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## KNOWLEDGE, ATTITUDE AND PRACTICE OF VACCINE VIGILANCE AMONG HEALTHCARE PROFESSIONALS IN A TERTIARY CARE TEACHING HOSPITAL

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**ABSTRACT: Introduction:** Adverse events following immunisation (AEFI) are frequently underreported in India for numerous reasons, ultimately impacting the country's immunisation program. The current study evaluates the knowledge, attitudes, and reporting practices (KAP) on vaccine vigilance among physicians in our hospital. **Objectives:** To find out various causes of Under-reporting of adverse events subsequent immunisation. **Materials & Methods:** Using a standard questionnaire, 200 doctors were interviewed. Responses were documented and analysed. Doctors had 37.8% knowledge while 68.9% had a good attitude but had poor reporting practices 34.6%. **Results:** Lack of knowledge, difficulty in filling reporting form, time constraints were the common causes for the under-reporting. **Conclusion:** Enhancing the perspective of AEFI, adequate training, and proactive involvement in reporting by healthcare practitioners could strengthen the nation's vaccine surveillance system.

**INTRODUCTION:** As per WHO/CIOMS recommendations, "Adverse events following immunisation (AEFI) denotes any unfavorable medical occurrence that transpires post-immunisation, which is not causally linked to vaccine administration" <sup>1</sup>. Furthermore, they are classified into five categories: responses linked to vaccination products, reactions related to vaccine quality defects, reactions related to immunisation errors, reactions related to immunisation anxieties, and coincidental incidents. Adverse Events Following Immunization (AEFIs) is divided into four types: common, minor, severe, and significant <sup>2,3</sup>.

Monitoring vaccine safety, also called AEFI surveillance, is conducted via a national system under the supervision of the "National Regulatory Authority" (NRA) and "National Immunisation Programme" (NIP) <sup>4</sup>. The AEFI monitoring system has been often associated with AEFI review committee, academic institutions, along with technical activities. The aim is to identify and analyze AEFI reports that demonstrate a temporal association with vaccine administration <sup>5</sup>. Despite an increase in reporting, under-reporting continues to be limitations for different reasons <sup>6</sup>. Our study aims to assess healthcare practitioners' knowledge, attitudes, and reporting behaviors concerning adverse occurrences following immunization.

**MATERIALS AND METHODS:** A cross-sectional, descriptive, prospective survey utilizing a questionnaire was administered to the physicians at our institution from November 2023 to January 2024. The Institutional Ethics Committee approved

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the study (No.VMC/F/III/00004/2023). We involved doctors who consented to the study. Research participants who did not consent or complete questionnaire had been excluded. The sample size had been determined by employing standard methods.

**Data Collection:** A semi-structured questionnaire had been developed through a survey of existing research. The questionnaire was evaluated by a team of experts in the domain. The questionnaire comprised 35 questions, including 5 demographic inquiries, 10 knowledge assessments, 10 attitude evaluations, and 10 questions regarding reporting processes.

The majority of the questions had been closed-ended, requiring yes or no responses. Each accurate response garnered one point, and each incorrect response received no points. The overall scores for knowledge, attitude, and reporting practices were computed individually for each participant.

**Statistical Analysis:** All findings were cataloged in MS Excel sheet and analyzed using standard statistical methods. Statistical significance had been evaluated at  $p < 0.05$ .

**RESULTS:**

**Demographic Characteristics of Participants:** Respondent's age distribution revealed that 42% belonged to the 21 to 30 age group, whereas 16% were in the 51-60 age group **Table 1**. Male respondents constituted 62%, while female respondents comprised 38% **Table 2**. The majority had fewer than five years of experience **Table 3**. The demographic characteristics have been presented in the following tables

**TABLE 1: AGE DISTRIBUTION**

Age	Number	Percentage
21-30	84	42
31-40	46	23
41-50	38	19
51-60	32	16

**TABLE 2: GENDER DISTRIBUTION**

Sex	Number	Percentage
Male	124	62
Female	76	38

**TABLE 3: YEARS OF EXPERIENCE**

Years of experience	Number	Percentage
< 5 YRS	82	41
5-10 YRS	48	24
10-15 YRS	36	18
> 15 YRS	34	17

**TABLE 4: RESPONSE ON KNOWLEDGE OF VACCINE VIGILANCE**

Question (n=10)	Correct Responsesn (%)	Incorrect Responsesn (%)
What is an abbreviation for" AEFI?	26	74
How do you define AEFI?	33	66
Do you know about WHO classification?	63	37
Do you know about the Pv PI classification?	32	68
What are the causes of AEFI?	51	49
Should the skin be stretched at the injection site when giving the IM injection?	58	42
Is facility supervision the responsibility of the District Health Management Team?	21	79
Why can't anaphylaxis be treated with subcutaneous adrenaline?	30	70
Should the patient receive oxygen and have their legs elevated above their trunk during anaphylaxis?	29	71
Could you describe the evident signs and symptoms of any adverse occurrences related to vaccines?	35	65
Average	37.8%	62.2%

**TABLE 5: RESPONSE ON ATTITUDE**

Question(n=10)	Yes n (%)	No n (%)
Do you consider AEFI reporting to be significant?	72	28
Do you consider that it is not your responsibility to report?	76	24
Do you consider that there will be no advantages to AEFI reporting?	84	16
Do you feel there's no need to report?	55	45
Do you think that reporting can lower the number of vaccine-preventable incidents?	66	34
Do you believe that reporting is a long and hectic procedure?	74	26
Do you think that the hospital is not properly aware?	56	44

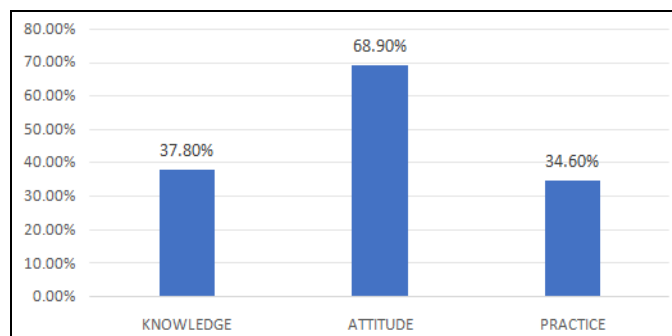
If you reported an AEFI, would you feel guilty about it?	64	36
Will you attend the training if you receive an invitation?	56	44
Will you suggest that a colleague attend training?	86	14
Average	68.9%	31.1%

**TABLE 6: RESPONSE ON REPORTING PRACTICES**

Question(n=10)	Yes n(%)	No n(%)
Does your hospital follow an AEFI reporting procedure?	32	68
Are you reporting in your workplace?	26	74
If yes, how do you report?	36	64
Have you ever missed reporting?	35	65
Is there a reporting form in workplace?	28	72
Do you let the caregiver or immunized person know about the potential AEFI?	38	62
Whom should you report initially?	44	56
Should minor adverse events be reported?	3	67
If yes, how should it be reported?	32	68
When should “the State and National AEFI committee” receive the Case Investigation Form?	42	58
Average	34.6%	65.4%

Regarding the knowledge part, 37.8% gave correct response **Table 4** which indicates poor knowledge about AEFI. 68.9% of respondents showed positive attitude **Table 5** but only 34.6% of them showed good reporting practice **Table 6**.

**Fig. 1** illustrates the comprehensive knowledge, attitudes, and reporting practices (KAP) of immunisation healthcare practitioners.



**FIG. 1: KAP OF VACCINE VIGILANCE**

**DISCUSSION:** Vaccine vigilance is important in our healthcare system. However, it’s being under-reported due to various reasons, which in turn affects the immunisation coverage <sup>7</sup>.

In our study, a significant proportion of doctors exhibited a favorable attitude (68.9%) towards reporting; nevertheless, they lacked sufficient knowledge (37.8%) and abilities (34.6%) to implement the practice effectively. We discovered that immunisation healthcare practitioners report AEFI often, corresponding to study’ outcomes by Parella A *et al.*<sup>8</sup> Research by Masika CW *et al.* showed that quality of reporting practice improved with years of experience; nevertheless, our data

reveal that those with fewer years of experience exhibit superior KAP <sup>9</sup>.

Mohammed LA *et al.* <sup>10</sup> found that age (with a p=0.009), work experience (p=0.001), along with prior training (p=0.001) had been significantly related to KAP, whereas no link was observed between gender and knowledge. In line with their findings, our study also showed that experience (p=0.002), age (p=0.0001), profession (p = 0.006), had significant correlations with KAP, but gender (p=0.242) did not.

The findings indicate that insufficient information, inadequate training, challenges in completing the reporting form, time restrictions, and a lack of awareness about the electronic reporting system were common causes of this problem. Medical practitioners ought to be informed about the AEFI surveillance system and encouraged to engage actively in documentation <sup>11</sup>. Doctors must be trained to utilize the electronic reporting system, and it is imperative that they allocate time to finish these forms <sup>12-14</sup>.

**Strengths and Limitations of the Study:** Our study was limited by low sample size, low willingness by doctors to participate in the study.

**CONCLUSION:** Doctors have a positive attitude in vaccine vigilance but lack knowledge and reporting practice. Regular in-service training and active engagement in reporting can enhance the vaccine monitoring system in the nation.

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