

ORIGINAL ARTICLE

Medical Errors and the Prevalence of Phenomenon of Second Victim in A Tertiary Care Hospital in Islamabad

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ABSTRACT

Objective: To determine the frequency of medical errors committed by doctors and the prevalence of second victim phenomenon in a tertiary care hospital, and to find out the effects of the error on the second victim's life.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted in a tertiary care hospital of Islamabad from 1st February to 30th September 2016.

Materials and Methods: A total of 200 male and female doctors were selected from a tertiary care hospital in Islamabad, Pakistan, through convenient sampling technique in order to fill a pretested structured questionnaire, for a period of six months. Questionnaire was adapted from a previous study and alpha reliability of the variables checked. Data was collected via face to face interviewing. It was analyzed using SPSS version 21.

Results: Out of the 200 study participants, 62.5% belonged to the age group of 24-31 years, 53% of them were males and 43% were females. Major errors were 13.2 %, minor 57.2 %, near miss were 29.6%. The prevalence of second victims came out to be 76 %, and it was almost equal in males (80.6%) and females (71.7%) and was the highest in Medicine department (35-40%). The main cause of errors was documented to be overwork by 72.5% of the participants. The major emotional effect as perceived by 50.5% participants was guilt, followed by sadness in 21.6%, embarrassment in 16.5% and sleep disturbance in 16%. Around 75.5% of the participants were of opinion that an organization should be in place to help second victims come out of their trauma. According to 83% study participants, medical errors should be disclosed to patients and their families.

Conclusion: The study concludes that there is a high prevalence of medical errors in the tertiary care hospital and male and female doctors are equally becoming second victims of their errors. The major effects of medical error on the second victim's life are feeling of guilt, sadness, embarrassment and sleep disturbance.

Key Words: *Cross Sectional, Medical Errors, Phenomenon, Prevalence, Sampling, Second Victim.*

Introduction

Humans commit mistakes but the brunt of mistakes done by doctors is faced by the patients and they are the prime or first victims of doctors' errors. They may have to bear all sorts of trauma ranging from a minor harm to disability or even death. Doctors themselves are the second victims of their own errors as they have to face the consequences of their mistakes, which can be a range of effects like frustration, distress, self-doubt, emotional trauma, anger, a

sense of incompetence in profession, insult, and even loss of job.¹ They also receive a very harsh reaction if, at all, they share their mistakes with fellow colleagues or with the patients and their families. The term 'second victim' refers to the healthcare professional who experiences emotional distress following an adverse event which was unanticipated.²

Studies show that minor to major medical errors affect many patients worldwide every year.³ The cases of doctors' negligence have been highlighted in various newspapers but not from the angle of second victims. The mistakes of doctors have been attributed to under qualification, indifferent approach towards the patient due to their private practices, lack of professional ethics as well as faulty health policies.⁴

According to a study from Johns Hopkins, more than 250,000 deaths per year are related to medical errors

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which suggests that deaths from medical errors comprise roughly 10 percent of all deaths in America every year⁵ which makes medical errors the third leading cause of death in the U.S.⁶ One of the leading causes of *errors* is communication barrier between patient and doctor.⁷ The increasing death toll over last six years is alarming, and proves that errors are consistently occurring. In neighboring countries like India, 5.2 million patients are effected each year due to medical errors.⁸ In Pakistan, medical errors are not reported frequently due to fear of embarrassment in front of peers, fear of medico-legal action, fear of punitive action by patients and complaints to governing bodies but around half a million error-related deaths are occurring each year. Many patients lose their life or face other serious health problems and disabilities because of the poorly structured healthcare system.⁹ No sympathy is shown towards the second victims, although they are equally affected by trauma. Improving patient safety requires more than voluntary reporting. Organizational changes need to be implemented and institutionalized as well.¹⁰ Researchers figured out three ways doctors choose to cope with the stress: (1) to abandon the profession, (2) to leave the incident behind and carry on with their duty, (3) learn lesson from their mistakes and try to avoid them in future.¹¹

Physicians all over the world, irrespective of their competence, are bound to commit medical errors as human error cannot be ruled out. Various circumstances affect their state of mind and they may make mistakes unintentionally. Researchers while attending a conference found that 60% of the physicians present there recalled at least one adverse patient event that left a huge negative impact on their lives. Among anesthesiologists, 84% suffered at least one such event that affected them emotionally and among these, more than 70% reported stress and self-doubt. Nineteen percent of these anesthesiologists admitted that they still were not able to recover from the emotional trauma.¹²

According to a report on the growing issue of medical negligence in Pakistan, the medical training of doctors in Pakistan needs special attention. Work hours need to be regulated and deficiencies in legal protection for doctors and patients need to be rectified. Reasonable salaries and working hours for

doctors, and adequate training and skills might lead to decreased errors, and in turn, decrease in the number of second victims.¹³

The second victim phenomenon has been highlighted and researched in various developed and developing nations of the world but extensive literature survey indicates no significant study conducted in any tertiary care hospital of Islamabad. The study fills an identified gap in the body of knowledge and proves to be a contribution to the domain of public health. Its main objective was to determine the frequency of medical errors committed by doctors and the prevalence of second victim phenomenon in a tertiary care hospital, and to find out the effects of the error on the second victim's life.

Materials and Methods

A cross-sectional study was conducted from 1st Feb – 30th Sep, 2016, and 200 male and female doctors from a tertiary care hospital in Islamabad were selected through convenient sampling technique. The research was ethically approved from ethical committee of the hospital and the confidentiality of the name of hospital and the respondents was ensured. Written informed consent was taken from all the participants and they were allowed to withdraw any time during the study.

Medical officers, registrars and consultants from Medicine, Surgery, Pediatric, Eye, Gynecology / OBS, ENT, Derma, & ICU department who had worked in the hospital for at least one year or more after house job were included in the study. House officers were excluded since they were under training and learning phase and had less than one year experience. Data was collected using a pretested structured questionnaire. The tool was adapted from a previous study in this regard with modifications. Alpha reliability of the variables was checked. Sample size was obtained using WHO sample size calculator taking the following study as reference:

Waterman A D et al, The Emotional Impact of Medical Errors on Practicing Physicians in the United States and Canada. The Joint Commission Journal on Quality and Patient Safety, August 2007; 33 (8):467-476.¹⁴

Before entering data into computer, all questions were checked for mistakes and omissions. Data was analyzed using SPSS version 21, and presented mainly as frequencies and percentages using bar

charts, and frequency tables. In order to see the gender difference of second victim phenomenon prevalence, chi-square test was applied taking p-value of <0.05 as significant.

Results

Out of the total 200 study participants, 106 (53%) were females and 94 (47%) were males. Majority belonged to the age group of 24-31yrs (62.5%), (Table1). The prevalence of second victims came out to be 76%.It was almost equal in males 76/94 (80.8%), and females 76 /106 (71.7%). The value of chi square was 0.139 at p<0.05, (Table II). Prevalence was highest in department of medicine 38(25%),followed by surgery 27(17.8%) and gynecology 25(16.44%)(Fig 1)

Majority of the second victims, 87(57.2%) were involved in minor error. Out of these, 48 (55.1%) disclosed the error to the authorities, and 39 (44.8%) disclosed it to the patient.(Table III,IV)

According to participants' responses, major barrier towards disclosure of error was fear of loss of professional reputation, declared by 93 (30.8%). Major emotional effect on second victims was guilt in 98 (24.9%), followed by sadness in 85 (21.6%), and embarrassment in 65(16.5%) respondents. Around 42 (40%) of participants' responses revealed that family life was affected due to an error, About 81 (25.8%) responses showed that job dissatisfaction was a major effect on occupational life, followed by 43 (13.7%) responses that pointed to negative effect on confidence as physicians.(Table V). The main cause of error according to the study population was overwork in 140 (72.5%), followed by lack of experience 82(42%), lack of knowledge 56 (28%), and panic 43 (21.5%).

According to 166 (83.0%) of the participants, patients and their families should be told about the adverse events. Among all,153 (76.5%) were of the opinion that error disclosure training should be provided to doctors, and 152(76%) wanted provision of counseling services to second victims. Majority, 151 (75.5%), of the participants were of the opinion that there should be some organization for support of second victims in order to solve their issues. Among all, 70 (35%) participants disagreed with the statement that hospitals support second victims.

The following hypothesis was made for chi square application to see the difference of gender in second

victim phenomenon.

H₀: There is no significant difference between the frequencies of male and female second victims.

H₁: There is a significant difference between the frequencies of male and female second victims.

p value: 0.139

Level of Significance: <0.05

The application of Chi-square Test indicates that p-value is 0.139 which is higher than the level of significance that is 0.05 hence accepting the null hypothesis and rejecting the alternate hypothesis, the results of the analysis indicate that medical errors equally affect both male and female doctors, in this tertiary care hospital.

Table I: Demographic Profile of Study Participants (n=200)

Gender		Frequency	Percentage %
Gender	Female	106	53
	Male	94	47
Department	Medicine	50	25
	Gynae/Obstetrics	37	18.5
	Surgery	33	16.5
	Eye	22	11.0
	Paediatrics	19	9.5
	ENT	14	7.0
	Others (Derma,ICUetc)	25	12.5
Age(In Years)	24-27	65	32.5
	28-31	60	30.0
	32-35	40	20.0
	36-39	23	11.5
	40 and above	12	6.0
Marital Status	Married	133	66.5
	Un-married	67	33.5
Designation	Medical officer	117	58.5
	PGT(postgraduate trainee)	36	18
	Consultant	21	10.5
	Senior registrar	26	13

Table II: Cross Tabulation Showing the Frequencies of Male And Female Second Victims

Gender	Been A Second Victim		Total	P value at < 0.05
	yes	no		
Male	76	18	94	0.139
Female	76	30	106	
Total	152	48	200	

Table III: Type of Medical Error (n=152)

Type of Error	Frequency	Percentage%
Near miss	45	29.6
Minor Error	87	57.2
Major Error	20	13.2

Table IV: Error Disclosure by the Participants (N=152)

	Major Error (n= 20)		Minor Error (n= 87)		Near Miss (n=45)	
	Frequency	Percentage %	Frequency	Percentage %	Frequency	Percentage %
Error Disclosure to the Authority	17	85	48	55.1	40	88.9
Error Disclosure to the patient	3	15	39	44.8	5	11.1

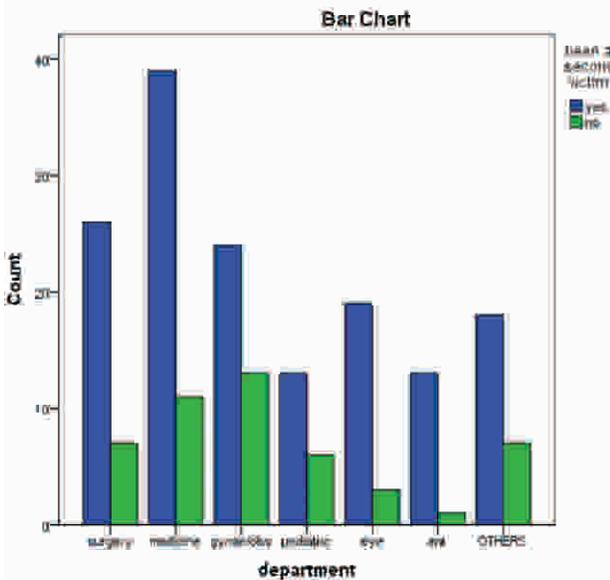


Fig 1: Bar Chart Showing Second Victim Prevalence in Different Departments

Table V: Participants 'responses About Effect of Error on Life and Barriers to Disclosure

Effect on Personal Life	Frequency	Percentage %
Sleep disturbance	63	16
Doubt about the potential for future errors	40	10.1
Anger	43	10.9
Embarrassment	65	16.5
Guilt	98	24.9
Sadness	85	21.6
Effect on Social Life		
Family life affected	42	40
Children affected	16	15.2
Friendship affected	18	17.1
Other relations in society affected	29	27.6
Effect on Occupational Life		
Job dissatisfaction	81	25.8
Affected confidence as physician	43	13.7
Professional reputation affected	41	13.1
Insult from authority	41	13.1

Monetary set back	28	8.9
Effect on productivity	30	9.5
Team work with colleagues affected	28	8.9
Litigation	22	7
Barriers Towards Error Disclosure	Frequency	Percentage %
Fear of embarrassment	31	10.3
Fear of patient's reaction	72	23.8
Fear of litigation	55	18.2
Fear of loss of professional reputation	93	30.8
Lack of peer and institutional support	51	16.9

Table VI: Participant's Response on How Errors Should Be Managed by Authorities (n=200)

	Response	Frequency	Percentage %
Error Disclosure Training Should Be Provided	Yes	153	76.5
	No	47	23.5
Counseling Should Be Provided To Second Victims	Yes	152	76
	No	48	24
Need For Society Or Organization To Solve The Issue	Yes	151	75.5
	No	49	24.5
Errors Should be Disclosed to Patients and their Families	YES	166	83
	NO	34	17

Discussion

Doctors, as second victims, have to face emotional trauma in an adverse situation. This research was designed to determine the prevalence of the second victim phenomenon and effect of medical errors on doctors' lives.

In our research on 200 participants, 76% declared that they had been a second victim somewhere along their medical career in this hospital after committing an error. Major errors committed were 13.2 %, minor 57.2 %, near miss were 29.6%. In a similar research conducted by Attia Bari and fellows in Lahore, 130 residents were included to study this phenomenon and majority of respondents (98.5%) described some form of error. Major errors that occurred were 19%, minor were 48% and 19% were near miss.¹³ Most of the participants recalled that they were medical officers or trainees when they experienced this phenomenon, which is similar in

both studies. In our study 69% disclosed medical errors to their senior authorities, and 31% to patients, while these results are in line with their study where 57% residents disclosed medical errors to their senior physician but disclosure to patient's family was negligible (11%). This points to similar socio-cultural conditions in major cities of our country. The major cause of error was declared to be fatigue in 65%, due to long duty hours, which was similar to our research, and guilt was the most felt emotional setback.

In contrast study done on residents of USA & Canada¹⁴ revealed that 92% of participants were involved in errors including major (57%), minor (36%) and near miss. (7%). This is higher as compared to ours, and the difference may be due to higher chances of disclosure of errors. In that study, 89% reported disclosing major error to patients and 54% disclosed minor error to patients, which is 15% for major and 44.8 % for minor error in our setting, hence explains the difference. Our physicians are reluctant to disclose errors. A good majority (83%) of the participants of our study believed that patients and their families should be told about the adverse events, but contrastingly, disclosure to the patients is much lesser (15%). Such a low percentage is seen mostly because of fear of loss of professional reputation and fear of patients' reactions and dissatisfaction with the overall system of the hospitals. Doctors should be able to tell the patient and the authority about such adverse events openly. Our findings emphasize the need for establishment of proper support system and societies for doctors to cope with the stress of such events. About 76.5% of the participants believe that there should be error disclosure training given to health care professionals. Also in our setting, male and female doctors were equally affected by the second victim phenomenon, while in their study, females were more affected. It might be due to the fact that our females are either more resilient and can handle stress in a better way or afraid to admit and disclose errors. In Maeve O'Beirne's research done on Canadian health professionals, the top five reported emotional responses were frustration (48.3%), embarrassment (31.5%), anger (12.6%), guilt (10.1%), and sadness (2.1%). In our study results for embarrassment (16.5%) anger (10.9%) guilt (24.9%) and sadness

(21.6%) clearly show that our respondents were left with a heavy heart and felt more guilty and sad after the incident. It was revealed that 52% of 264 participants talked to someone to deal with an emotional response.¹⁵ In our study 76% of the respondents wanted access to counseling after serious errors, which seems to lack in our system, as no one lends a shoulder for emotional venting and counseling. Proper training should be provided to the doctors to disclose such information to the patients and their families. Among our study participants, 35% disagreed with the statement that hospitals support second victims. In USA & Canadian study, 90% of physicians disagreed that hospitals and health care organizations support physicians and help them in coping with trauma and stress linked to medical errors. Hence the indifferent and non-sympathetic approach of healthcare organizations seems to exist universally regardless of whether the country is developed or developing. A majority (82%) of physicians showed interest in receiving counseling after a medical error.¹⁴ Researchers at the University of Missouri Health Center found that almost 1 in 7 staff members declared in a survey that they had experienced a patient safety event within the past year that affected personal life causing anxiety, depression, or doubt in professional confidence. A major two thirds of them denied any support from their institute.¹⁶ In most health care settings, healthcare providers do not receive care, support or guidance when they commit an error, and most suffer in silence.¹⁷

A research conducted in a tertiary care hospital in India concluded that errors related to medication were 50.26%, related to treatment procedures were 16.23% and related to clerical procedures were 28.27%.¹⁸ Hence, errors are inevitable. They are occurring globally and need attention in order to prevent psychological, physical, and emotional setback in the physicians. At present medical errors have become great challenges for healthcare professionals, and health policy makers.¹⁹

The study was limited because of convenient sampling technique and small sample size. As it was carried out in only one tertiary care hospital hence results can't be generalized. Further studies are suggested to know the actual prevalence of second victim phenomenon and the magnitude of medical

errors occurring in major hospitals.

Conclusion

The study concludes that there is a high prevalence of medical errors in the tertiary care hospital and male and female doctors are equally becoming second victims of their errors. The major effects of medical error on the second victim's life are feeling of guilt, sadness, embarrassment and sleep disturbance. The main cause of error identified is overwork.

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