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# Health Care Professional as a Second Victim

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## Abstract

Besides its consequences on patient safety, medication errors may seriously hamper the self-esteem of health care professionals who commit the error and if not dealt properly, this may lead to serious mental health issues. Using a descriptive design, this study aimed to explore the feelings and experiences of the health care professionals who had committed medication errors that occurred between December 2011 and March, 2012.

The study was designed to answer the following questions:

What are the emotional responses of the health care professionals involved in the medication errors?

What are the implications of those errors on the individuals?

What coping strategies are used to deal with the situation?

Data was collected by using face to face interviews with doctors, pharmacists and nurses who had committed an error. A purposive sample of 12 health care professionals including 5 nurses, 4 pharmacists and 3 physicians who had committed medication errors was face to face interviewed. The analysis of qualitative data was started along with data collection. The qualitative information was manually analyzed for themes and categories. Crabtree and miller editing analysis style were used for coding the data either in manifest or latent way.

The findings from the interview are categorized into three sections: (a) emotional responses towards errors, (b) impact of errors, and (c) the coping mechanisms used by the health care professionals who committed the error. The immediate reactions of the health care professionals to the incidents included denial, shock, anger, distress and guilt. Their responses were mainly dependent on the nature of the incident. Most health care professionals accepted the error as a learning opportunity but remained worried about the consequences the incident may have on their professional image and career.

Thus, besides actions to minimize error producing conditions, a supportive and constructive approach is required for handling the health care professionals who commit the errors.

These findings have implications for the hospital administration, and recommendations provided in this study will help them to bring an improvement in the system.

**Keywords:** Patient safety; Medication errors; Post-traumatic stress syndrome; Health care; Dispensing

## Introduction

Medication error is one of the quality indicators for patient safety [1,2]. It is a major patient safety issue worldwide because medication errors may result in patients' morbidity and mortality [3]. Drug errors are rarely reported from developing countries [4].

Medication errors may occur at any phase of the medication management process, that is, from its prescription to administration [5]. Empirical evidence suggests that besides its consequences on patient safety, medication errors may seriously hamper the self-esteem and self-image of those health care professionals who commit the error [6]. And if not dealt properly, this may lead to serious mental health issues [7,8].

Moreover, incidences of medication errors can damage the reputation of health care institutions. To minimize the consequences of medication errors, it is important to understand their effect on the staff associated with those errors. Although in the past, studies have been conducted in Pakistan about the types of errors and reasons for under reporting medication errors, no study has been done to investigate how these errors affect the staff who commit these errors [4,9]. In view of the above information, it is necessary to

discuss its impact on the health care professionals and how they cope with it after the medication incident.

### Study purpose

The purpose of this study was to explore the experiences of health care professionals who had committed medication errors. In particular, this study was designed to answer the following questions:

What are the emotional responses of the health care professionals involved in the medication errors?

What are the implications of those errors on the individual who has committed a medication error?

What coping strategies are used by the health care professionals in trying to deal with the situations?

## Literature Review

A systematic and comprehensive search was done in July, 2011, to access research studies on factors underlying medication errors and certain experiences of health care professionals who had committed drug errors. Various words and phrases were used to guide the search that included: medication errors, medication adverse event, feelings, coping, and causes of medication error. Data bases such as CINAHL, Mosby Nursing Consult, PubMed, Sage, and Science Direct were used to guide the search. The search ranged from 1995 up to 2011. A total of 167 articles appeared relevant, but after reading the abstract only eleven were found relevant to the purpose of study. Out of 167 articles, eleven articles were included in a review after reading the abstracts. Nine articles related to the underlying factors of medication errors, one related to the nurses' experiences of making medication errors and one related to both.

Gladstone [5] also explored the feelings of nurses (n=14) who had committed medication errors. Information obtained from nurses was content analyzed. The author reported two themes: the management's reaction to nurses who make drug errors and the nurses' feelings about the incident. With regard to the nurses' comments about the management's reaction, most of them felt worried about the reaction of their supervisors and experienced anxiety, whereas very few nurses described that as a learning experience. In terms of feelings about the incident, the nurses reported feeling extremely upset, guilty, terrified, and nervous about the consequences of the medication errors on the patients' illness. They also reported a loss of confidence in their skills and abilities.

Recently, Schelbred and Nord [8] explored the experiences of Norwegian nurses who had committed serious medication errors. The researchers' main focus was to inquire about the support mechanisms that nurses received after committing an error. The researchers conducted semi-structured interviews with 10 nurses associated with medication errors. The authors conducted seven face-to-face interviews and three by telephone. The participants described the incident as traumatic; they suffered from the post-traumatic stress syndrome, characterized by insomnia, nightmares, and mental disturbance. Although some nurses reported receiving support from the management, others did not.

To reduce their stress, some nurses verbalized their feelings with colleagues but two nurses required assistance from a psychologist. The authors also concluded that medication errors could be devastating for the self-esteem of the health care workers. In one of the cases, the participant was unable to practice and had to permanently leave the nursing profession.

The discussed studies indicate that medication errors are a world-wide issue. However, limited information can be found about the nurses' experience related to making those errors but none of the study was found related to the doctors and the pharmacists. The emotional response to medication errors has not been explored among health care professionals, other than nurses. Furthermore, no such study was found to have been done in the Pakistani context.

## Research Methodology

Descriptive design was employed in this study. Since this study intended to understand the experiences of the health care professionals involved in medication errors, a qualitative approach was needed. The study included all medication errors at the tertiary Hospital that were reported through the online incident reporting system from December 2011 to March 2012.

Moreover, the nurses, physicians, and pharmacists involved in the reported drug incidents, were included in the study.

### Inclusion and exclusion criteria

Those drug errors that have led to, or could have led to a substantial injury to patients were included in the study. However, those cases of drug errors that were reported but not confirmed by the clinical affairs physicians, pharmacy supervisors, or nursing managers were excluded. Those cases of drug error that involved more than one health care professional were also excluded from the study.

Only those health care professionals who agreed to participate voluntarily.

### Data collection

Moreover, face to face interview was conducted with those participants who showed willingness to talk about their experiences of medication error to the researcher. An interview guide was used to collect the participant responses during the interview. Moreover the rigor of the study was ensured by using Lincoln and Gubas criteria for trustworthiness. The qualitative information was manually analyzed for themes and categories.

Approval from ERC and administrative approval from the director of Nursing, medicine and pharmacy were taken. Each participant provided the informed consent, principles of autonomy, confidentiality and anonymity were maintained.

## Results

A total of 83 medication errors were reported during the study period from December 2011 to March 2012. The reporting time of errors after the actual incident varied from 6 to more than 48 hours.

Most of the reported (38) errors were related to the administration cycle. Fifteen errors occurred in the dispensing phase while 9 in the prescribing phase. With regards to the type of error, the common errors were dispensing of a wrong medicine or administration of a wrong medicine.

Participants were also invited to either express their feelings about the incidents in writing or indicate their interest for an in-depth interview with the researcher. Information obtained through the questionnaire is detailed below.

In terms of the management's action on the incident for the employees involved in the medication errors, around 41 health care professionals were counseled verbally while 16 of them received a written warning **(Table 1)**.

**Table 1** Distribution of management actions on the errors by profession.

| Health care professionals | Total errors | No action | Verbal counseling | Written warning |
|---|---|---|---|---|
| | | (%) | % | % |
| Doctors | 9 | 0.444 | 0.444 | 0.111 |
| Pharmacists | 15 | 0.0666 | 0.8 | 0.13 |
| Nurses | 40 | 0.05 | 0.625 | 0.325 |
| *Percentages calculated from individual health care professionals sample size | | | | |

However, no action was taken for near miss incidents in 6 percent of the cases. On comparing written warnings given to doctors, pharmacists and nurses, thirty two percent of the nurses received written warnings.

### Emotional responses towards an error

This section presents the feelings of the health care professionals who had committed the medication errors. The analysis of their narratives revealed that health care professionals experienced a range of emotions, including, being shocked, surprised, and feeling guilty and humiliated. Some of them, initially, denied their incident before they accepted that an error had been committed by them and then they felt guilty. As a pharmacist shared:

It was really surprising how such a big blunder was committed by me. It was a nurse who communicated to me that wrong medication had been dispensed. At first I said, how could that happen? It's impossible. But when I checked it, it was obvious that I had sent a wrong order. Then, I felt guilty that I had dispensed a wrong medication but [thank God] it was not administered to the patient (P-3).

The participants' level of guilt varied, based on the effect of the incident on the patients. As a doctor said, "At the time of the incident, you are totally broken up and you don't know where to go and I think I might have committed suicide if this incident had led to serious consequences for the patient" (D-1). Similarly, a nurse verbalized [Head down and blank facial expression], "I was feeling very bad why I didn't check the patient's electrolytes before giving the drug. Why did this incident happen to a patient through my hands?" (N-1).

In addition to being shocked or feeling guilty, some of them found it a humiliating experience. As one pharmacist shared, "It is insulting and humiliating when your supervisor tells you that you have committed an error and inquires how did this happen" (P-3). However, some health care professionals felt angry as to why the error was reported, especially when the error was a near miss. A pharmacist questioned: "The patient hadn't lost his/her life and that was not a life-saving drug. If it had been a lifesaving drug then only you should have filled the incident report" (P-4). Similarly, a doctor expressed his anger, he said:

I was extremely upset why that incident had occurred. I was blaming myself why I didn't concentrate properly on my work. But then, why did the nurse raise the incident when it was corrected. As health care professional, we are colleagues and we should support each other, rather than reporting an incident. Nurses make medication errors as well but we never report the incident. Its team work and we all should support each other (D-1).

A closer look at the excerpts above indicates that medication errors are under-reported when it is a near miss or where the team members have a good understanding.

Some of the health care professionals felt embarrassed and were also worried about the reactions of the patients, their colleagues and their supervisors. As one of the participant shared, "I was embarrassed that how the patient will react when he knows about the incident… the patient did not react and said 'it's ok'. So I started feeling better at work within one or two days" (N-10). This excerpt shows that a supportive response from the patient helped the nurse to overcome her feelings in a short period of time.

The feelings of guilt were stronger when a health care professional, who was in a supervisory position, was responsible for the incident. As one nurse reflected, "I was ashamed thinking how people would perceive me after this incident, as I am the team leader. People will pass comments that I had committed the medication error" (N-4). Similarly, a pharmacist shared, "I was embarrassed and felt disappointed that I was supervising someone. If I commit such errors, then what kind of role model am I?" (P-1).

Moreover, medication errors were perceived to have a negative mark on health care professional's careers. As one pharmacist said, "This [incident] occurred during my last days of resignation period and I was feeling bad because it was going to have a bad impact on my career" (P-4).

The feelings of shame appeared to be less if the error was self-realized, as reflected in this excerpt: "I realized myself that I had made an error and caught the incident myself" (P-2).

Furthermore, people were more concerned about the repercussions of those errors on their job status: "I was afraid as a few staff members told me that you can be terminated due to this incident. Although I was not terminated, but my confirmation got delayed" (N-10). The above excerpts highlights that while nurses can prevent medication errors of other health care professionals, but any lapse on their part can lead to an error. Thus nurses experienced higher psychological or emotional stress as compared to pharmacists and doctors.

## Effects of errors on the health care professionals

This section presents the analysis of the effects of the medication errors on the health care professionals. The analysis reveals that medication errors affected the health care professionals in different ways. Most of them viewed the experience as a learning opportunity that resulted in being more cautious and vigilant in their practices, while others became demotivated as they considered the incident as a negative experience. Several of them shared that they have to be cautious in their work to avoid such incidents in the future.

As one of the pharmacists articulated, "In practice, I have become more careful when processing orders. If I was looking at the order twice, Now I will be looking at that stat order four times, so I have to give more attention to it" (P-4). In some cases, where the medication error had occurred due to reliance on others, the incident led to a renewed sense of accountability: "I have learnt never to rely on doctors. Now I always keep in mind that I have to check the lab levels before the administration of K-Lyte" (N-1). The same participant also regretted the manner in which the incident was disclosed and wished for an empathetic listening in privacy, as expressed below:

The head nurse should have called me in her office and given me time to share my feelings. Instead she discussed the incident at the counter, in front of all the junior staff; I felt humiliated because the junior staff became aware and was talking about me. Now I am thinking of either to getting a transfer or resigning from the hospital (N-1).

In addition, a few of the health care professionals who committed the error made structural changes to prevent the error. For example, a drug incident occurred due to look-alike drugs. The pharmacist, in consultation with the management, separated the location of similar drugs (P-1). Likewise, other participants planned to use various strategies that would enhance their concentration on the task. A nurse shared:

I have learnt that I should prioritize and manage my time better. I have also learnt that I would just focus on medication at the time of administration and would not be attending to patients' complaints. I will keep one nursing assistant in the patient area to address such complaints (N-10).

Similarly, a doctor expressed, "I will try not to think about personal issues while on work. I will either rest or take a day off that day as health care is a dangerous profession and we can take some one's life with even a slightly wrong order" (D-1). The above narrative reveals that a majority of the health care professionals were able to reflect on the root causes of the issues and thoughts of using strategies that could be used to overcome them. In some cases, initially, it was difficult for them to realize the error but, finally, they accepted, as verbalized by the nursing staff:

I felt I was lacking the kind of involvement I had with the patients …In those few days I decided that I will behave like everybody else and would not make any extra efforts. So I was hurt at that time. When I got a little bit relaxed then I realized that I was doing a wrong thing (N-4).

## Coping and support mechanisms used by the health care professionals

This category includes the analysis of the data on how health care professionals cope with incidents of medication errors. The analysis revealed that health care professionals used different strategies to overcome the stress and guilt that they experienced as a result of making medication error. To seek support, several of them shared their feelings with a close family member, friend, or a colleague.

As stated by one of the doctors, "The best support mechanism with whom you can share is your partner. I share my problems with my wife and she understands my entire problems. She listens to me and asks me what my learning from the experience is" (D-1). Likewise, a pharmacist shared, "My husband guides me and supports me how to deal with such stressors" (P-2). However, one of them acknowledged that sharing feelings with colleagues is dependent on the severity of the incident. A nurse shared, "I share my experiences with my colleagues because I haven't committed such a big mistake. In fact, sometimes we don't even share it with our colleagues especially if it is a serious mistake" (P-1).

Six of the participants appreciated the support from their management, as they were given the opportunity to explain the circumstances that had led to the incident. An empathetic approach by the supervisor was found comforting and apparently helped them to reflect and accept the error graciously. A pharmacist articulated, "My supervisor coordinated with me, listened to me and sent me the incident form. She handled it very effectively and… understood that drug was rarely ordered" (P-2). Similarly, a nurse expressed:

Our head nurse and CNI [Clinical Nurse Instructor] gave a lot of support. The CNI told me that if you do not know something, I could ring her even fifty times. Later on I realized that if the management hadn't supported me I would have felt much worse (N-8).

On the contrary, one of the nurses reflected sadly: "No help or support is available to the staff to deal with the effects of such incidents. The management can play a major role and provide emotional support to the nurse involved in an error" (N-1). Similarly, a pharmacist was saddened by the non-empathetic warning from her supervisor:

The supervisor just told me to be careful next time and check it before dispensing. How do you get that busy?

Although she knows how but then still my supervisor asked me this question. I think they should work in the ### [place] then they will realize how much workload we have to go through (P-3).

To cope with the effects of the incidents, some participants tried to divert their mind through relaxation or walking while they also reflected on the cause of the error and ways to prevent it in the future. One of the nurse said, "I tried to relax and divert myself at home, reflecting where I was at fault and what will be my different strategy next time" (N-4). Similarly, a doctor shared, "I tried to divert my thoughts from the incident by fully concentrating on the work. I also took a walk on the lake side to get over my feelings–and so I threw all my negative thoughts inside the lake" (D-1). Two of the participants sought comfort through spirituality, as reflected below:

I share all my problems with Allah. Thinking about Allah helped me overcome my feelings. Now, when I start my work I take the name of Allah so that no such mistake can be repeated. Thanks to Allah, He is always there to guide and comfort me (P-2).

Although the participants tried at their level to cope with the effects of the incidents, several of them felt that the management needed to have a mechanism to help the staff to deal with the effects of the incidents. One of the nurses expressed her feelings with this:

I felt very lonely and found that there was a need of a person who could help the staff in coping with difficult moments [such as medication errors]. After this incident, I felt that there should be a few neutral people in the ward who are authorized by the management to help and support the staff to cope with the stressful situation (N-4).

Other participants suggested that a designated counselor could help. However, one participant emphasized that the counselor should be neutral while being familiar with the context. One of the nurses suggested, "The person should understand our stressors, pressures, and the environment in which we are working. By having these qualities, this counselor would be able to handle our issues more effectively" (P-2). A nurse elaborated, "The counselor should be some neutral person, such as a judge/advocate, who could decide who is at fault and who is not and should support the person involved in the incident then" (N-2).

When health care professionals commit the errors, the management constantly warns health care professionals to "be careful for this or that" which creates more pressure for them. That pressure could lead to their making of another error. The nurse suggested that, "the concerned person should get some time to regain their confidence" (N-10). Likewise, a doctor elaborated:

Special attention should be given to the health care professional involved in such incidents. The support system is very important for the health care professionals involved in the incidents as we provide care to sick patients. When persons are involved in an incident, they should be given some time out from work, for one week, so that they can relax themselves (D-1).

The above findings indicate that several factors, including human and environment, contribute to medication errors. Health care professionals face multiple emotions and the effects of medication error are devastating for the self-esteem of health care professionals. To overcome the effects of such incidents, a strong support mechanism is required in order for them to be able to cope up with the effects of the incidents.

# Discussion

## Emotional responses towards an error

As discussed, the findings revealed that the health care professionals involved in a medication error experienced a variety of emotions–from denial to acceptance, which appears similar to the stages of the Kubler Ross grieving process [10]. Although described differently, previous researchers have also indicated that the initial reaction of a health care professional towards a medication error may be shock or denial and it takes sometime before they accept the error and move on with their careers [5,7, 8,11].

Gladstone [5] reported that participants in their study were emotionally distressed as they were ready to commit suicide if the patient had suffered serious consequences. In the current study, the participants were also found to be disturbed to the level of committing suicide as stated by one doctor in this study. In our study, most of the errors (7.8%) were near misses by the doctors. Waterman et al. [12] found that the physicians reported increased anxiety about the occurrence of errors in the future (61%), a decrease in self-confidence (44%), and an increased in sleeplessness (42%).

From their perspective, reporting the incident did not seem necessary if the patient was not harmed by the error. The findings also indicated that the emotional distress of the health care professionals after the error depended on whether the error was actual or a near miss, and whether it had any effect on the patient or not. The participants' narratives in this current study indicated that near miss incidents are unreported when the team members have a good understanding. However, the reporting of near miss incidents is important to recognize the possible issues in the system which cannot be overcome if they go unreported [5,6,13].

Nurses experienced more psychological stress as compared to other health care professionals in the current study. Likewise, Gladstone [5] had also highlighted that nurses are held more responsible and accountable for any error than the other health care professionals. Similarly in their study, Shanks and Enlow [14] found that nurses dedicated about 25% of their work timings to medication administration: obtaining, verifying, and delivering medication and monitoring. Nurses were usually able to stop the near miss errors by doctors or pharmacists. Therefore, in this study nurses experienced more psychological stress as compared to the doctors and pharmacists.

Moreover, self-identification of an error and its reporting could also help the health care professionals in taking corrective actions immediately [8]. In the present study, it was found that the intensity of emotional distress decreased when the health care professionals accepted their mistakes and realized those errors. To lessen their feelings of guilt, several participants tried to justify that the error was unintentional.

## Effects of the errors on the health care professionals

Albeit with individual variations, similar to the study of Waterman et al. [12], most of the participants of this study identified the experience of medication error as a learning opportunity for them. However, some got demotivated and lacked self-confidence, while some participants identified the root causes and took corrective actions to prevent those errors from reoccurring.

Like the previous studies [8,11], the participants of this study were concerned about the repercussions of the errors on their career profile. Besides this, some of the participants who were working in a supervisory position were also concerned about the impact of this error on the junior staff from a role modeling perspective. One of the participants in our study decided to resign or get a transfer due to the improper handling of the incident, which was similar to the study findings of Schelbred and Nord [8], in which one nurse permanently left the profession when the patient was seriously injured.

## Coping and the support mechanism used by the health care professionals

To cope with the effects of the incident, the participants in the current study reported sharing their feelings with their friends or colleagues, concurrent with the findings of other studies [7,8,15]. It was also noted in most cases that they preferred to share their feelings with their spouses; however, in some cases, when the intensity of the error was low, some participants shared their feelings with their colleagues.

In a study of medication errors among nurses [8], the participants reported having support from management which they found as the most helpful strategy to cope with the incident. Similarly, a few participants in the current study who received support from the management appreciated it, but many of them showed their concern about the level of support that they had received from the management. Almost all of the participants in our study also voiced the need for a professional counselor who could play a neutral role and was also familiar with the working environment, which is in line with the findings of other studies [5,7,8].

## Open-ended written questions

As stated earlier, 40 (62%) participants responded to the open-ended questions and many of them wrote multiple comments. The comments were categorized as feelings associated with the errors. As shown in **Table 2**, several of them denied that they have committed the error while others felt fearful or guilty. Some of them accepted their mistakes but commented that it was unintentional. Only some of them 6 (10.3%) accepted their mistakes with a reflection on the reason for the error committed.

**Table 2** Participants' comments in response to the open-ended questions.

| Themes | Categories | (n) | (%) |
|---|---|---|---|
| **Feelings associated with errors** | "I have not done it. Someone else is responsible | 9 | 15.50% |
| | Accepted the mistake with reflection on its cause | 6 | 10.30% |
| | "It was an unintentional mistake" | 4 | 6.90% |
| | "It was very bad experience, I am feeling guilty" | 3 | 5.10% |
| | "I am really afraid of doing medications" | 2 | 3.40% |
| | **Total** | **24** | **41.40%** |

## Strengths and limitations of the study

The current study has a number of strengths and a few limitations:

The participants included doctors, pharmacists and nurses which provided a comprehensive understanding of the medication errors in the study setting.

A mixed method approach was used in the study; triangulation of data lends credence to its rigor.

Some of the participants of this study, in fact thanked the researcher for providing them the opportunity to verbalize their feelings. An open-ended question at the end of the structured questionnaire also provided an opportunity to those participants who did not want to reveal their identity, but were interested in ventilating their feelings in writing.

The researcher had intended to interview the participants within a week after the incident; but in two cases the time factor exceeded more than twenty days due to handling of incident by the managers. This was the major limitation faced by the researcher during data collection process.

# Conclusion

Besides possible harm to patients, the study confirmed that medication errors can cause extreme emotional distress in the health care professionals involved in the errors. Thus, besides actions to minimize error producing conditions, a supportive and constructive approach is required for handling the health care professionals who commit the errors. The severity of errors and the staff stress level could also be explored in future studies.

## Recommendations

In view of the study findings, the following recommendations may help the management in bringing about some improvement in the system. The recommendations include:

Considering the serious effects of medication errors on the health care professionals' emotional health, the supervisors should provide psychological support to them. They should also guide the staff to seek professional counseling. Moreover, professional counseling services should be made available for the staff who are under extreme stress.

The management should be sensitive in handling health care professionals involved in medication errors. All counseling should be done in privacy, as the health care professionals feel degraded when it is done in front of others. The staffs who commit the errors should be given some time off to regain their confidence.

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