

Barriers in Disclosing Medication Mishaps at Public Sector Hospitals Nurses Perspectives

Khalida Naz Memon, Zeeshan Abbas, Mahaveer Singh Sodho

ABSTRACT

OBJECTIVES: To identify barriers to disclosing medication mishaps among study populations and the association between hiding medication mishaps to the population's socio-demographic features.

METHODOLOGY: This Descriptive cross-sectional study was carried out at Clinical & allied wards of Liaquat University Hospital (LUH) Jamshoro/Hyderabad, Sindh Govt Hospitals of Qasimabad, Peretabad & Kohsar, Shah Bhitai Hospital, Countenance Difference Fund (CDF) Hospital, Services Hospital & Sir Cowasjee Jehangir Institute of Psychiatry Hyderabad from October – December 2019. Through Non-probability convenience sampling, 264 registered nurses were selected as per eligibility criteria. The data was analyzed using (SPSS) version 23.0. Registered nurses, both male and female, having at least six months' experience of work in a designated hospital and having qualification diploma, BSc.N (Post R.N) or BSc.N and MSc.N were included in the study.

RESULTS: Participants (31.7%) agreed of committing a medication mishap; 69.9% reported not to disclose these mishaps. Professional education had a significant relationship to hiding medication mishaps ($p=0.003$). Around 43.1% of participants agreed with the existence of a highly functional reporting system in hospitals for disclosure of medication mishaps ($p=0.02$). Nurses (47.2%) had a high interest in reporting medication mishaps; still showing insignificant association with the actual mishap reporting ($p=0.67$).

CONCLUSION: The study covers the most available public sector hospitals showing one-third of the participants committing medication mishaps. The finding of this study highlights the need to minimize mishap practices and maximize their disclosure if the consequences of medication mishaps are to alleviated.

KEY WORDS: Medication mishaps, Hospital Nurses, Barriers, Disclosure, Public sector.

This article may be cited as: Memon KN, Abbas Z, Sodho MS. Barriers in Disclosing Medication Mishaps at Public Sector Hospitals Nurses Perspectives. J Liaquat Uni Med Health Sci. 2021;20(03):235-40. doi: 10.22442/jlumhs.2021.00781

INTRODUCTION

Throughout the world, every person takes medicines to treat disease. However, if taken incorrectly, medicines sometimes cause serious harm. Client safety is one of the key indicators in the quality services of healthcare. The incorrect drug administration is responsible for around half a million deaths per year in Pakistan. These widespread deaths at hospitals across the country are attributed to non-regulation of the medicines, dosages, and potencies^{1,2}. In healthcare settings mostly nurses practiced medication mishaps, limiting care quality leading to severe damages, disabilities, and even death. These consequences result from staff tiredness, overcrowding, shortage of workers, inadequate training, and incorrect information to clients^{3,4}. In the United States, 2.5 million annual deaths occur due to medical mishaps, the third leading cause of mortality after heart disorders and cancers. Every year US\$ 42 billion or near to 1% of overall worldwide health expenditures is being consumed to nursing shifts by clients' hospitalization exceeding 4.6 days as a result of medication mishaps⁵.

A severe type of medication mishap includes a knowledge-based, rule-based, action-based, memory-based, administration-based, prescribing, preparation, omission, incorrect time, wrong drug, incorrect administration technique⁶⁻⁹. Nowadays, limiting medication mishaps has become a worldwide concern¹⁰. Every healthcare system strives to minimize injuries from medical mishaps¹¹. Medication mishaps can be prevented by putting systems and procedures in place to ensure that the right patient receives the right medication in the right dose through the right route at the right time.

An effective disclosing system is a keystone and first step toward limiting mishaps again¹². Mishaps are disclosed in a minimal amount, contributed by various limitations, like fear of disciplinary action from management or fear of losing a job, assumed unskilled and carelessness by coworkers, fear of being accursed, and fear from the patient attendant to take action against staff or reprisal. Disclosing effort and disagreement over definition is also considered as the barriers of disclosing^{12,13}. Creating a secure environment for the nursing staff after a medical mishap can decrease the rate of the mishaps to the lowest possible level and increase disclosing¹⁴.

Considering this issue as an un-researched public health problem, this study was set with the following objectives:

To assess the occurrence of medication mishaps & their disclosure among the study population.

To identify barriers to disclosing medication mishaps among the study population.

To determine the association between hiding medication mishaps to socio-demographic features of the study population.

Currently, as such no, intervention to encourage disclosure of medication mishaps is being practiced in Pakistan. This study may help to encourage health care practitioners to disclose mishaps that result not only in financial losses but can be life-threatening.

METHODOLOGY

This descriptive cross-sectional study was conducted in all medical & allied as well as surgical & allied wards of General/Tertiary Hospitals (Liaquat University Hospital (LUH) Jamshoro/Hyderabad, Sindh Govt Hospitals of Qasimabad, Peretabad & Kohsar Hyderabad, Shah Bhitai Hospital, and Hyderabad). Special Hospitals, Countenance Difference Fund (CDF) Hospital Hyderabad (Obstetrics and Gynecology), Services Hospital Hyderabad, Sir Cowasjee Jehangir Institute of Psychiatry Hyderabad from October to December 2019.

All the registered practicing nurses of both genders having nursing qualifications like diploma, BSc.N (Post R.N) or BSc.N and MSc.N, at least six months' experience of work in designated hospitals & willingness to be the part of the research, were enrolled in the study. The nurses working as head nurses, nursing supervisors, nursing superintendents & those working in outpatient departments were excluded from the study.

A self-developed questionnaire was used to collect data regarding socio-demographic information & various barriers in disclosing the medication mishaps. The perceptions regarding barriers to disclose medication mishaps were recorded by using a 5-point Likert-type scale. The Cronbach's alpha reliability index of the questionnaire was computed as 0.832.

The sample size was estimated by taking the prevalence of medication mishaps as 78 percent⁹; two hundred & sixty-four participants were selected from designated hospitals through non-probability convenience sampling technique. The number of participants from each hospital was selected as per the proportion of availability of nursing staff.

Data were analyzed by using SPSS 23 version. The socio-demographic variables & barriers were measured as percentages while their associations with hiding medication mishaps were analyzed by applying a chi-square test of significance at a p-value of 0.05.

RESULTS

About 166 (67.5%) participants never practiced mishap, 78 (31.7%) agreed, while 2 (0.8%) response values were missing. Only 30 (12.2%) subjects disclosed mishaps, 44 (17.9%) were never involved in a mishap, while 172 (69.9%) replied that they did not disclose their medication mishap to the authorities (Table I).

Table II shows the relationship of socio-demographic variables to hiding medication mishaps. The professional education revealed a significant relationship of hiding medication mishaps ($p < 0.01$).

Table III shows the distribution of participants regarding their perception of barriers. The 43.1% of respondents stated that their work setting had a highly functional reporting system. Assessment of personal interest of participants showed 47.2% of them as having high interest. The 59.8% of participants confirmed some organizational issues as barriers in disclosing medication mishaps.

TABLE I: DISTRIBUTION OF RESPONDENTS REGARDING MEDICATION MISHAP PRACTICES AND DISCLOSURES (n=246)

Response	Frequency (%)
Mishap practice	
Yes	78 (31.7%)
No	166 (67.5%)
Missing	2 (0.8%)
Mishap Disclosure	
Yes	30 (12.2%)
No	172 (69.9%)
Never Involved	44 (17.9%)

DISCUSSION

The response rate to this study was 93.2%, which is highly encouraging. The study reveals that 67.5% of participants had never practiced mishaps compared to 31.7% who had committed medication mishaps. Interestingly, only 12.2% of subjects disclosed mishaps to the concerned authorities, while the remaining did not disclose these sorts of mishaps. This finding is comparable to another study that showed 68.12% of nurses reporting as never committing a medication mishap¹⁵. Out of 152 respondents out of 300, with a response rate of (50.7%), where this study is having a response rate of (93.18%) showing a more significant study. On the contrary, Shahzadi S 2017¹³ found 86.5% of respondents refusing the committing of medication mishap. Committing a medical mishap is an unavoidable phenomenon in any health care setting

TABLE II: ASSOCIATION OF SOCIO-DEMOGRAPHIC VARIABLES WITH HIDING OF MEDICATION MISHAPS

Socio-demographic Variable	Frequency	Disclose Medication Mishap			p-Value
		Yes	No	Never Involved	
Age Groups					
25 -35 Years	100 (40.7%)	14 (5.7%)	67 (27.2%)	19 (7.7%)	0.42
36 - 45 years	75 (30.5%)	5 (2.0%)	55 (22.4%)	15 (6.1%)	
46 - 59 years	71 (28.9%)	11 (4.5%)	50 (20.3%)	10 (4.0%)	
Gender					
Male	66 (26.8%)	10 (4.1%)	40 (16.3%)	16 (6.5%)	0.14
Female	180 (73.2%)	20 (8.1%)	132 (53.7%)	28 (11.4%)	
Professional Education					
General Nursing Diploma	122 (49.6%)	10 (4.1%)	93 (37.8%)	19 (7.7%)	0.00*
BS Nursing Generic	27 (11%)	1 (0.4%)	23 (9.3%)	3 (1.2%)	
BS Nursing Post R.N	90 (36.6%)	18 (7.3%)	54 (22%)	18 (7.3%)	
MS Nursing	7 (2.8%)	1 (0.4%)	2 (0.8%)	4 (1.6%)	
Professional Experience					
6 months - 1 year	5 (2.0%)	0 (0%)	5 (2.0%)	0 (0%)	0.22
2 - 5 years	65 (26.4%)	08 (3.3%)	40 (16.3%)	17 (6.9%)	
6 - 10 years	70 (28.5%)	10 (4.1%)	48 (19.5%)	12 (4.9%)	
11 - 20 years	43 (17.5%)	02 (0.8%)	36 (14.6%)	5 (2.0%)	
More than 20 years	63 (25.6%)	10 (4.0%)	43 (17.5%)	10 (4.0%)	
Duty Shift					
Fixed	152 (61.8%)	19 (7.7%)	98 (39.4%)	35 (14.2%)	0.22
Rotation	94 (38.2%)	11 (4.5%)	74 (30.1%)	9 (3.7%)	

TABLE III: PERCEPTION OF RESPONDENTS REGARDING BARRIERS IN MEDICATION MISHAP DISCLOSURE

Perception regarding Barrier	Frequency%	p-value
Awareness about disclosing medication mishaps		
High level of awareness	91 (37%)	0.04*
Moderate level of awareness	88 (35.8%)	
Poor level of awareness	67 (27.2%)	
Reporting system involved in disclosing medication mishap		
Highly functional	106 (43.1%)	0.02*
Moderate functional	75 (30.5%)	
Less/not functional	65 (26.4%)	
Personal interest in disclosing medication mishap		
High interest	116 (47.2%)	
Moderate interest	96 (39%)	0.67
Minute/no interest	34 (13.8%)	
Organizational issues involved in disclosing medication mishap		
Less presence/absence	9 (3.7%)	0.57
Moderate presence	90 (36.6%)	
High presence	147 (59.8%)	
Scare to consequences about disclosing medication mishap		
Low presence/absence	50 (20.3%)	0.11
Moderate presence	46 (18.7%)	
Sever presence	150 (61%)	

but admitting its occurrence is highly desirable to avoid its repetition.

Disclosure of medication mishaps is an important step and discouraged by various limitations; the current study found 12.2% of subjects who disclosed mishaps, which is an immensely encouraging figure compared to 4.5% subjects reporting the same as found in another research¹³.

Regarding socio-demographic features of the participants' contribution towards hiding medication mishap, 27.2% of the respondents in the age bracket of 25-35 years revealed that they would not report mishap after its occurrence. The corresponding data of other studies reveal these figures as 7.1%¹⁶, 7.7%, and 6.3%¹³.

Moreover, the present study shows this proportion of subjects decreases as the respondents' age increases so much that at the age group of 46 - 59 years, only 20.3% of the subjects believed that medication mishap should not be hidden if it occurs. However, there was no significant association observed between the age of the respondents & the hiding of medication mishaps ($p=0.45$). Compared to another study, most of the nurses in the age group of 25-40 showed the least concern about disclosing medical mishaps ($p=0.03$)¹⁸. The difference could be due to a big difference in the sample size of both studies. Another reason for this difference could be due to the gender-wise participation of the subjects. This study shows a large number of male (28.9%) participants, whereas in previous studies this was found as 4.8%¹², 6%⁹ and 1.8%¹⁴. The gender was, however, not associated with hiding medication mishaps ($p=0.14$). Contrary to this, 37.80% of the medication mishap reporting failure was committed by nursing diploma holders revealing a significant association between educational status & hiding the mishaps ($p=0.003$). The findings contrast to another study in Ethiopia showing 44.21% of highly educated participants hiding such mishaps¹⁵. Similarly, another research conducted in Saudi Arabia revealed similar findings showing an increase in education level associated with greater reporting of medication administration error ($p=0.05$)¹⁴. The current study did not find any association between work experience & disclosure of mishaps (0.22).

Participants with 39.4% of those working on fixed duty did not disclose the medication administration mishaps ($p=0.22$). A study in Taiwan finds 48.38% of nurses working in fixed shifts, not revealing drug administration mishap¹⁸. Bull ER et al.¹⁹ identified participants performing fixed duties as avoiding disclosure of medical mishaps.

Although the availability of a healthcare facility's reporting system cannot be denied, it is useless if workers have not learned how to report the medication mishaps. In contrast to 27.2% of respondents having a low level of awareness

regarding reporting medication mishaps as compared to 64.90% in a research conducted in Saudi Arabia²⁰ and another study by Dirik HF 2019²¹, we still find this association as statistically significant ($p=0.03$). At public sector hospitals, no reporting system was found. The current study depicted that 43.1% of participants agreed with a highly functional reporting system in their hospitals, conducive to disclosing medication mishaps ($p=0.02$). Even though 47.2% of the nurses were found to have a high interest in reporting medication mishaps, we find no significant association of this variable with the actual mishap reporting ($p=0.67$). This was endorsed in another study with similar objectives²². Further exploration revealed organizational issues involvement in disclosing medication mishap (59.8%) $p=0.57$ & being scare to consequences about disclosing medication mishap 61% ($p=0.11$). Few other researchers found 31.7% & 26.1% of the nurses fear being rendered unqualified because of their disclosure as the major reason for non-disclosure of their medication mishaps, respectively^{23,24}. After the disclosure, being scared of consequences was the main barrier to underreporting among 42.68% of respondents²⁵.

CONCLUSION

Fear of consequences, Lack of feedback, Anonymity, less interest paid from the Head of departments were major barriers identified to limit the disclosure. Socio-demographic variables like higher professional education and duty shift were found statistically highly significant to hide medication mishaps. Around two-thirds of participants refused to deny their involvement in medication mishap; another two-thirds of those who were involved in medication mishap, but did not disclose it to their authorities. Findings in this study are valuable to help minimize mishaps practices and maximize its disclosure if the untoward consequences are to alleviate.

Ethical Permission: Liaquat University of Medical and Health Sciences, Jamshoro, Letter No. DOC#LUMHS/REG/ACD/28274/79, Dated:1-10-2019.

Conflict of Interest: There is *no* conflict of *interest* among the authors.

Financial Disclosure / Grant Approval: There was no funding agency.

DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

AUTHOR CONTRIBUTIONS

Memon KN: Supervised the study and helped in each section, analyzed the gathered data in SPSS, and interpreted it.

Abbas Z: Conducted study, chief investigator, collected, gathered, and managed data, also wrote

the manuscript of study.

Sodho MS: Grammatical correction and sentence structures

REFERENCES

1. Medication errors cause half a million deaths in Pakistan, say pharmacists. Dawn news [Internet]. 2017 October 11. Available from: <https://www.dawn.com/news/1362951>.
2. Medication errors kill 0.5m people each year in Pakistan. The Nation [Internet]. 2018 March 30. Available from: <https://nation.com.pk/30-Mar-2018/medication-errors-kill-0-5m-people-each-year-in-pakistan>.
3. Organization WH [Internet]. WHO launches global effort to halve medication-related errors in 5 years. 2017 March 29. Available from: <https://www.who.int/news/item/29-03-2017-who-launches-global-effort-to-halve-medication-related-errors-in-5-years>.
4. Tabatabaee SS, Kalhor R, Najtehzadegan Z, Jahroma VK, Sharifi T. Barriers to Medication Error Reporting from Nurses' Perspective: A Private Hospital Surve. *Int J Hosp Res*. 2014; 3 (2): 97-102.
5. Makary M, Daniel M. Study Suggests Medical Errors Now Third Leading Cause of Death in the U.S. [Internet]. Johns Hopkins Medicine. 2016. Available from: https://www.hopkinsmedicine.org/news/media/releases/study_suggests_medical_errors_now_third_leading_cause_of_death_in_the_us.
6. Aronson JK. Medication errors: definitions and classification. *Br J Clin Pharmacol* 2019; 67(6): 599-604. doi: 10.1111/j.1365-2125.2009.03415.x.
7. Norman DA. Categorization of action slips. *Psychol Rev*. 1981; 88(1): 1-15. doi: 10.1037/0033-295X.88.1.1.
8. Keers RN, Williams SD, Cooke J, Ashcroft DM. Prevalence and Nature of Medication Administration Errors in Health Care Settings: A Systematic Review of Direct Observational Evidence. *Ann Pharmacother*. 2013; 47(2): 237-56. doi: 10.1345/aph.1R147.
9. Salmasi S, Khan TM, Hong YH, Ming LC, Wong TW. Medication Errors in the Southeast Asian Countries: A Systematic Review. *PLoS One*. 2015; 10(9): e0136545. doi: 10.1371/journal.pone.0136545.
10. Poorolajal J, Rezaie S, Aghighi N. Barriers to medical error reporting. *Int J Prev Med*. 2015; 6: 97. doi: 10.4103/2008-7802.166680.
11. Sham F, Wahab S, Sihat H, Nazri H, Amyah A, Kaur H . Prevalence and perceived causes of unreported medication errors among nurses in a public hospital in selangor. *Malaysian J Nurs*. 2018; 9(3): 3-10.
12. Ajri-Khameslou M, Aliyari S, Pishgooie AH, Jafari-Golestan N, Afshar PF. Factors Affecting Reporting of Nursing Errors: A Qualitative Content Analysis Study. *Ann Med Health Sci Res*. 2018; 8: 215-219.
13. Shahzadi S, Afzal M, Kousar R, Waqas A. Barriers to Reporting Medication Administration Errors among Nurses in Services Hospital Lahore. *Saudi J Med Pharm Sci*. 2017; 3: 947-56.
14. Mostafaei D, Marnani AB, Esfahani F, Estebarsari F, Shahzaidi S, Jamshidi E et al. Medication Errors of Nurses and Factors in Refusal to Report Medication Errors Among Nurses in a Teaching Medical Center of Iran in 2012. *Iran Red Crescent Med J*. 2014; 16(10): e16600. doi: 10.5812/ircmj.16600.
15. Qrishah AL, Hassan M. The Factors Associated With the Occurrence of Medication Errors in the Ministry of Health Hospitals in Saudi Arabia: A Cross-Sectional Study of Nurses. (Doctoral dissertation). University of Adelaide, School of Nursing. 2017. Available from: <https://digital.library.adelaide.edu.au/dspace/handle/2440/110348>.
16. Banakhar M, Tambosi A, Asiri S, Banjar Y, Essa Y. Barriers of Reporting Errors among Nurses in a Tertiary Hospital. *Int J Nurs Clin Pract*. 2017; 4(1): 245. doi: 10.15344/2394-4978/2017/245.
17. Almutary HH, Lewis PA. Nurses' Willingness to Report Medication Administration Errors in Saudi Arabia. *Qual Manag Health Care*. 2012; 21(3): 119-26. doi: 10.1097/QMH.0b013e31825e86c8.
18. Niu S-F, Chu H, Chen C-H, Chung M-H, Chang Y-S, Liao Y-M, et al. A comparison of the effects of fixed- and rotating-shift schedules on nursing staff attention levels: a randomized trial. *Biol Res Nurs*. 2013; 15(4): 443-50. doi: 10.1177/1099800412445907.
19. Bull ER, Mason C, Junior FD, Santos LV, Scott A, Ademokun D et al. Developing nurse medication safety training in a health partnership in Mozambique using behavioural science. *Global Health*. 2017; 13(1): 45. doi: 10.1186/s12992-017-0265-1..
20. Abdel-Latif MM. Knowledge of healthcare professionals about medication errors in hospitals. *J Basic Clin Pharm*. 2016; 7(3): 87-92. doi: 10.4103/0976-0105.183264.
21. Dirik HF, Samur M, Seren Intepeler S, Hewison A. Nurses' identification and reporting of medication errors. *J Clin Nurs*. 2019; 28(5-6): 931-8. doi: 10.1111/jocn.14716.
22. Rutledge DN, Retrosi T, Ostrowski G. Barriers to medication error reporting among hospital nurses. *J Clin Nurs*. 2018; 27(9-10): 1941-9. doi: 10.1111/jocn.14335.
23. Bahadori M, Ravangard R, Aghili A, Sadeghifar J, Gharsi Manshadi M, Smaeinejad J. The factors affecting the refusal of reporting on medication

- errors from the nurses' viewpoints: a case study in a hospital in iran. *Int Scholar Res Notices Nurs.* 2013; 2013: 876563. doi: 10.1155/2013/876563.
24. Karimi FZ, Ebrahimipour H, Hooshmand E, Bayrami R, Pourshirazi M, Afiat M, et al. Medication Errors and its Contributing Factors among Midwives. *J Midwife Reprod Health.* 2016; 4(4): 748–56. doi: 10.22038/jmrh.2016.7563.
25. Lee E. Reporting of medication administration errors by nurses in South Korean hospitals. *Int J Qual Heal Care.* 2017; 29(5): 728-34. doi: 10.1093/intqhc/mzx096.



AUTHOR AFFILIATION:

Prof. Khalida Naz Memon

Department of Community Medicine &
Public Health Sciences
Liaquat University of Medical & Health Sciences
Jamshoro, Sindh-Pakistan.

Zeeshan Abbas (*Corresponding Author*)

Staff Nurse
Sir CJ Institute of Psychiatry
Hyderabad, Sindh-Pakistan.
E-mail: zeeshanliskani@gmail.com

Mahaveer Singh Sodho

Staff Nurse
LUH, Hyderabad, Sindh-Pakistan.