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# Awareness and Attitudes Toward Medication Error Reporting Among Healthcare Providers at a Tertiary Hospital in Riyadh

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## ABSTRACT

**Background:** Medication errors are a serious risk to patient safety worldwide. One of the main problems is that many healthcare professionals (HCPs) do not report them, which makes improvement harder. This study aimed to explore the awareness and attitudes of HCPs about reporting medication errors in a large tertiary hospital in Riyadh, Saudi Arabia.

**Methods:** A descriptive cross-sectional study was carried out with 425 healthcare professionals (nurses, doctors, and pharmacists) using a validated self-administered questionnaire. The survey collected information on demographics, knowledge, attitudes, reporting practices, and perceived barriers.

**Results:** The participants showed good knowledge about medication errors (average score 4.8 out of 6) and had positive attitudes toward reporting (average score 4.2 out of 5). Still, 62.4% had never reported an error. The main barriers were fear of punishment (average 3.8 out of 5) and lack of feedback (average 3.5 out of 5).

**Conclusion:** There is a clear gap between the positive attitudes of healthcare professionals toward reporting medication errors and their actual reporting practice. This gap is mostly caused by a culture of blame and fear. To improve patient safety, hospitals need to create a fair, non-punitive reporting system and provide strong feedback to staff.

***Keywords:*** *Barriers to Medication Error Reporting, Attitudes of Healthcare Professionals Toward Reporting*.

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## 1. INTRODUCTION

Medication errors are a serious and ongoing problem for patient safety worldwide. The World Health Organization (WHO) has reported that unsafe medication practices and errors are a major cause of injury and avoidable harm, costing about $42 billion USD each year [1]. These errors can happen at any stage, including prescribing, dispensing, giving, or monitoring medicines, and may cause severe harm, disability, or even death [1]. To address this issue, the WHO started the third Global Patient Safety Challenge, “Medication Without Harm,” which aims to reduce serious avoidable harm from medicines by 50% in five years [1].

One of the main barriers to achieving this goal is the ongoing problem of underreporting by healthcare professionals (HCPs). Most systems for identifying and studying medication errors depend on voluntary reporting, but this only works if HCPs are willing to report [2]. A culture of blame and fear of punishment often prevents them from doing so, which creates a cycle where the lack of reports limits the chance to improve systems [3, 4]. As a result, the real number and types of medication errors remain hidden, making it harder to learn from mistakes and improve patient safety.

The problem of medication error reporting is especially serious in the Middle East, and in Saudi Arabia in particular, where studies have shown a high number of errors in hospitals [5]. A recent review found that prescribing mistakes remain common, and there is a strong need to improve reporting systems, raise professional awareness, and build a culture that is less focused on blame [5]. The Saudi Food and Drug Authority (SFDA) has set up a national pharmacovigilance system to track medication errors, but its success relies on the active involvement of frontline healthcare workers [6].

To deal with this problem, it is important to understand the factors that affect medication error reporting among healthcare professionals in Saudi Arabia. This study aims to measure the awareness and attitudes of healthcare providers toward reporting in a large tertiary hospital in Riyadh. By pointing out gaps in knowledge, attitudinal barriers, and institutional issues that affect reporting, the study hopes to give evidence-based recommendations for improving reporting systems and, in turn, patient safety.

## 2. LITERATURE REVIEW

Many studies have looked at the complex problem of medication error reporting and found that it is shaped by individual, organizational, and system-level factors. This review will discuss the main themes from this research, focusing on the barriers to reporting, the attitudes of healthcare professionals, and the situation in Saudi Arabia.

### *Barriers to Medication Error Reporting*

The biggest and most common barrier to reporting medication errors is the fear of negative consequences [3, 7]. Many healthcare professionals are afraid of blame, punishment, legal problems, or harm to their professional reputation [3]. This fear-based culture strongly discourages reporting, even when staff know it is important for patient safety. A review by Aljabari and Kadhim (2021) showed that fear of consequences was the main barrier in 63% of the studies they examined [3].

Apart from personal fears, there are also organizational and system barriers that add to underreporting. These include unclear or hard-to-use reporting systems, reporting processes that take too much time, and the absence of feedback for those who report [7]. When healthcare professionals do not get feedback, they may feel their effort is wasted and become less likely to report in the future [7]. Another issue is the lack of a clear and commonly accepted definition of what counts as a medication error, which causes confusion and inconsistency in reporting [7].

### *Attitudes of Healthcare Professionals Toward Reporting*

Even though there are many barriers, most healthcare professionals have positive attitudes toward reporting medication errors [8]. They usually agree that reporting is part of their professional duty and is important for improving patient safety [8]. However, there is still a large gap between these positive views and their actual reporting practices. This gap is mainly caused by the strong effect of the barriers mentioned earlier, which often prevent action despite good intentions.

Research has also found that attitudes toward reporting differ between healthcare professions. For example, some studies suggest that nurses are more likely to report errors than doctors. The reasons for this are complex and may be linked to differences in training, professional culture, and levels of accountability [9].

### *The Saudi Arabian Context*

In Saudi Arabia, as in many other countries, medication errors remain a major threat to patient safety [5]. A review of Saudi hospitals found that errors were common, especially in prescribing [5]. The review also stressed the need to build a more positive and less punitive culture so that healthcare professionals can report errors without fear of punishment [5].

Research in Saudi Arabia has found barriers to medication error reporting similar to those seen worldwide, such as fear of blame, lack of feedback, and reporting systems that are difficult to use [10, 11]. At the same time, there may be cultural and organizational issues that are specific to the Saudi setting. For instance, a study by Alshammari et al. (2021) showed that many healthcare professionals in Saudi Arabia had limited education and training about medication errors, which may partly explain underreporting [12].

Since patient safety is a major priority in Saudi Arabia, it is important to understand the specific challenges and opportunities related to reporting medication errors in this setting. This study adds to the existing research by assessing the awareness, attitudes, and practices of healthcare professionals in a large tertiary hospital in Riyadh. The aim is to support the design of targeted interventions that can improve reporting and strengthen patient safety.

### *Methods*

This study used a descriptive cross-sectional design to examine the awareness and attitudes of healthcare providers toward reporting medication errors in a tertiary hospital in Riyadh, Saudi Arabia. The study included registered nurses, pharmacists, and physicians who had worked for at least six months and agreed to take part. Interns, trainees, and staff who

were on probation or leave during data collection were not included. A stratified random sampling method was used to ensure fair representation from the three professional groups (nursing, pharmacy, and medicine). The sample size was calculated with Cochran's formula, using 50% as the expected prevalence of reporting, a 95% confidence level, and a 5% margin of error. After adding 10% to account for non-response, the final sample size was 425 participants.

Data were collected through a structured, self-administered questionnaire adapted from validated studies by Alsulami et al. (2019) and Alandajani et al. (2022). The questionnaire had five parts: demographics, knowledge of medication errors, attitudes toward reporting, reporting practices, and perceived barriers. A pilot test was done with 30 healthcare providers to check clarity, relevance, and reliability. The internal consistency of the Likert-scale items was measured using Cronbach's alpha, with values of 0.7 or above considered acceptable.

Data will be analyzed using SPSS version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations will be used to describe participant demographics and responses. Inferential tests, including Chi-square, t-tests, and ANOVA, will examine differences in awareness and attitudes between professional groups and other demographic factors. Logistic regression will be used to find predictors of medication error reporting behavior.

Ethical approval for this study was granted by the Institutional Review Board (Approval no: 00000211925). All participants were informed about the aim of the study and were assured that their answers would remain confidential and anonymous. Written consent was obtained from each participant before they filled in the questionnaire.

### *Results*

A total of 425 healthcare providers took part in the study, giving a response rate of 100%. Table 1 shows the demographic details of the participants. Most were nurses (58.8%), followed by doctors (23.5%) and pharmacists (17.6%). Their ages ranged from 22 to 65 years, with an average of 34.5 years (SD = 8.2). The majority were female (65.9%). More than half (55.3%) had between 1 and 5 years of work experience, and 68.2% said they had received formal training on medication error reporting.

**Table 1: Demographic Characteristics of Study Participants (N=425)**

| Characteristic | Category | Frequency | Percentage (%) |
|---|---|---|---|
| **Profession** | Nurses | 250 | 58.8 |
| | Physicians | 100 | 23.5 |
| | Pharmacists | 75 | 17.6 |
| **Gender** | Male | 145 | 34.1 |
| | Female | 280 | 65.9 |
| **Age (years)** | 20-30 | 180 | 42.4 |
| | 31-40 | 150 | 35.3 |
| | 41-50 | 70 | 16.5 |
| | >50 | 25 | 5.9 |
| **Years of Experience** | <1 year | 50 | 11.8 |
| | 1-5 years | 235 | 55.3 |
| | 6-10 years | 90 | 21.2 |
| | >10 years | 50 | 11.8 |
| **Formal Training** | Yes | 290 | 68.2 |
| | No | 135 | 31.8 |

### *Knowledge of Medication Errors*

The participants' knowledge of medication errors was measured using true/false questions. Table 2 shows the results. Overall, the group showed good knowledge, with an average score of 4.8 out of 6 (SD = 1.1). Most participants knew that a medication error is any preventable event that could cause wrong use of medicine or harm to the patient (92.9%) and that all errors should be reported, even if no harm occurs (85.9%). Still, about one-quarter (25.9%) wrongly thought that near misses do not need to be reported.

**Table 2: Knowledge of Medication Errors (N=425)**

| Statement | Correct Answer | Correct Responses (%) | Incorrect Responses (%) | Don't Know (%) |
|---|---|---|---|---|
| A medication error is any preventable event that may lead to inappropriate medication use or patient harm. | True | 92.9 | 4.7 | 2.4 |
| Near misses do not need to be reported. | False | 74.1 | 25.9 | 0.0 |
| Look-Alike/Sound-Alike medications are a major cause of errors. | True | 88.2 | 7.1 | 4.7 |
| The hospital has a reporting system for medication errors. | True | 95.3 | 2.4 | 2.4 |
| All medication errors should be reported, regardless of harm caused. | True | 85.9 | 9.4 | 4.7 |
| I know how to report a medication error in my hospital. | True | 82.4 | 11.8 | 5.9 |

### *Attitudes Toward Reporting Medication Errors*

Participants' attitudes toward reporting medication errors were measured with a 5-point Likert scale. Table 3 shows the findings. Overall, the group showed positive attitudes, with an average score of 4.2 out of 5 (SD = 0.8). Most participants agreed that reporting errors improves patient safety (94.1%) and that it is part of their professional duty (91.8%). Still, many respondents (41.2%) said they were worried that reporting might lead to punishment.

**Table 3: Attitudes Toward Reporting Medication Errors (N=425)**

| Statement | Strongly Disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly Agree (%) | Mean (SD) |
|---|---|---|---|---|---|---|
| Reporting medication errors improves patient safety. | 1.2 | 2.4 | 2.4 | 44.7 | 49.4 | 4.3 (0.8) |
| I feel comfortable reporting errors in my department. | 4.7 | 11.8 | 21.2 | 47.1 | 15.3 | 3.6 (1.1) |
| I worry that reporting errors may result in punishment. | 11.8 | 23.5 | 23.5 | 30.6 | 10.6 | 3.0 (1.2) |
| I believe medication error reporting is a professional responsibility. | 1.2 | 3.5 | 3.5 | 49.4 | 42.4 | 4.2 (0.9) |
| I trust that my hospital maintains confidentiality when errors are reported. | 5.9 | 14.1 | 25.9 | 40.0 | 14.1 | 3.4 (1.1) |
| I would be more likely to report errors if I received feedback. | 2.4 | 4.7 | 11.8 | 51.8 | 29.4 | 4.0 (1.0) |

### *Reporting Behavior*

Participants were asked about their behavior in reporting medication errors. Figure 1 shows the results. Most respondents (62.4%) said they had never reported a medication error in their current job. Among those who had not reported, the main reason was fear of punishment (35.8%), followed by the belief that the error was not serious enough to report (25.4%).

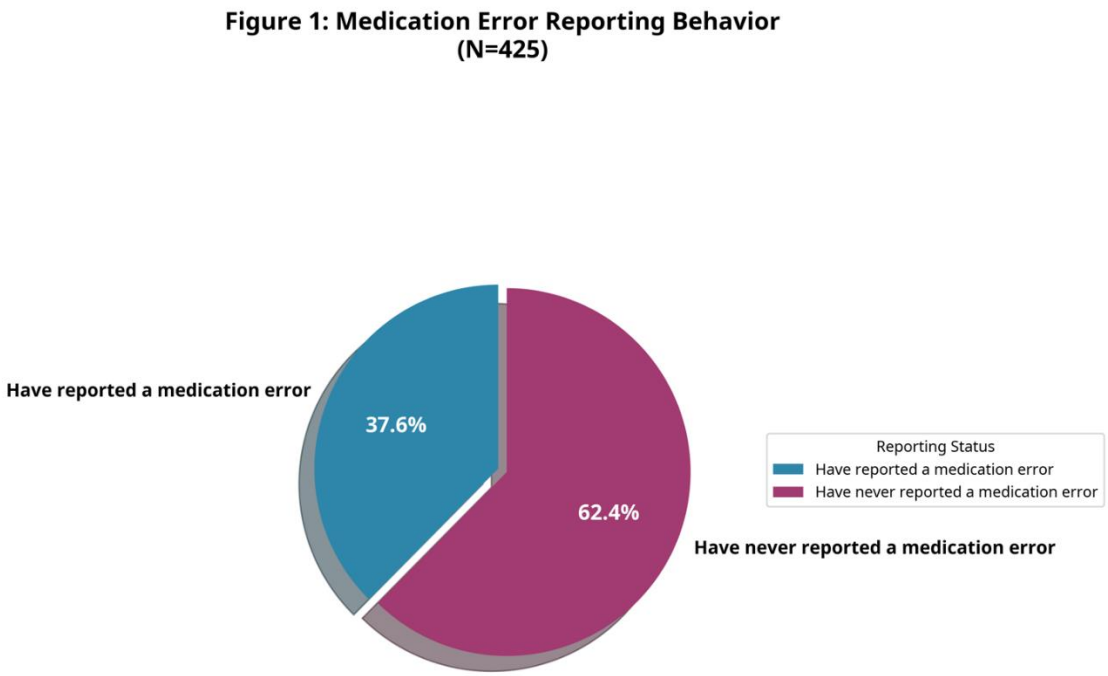


***Figure 1: Medication Error Reporting Behavior: 37.6% of participants have reported a medication error, while 62.4% have not.***

### *Perceived Barriers to Reporting*

Participants rated how much different factors discouraged them from reporting medication errors. Table 4 shows the results. The strongest barrier was fear of punishment or blame, with an average score of 3.8 out of 5 (SD = 1.2). The next barriers were lack of feedback after reporting (mean = 3.5, SD = 1.1) and lack of time due to workload (mean = 3.3, SD = 1.0).

**Table 4: Perceived Barriers to Reporting Medication Errors (N=425)**

| Barrier | Not at all (%) | Slightly (%) | Moderately (%) | Very much (%) | Extremely (%) | Mean (SD) |
|---|---|---|---|---|---|---|
| Fear of punishment or blame | 10.6 | 18.8 | 25.9 | 30.6 | 14.1 | 3.8 (1.2) |
| Lack of feedback after reporting | 14.1 | 21.2 | 30.6 | 23.5 | 10.6 | 3.5 (1.1) |
| Not knowing how or where to report | 23.5 | 30.6 | 25.9 | 14.1 | 5.9 | 2.9 (1.1) |
| Lack of time due to workload | 16.5 | 25.9 | 30.6 | 21.2 | 5.9 | 3.3 (1.0) |
| Belief that the error is not serious enough to report | 21.2 | 35.3 | 28.2 | 10.6 | 4.7 | 2.8 (1.0) |
| Lack of clarity about what constitutes a medication error | 25.9 | 32.9 | 25.9 | 11.8 | 3.5 | 2.7 (1.0) |

## 3. DISCUSSION

The results of this study give useful insights into how healthcare providers in a large tertiary hospital in Riyadh view medication error reporting. The findings show that while most healthcare professionals have good knowledge about medication errors and generally positive attitudes toward reporting, there is still a clear gap between what they believe and what they actually do. This gap seems to be mainly caused by barriers such as fear of punishment and lack of feedback.

The high level of knowledge found in this study is a positive sign and shows that education on medication safety has helped raise awareness. Still, the fact that one-quarter of participants believed that near misses do not need to be reported is worrying. This shows the need for more education to stress the importance of reporting all errors, including near misses,

because they offer important chances for learning and improving systems. This result is similar to earlier studies that found lack of understanding about what counts as a reportable error to be a barrier [7].

The positive attitudes toward reporting found in this study are encouraging. Most participants agreed that reporting improves patient safety and that it is part of their professional duty. This shows that healthcare professionals are motivated to act but are often held back by system barriers. A key finding is that many participants said they would be more likely to report if they received feedback. This highlights the need for a closed-loop reporting system where staff are informed about what happens after they report. Such a system would not only promote more reporting but also help build a culture of openness and learning.

The most important finding of this study is the strong effect of fear in stopping healthcare staff from reporting medication errors. Fear of punishment was the most common reason given for not reporting and the highest-rated barrier, which is similar to results in international studies [3, 7]. This has clear implications for hospital leaders and policymakers. Efforts to improve reporting will not succeed unless the culture of blame in healthcare is addressed. Moving toward a just culture, which focuses on learning from errors instead of punishing individuals, is necessary to create an environment where staff feel safe to report.

The results of this study also have important meaning for the Saudi context. The high number of medication errors in Saudi hospitals, as reported in the review by Tobaiqy and MacLure (2024), shows the urgent need for stronger action to improve patient safety [5]. The findings suggest that such action should aim to build a more positive and supportive reporting culture, give regular feedback to those who report, and make clear what counts as a reportable error. The creation of a national reporting system is a good step, but its success will depend on whether healthcare professionals are willing to use it. This study can help guide strategies to encourage use of the system and promote a culture of safety in Saudi hospitals.

## 4. CONCLUSION

In conclusion, this study gave a full view of how healthcare providers in a large tertiary hospital in Riyadh see medication error reporting. The results show a clear gap between their positive attitudes and their actual reporting practice. This gap is mainly caused by fear of punishment and lack of feedback, which reflect a strong culture of blame. To improve reporting and patient safety in Saudi Arabia, hospitals need to move toward a just culture that focuses on learning from mistakes rather than punishing staff. This will require several actions, including giving regular feedback, making clear what counts as a reportable error, and applying a non-punitive policy. By creating a safe and supportive environment, healthcare organizations can encourage staff to take part in improving patient safety.

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