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THE IMPACT OF INTERRUPTIONS ON MEDICATION ERRORS IN HOSPITALS: A DIRECT OBSERVATIONAL STUDY OF NURSES

1.Noreen Shahbaz Post RN (Student) Lahore School of Nursing, The University of Lahore.

2.Muhammad Hussain, Assistant professor at LSN (UOL).

3.Muhammad Afzal, Principal at UOL (LSN).

4.Muhammad Amir Gilani, Dean Faculty of Allied Health Sciences, Lahore School of Nursing,

The university of Lahore 1- Km Raiwind Road, Sultan Town, Lahore, Punjab,

ABSTRACT: *The aim this study is to observe the existence of interruptions during drug preparation as well as administration including the cause of interruptions, time taken from the primary purpose (drug administration), secondary activities performed and the extent of clinical. Background: Many researches on the frequency of occurrence of medication administration faults or errors have been conducted but only a few have examined the occurrence of drug administration associated variations from safe practice. During the medication administration cycle conducted by staff nurses in hospital surroundings, interruptions are common and have been shown to be correlated with an development in the occurrence and medication administration errors. Methods: A observational study conducted. Convenient sampling technique used in this study. Inside a large government teaching hospital in Lahore, a suitability sample of six medical unit, surgical unit.The mean number of interruptions was 1.79 (SD 1.04). Thirty-four percent of medication events had at least one procedural failure, while 6.7% resulted in a clinical error. Result: During medication administration incidents, close monitoring of nurses culminated in 100 percent recorded medication administration activities. One third of the interruptions were by other nurses trying to share patient and process details, including asking queries, providing orders, recording details and finding support. Clinical and operational problems found in incidents relevant to drug administration. 72 percent of the reported drug incidents have been shown to involve administrative deficiencies. Conclusion: It is confirmed that interruptions sometimes arise and are related to operational deficiencies and clinical errors. There is an immediate need for instructional programs that reflect on the significance of interruptions, their connection with procedure malfunction and clinical negligence.*

KEYWORD: interruptions; medication errors; procedural failures; clinical error; disruptions.

INTRODUCTION

The Interruptions are usually part of the working day of most health professionals and can provide the necessary information to nurses, such as a monitor alarm which shows an irregular heart rate is a critical timely warning which may interrupt the practice. [1]

Interruptions were described as a disruption in the operation of a human action caused by an internal and external source towards the receiver. This split resulted in the termination of original

task to perform an unintended secondary task culminating in the breakdown or termination of the primary task. Not all interruptions should be supposed as negative during clinical practice. [1,2]

Today's nursing practice's complexity makes interruptions, disruptions and multitasking normal, even during complex and high-risk tasks. Interruptions are also often identified as a concern for drug safety, especially in relation to nurses who administer medication. Recent some studies indicate a linear relationship between medication-administering errors and interruptions.

Whereas a causal link remains to be shown that, a generally accepted goal is to eliminate interruptions during drug administration to reduce the psychological and multitasking load. [3]

Interruptions were related with patients' harm during medication administration (Coiera 2017). This opinion is reinforced by a review of 380 drug incident cases where 49 percent of authors consider disruptions often used with the word interruptions to be the most usually occurring cause. Coiera encourages more work to recognize key areas of operation that have been compromised and to look for ways to render them ' evidence of disruption' (Coiera 2017). This research discusses and describes disruption forms and their consequences during planning and administration of the drug. [3,4]

Nursing staff are directly responsible for preparation and providing medication to patients, the entire process is often called as medication administered. Interruptions faced by nurses while administering medication can cause clinical administration errors. Nurses have been seen to be regularly disturbed during drug administration. Interruptions have been shown to cause an increase in the severity and frequency of medication administration errors. The Institute for Safe Drug Practices reports that interruptions are experienced very often during drug administration, about every 2 minutes, with interruptions happening in more than half of the medication administration processes. [1]

Interruptions can cause longer task execution periods, leading to lower work performance Cooper, Tupper, and Holm in 2016 observed that interruptions increased medication administrating time (From documentation of the drug) from 7 minute with no distractions to 10 minutes with one or two disruptions. For three to five interruptions the period to complete medication administration increased to 15 min. Nurses were observed to be interrupted with high frequency when conducting sensitive nursing activities, mostly during medication administration (Institute of Safe Medication Practices[ISMP], 2012 stated that nurses are expected to be interrupted as frequent as once every 2 minutes while administering medicines. [3]

Interruptions are usually part of the working day of most health professionals and can provide the necessary information to nurses. Interruptions were described as disruption in the operation of a individual or human action caused by an internal and external source towards the receiver. This split resulted in a termination of the original task to conduct an unintended secondary task culminating in the primary task being broken or terminated. Not all interruptions should be supposed as negative during clinical practice. [5]

When applicable, the present study uses existing meanings surrounding errors. Clinical or medical errors are well-explained as observing the administering of incorrect medicine, including administering the wrong dose or drug, or administering the wrong patient, or to the wrong route

or on wrong period time. Failures in the process indicate neglecting or omitting to obey existing protocols, guidelines in any aspect of the medicine process.

Example of technical problems involve failure to verify patient identity, inability to report medication administration on drug chart failure to recite the prescription label and expiration date, temporary storing of medicine in an unsecured setting. Ultimately, a drug administration case is described as starting when the nurse receives a patient's prescription order with the purpose of prescribing or delivering a medication, providing medicine to the patient, and performing any documentation required (Johnson et al., 2017).

Problem statement:

Hospital staff nurses often interrupted during medicine preparation and administration which contributes to administering errors. Drug errors are particularly worrisome. Knowledge about extent and category of medication interruptions is however limited. So, need to conduct this study that how to reduce interruptions with educational session after observation.

Study purpose:

Searched for the existence of interruptions during drug preparation as well as administration including the cause of interruptions, time taken from the primary purpose (drug administration), secondary activities performed and the extent of clinical errors and procedural deficiencies.

Research Questions:

What are the causes of interruptions during medication administration?

What is nature of interruptions during medicine preparation and administration, as well as the source of interruptions?

What are the consequences of medication interruptions?

How to reduce Medication Interruptions that cause clinical errors?

Significance of study:

This research demonstrated that interruptions are common and result in surgical mistakes and operational delays, which endanger the health of the patient. These interruptions contribute to the medication tasks with a substantial additional workload. Multiple strategies are needed to reduce interruptions correlated with non-patients. A proper Medication administration process eliminating interruptions indirectly.

Unfortunately, the process of administering medication can be balanced through a myriad of interruptions during the process. This study addresses the gap in nursing knowledge associated with errors and interruptions and how to stop during the administration of medications. The goal of the present study is thus to improve the safety of medication administration by using action to raise awareness and skill of nurses in order to reduce medication errors in medical and surgical units at (MUH) administration.

Specific Objective:

Exploring interruptions or distractions during the preparation and administration of the medication and their consequences.

General Objective:

The objective is to investigate the existence of disruptions and interruptions during drug preparing and administrating including cause of interruptions, the time taken from the primary task (medicine administration), secondary activities performed, and the extent of clinical inaccuracies and procedural errors.

LITERATURE REVIEW

This study was done by Bonafide et al., 2019 Data were gathered from 1 August 2016 until 30 September 2017. Participants comprised 217 nurses and the 330 patients, to whom treatment was given. This research examined the exposures, main exposures were telephone calls and collected text messages on the hospital mobile phone allocated to the nurse in the 10 to 15 minutes leading up to an effort to administrating medication.

The primary outcome of this study, errors during drug administration, was a combination of recorded medicine administration errors and barcode medicine administration error warnings created when nurses tried to give the patient the barcode of which they scanned medicine without active instructions. Findings from this study suggest that telephone call interruptions among PICU nurses may be temporarily related with errors in the administration of medication. Failure frequency differed by change, practice, nurse to patient ratio and patient care quality needed. [4]

Other study done by Özkan, Kocaman, & Öztürk, in 2016 the greatest number of interruptions were caused by the caregiver factor. As issues with providing care for their children come into doubt, mothers disrupted nurses ' planning for drug and management procedures.

While in the analysis of Palese et al., patient-caused disruption was placed at the top, 24.7 percent where recorded to trigger interruptions. Such interruptions have been sporadic and unexpected. During the preparation of the medication the number of interruptions could be reduced with the help of preventive interventions. Decreasing interruptions and distractions is recommended by arranging the preparation room for the medication as a sterilized cockpit area. Nurses themselves were among the most common factors causing interruptions. Nurse chitchats during the preparation of the drug have also been stated to be one of the primary reasons for error in other research. According to the observation data, the nurse obtains information from an experienced nurse about a study about a medication that is not being applied before, or they might be preparing it together. [6]

Another study conducted by Zhao et al., in 2019. The most prevalent causes / causal reasons of interruptions during drug administration were climate, patients, doctors, other nurses also communication issues. The results of the study were compatible with earlier research, with a third of the interruptions being attributed to the work environment by nurses. Unlike previous research, this study cleared that caregivers of patients were more possible to interrupt female nurses during drug administration. The author stated that the negative impacts of interruptions could increase the workload, require the postponement of current tasks, result in temporary memory loss and lead to

medical errors. Possible underlying reasons include a limited number of duty nurses and more patients assigned to nurses, an increase in the workload and more interruptions, thereby increasing the likelihood of medication errors. [7]

The research investigates the frequency of at tiniest one disturbance, which was typically caused by a nurse assistant or patients. During evening shifts significantly fewer interruptions happened during medication or drug administration. No important correlation between the disruption and full conformity with the procedure was noticed. Differences in the frequency of interruptions were greater between hospitals than between wards.

Study has shown that human activities or actions for example staff, patients, families, other HCPs, are the main reason of interruptions, consistent with previous studies, which may also justify less interruptions in the evening shift owing to decreased number of nurses and HCPs in the wards after six p.m. Since human beings are the principal cause of interruptions Because humans are the main cause of interruptions. [8]

Another study that Salami et al. carried out in 2019 explored that Medication Administration Errors had short- and long-term consequences for the health of patients, as well as for the accreditation and monetary status of hospitals. His findings explored that the most common types of MAEs were wrong time and wrong patient. Moreover, 42.9 per cent of MAEs compensated for night shifts; the aspect that applied most to MAEs was workload. [9]

Where possible, this present study makes use of existing error definitions. Clinical errors are defined as observing the wrong drug, wrong dose, wrong route, or the wrong patient, as well as wrong time. Procedural deficiencies in any part of the prescription cycle indicate neglecting or omitting to obey the procedures, guidelines or policies defined. [10]

According to one study, it was cleared that errors in medication or drug administration are hard to intercept as they happen at the end of the process. This study researcher defines distractions, interruptions, and cognitive loads experienced during medication administration by staff nurses, and explores their impact on procedural failures and errors in medication administration. His findings of the results explored the interactions between environmental and individual factors and culminated in medication errors. [11]

Another study by Blignaut, Coetzee, & Ellis, 2017) was found in surgical and medical units between February and August 2015. In total, 296 errors in the medication were identified, His findings of results explored that most were errors and omissions in the wrong time. Interruptions and patient acuity were strongly linked, respectively, to mistakes in the wrong dose and the wrong direction. Most of the deviations from safe drug administration practices were related to patient identification or asepsis. [12,13]

Errors in the administration of medication have been common happenings in the hospitals. The most frequently occurring MAE has been the failure to practice the proper documentation. Looking-like drugs and distractors were the reasons that greatly contributed to the medication administration errors. Most MAE's have not been reported. The inaccessibility of a system and fear substantially contributed to decrease level of MAE reporting. [14,15]

This retrospective study was conducted in a secondary hospital, using a direct examination methodology and drug report evaluations. Errors in the administration of medicine were detected in 85 per cent of the measured doses. Thirty7 errors were identified overall. 66.7 per cent remained erroneous after excluding the 39 errors in the wrong time. Throughout the drug administration stage, more errors were found (62.5 percent) than in the process of drug processing (37.5 percent). The largest error rate was reported by central nervous system drugs at 94.1 percent. A total of 43 errors (14.3 per cent) have been found to be potentially severe overall. In analysis, the incidence of errors was closely related to the experience of nurses and level of education. [15]

One fourth of nurses disrupted their administration of medicine: preference was given to supporting direct patient care users. They abandoned the round when the nurses were disturbed, then re-entered the process. Nevertheless, they have accomplished to refocus and continue to administration the drugs: interruptions and disturbances have made little difference to most behaviors and actions, possibly due to more frequent duplication of nurses' checks. [22]

METHODOLOGY

A observational study will be conducted. This study conducted audit over a three month from January 2020 to March 2020. Convenient sampling technique will be use in this study. Inside a large government teaching hospital in Lahore, Pakistan, a suitability sample of six medical unit, surgical unit and ICU(critical care unit) (Emergency Department, Neonatal Intensive Care Unit) will recruit. These wards volunteer to take part after the lead observer defined the research at a unit managers forum.

Research Instruments:

The direct observation will conduct using the structured checklist adopted from the previous study. It contained 24 components. The observational checklist will use to gather data by observing nurses while medicating patients to assess interruptions and impact of interruption on medication process as well as assess medication errors that associate with interruptions. The questions will design to elicit a 'yes' or 'no' response depending on the degree of nurses' impact of interruptions on medication errors medication administration during the process of a medication administration.

Development of observation tool:

A status procedural apparat was created which included the details of the unit, the identification of the nurse, the clinical history of the patient, the administration of medicine and errors during administration. Characteristics of interruption like nature of interruption, description of the interruption, sources of interruption should be recorded according to protocols. Details of stoppage of medicine administration by nurse due to any secondary task, time taken away from primary task, time for secondary task were also recorded addition, a brief description of the primary and secondary tasks were detailed in writing for example, if the interruption was by another nurse asking for the medication keys.

The primary task can be defined as administration of medicine and secondary task can be defied as the talking to another nurse about location drug keys currently. The time taken by the phone to handle the secondary task should recorded by using clock function. Medical negligence consisted of failure to verify patient identity, failure to fulfill protocols and clinical failures consists of correct

person, right medicine, accurate dose, exact time, right route, and correct documentation. There should be free text space to write down other problem. Preliminary observation tool consisted of 21 observations that observed in morning round. Tools can be changed by addition of information concerning the place interruption and point of interruption during preparation and administration, date, time of observation, also definitions of clinical errors besides procedure failures. The updated version of observation tool will be use. [8]

Data collection Techniques:

During weekdays between 6AM - 10PM, nurses on the study wards were directly observed while administering IV medication to patients >18 years of age. It involved observing all IV medications, except parenteral nutrition, chemotherapy and acute medications. At each hospital, trained external researchers conducted the observations during consecutive weekdays. During each observation, the following items were registered: (a) whether or not the administrator was interrupted during the administration; (b) whether or not the administrator was wearing a do-not-disturb vest and (c) describing the interruption in detail (free text). It was possible to be interrupted more than once during one administration.

Ethical Considerations:

The medical ethical committee waived the requirement of informed consent. Nevertheless, verbal consent from nurses and (wherever possible) patients was obtained prior to observations. Nurse managers from the participating wards were informed about the purpose of the study. Nurses were aware that they were being observed and were informed about the purpose of the observations: interruptions, procedure failures and clinical errors assess during preparation and administration of medication. Nurse participation in the study was voluntary and anonymous

Data Analysis:

The collected data is analyze and computed using frequency, table and charts through SPSS version 25.

RESULTS

Although demographic data such as patient age or gender were collected, the primary diagnosis was obtained from Nursing Handover Summary documents. Diagnoses comprised gastrointestinal conditions (36.7%), followed by musculoskeletal, spinal and skin conditions (30.8%), cardiovascular conditions (4.2%), endocrine, hepatic, renal and urinary conditions (15.8%) and other conditions (7.5%) (n = 120).

Table.1 Demographic Data

		Frequency	Percent
Age	20 to 25 year	23	19.2
	26 to 30 year	41	34.2
	31 to 35 year	34	28.3
	More than 36 year	22	18.3
	Total	120	100.0
Sex	Female	120	100.0
Current employment position	Enrolled nurse	16	13.3
	Nurse Officer	104	86.7
	Total	120	100.0
Highest level of education earned in nursing	Diploma	90	75.0
	Bachelor degree	30	25.0
	Total	120	100.0
Patient age	20 to 25 year	16	13.3
	26 to 30 year	41	34.2
	31 to 35 year	25	20.8
	More than 36 year	38	31.7
Diagnose	Gastrointestinal	44	36.7
	Musculoskeletal	37	30.8
	Cardiovascular	5	4.2
	Endocrine	3	2.5
	Hepatic	19	15.8
	Renal	3	2.5
	Other	9	7.5
	Total	120	100.0

Table.2

		Frequency	Percentage
Interruptions occurred?	Yes	120	100.0
Did the interruption occur within the phase?	Preparation phase	51	42.5
	Administration phase	69	57.5
	Total	120	100.0
Staff Nurse interrupting with another patient?	Yes	68	56.7
	No	52	43.3
	Total	120	100.0
Staff Nurse interrupting with Medical officer?	Yes	80	66.7
	No	40	33.3
	Total	120	100.0
Staff Nurse interrupting due to phone?	Yes	92	76.7
	No	28	23.3
	Total	120	100.0
Staff Nurse interrupting due to other health professional?	Yes	97	80.8
	No	23	19.2
	Total	120	100.0
Staff Nurse interrupting with another staff Nurse?	Yes	47	39.2
	No	73	60.8
	Total	120	100.0
Staff Nurse interrupting with other patient family members?	Yes	88	73.3
	No	32	26.7
	Total	120	100.0
Staff Nurse interrupting with another reason?	Yes	31	25.8
	No	89	74.2
	Total	120	100.0
Failure to check patient ID?	Yes	79	65.8
	No	41	34.2
	Total	120	100.0
Failure to recognize wrong medication order?	Yes	92	76.7
	No	28	23.3
	Total	120	100.0
Failure to document administration or wrong documentation?	Yes	97	80.8
	No	23	19.2
	Total	120	100.0
	Yes	55	45.8

Failure to check vital sign(s)/ blood glucose level/ neurological observation/ others prior to administration of some medications when appropriate?	No	65	54.2
	Total	120	100.0
Failure of 2 nurses to check when appropriate (preparation, administration, pump setting with IV drugs, dangerous drugs)?	Yes	92	76.7
	No	28	23.3
	Total	120	100.0
Failure of 2 nurses to sign medication charts?	Yes	93	77.5
	No	27	22.5
	Total	120	100.0
Failure to comply with infection control procedures?	Yes	53	44.2
	No	67	55.8
	Total	120	100.0
Failure to comply with aseptic or non-touch technique when appropriate?	Yes	35	29.2
	No	85	70.8
	Total	120	100.0
Clinical errors occur due Wrong Drug?	Yes	87	72.5
	No	33	27.5
	Total	120	100.0
Clinical errors occur due Wrong patient?	Yes	33	27.5
	No	87	72.5
	Total	120	100.0
Clinical errors occur due Wrong Dose?	Yes	95	79.2
	No	25	20.8
	Total	120	100.0
Clinical errors occur due Wrong Route?	Yes	96	80.0
	No	24	20.0
	Total	120	100.0
Clinical errors occur due Wrong Time? (≥ 1 hour before or after prescribed time)	Yes	71	59.2
	No	49	40.8
	Total	120	100.0
Clinical errors occur due Wrong method of Administration?	Yes	24	20.0
	No	96	80.0
	Total	120	100.0
Other clinical error occurs?	Yes	87	72.5
	No	33	27.5
	Total	120	100.0
Was the medication task stopped to attend other task?	Yes	68	56.7
	No	52	43.3
	Total	120	100.0
Did the nurse return to the medication task?	Yes	93	77.5
	No	27	22.5
	Total	120	100.0
Strategies used to manage the interruption	Blocking	52	43.3

Interruptions during medication preparation or administration:

During medication administration incidents, close monitoring of nurses culminated in 100 percent recorded medication administration activities with 57 percent interruptions during drug administration and 42 percent during drug planning. Most incidents concerning treatment were disrupted (99%), which often included self-interruption. Nurse-initiated (47%), accompanied by patients (68%) and then medical officers (80%), as seen in Table 2 the main cause of interruptions. Many interruptions happened during treatment (57.5%) rather than planning (42.5%). The bulk of clinical interruptions occurred by licensed nurses (39.2%), accompanied by participating nurses who were professionals who attended a single trial. Interruptions happened in the corridor, at the bedside or space of the patients, the area of planning and the station of the nurses. The nurse interrupted the task of medication in all but one interruption to respond to the disruption (77.5%), and then returned to the task of medication (56.7%). The mean time that was 2.5 minutes removed from the drug mission. Medication incidents were disrupted on average two or three times per case, with no more than six interruptions recorded for a medication occurrence (see Table 2).

Sources of interruptions:

One third of the interruptions were by other nurses trying to share patient and process details, including asking queries, providing orders, recording details and finding support (Table 2).

Secondary tasks attended following an interruption:

Identifying the relevance of the activities that prevented nurses from attending drug administration was also important. Table 2 illustrates the essence of the secondary activities, highlighting the large proportion of social encounters that exist (28%), accompanied by attending to logistical problems (76.7%), attending to medical wishes (45.8%) and finding patients that were not in their bed or room (25.7%).

Clinical errors and procedural failures associated with medication administration events:

Using the Westbrook and Ampt definitions of clinical mistakes and procedural deficiencies,

	Mediating	16	13.3
	Engaging	26	21.7
	Multitasking	26	21.7
	Total	120	100.0

describes the clinical and operational problems found in incidents relevant to drug administration. From Table, 72 percent of the reported drug incidents have been shown to involve administrative deficiencies, most importantly failure to consult with two nurses as appropriate. There were a few reports of health failures often concerning drugs being given at the incorrect moment.

DISCUSSION

This research offers valuable knowledge on the extent of interruptions due to clinical mistakes and administrative errors, and the ambiguity around the forms of interruptions that have occurred. The approaches used in this research include a basis for potential researchers to use an analytical methodology to analyze drug management procedures. Clinicians were able to engage in seeking

alternatives to the obstruction issue during drug administration and these strategies may form a technique for local quality management which can be applied to any area.

We linked our findings and observations for data collection with the work of Sassaki, Cucolo, & Perroca., (2019). This research analysis examines the process of planning as essential to the disruption of nurses (48%) and nursing technicians (28.3%) in an inpatient unit in pediatric treatment. They will emphasize that his / her focus moves to other requests as the specialist is distracted and such disturbances compensate for almost 50 percent of prescription errors.

The studies reveal that the nursing workers were considered to be the primary participant. Certain considerations involved self-interruption and several other boosts such as various Community structures. When a practitioner shifts his mind and starts performing one treatment and taking up another, it typically occurs, self-interrupting. This perpetrator is helpful in future research. This is noted that self-interruption is the largest and most disturbing due to being the lowest as observed. [18]

Another finding is wrong time error of MAE detected in the studies. And the alarming situation was found when it was revealed that almost more than half of the medicine were not given at the specified time. And this trend may result into resistance in the patient and toxicities in the patients. the same result was observed when the same studies were done in Ethiopia. However due to better systems in Europe the results were as per expectations, and that was as low as expected. (Alemu, et al., 2017).) However, it was much lower than a study conducted in France (72.6%). [20]

The difference of the results was merely due to some other reasons also. Which include selection of hospital as an entire unit for study and ward as aa unit for study. Also data collection was done differently. We can suggest on the basis of the study the dosage to be given at some specific time and it's preparation should be more concerning and require more attention.

So the need to intervene arises when a nursing staff prepares a medicine in wrong way or tries to administer it wrongly. This may lead to fatal results. This may also lead to other risks. So need is to make environment for paramedics more friendly and helping instead of interruption at each step. The working experience and output of paramedics is directly associated with MAEs.

Another research close results to our analysis conducted by Johnson M, et al 2018. This qualitative research aimed to explore the existence of interruptions during drug administration. Medical / surgical nurses (n=15), critical care nurses (n=13), and nurse managers / educators / specialists (n=6) performed focus groups. Much of the interruptions is expected (78 per cent). Strategies embraced by the nurses involved blocking, communicating, mediating, multitasking and avoidance. It has established instructional material that relates to behavioral approaches to react to repetitive and unexpected interruptions. [17]

Health-care interruptions should never end fully. Continued study is required in the field of interruptions and the role of nurses, especially on approaches for how nurses should better handle interruptions. Johnson et al. (2017) described how the nurses handle interruptions during MA at present. Extending this study is advised with a view to determining which techniques are both realistic and efficient in reducing the negative consequences of interruptions during MA. Confronted by unforeseen external interruptions, mediation and blockage should be considered. [21]

In our research nurses disrupted during drug administration owing to certain various activities and our results linked another observation from the research. Our survey result investigated that 56.67 per cent often distracted during the task of medication and abandoned the task of medication for certain various tasks or purposes. Many research results show nurses are often distracted during drug activities. The spectrum of responses from nurses to interruptions was remarkable in terms of the extent at which nurses acknowledged the interruption assignment and the unusual pause responses. About 39 per cent of medication operations have been disrupted. Nurses were more inclined to pause the medication task after an interruption to react to the interruption activity (51.1 percent) or multitask (40.3 percent) than to postpone reacting to the interruption until the medication activity was done (12.6 percent). The responses of nurses at the level of statistical significance were correlated with several characteristics of the interruption task including task form, source, process, and communication purpose. [22]

Our research results examined that nurses provided prescription reports and double-checked more often if disturbed. At the same period, when nurses reduced their expectations while placing medications on the bedside and failed to support patients take narcotics, they took an extra precaution: double-check.

Whether the nurses were distracted or not, certain nursing activities that insure patients receive the correct medication were less regular than anticipated, such as allergy tests, checking and asking questions. The results of this research add up close to our results of the analysis that interruptions subject patients and nurses to harmful incident threats. Once they were disturbed, we noticed certain shifts in nurses ‘ attitudes. We were more likely to put medications by their bedside, and less likely to support people taking narcotics. They resumed the distribution of medications after nurses were disrupted. [25]

Main sources of prescription failures include interruptions and disturbances during the administration of drugs. False dosage 241 (41) percent), incorrect patient 76 (13 per cent), and medication omission 69 (12 per cent) are the most frequent human errors. The most common program failures are task overload 212 (36%), inconsistent coordination or commands 177 (30%) and insufficient access to instructions on product handling procedures or ambiguous operational protocols 176 (30%) [23]

The defects in mental health clinics are quite similar: absence dose 52 (37%), insufficient dose 25 (18%), dosage 16 (12%) or wrong timing 12 (9%). Mistakes identified to Norwegian adverse effect programs are as follows: incorrect methods of treatment 119 (6%), incorrect medication or dosage 280 (14%), approved drug not given 433 (22%), prescription mistakes 468 (23%), and incorrect dosage, intensity and frequency 676 (34%). [24]

Our research results indicate that during drug administration most nurses (70.83 per cent) were compiled using aseptic methods and most nurses adopted infection management protocols. Our research results comparable to other study findings, only 4 per cent of nurses washed their hands in another test findings evaluation parameters in exterior and oral administration. In fact, before offering an injection, nurses washed their hands 93 per cent of the time. It means nurses do not believe they ought to wash their hands when prescribing oral and external medicine. Most nurses find that there is little chance of acute contamination as external and oral medications appear to be treated separately. Nevertheless, not much data has been released on this general notion, work will

be undertaken to establish the association for hospital infection between hand washing and individually wrapped oral medicine (the effectiveness of the unit-dose system). For starters, in terms of hand-washing protocol, a Children's Hospital in Miami, United States, implemented wireless surveillance technology. This uses RFID (Radio Frequency Identification) to track the hand-washing actions of medical workers on an daily basis, and raises an warning if a care worker has not washed his or her hand approaches a patient [26,27]

Limitations

There are some limitations to the report. It was conducted at a single Lahore hospital, which might not be indicative of other hospitals in Lahore or anywhere else in Pakistan or other areas. Moreover, selection wasn't random from all hospital departments.

Sample size was not adequate. Ultimately, the analysis was focused on direct observation which may be observer bias.

Another constraint and some form of ethical problem surrounding the case could be what the observers did when they found the mistake. Although the purpose of this research was to evaluate interruptions and prescription errors during prescription administration, the observers did not detect or attempt to provide any input when they found such errors. Furthermore, this research did not aim to examine the effects of the mistake or its cause and effect. That kind of problem might be another research subject.

CONCLUSION

We often confirmed that interruptions sometimes arise and are related to operational deficiencies and clinical errors. There is an immediate need for instructional programs that reflect on the significance of interruptions, their connection with procedure malfunction and clinical negligence, their consequences in the period needed to complete the medication rounds. Reducing interruptions associated with non-patients can reduce medication errors while reducing the time needed to complete rounds of medication. Engaging in non-patient social activities during drug administration practices should be deemed a high risk activity that should be avoided. Medication monitoring programs or policies that reduce the need for double testing may reduce the waiting period for completion of medication administration. Further work into and its effect on independent double-checking methods is required.

Implications for nursing management:

Interruptions that arise during the planning and administration of medications add considerable workload for clinicians. Medication administration schemes that restrict potential – with a double-checking facility in near proximity to the patient – for interruptions may minimize delays which interruptions, which encourage more analysis. Given the time wasted per drug round in conjunction with interruptions, nurse managers have the ability to maximize the usable nursing hours per patient by minimizing socialization with nurses or interruptions relevant to non-patients.

References:

1. Zhao J, Zhang X, Lan Q, Wang W, Cai Y, Xie X, Xie J, Zeng Y. Interruptions experienced by nurses during pediatric medication administration in China: An observational study. Journal for Specialists in Pediatric Nursing. 2019 Oct;24(4):e12265.
2. Schutijser BC, Klopotowska JE, Jongerden IP, Spreeuwenberg PM, De Bruijne MC, Wagner C. Interruptions during intravenous medication administration: a multicentre observational study. Journal of advanced nursing. 2019 Mar;75(3):555-62.
3. Alteren J, Hermstad M, White J, Jordan S. Conflicting priorities: observation of medicine administration. Journal of clinical nursing. 2018 Oct;27(19-20):3613-21.
4. Bonafide CP, Miller JM, Localio AR, Khan A, Dziorny AC, Mai M, Stemler S, Chen W, Holmes JH, Nadkarni VM, Keren R. Association between mobile telephone interruptions and medication administration errors in a pediatric intensive care unit. JAMA pediatrics. 2020 Feb 1;174(2):162-9.
5. Schroers G. Characteristics of interruptions during medication administration: an integrative review of direct observational studies. Journal of clinical nursing. 2018 Oct;27(19-20):3462-71.
6. Özkan S, Kocaman G, Öztürk C. Interruptions during pediatric medication preparation and administration. The Journal of Pediatric Research. 2016 Jun 1;3(2):104.
7. Zhao J, Zhang X, Lan Q, Wang W, Cai Y, Xie X, Xie J, Zeng Y. Interruptions experienced by nurses during pediatric medication administration in China: An observational study. Journal for Specialists in Pediatric Nursing. 2019 Oct;24(4):e12265.
8. Schutijser BC, Klopotowska JE, Jongerden IP, Spreeuwenberg PM, De Bruijne MC, Wagner C. Interruptions during intravenous medication administration: a multicentre observational study. Journal of advanced nursing. 2019 Mar;75(3):555-62.
9. Salami I, Subih M, Darwish R, Al-Jbarat M, Saleh Z, Maharmeh M, Alasad J, Al-Amer R. Medication Administration Errors: Perceptions of Jordanian Nurses. Journal of nursing care quality. 2019 Apr 1;34(2):E7-12.
10. Johnson M, Sanchez P, Langdon R, Manias E, Levett-Jones T, Weidemann G, Aguilar V, Everett B. The impact of interruptions on medication errors in hospitals: an observational study of nurses. Journal of nursing management. 2017 Oct;25(7):498-507.
11. Thomas L, Donohue-Porter P, Fishbein JS. Impact of interruptions, distractions, and cognitive load on procedure failures and medication administration errors. Journal of Nursing Care Quality. 2017 Oct 1;32(4):309-17.
12. Donohue-Porter P, Thomas L, Stein Fishbein J. Impact Of Interruptions, Distractions, And Cognitive Load On Procedure Failures And Medication Administration Errors.
13. Blignaut AJ, Coetzee SK, Klopper HC, Ellis SM. Medication administration errors and related deviations from safe practice: an observational study. Journal of clinical nursing. 2017 Nov;26(21-22):3610-23.
14. Alemu W, Belachew T, Yimam I. Medication administration errors and contributing factors: A cross sectional study in two public hospitals in Southern Ethiopia. International journal of Africa nursing sciences. 2017 Jan 1;7:68-74.
15. Basil JH, Wong JN, Zaihan AF, Zaharuddin Z, Mohan DS. Intravenous medication errors in Selangor, Malaysia: prevalence, contributing factors and potential clinical outcomes. Drugs & Therapy Perspectives. 2019 Aug 1;35(8):381-90.

16. Schroers G. Characteristics of interruptions during medication administration: an integrative review of direct observational studies. Journal of clinical nursing. 2018 Oct;27(19-20):3462-71.
17. Alteren J, Hermstad M, White J, Jordan S. Conflicting priorities: observation of medicine administration. Journal of clinical nursing. 2018 Oct;27(19-20):3613-21.
18. Rafferty AM, Franklin BD. Interruptions in medication administration: are we asking the right questions?.
19. Johnson M, Sanchez P, Langdon R, Manias E, Levett-Jones T, Weidemann G, Aguilar V, Everett B. The impact of interruptions on medication errors in hospitals: an observational study of nurses. Journal of nursing management. 2017 Oct;25(7):498-507.
20. Sassaki RL, Cucolo DF, Perroca MG. Interruptions and nursing workload during medication administration process. Revista brasileira de enfermagem. 2019 Aug;72(4):1001-6.
21. Alemu W, Belachew T, Yimam I. Medication administration errors and contributing factors: A cross sectional study in two public hospitals in Southern Ethiopia. International journal of Africa nursing sciences. 2017 Jan 1;7:68-74.
22. Bifftu BB, Dachew BA, Tiruneh BT, Beshah DT. Medication administration error reporting and associated factors among nurses working at the University of Gondar referral hospital, Northwest Ethiopia, 2015. BMC nursing. 2016 Dec;15(1):43.
23. Johnson M, Weidemann G, Adams R, Manias E, Levett-Jones T, Aguilar V, Everett B. Predictability of interruptions during medication administration with related behavioral management strategies. Journal of nursing care quality. 2018 Apr 1;33(2):E1-9.
24. Reed CC, Minnick AF, Dietrich MS. Nurses' responses to interruptions during medication tasks: a time and motion study. International journal of nursing studies. 2018 Jun 1;82:113-20.
25. Björkstén KS, Bergqvist M, Andersén-Karlsson E, Benson L, Ulfvarson J. Medication errors as malpractice-a qualitative content analysis of 585 medication errors by nurses in Sweden. BMC health services research. 2016 Dec;16(1):431.
26. Norwegian Directorate for Health. Annual Report 2016 for notification of adverse events in the specialist health service, Oslo, Norway 2017 IS-2617.
27. Alteren J, Hermstad M, White J, Jordan S. Conflicting priorities: observation of medicine administration. Journal of clinical nursing. 2018 Oct;27(19-20):3613-21.
28. Johnson M, Weidemann G, Adams R, Manias E, Levett-Jones T, Aguilar V, Everett B. Predictability of interruptions during medication administration with related behavioral management strategies. Journal of nursing care quality. 2018 Apr 1;33(2):E1-9.
29. Kim J, Bates DW. Medication administration errors by nurses: adherence to guidelines. Journal of Clinical Nursing. 2013 Feb;22(3-4):590-8.