



Original Research Article

Impact of an Awareness Program on Adverse Drug Reaction Reporting Among Community Pharmacists

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Abstract: Community pharmacists are pivotal in the pharmacovigilance pathway, but under-reporting of adverse drug reactions (ADRs) remains an ongoing challenge. Structured awareness programs have emerged as an effective intervention to boost knowledge, attitude, and practical engagement in ADR reporting among these professionals. This article examines empirical evidence from prospective and interventional studies, evaluates key facilitators and barriers, and analyzes quantitative outcomes linked to awareness interventions in different regions.

Keywords: Community pharmacists, Pharmacovigilance, Adverse drug reactions (ADRs), Awareness programs, ADR reporting.

INTRODUCTION

Adverse drug reactions are a significant public health concern resulting in morbidity, mortality, and economic implications. Community pharmacists, being the first point of contact for many patients, have a unique vantage for ADR identification and reporting. However, studies worldwide frequently cite low reporting rates, insufficient practical knowledge, and limited awareness about reporting processes as key impediments^{[1][2][3]}. Awareness and educational interventions targeting community pharmacists have demonstrated marked benefits in both reporting frequency and quality.

METHODS

Several studies utilized pre- and post-interventional designs, involving questionnaires to assess knowledge, attitude, and practice (KAP) before and after awareness or educational programs. Interventions typically encompassed workshops, continuing professional development sessions, leaflet distribution, visual presentations, and interactive seminars. Analysis was conducted using summary statistics and paired t-tests to track changes in KAP scores and actual ADR-reporting rates^{[1][2][4]}.

RESULTS

Quantitative Impact of Awareness Programs
Study Example 1 (Belagavi, India)

- The baseline knowledge, attitude, and practice scores among pharmacists were significantly low. After executing an awareness program (workshops and distribution of leaflets), there was a substantial increase in all measured domains:
 - Knowledge score: from 35 ± 23.87 to 87.86 ± 13.62
 - Attitude score: from 56.9 ± 20.79 to 66.9 ± 10.68
 - Practice score: from 26.67 ± 17.75 to 72.5 ± 23.78
- Approximately 38.3% of participants began actively reporting ADRs following the intervention, compared to almost none before it. These changes were statistically significant ($p < 0.0001$)^[2].

Study Example 2 (Northern Indian Hospital)

- Following the annual National Pharmacovigilance Awareness Week, the number of reported ADRs increased dramatically:
 - 56 reports in 2022 (pre-intervention)
 - 151 in 2023 (first year post-intervention)
 - 371 in 2024 (second intervention cycle)
- The reporting quality, with more detailed descriptions of ADRs and patient outcomes, also improved notably.
- The increased use of alternative reporting methods (toll-free numbers, email) reflected broadening access driven by awareness efforts^[4].

Figure 1. Increase in ADR Reporting after Awareness Program (2022–2024)

Year	ADR Reports Received
2022	56
2023	151
2024	371

Knowledge, Attitude, and Practice Enhancement

Awareness interventions brought significant improvements in all KAP domains:

- **Knowledge:** Clarity on what constitutes an ADR, methods to report, and the importance of timely documentation.
- **Attitude:** Increased recognition of the pharmacist's professional obligation and the public health value of ADR reporting.
- **Practice:** More frequent and complete ADR submissions, with greater confidence in identifying, recording, and forwarding ADRs to regulatory bodies^{[1][2][5]}.

Graph: Pre- and Post-Intervention KAP Scores Among Community Pharmacists

Domain	Pre-Intervention Mean Score	Post-Intervention Mean Score
Knowledge	35	87.86
Attitude	56.9	66.9
Practice	26.67	72.5

Barriers and Facilitators Identified

Key Barriers Prior to Intervention:

- Uncertainty about how or where to report ADRs
- Fear of legal consequences
- Lack of time and practical training
- Belief that reporting known ADRs is redundant^{[3][5]}

Facilitators Provided by Awareness Programs:

- Accessible reporting forms and clear guidance
- Inclusion of ADR modules in continuing education
- Incentives and recognition for active reporters
- Streamlining ADR reporting into daily pharmacy software/tools^{[1][6][7]}

DISCUSSION

Awareness programs have been consistently effective across different settings and populations for enhancing ADR reporting by community pharmacists. The scale and sustainability of improvements are highly correlated with:

- Interactive and continuous educational efforts
- Inclusion of practical, case-based training
- System-level support (easy reporting methods, institutional protocols)
- Positive reinforcement and professional recognition
- Ongoing education is essential, as knowledge and performance tend to diminish over time without reinforcement^{[6][8]}. Collaboration with national pharmacovigilance centers and integration of ADR reporting into pharmacy management software can further increase engagement and reporting rates^{[11][4][9]}.

CONCLUSION

The implementation of structured awareness and education programs significantly increases both the frequency and quality of adverse drug reaction reporting among community pharmacists. Such programs address key barriers, foster positive attitudes, and equip pharmacists with the necessary skills to fulfill their pharmacovigilance roles. Sustained improvements require continued training, accessible reporting systems, and institutional support at all healthcare levels.

Table 1. Effect of Awareness Program on ADR Reporting (Selected Studies)

Study Location	Pre-Intervention Reporting (%)	Post-Intervention Reporting (%)	% Change
Belagavi, India ^[2]	<5	38.3	+33.3
Northern India ^[4]	-	2.5–6.6× (over 2 yrs)	-

Table 2. Barriers vs. Solutions in ADR Reporting

Barriers	Solutions via Awareness Program
Lack of knowledge/training	Interactive workshops and case-based education
No accessible reporting forms	Distribution of standardized forms, reminders
Low motivation/fear	Recognition/incentives, peer support
Uncertainty about scope	Clear definitions/examples in training
Time constraints	Integration with daily practice software

Recommendations

- Expand and standardize awareness campaigns at local and national levels.
- Leverage digital platforms for ongoing pharmacist education and easier ADR submissions.
- Integrate ADR reporting as a quality metric in pharmacy practice.
- Encourage collaboration between regulatory agencies, healthcare institutions, and pharmacy associations to build a robust culture of pharmacovigilance.

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