and a mere 14% had documented such events. Even fewer (5%) had formally submitted a report to a Haemovigilance centre. This trend reflects a concerning disparity between awareness and actual practice.

Comparable findings were reported by Adhikary et al, where only 7% of healthcare professionals had ever submitted a haemovigilance report, despite 80% being aware of its importance Similarly, in our study, only 12% had attended any educational event related to haemovigilance, and just 10% had received formal training in reporting procedures. Adhikary et al also noted that lack of training and institutional support were primary barriers to active participation, highlighting systemic issues that limit effective reporting.[15]

Limitations

The study was constrained by a limited sample size and was conducted at a single medical institution, which may restrict the broader applicability of the results. As the study relied on self-reported practices, the findings may be subject to recall bias.

CONCLUSION

Our study shows that postgraduate medical students have a good understanding and a positive outlook towards haemovigilance. However, actual reporting practices are still inadequate. There is a pressing need for structured training programs, hands-on workshops, and simplified reporting procedures to ensure better implementation. Introducing haemovigilance modules early in medical education and promoting continuous professional education can significantly enhance compliance and patient safety in transfusion services.

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