

# International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675 Frequency: Bi-Monthly

Available online on: https://ijmpr.in/

# Original Article

# A Cross Sectional Study on Knowledge, Attitude, Practice Towards Hemovigilance Among Interns at A Tertiary Care Hospital

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# OPEN ACCESS

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Received: 25-10-2025 Accepted: 24-11-2025 Available online: 30-11-2025

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#### ABSTRACT

**Background**: Blood transfusion is a lifesaving procedure that leads to serious adverse events. Hemovigilance program of India ensures safety Blood transfusion by monitoring every step of the process from donor to recipient. Aim and **Objective**: The Aim of the study was to access the knowledge, attitude and practice of Hemovigilance among CRMIs and to evaluate the various causes of under reporting in a Tertiary care hospital. Materials and Methods: After obtaining IEC approval, the nature and purpose of the study was explained to the study participants. This cross-sectional questionnaire study was conducted among MBBS interns (CRMIs) in Department of Pharmacology – Melmaruvathur Adhiparasakthi institute of medical sciences and research. The Duration of the study was 3 Months.117 CRMIs was provided with a sheet containing 20 -Pre validated questionnaire (Knowledge -10, Attitude -5, Practice -5) pertaining to Hemovigilance and 30 minutes was provided to them for answering. Data was analyzed using SPSS Software version 29. Continuous data was expressed as mean and standard deviation while categorical data was expressed as Proportions. Difference between groups was accessed in "t" Test. Results: Knowledge regarding adverse events reporting was 75% whereas, 82 were aware that Reporting is Essential.63% of the study participants believed that blood transfusion is risk to the patient. 70% of the participants did not know where to report the reaction leading to Underreporting. Conclusion: Although the Health care Professionals had Good Knowledge and Attitude but the practice of reporting was only 50% leading to underreporting. Incorporation of Hemovigilance education in CRMIs Duty curriculum would enhance reporting of adverse effects due to Hemovigilance.

**Keywords**: Hemovigilance, Blood Transfusion, Knowledge, Attitude, Transfusion Reactions.

# INTRODUCTION

The idea of Secured Blood Transfusion has garnered attention since the 80's. In the 1990 s HIV and Hepatitis C virus infections were discovered in Hemophilia patients across the USA, UK, France, Canada and Japan, which demanded a need for the establishment of a surveillance system to ensure transfusion safety. This Surveillance system is now widely regarded as Hemovigilance<sup>[1]</sup> The term hemovigilance was first used in France in 1990, and then it was developed in 1994 by the French blood agency as a national system of surveillance and alert from blood collection to the follow-up of the recipients.

WHO States," Haemovigilance is a set of surveillance procedures covering the entire transfusion chain, from the donation and processing of blood and its components, to their provision and transfusion to patients and their followup. Haemovigilance includes the monitoring, reporting, investigation and analysis of adverse events related to the donation,

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processing and transfusion of blood, as well as the development and implementation of recommendations to prevent their occurrence or recurrence [2]

Hemovigilance is mainly intended to improve the safety of blood transfusion. On December 10, 2012 The Indian Pharmacopoeia Commission (IPC) launched the Hemovigilance program of India (HvPi), nationwide, with the National Institute of Biologicals in Uttar Pradesh serving as its coordinating center. HvPi collaborates with the pharmacovigilance program of India (PvPi) under the Ministry of Health and Family Welfare, Government of India

Haemo-Vigil Software has been created to gather information from medical colleges and hospitals across India [3]. The Transfusion Medicine Department of the relevant medical colleges or hospitals must report all details and evaluations of the transfusion reaction that took place according to the Transfusion Reaction Reporting Form (TRRF).

The TRRF form is then sent to the National Institute of Biologicals in Noida, Uttar Pradesh, where it is collected, collated, analyzed, reviewed for completeness, and quality checked through core group hemovigilance and hemovigilance advisory committee, which consists of a signal review panel, core training panel, and quality review panel for the preparation of SOP, guidance documents, and training manuals, as well as training and feedback for technical associates in medical colleges and hospitals<sup>[4]</sup>. Interns are frequently involved in patient care and transfusion-related activities; their KAP influences reporting of transfusion reactions and blood safety practices. Assessing KAP helps identify gaps for targeted training, strengthening Hv implementation, and improving patient safety. Thus, this study aims to Access the Knowledge, Attitude and Practice of Hemovigilance among Interns in a Tertiary care Hospital.

#### MATERIALS AND METHODS

After obtaining IEC approval, the nature and purpose of the study was explained to the study participants. This cross-sectional questionnaire study was conducted among MBBS interns (CRMIs) in the Department of Pharmacology-Melmaruvathur Adhiparasakthi institute of medical sciences and research. The Duration of the study was 3 Months.117 CRMIs was provided with a sheet containing 20 – Pre validated questionnaire (Knowledge -10, Attitude -5,Practice -5) pertaining to Hemovigilance and 30 minutes was provided to them for answering. Data was analyzed using SPSS Software version 29. Continuous data was expressed as mean and standard deviation while categorical data was expressed as Proportions. Difference between groups was accessed in "t" Test.

#### **INCLUSION CRITERIA:**

CRMIs willing to participate and have given written Informed consent.

# **EXCLUSION CRITERIA:**

CRMIs Decline to participate

# **RESULTS**

Among the 123 participants, females constituted 63.52% (n=70), while males accounted for 36.48% (n=53)

**Table: 1 Knowledge towards Hemovigilance** (Parenthesis indicates percentage)

S.No	Questions	Yes	No
1	Have u had any Awareness about Hemovigilance?	61 (49.6)	62 (50.4)
2	Do you possess Knowledge about Transfusion Reactions?	112 (91.1)	11 (8.9)
3	Have you Attended any Seminars/Workshops on Hemovigilance?	23 (18.7)	100 (81.3)
4	Have you have Any Idea about Patients preparations before issue of blood unite from blood?	92 (74.8)	31 (25.2)
5	Do you know any information about issued blood bag storage that is going to be infused?	78 (63.4)	45 (36.6)
6	Have you Heard about Privacy and Security of data sent through Hemovigilance?	35 (28.5)	88 (71.5)
7	Are you Aware about Haemo-Vigil Software?	23 (18.7)	100 (81.3)
8	Do you know About How to Report Transfuse Reactions?	40 (32.5)	83 (67.5)
9	Are you Aware of risk to Donors caused during blood withdrawal?	88 (71.5)	35 (28.5)
10	Are you Aware of Donors and Recipient Adverse Drug Reaction forms to be filled towards Hemovigilance?	77 (62.6)	46 (37.4)

Table 1 indicate varied levels of knowledge toward hemovigilance among the 123 participants. 49.6% respondents reported having awareness about hemovigilance, while a considerably 91.1% had knowledge of transfusion reactions. Only 18.7% had attended seminars or workshops related to hemovigilance. Most participants (74.8%) were aware of patient preparation prior to issuing blood units, and 63.4% knew about appropriate storage of issued blood bags before infusion. Awareness regarding privacy and security of hemovigilance data was relatively low (28.5%).

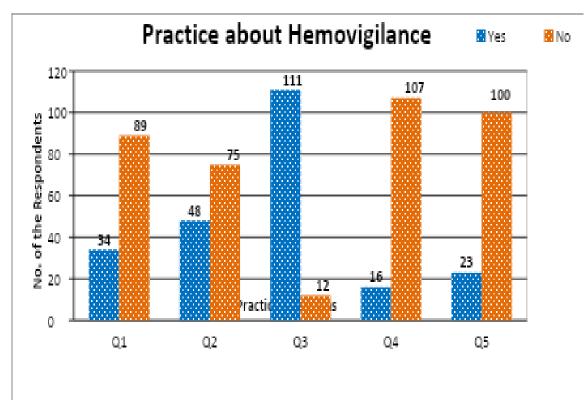
 Table 2: Attitude towards Hemovigilance (Parenthesis indicates percentage:)

S. No	Questions	Yes	No
1	Whether Blood Transfusion is at Risk to the patient?	63 (51.2)	60 (48.8)
2	Whether Reporting of Blood Transfusions is Essential?	114 (92.7)	9 (7.3)
3	Whether Every institute should enroll Hemovigilance?	100 (81.3)	23 (18.7)
4	Have you Faced situations to discard blood bags due to other issues in ward?	31 (25.2)	92 (74.8)
5	Have you Documented any reaction during Training?	33 (26.8)	90 (73.2)

Table 2 indicate mixed levels of awareness regarding the responsibilities related to blood transfusion. 51.2% of the participants believed that blood transfusion poses a risk to patients, while 92.7% agreed that reporting blood transfusions is essential. 81.3% felt that every institute should be enrolled in hemovigilance programs. However, only 25.2% had encountered situations where blood bags needed to be discarded due to ward-related issues, 26.8% reported documenting any reaction during their training.

**Table 3**: Practice towards Hemovigilance (Parenthesis indicates percentage:)

S.No	Questions	Yes	No
1	Have you pricked yourself with needle during blood collection?	34 (27.6)	89 (72.4)
2	Do you know how to report Adverse transfusion Reactions?	48 (39.0)	75 (61.0)
3	Whether Transfusion reactions reporting have benefit for patients?	111 (90.2)	12 (9.8)
4	Have you faced issuing wrong blood group bag and noticed after few hours?	16 (13.0)	107 (87.0)
5	Have you suspected any donor which has been tested for HIV?	23 (18.7)	100 (81.3)



27.6% reported having pricked themselves with a needle during blood collection. 39% aware of the correct reporting procedures. Nevertheless, an overwhelming majority 90.2% acknowledged that reporting transfusion reactions benefits patients, reflecting strong recognition of its importance. Only 13% had encountered, issue of the wrong blood group bag and discovered hours late. Additionally, 18.7% had suspected donors who were later tested for HIV.

# DISCUSSION

This study assessed the knowledge, attitude, and practice (KAP) of hemovigilance among MBBS interns in a tertiary care teaching hospital. As a frontline health care trainess frequently involved in transfusion processes, nterns play a crucial role in identifying and reporting transfusion reactions. <u>In</u> this study only **49.6%** of interns reported awareness of hemovigilance which is consistent with Sharma et.al from India, where hemovigilance is still evolving as a structured component of medical training <sup>[3,4]</sup>.

**91.1%** indicating an adequate understanding of general transfusion medicine concepts. However, awareness of national hemovigilance systems, reporting procedures, and digital tools, including Haemo-Vigil software, remained low (**18.7%**), which is in agreement with Agrawal A, et al. highlighting poor exposure to formal reporting systems among medical undergraduates <sup>[5]</sup>.

Only **18.7%** of participants had attended seminars or workshops on hemovigilance, echoing Bhattacharya P, et al findings that structured training opportunities remain insufficient across Indian teaching hospitals <sup>[6]</sup>. Participants demonstrated a largely positive attitude toward hemovigilance. (**92.7%**) agreed that reporting transfusion events is essential, similar to findings in studies by Sahu et al. and Mittal et al<sup>[7]</sup>.

However only 26.8 % had documented a transfusion reaction during training, indicating insufficient practical exposure or low exposureor low emphasis on documentation. Effective Hemovigilance requires close collabaration between blood banks and healthcare professionals in reporting adverse events. Success depends upon creating Awareness among healthcare professionals about Hemovigilance and its parameters. Understanding about Hemovigilance will also significantly improve the impression of Reporting Blood Transfusion responses, which will ultimately result in more preventing Reactions in the future.

# **LIMITATIONS**

- 1) Single-center study
- 2) Self-reported questionnaire
- 3) Limited assessment of practical skills (Did not include direct observation of practice)
- 4) Possible recall bias

# **RECOMMENDATIONS:**

- 1.Strengthen undergraduate curriculum.
- 2. Mandatory Periodic training workshops
- 3. Promote a reporting culture

#### **CONCLUSION**

Interns possess positive attitudes and reasonable clinical awareness, their knowledge of structured reporting mechanisms and digital hemovigilance tools remains inadequate. Enhanced awareness and training are essential for strengthening the Hemovigilance Programme of India (HvPi) and ensuring safer transfusion practices, ultimately improving patient outcomes.

FUNDING: Self

**CONFLICT OF INTEREST**: None

**ACKNOWLEDGEMENTS**: The authors would like to thank all the participants for their contribution.

# REFERENCES

- 1. Jaspreet Kaur Boparai, Surjit Singh. Haemovigilance: A new beginning in India. Int J App Basic Med Res. 2015; 5(3): 200-202.
- 2. World Health Organisation. AIDE-MEMOIRE. National Haemovigilance System; 2015.
- 3. Sharma S, Sharma P. Knowledge, Attitude and Practices of Hemovigilance among Medical Students. J Clin Diagn Res. 2017;11(6).
- 4. Singh A, et al. Awareness of Hemovigilance Among Interns in a Tertiary Care Hospital. Indian J Hematol Blood Transfus. 2018;34(2):1–6.
- 5. Agrawal A, et al. Hemovigilance in India: A Study on Knowledge and Awareness in Teaching Hospitals. Asian J Transfus Sci. 2019;13(2):120–125.
- 6. Bhattacharya P, et al. Awareness and Implementation of Hemovigilance Programme in India. Indian J Med Res. 2018; 147:83–89.
- 7. Mittal.S et al. Assessment of Attitude Toward Hemovigilance Among Health Professionals. Transfus Apher Sci. 2019;58(1):102–107.[8]
- 8. Ahamed SM, Poornachandra Somwarpet Manjunatha, Milton B, Siva Ranjini. Knowledge, attitude and practice of hemovigilance among health care professionals and hemovigilance study in a tertiary care hospital. International Journal of Community Medicine and Public Health. 2025 Jan 31;12(2):803–9.
- 9. K. Hima Bindu et al (2020) in the recent edition of the IOSR Journal of Dental and Medical Sciences.
- 10. Sahoo PK, Raj SS, Manthri S. Improved access to safe blood must be prioritized as a core component of comprehensive efforts to prevent maternal deaths in Uttar Pradesh, India. Int J Med Sci Public Health 2014;3:1208-14.
- 11. Singh S, Bisht A, Singh S, Kalaiselvan V, Chopra V, Kumari P, et al. Review on haemovigilance practice in India. WJPPS. 2015;4(12):350-7.
- 12. Mukherjee S, Maiti R. Haemovigilance: a current update in Indian perspective. J ClinDiagn Res. 2016;10(11):EE05-9.

- 13. Rani SK, Chakeadhar T, Swetha AR, Bhuvaneshwari E, Marapaka S. Assessment of knowledge, Attitude, Practice of Hamovigilance among PGs in a tertiary care hospital in Hyderabad- A cross-sectional study. Asian J Pharm Clin Res. 2022;15(3):21-9.
- 14. Amit P, Anjali A, Amruta VD, Archana SB. Knowledge, Attitude and Practice of Haemovigilance among Doctors in Tertiary care Hospital in Nagpur, Maharashtra, India. IJBCP. 2016;5(3):788-93.
- 15. Date A, Dashputra A, Borkar A. Knowledge attitude and practice of haemovigilance among doctors in tertiary care hospital in Nagpur, Maharashtra, India. IJBCP. 2017;6(3):421-9.
- 16. Bisht A, Gupta S, Singh S. Transfusion reaction reporting culture in hemovigilance program of India since its Inception. JRFHHA. 2015;
- 17. Abdullah MA, Abouzeid H, Allangawi M. Knowledge, attitudes, and practices of healthcare professionals towards hemovigilance in the Middle East: A multicenter survey. Transfus Apher Sci. 2023;62(2):103544.
- 18. Wendel S, Roman A. Hemovigilance and patient safety: An analysis of healthcare professionals' knowledge and practice. Transfus Med Rev. 2022;36(4):300-8.
- 19. Goel R, Johnson D. The importance of hemovigilance in blood transfusion safety: Insights from a healthcare professionals' perspective. J Clin Apher. 2023;38(1):55-63.
- 20. Klein HG, Anani WQ. Enhancing hemovigilance: The role of healthcare professionals in monitoring and reporting transfusion-related adverse events. J Blood Transfus. 2022:6672304.