The Lived Experience of Making a Medication Administration Error in Nursing Practice

Seema Lall, PhD, RN

Abstract

The multiple and varied roles of nurses, complexity of workplace, chaotic and technical nature of the work environment may result in cognitive overload that may overwhelm nurses, which may possibly lead to medication errors. All medication errors committed are considered serious events but some may consequently be harmful to patients and have a lasting effect on the nurses involved in making the error. This study examined what it was like to make a medication error for eight registered nurses through in-depth and focused face to face interviewing using the descriptive phenomenological approach rooted in the philosophical tradition of Husserl (Husserl, 1965). The data were generated from a total of sixteen interviews and field notes. Data analysis was done using Colaizzi's method for data interpretation. Five theme categories emerged: *Immediate Impact: Psychological and Physical Reactions; Multiple Causes within Chaos: Cognitive Dimensions; Embedded Challenges: Healthcare Setting; Organizational Culture: Within the Place/Within the Person; Dynamics of Reflection: Looking Forward.* The lived experience of making a medication administration errorled nurses to the realization that a profound occurrence had happened. This resulted in physical and emotional upheavals, a threatened professional status, with low self-esteem and confidence. An overwhelming workload, a stressful work environment and ill-treatment by peers were predominantly described as the cause/s of the errors. Nurses did offer ways to improve the system but felt their concerns were often not valued. Implications for nursing practice to improve patient outcomes, and for nursing education, to radically change the teaching methods of medication administration were suggested.

Introduction

One of the key roles when providing safe quality care to patients is safe medication administration. Nurses are expected to understand that safety of patients while administering medications an individual responsibility and that the accountability ultimately rests with the person who administers the medication. The specifics of accurate medication administration is well embedded in the nursing profession and explicitly understood by practicing nurses. Nurses are generally apprehensive of committing medication errors, which may be viewed in relation to patient welfare as in violating the ethical aspect of non-malfeasance as well as a potential threat to self in terms of blame, loss of a position and more. Nonetheless, one must understand that despite the error committed nurses continue to care for patients and simultaneously deal with their feelings daily. Research indicates that these errors may have a devastating effect on those nurses who are involved in the incident and therefore, may be considered second victims to the medication errors committed (Schelbred & Nord, 2007; Treiber & Jones, 2010).

Background and Significance

Patient safety has been and continues to be a matter of concern for nurse leaders and administrators. This was substantiated by the first report released by The Institute of Medicine (IOM) entitled 'To Err Is Human: Building a Safer Healthcare System' in the year 2000. Subsequently, IOM published multiple reports that highlighted medication errors to be the leading and most common predictable cause for adverse events in healthcare facilities, among these administration errors were placed as the most common identifiable medical errors in the USA.

This called attention of healthcare professionals and leaders including nurses to the high rates of negative patient outcomes, some of which cost these patients their lives (IOM, 2000, 2006, 2007; National Medicines Information Centre, 2001; Cousins, Dewsbury, Mathew, Nesbitt & Warner, 2007). Literature reviewed related to medication errors over two decades and more provides evidence that medication errors occur frequently in hospitals, and may prove to be fatal as well as very costly. A study published in the United States about medical errors, delineated that annual deaths from medication errors accounted for 7000 out of the total number of 48,000–98,000 deaths due to drug complications (Joolaee, Hajibabaee, Peyrovi, Haghani & Baharani, 2011). Another study reported that administration errors account for approximately 59% of all medication errors and one out of every three adverse drug events (ADEs) is related to medication errors. A study conducted in two teaching hospitals revealed that about 2% of patients admitted experienced preventable ADEs, costing the hospital approximately $4,700 per admission or nearly $2.8 million annually for a 700-bedded teaching hospital and if these findings could be generalized then the preventable ADEs are costing the country approximately $2 billion per year. A 1997 study reviewed admissions in a large teaching hospital that indicated 2.43 of the admissions out of 100 admissions were complicated due to an ADE. This led to an increase in the length of stay (LOS) of these patients by 1.91 days escalating the cost to the hospital by $2, 262. Additionally, ADEs indirectly impact costs for loss of productivity, disability and other care related costs.(IOM, 2000; Bates, Spell, Cullen, Burdick, Laird & Peterson, 1997; Buchini & Quattrin, 2011; Peppers, 1995; Classen, Pestotnik, Evans, Lloyd & Burke, 1997).

The Study

Purpose

The purpose of this study was to examine and gain a unique understanding of the lived experience of nurses involved in making one or more medication errors that reached the patient and may have resulted in negative patient outcomes; how they coped with the aftermath, as well as to more and fully understand the support nurses may need after the occurrence.

The research questions for this study were to understand:

'What is the lived experience of nurses involved in medication errors?' 'What is the lived experience of these nurses caring for patients after the medication error occurred?''What is the lived experience of these nurses working on the unit after the medication error occurred?'

Research design and methodology

This study utilized a descriptive phenomenological approach rooted in the philosophical tradition of Husserl. Two interviews were carried out with each participant and the research data were generated from a total of sixteen interviews and field notes. Colaizzi's seven-step methodological guidelines were used for analysis sand interpretation of data.

Participants

Participants for this study were registered nurses (RNs) employed in facilities and experienced in caring for patients in a variety of healthcare areas. These nurses were currently practicing with a valid RN license for at least six months in the state of New York. A purposive sample of eight RNs with the above inclusion criteria who were directly involved in one or more medication errors were selected. The recruitment of participants was primarily done by snowballing method. The first participant however, was recruited by posting a flyer on the announcement board of a RN- BS completion program. The study sample comprised of seven female and one male participant with ages ranging from 36-55 years. The educational background of one participant was associate degree in nursing; five held a baccalaureate degree and two were masters prepared RNs. Their professional experience of practicing as RNs ranged from 3-22 years. Two participants prior to practicing as RNs also had the opportunity to practice as licensed practical nurses(LPNs). Most of the participants had the opportunity to practice in more than one area of expertise. The work areas of these participants were: medical-surgical, neurology intensive care unit, emergency department, telemetry, intensive care unit, nursing home and home care. Most of the participants were full time registered nurses in one facility with a second part-time job in another facility. Two participants worked as perdiem RNs in their second job and floated to a different unit almost every day.

Of the eight participants, three participants worked eight-hour day shifts, one worked twelve-hour day shift and one worked both day and night eight-hour shifts. The remaining three participants worked twelve-hour night shifts (see table below with participant demographics).

Participant Description by Demographics

Participant	Gender	Age in years	Years of experience	Education	Unit worked on Nurse: patient ratio	Shift/Time of day Length/Status
P1	Female	43	10	BSN	Medical-Surgical (NH) / 1:40	Day/8 hr/FT, Float
P2	Female	39	3	BSN	Neuro ICU/ 1:2	Night/12 hr/FT
P3	Female	39	3	BSN	ER/1:12 or 3;24	Night/12 hr/FT
P4	Female	47	12	BSN, MS	Medical-Surgical (NH) / 1:38	Day/8 hr /Per Diem
P5	Female	55	22	BSN, MPH	Medical-Surgical (NH) / 1:20	Day/Night/8 hr FT
P6	Female	36	9	BSN	Telemetry/1:8 (home care)	Day/12 hr/FT
P7	Female	43	12	BSN	Medical-Surgical /1:10	Night/12 hr/FT
P8	Male	51	10	ADN	Telemetry/1:6	Day/8 hr/FT

Data collection

Data collection was done by the researcher via two face-to-face interviews. The first interview was an in-depth interview with open-ended questions; the second interview was more focused including probing questions to clarify information obtained during the first interview. This style of interviewing allowed the researcher to follow the participant's lead to format clarifying questions for the second interview (Streubert & Carpenter, 2011). While interviewing, the researcher also carefully observed participants' nonverbal expressions and the elements of their environment which was then recorded in the field notes. The researcher encouraged each participant to describe his or her lived experience without leading the discussion. Open ended broad questions were used in the first interview to allow for participant comfort and to gradually ease into the process of interviewing. Examples of questions included in the first interview were: 'Describe the incident when you were involved in a medication error' (reveal as much as you want). 'Describe your feelings when you made the medication error.' Probes were used in the second interview, examples of these are: 'What was it like to care for the patient involved in the incident?' 'What were the reactions of your colleagues/supervisor after the incident?'Based on the literature review the interview questions were structured to focus on specific areas like:

- Nurses' reactions (physical, emotional and psychological) to medication error occurrence immediately after the incident, and later.
- Factors within practice environment that led to medication error occurrences.
- Challenges faced by nurses before during and after medication error occurrence.
- Culture within the work area and /or factors that predisposed to medication error occurrences.
- Coping mechanisms used by nurses when medication error/s occurred.
- Type of support needed by nurses after the medication error occurrence.
- Nurses' perceptions as to why the medication error occurred.
- Nurses' reflections about error occurrence and effects on future practice.

Sixteen face-to-face interviews were performed on eight registered nurses. Each interview lasted approximately 50-60 minutes. The interviews were conducted in a private area of choice of each participant. The researcher travelled distances to reach the place of the participant's choice. The process of data collection took place over a period of approximately three months. All participants were recruited by snowballing method therefore; interviews were conducted as participants were being recruited. After completion of the first interview, the second interview was scheduled by setting a date approximately one week later.

This was done according to the convenience of the participants. All interviews were conducted by the principal investigator and completed as scheduled except in the case of one participant whose second interview was scheduled after three weeks due to sickness. Even though questions for the two interviews were previously formatted to gain basic information, the researcher (interviewer) reworded questions to make their meanings explicit to the respondents as needed.

Trustworthiness and establishment of rigor

Techniques to ensure trustworthiness were employed by engaging participants, member checking, thick descriptions, and audit trail methods for this study.   Participant engagement was accomplished by building a relation of trust between the investigator and the participant. The researcher gave relevant explanations and answered any questions the participants had prior to interview, enabling comfort and gradual ease into the interview process. Member checking involved the action of returning of the investigator to each participant after the interview process was complete to ensure correctness of the information given by the participant and to validate the essential structure developed for the preservation of the true meaning of the experiences (Colaizzi, 1978).The researcher made the participant aware of this at the time of interview sessions. All participants responded via email. Thick descriptions were key to the meaning of research and an important aspect of trustworthiness. The researcher sought permission and verification to use narratives, which was crucial for this study. Finally, audit trail was critical to establishing authenticity and trustworthiness of the data. The researcher documented the research activities over time with clarity and in a systematic way to be followed by others to understand the line of thinking used by researcher at the time of data analysis (Shenton, 2004; Lincoln & Guba, 1985).To ensure methodological rigor the researcher used the processes of phenomenological reduction, bracketing and member checking. The researcher's attitude was non-judgmental, she practiced the art of openness as the data were revealed, which was carried out before the study began and continued throughout data collection and data analysis (Streubert & Carpenter, 2011).

Ethical considerations

The study was approved by Institutional Review Board, Adelphi University, New York. The researcher obtained a written informed consent from each participant prior to data collection. The participants were assured of confidentiality and the right to withdraw from the study at any time during the research. Anonymity was not completely assured, as the researcher was the interviewer however, the participants' names were coded to allow for confidentiality when data was examined by experts. Since the study investigated error in the participants' workplaces, all methods to eliminate and/or avoid coercion were employed always during the research. Permission to tape record the interviews was obtained prior to each interview being conducted. To ensure participant privacy and comfort the interviews were conducted in a private area that allowed for a calm environment (Streubert & Carpenter, 2011).A "cooling-off" period was provided to individual participants before moving the interview forward in case of any emotional upset or distress during the interview process while they reflected upon their experiences of medication errors. Individual participants were also provided the opportunity to reschedule the interview if needed.

Data analysis

The recorded interviews were transcribed verbatim by the researcher. Transcription of interviews was completed in approximately two months. The data collected from the eight participant's interviews described a total of ten medication errors which were categorized as: unauthorized drug error, wrong route error, wrong dose error, omission error and wrong documentation error. The interviewer also gathered additional data in the form of field notes for all eight participants. Data were subjected to intense and thorough analysis utilizing Colaizzi's method, significant statements were extracted and in-depth explanation of the meaning of each statement was achieved after coding the data. This process was valuable in understanding the actual meaning behind each statement made by the participants. Coding and intense analysis of data resulted in two hundred and thirty formulated meanings. All data were coded by hand by the researcher. As the process of coding and recoding continued previously examined codes were re-examined for new codes and repetitions retained for each protocol. The transcripts were reviewed with a doctorally prepared nurse researcher for authenticity and validation of the coding system. Significant statements were subjected to systematic review, formulated meanings were carefully constructed to preserve the context of the protocol as closely as possible to the stated expressions to ensure preservation and significance of their meaning. Formulated meanings were organized into clusters of themes and theme categories. Themes were continuously referred back to the original protocols to ensure validation and commonality of themes.

The data was finally organized into nineteen theme clusters within five theme categories as described below. The findings presented are the descriptions given by the nurses who participated in this study as they related their experiences of medication error/s occurrences in actuality. The authenticity of the meaning was derived from the experiences that these nurses lived through during and in the aftermath of the medication error committed. Following are the descriptions derived from the lived experiences of eight registered nurses and are presented under five theme categories.

Theme category 1- Immediate Impact: Psychological and Physical Reactions

Nurses described the immediate reactions of mind and body experienced by them when a medication error was committed. They verbalized feelings of fear, anxiety, remorse, disappointment, unbelief, embarrassment, tearful and being visibly shaken.

"...I was so scared! I was so scared!!! Because it's a blood pressure medication...I was speechless…I really didn't know what to do..."

"...I used to cry for everything...it was just like, 'Oh! My God!! This is the worst thing that could've happened to me…!

"…It was embarrassing and very painful as a human being...I was upset (for the patient) and I was embarrassed (for myself)."

Nurses described the experiences to be emotionally draining and physically challenging as these experiences threatened their personal and professional self. This, ultimately culminated into first a fear for the wellbeing of their patient and nexta fear of losingtheirjob. Nurses expressed concerns about the lack of collegiality and the environment of animosity that prevailed in workplaces which undermined their self-confidence to the extent that impeded their professional growth.

Theme Category 2- Multiple Causes within Chaos: Cognitive Dimensions

Nurses described multiple factors that impacted cognition resulting in medication error occurrences. They spoke about practice challenges of being a new nurse, working in nursing homes with forty patients to one RN, balancing multiple roles and responsibilities, workplace demands while caring for very sick patients. Nurses were concerned about the lack of support and the atmosphere of unfriendliness experienced specifically by newly hired nurses which made them unsure of themselves because they felt they were expected to perform as experts even though they were novices with very little support from their senior counterparts. Nurses also verbalized being physically and mentally exhausted with practically no break or recess due to the constant busyness and excessive work demands.

"... as a new nurse there was time management, bullying, that is just there and then...just trying to learn your trade as well as the real-world side of it... and being so unsure of myself...it could happen to anybody..."

"...and if you have things on your mind, you are sleep deprived, you are tired, you are hungry you're (nurse) prone to make error..."

"...being new to the system...considering the ratioof the patient...I had to give medication to forty patients...at 10 o'clock and there are a lot of them(medications)!"

Theme Category 3 - Embedded Challenges: Healthcare Setting

Nurses expressed concerns about the current healthcare system while describing experiences of constant struggleto meet multiple patient care demands in terms of care related situations which stemmed from disparities in work routines, mostly related to a culture of unsupported prevalent among the leaders and peers and embedded in the work environment.

"…you know you...rush, rush, rush things...And that's what causes error, because you know, instead of looking at everything right time, right dose, right patient..."

...when I was in med-surg (medical-surgical) for three years; it was so stressful…so overwhelming! … you're dealing with different diagnoses, different treatment plans …antibiotics every 6 hours… you have to draw blood, monitor vital signs… monitor a seizure patient… patient with infected peg…changing dressing all the time…It's just, it's a heavy task"

"...they (peers) start to pick at you and try to find things...it could really be an experience of true learning, but it's not...you are a nervous wreck and everyone who doesn't really want you there, they are like questioning this and that and trying to get you in trouble…"

Theme Category 4-Organizational Culture: Within the Place, Within the Person

Nurses described their experiences of an organizational climate that was mostly unaccepting and unsupportive of newcomers and was commonly rooted within the workplace and reflective of the behaviors of the nursing colleagues and leaders. Participants described experiences where they were afraid to approach senior colleagues for assistance or voice concerns regarding patient care due to lack of camaraderie, support and collegiality.

"I remember being extremely tired, ...you are new, they're (co-workers) looking for any reason to get you in trouble...Well it was definitely always lack of support… they didn't want me there to begin with… a new grad, out of, out of... school! Soof course, they start to pick at you and try to find things…

"...a harsh scolding at the front desk, early in the morning...is highly inappropriate and should not have been done in that forum... this nurse already feels terrible, she is supposed to go home and this is what she goes home from..."

"...You cannot rush a nurse to give medications, you cannot, you know, just 'SCOLD' them and expect them to learn!"

"It's all very, very stressful for a nurse! …because she gives the medications, she or he, so it's ultimately that nurse's FAULT if there is an error made you know, it's very unfortunate!...they just have to put better practices in place...better staffing where they are supportive staff, not staff that are 'bullies'... They (nurses) don't need to be in an environment and be ridiculed!"

Theme Category 5 – Dynamics of Reflection: Looking Forward

Nurses reflected upon experiences and identified multiple issues linked to the ever-changing dynamics of the healthcare system and the negative outcomes in terms of patient care and safety and its unfavorable impact on nurses professionally. Nurses described experiences that were linked to the contemporary organizational structure embedded in the healthcare facilities and expressed feelings of being treated unjustly by the leaders most of the times and not being heard in terms of factors that led to the medication error incidents. They strongly expressed concerns about being held responsible for medication errors without being able to voice concerns and felt that such behaviors of organizational leaders will not serve to resolve issues and errors will constantly occur and nurses will continue to leave. Nurses also expressed concerns about unreceptiveness of organizational leaders to suggestions of relevant changes to the current healthcare system for improvement of future practice. Finally, nurses identified ways of fostering positive changes and just culture in the workplace environment to improve systems in healthcare facilities.

"...poor judgment and assigning too many patients with similar names to the same team... you have two nurses a team with 28 or 29 patients, we don't have a cap in the emergency room."

"…a lot of people...don't stay when they see the overload of work and the demand on the floor especially on a medical-surgical unit..."

"...Patient load hasn't really gotten better ...I moved from that 10:1, I thought that was too much! Spent three years in med-surg... There is a lot to do, just a lot to do! It's very you know demanding kind of work..."

"...incident reporting is not necessarily a bad thing but it's usually a reactionary thing in terms of med errors...to make it a proactive measure...a way to improve patient care or just put a positive spin on it... it's called an 'incident report'! ...it could also be… 'caution report' or something...just detaching the behavior from a person... that's what makes it a positive thing".

Discussion of Findings

Following is the discussion presented based on the findings of this study. First the findings were compared to previous studies on medication errors, second new findings that emerged through nurses 'lived experience of making a medication error were highlighted. The new findings even though bear similarities to previous studies are unique in the way they were expressed by the participants in this study.

Fear and anxiety, self-degradation

Nurses verbalized feelings of extreme emotional and physical nature which resulted from situations after the medication error was committed. Nurses feared for the patient's wellbeing, but were equally anxious and fearful about being reprimanded, losing their job and/or professional license. Nurses also expressed thoughts of self-degradation and remorse with respect to medication error occurrences and blamed themselves for the incidents. These feelings were similar to those expressed by nurses in other related studies (Schelbred & Nord study, 2007; Treiber & Jones, 2010; Kim et al, 2011).

Nurses, however, also spoke about multiple factors that contributed to these medication errors, particularly, the chaotic demands of the workplace with little or no organizational support. They said that if certain common issues were anticipated and addressed, the medication error/s could have been prevented.

Being overwhelmed and coping, being new nurse and facing practice challenges

This study illuminated nurses' experiences of scenarios and situations highlighting the complexity of the workplace which was exceptionally distressing and overwhelming for nurses as they cared for patients while simultaneously trying to cope with difficult situations. Nurses expressed feelings of frustration and inadequacy when they were unable to complete patient related tasks and were constantly struggling to balance multiple RN responsibilities of patient care along with administering medications.

They also stated that such experiences were mostly challenging when they were novices striving to familiarize themselves with the intricacies of the profession while simultaneously caring for patients of diverse nature.

Nurses spoke about encountering stressful situations with colleagues and nurse leaders and experiences of mistreatment and lack of guidance. Previous studies identified similar situations and experiences of nurses that reported inefficiencies, distractions, multiple factors and latent failures significant to error incidents (Elganzouri et al., 2009; O'Shea, 1999; Lawton et al., 2012). Nurses spoke about altering their own behavior while transitioning from being new to becoming experienced by educating self about routines and policies while managing patient workload with little or no peer or leadership support and explained that these experiences were 'eye openers' both personally and professionally in terms of future practice. They described a culture that did not support the new nurses instead, the culture existing within the professionals was to primarily allow the new nurses to succeed or fail on an individual basis and not to offer individual support, acceptance or collaboration. The participants termed this as 'individual cultural sense', different but just as destructive as the culture of blame that was generally prevalent in the workplace. Nurses strongly advocated for support systems to be incorporated in workplaces where newcomers should be welcomed and encouraged by senior members of the nursing staff.

Workplace culture, survival and moving on

Nurses described a common atmosphere of censure and reproach encountered day to day during patient care both in the nursing homes and acute care facilities which was not just limited to medication error incidents. Some nurses described situations where they experienced behaviors of incivility by nurse managers and senior nurses towards them. Nurses emphasized that survival of new nurses in such a challenging work atmosphere is almost impossible and frequently forces new nurses to leave their jobs. Nurses were also, greatly concerned about the interruptions and distractions that have become so commonplace and such a part of most workplaces in the healthcare arena, that leaders often fail to recognize these as significant factors which may result in most medication error occurrences. Nurses in this study described experiences where they encountered and overcame challenging situations while caring for patients as they moved forward in the practice arena. Nurses also said that they understood the challenges of practice and recognized various barriers present in the current healthcare system and asserted that staff nurses must be included in discussions while addressing common patient issues for safe professional practice. Similar concerns by nurses were reported in previous studies addressing medication errors (Biron et al. 2009; Agyemang & While, 2010; Buchini & Quattrin, 2011; Dickson & Flynn, 2011; Lawton et al. 2012).

Nurses in this study strongly expressed that patient care should not be an individual responsibility rather a team effort where members of the healthcare team may be able to depend on each other to deal with critical patient care situations owing to the busy and sensitive workplace environment and explicitly stated the need for change from a toxic environment to one that was just and supportive. Nurses attributed error occurrences to lack of collaboration among healthcare team members in terms of following correct protocol or individual team members following a different protocol or being unaware of the protocol. Nurses also stated that most organizational systems currently in place are possibly not very conducive to safe patient care practices, and strongly suggested the utilization of experienced frontline staff nurses in care related discussions to build future safe practices.

Communication and teamwork, voicing concerns without fear

Nurses in this study expressed concerns about not being able to voice concerns or express their opinions regarding medication errors or other patient care related issues because they were not invited to be a part of discussions vital to their patients. This markedly draws attention to the fact that nursing is not involved directly in discourses or discussions where patient care concerns are addressed. This aspect is clearly reported by previous medication error studies (Treiber & Jones, 2010; Gibson, 2001).

Participants in this study asserted that nurses' involvement in patient care and care related decisions should always be a primary focus which is less likely to be successful without effective communication and teamwork. Nurses stated that workplaces that lack communication and teamwork create major barriers for safe and effective patient care which invariably results in medication and other types of errors that compromise patient care. Nurses strongly believed that even though much system improvements have been made, medication errors are still prevalent because nurses are excluded from discussions related to these occurrences. Nurses uniquely and explicitly advocated that having conversations with those nurses who were involved in medication error incidents would be an excellent way to better understand the circumstances that predisposed to the medication error occurrences.

Participants felt that nurses' input is most essential to equip units to reduce such incidents which, going forward would assist organizers and leaders to effectively improve existing work conditions as well as assist nurses to gain back self-confidence and be able to voice concerns without intimidation from colleagues or supervisors.

Governance and collegiality

Nurses asserted that staffing decisions are commonly made by nurse leaders where nurses are frequently assigned to different set of patients on the same unit or moved out of the unit to staff another floor which disrupts the continuity of care and work routine. They (staff nurses), on the other hand are not allowed to organize or manage the care of their own patients. This disrupts teamwork and frequently leads to inconsistencies in work routine generating distractions that may promote error occurrences due to unfamiliarity of patients and patient care routines. Literature reviewed reports several studies that have identified disruptions, distractions and interruptions as causes of medication errors and identifies them as the leading cause of medication error. Some studies recommend restructuring nursing and educating staff nurses as well as incorporating specific protocols to reduce medication errors (Gibson, 2001; Pape, 2003; Petrova et al., 2010; Hayes, 2015).

This study highlighted participants' experiences where nurses explained that because patient care units were constantly busy it was extremely challenging to administer medications safely and simultaneously care for patients especially those that were critically ill with multiple care needs. Nurses expressed distress at the unfair treatment by peers while a few expressed gratitude for being treated fairly and said that support is much needed in times of crisis. Nurses strongly felt that difficult situations warranted coordinated teamwork and collegiality which would help significantly to manage patient care and avoid medication error incidents. Participants suggested involvement of nurses in creating processes for safe medication administration and said that nurses are the persons who understand the medication administration process better than anyone else. Nurses also stated that because they are often the second victims who experience the errors along with patients, they should be the designated change agents to help promote safe medication administration process. Nurses further asserted that adequate staffing as well as a collegial and supportive workplace environment free of intimidation is extremely essential to reduce medication errors.

Professional security

This study revealed nurses' concern about the wellbeing of their patients when a medication error/s occurred because they were aware of their responsibility towards the safety of patients. However, nurses were also extremely concerned about their professional security which was mostly generated from a fear of being held accountable if patient was harmed by the error and the culture of blame prevalent in the workplace. All participants in this study agreed that underreporting of medication errors was largely due to an underlying fear of losing one's job. These findings were identified by previous medication error studies (Osborne et al., 1999; Antonow et al., 2000; Schelbred & Nord, 2007)

Most participants in this study described a general atmosphere of hostility in the workplace where nurses were against nurses and the workplace culture was that of animosity and antagonism towards each other. Nurses felt that one wrong move may jeopardize their job because they were either new to practice or new to the unit and were constantly made to feel that they needed to prove themselves toothier colleagues. Nurses felt that they were being set up for failure which rendered them incapable of handling patient situations professionally. Nurses described feelings of being unwanted and undeserving of the RN position mostly after the medication error incident and felt that senior nurses tried to make them look incompetent in the sight of the nurse manager as if they committed a misdemeanor. Nurse colleagues often tried to implicate them in multiple ways which generated insecurity and a fear of losing their professional status. Participants believed that maintaining a job status was more important than being hired as a RN for the first time. Nurses in this study strongly suggested that healthcare leaders need to strengthen frontline staff nurses by eliminating the culture that exudes constant criticism, reprimand and rebuke and inculcate the workplace environment with collegiality and support.

Study limitations

This study was conducted in the U S A, state of New York therefore; the transferability of the results globally may be questioned due to variations in the healthcare systems prevailing in other countries.

Another possible limitation of this study may be related to the self-selected sample, which may be viewed as subject to bias as the nurses involved in medication errors may have projected exclusive individual attitudes owing to the unique nature of these experiences. Additionally, those nurses who volunteered to participate in this study might have demonstrated strong interest in medication safety.

Meanwhile, those nurses who were less confident and forthcoming in wanting to share their experiences may have been unintentionally excluded from this study. Finally, the researcher's professional experience as a nurse of several years with multiple roles and responsibilities may be viewed as subject to bias.

Implications and Recommendations

Nursing practice and healthcare organizations

It is common knowledge that making errors is part of the human experience therefore; nurses and other healthcare professionals being humans may commit medication errors. According to Reason (1995) there are two ways to view causes of human errors. The person approach attributes the errors to individuals (culture of blame) and the system approach assess deficiencies in the existing systems and recognize individuals to be fallible (just culture). Research suggests that perceptions of a safe patient care environment and safety culture in healthcare facilities vary among staff nurses and nurse leaders because of differences in their viewpoints which is a major deterrent to quality patient care and a concern among staff nurses (Vogelsmeier, Scott-Cawiezell, & Miller, 2010; Stevens 2017).Other medication error studies were found to belinkedto lateral violence and bullying (Roche, Diers, Duffield& Catling-Paull, 2010; Vessey, DeMarco, & DiFazio, 2011).

The contemporary healthcare system has transformed in a variety of ways, one of which is the magnitude of RN roles and responsibilities for patient care. This change calls for nurses to be leaders at the bedside placing nurses with full responsibility for the governance of patient care. The findings of this study suggest that nursing practice and healthcare organizations consider the following:

- Provide adequate staffing on units routinely, based on the acuity and diversity of the patient population to enable nurses to prioritize care and work as a team while providing safe and quality care to all patients.
- Transform workplace culture to foster collegiality first among members of the nursing team, then among nurses and other healthcare team members.
- Build a culture that is blame free and stress-free in workplaces where nurses may voice patient related concerns and be a part of the change to improve patient outcomes.
- Organizational and nurse leaders create and incorporate programs that provide staff nurses with continued learning experiences of high caliber and quality to enhance their management skills for improved and safe quality care of patients.

Nursing education

Nursing students have a restricted and supervised exposure to patients therefore they acquire limited experience in patient care. Therefore, it is critical that newly graduated nurses are guided and supervised by experienced nurses, specifically in the first year of practice (Benner, 1984, 1992).Participants in this study revealed new realizations with implications for nursing education that underscore the importance of educating student nurses about to graduate in a unique way to anticipate and overcome obstacles of being novices when entering practice to reduce medication error incidents. The findings of this study recommend and/or suggest that nursing educators may consider the following implications.

- Provide nursing students with varied learning experiences via simulation/clinicals in the undergraduate nursing program to bridge the gap for graduating students between classroom learning and nursing practice.
- Provide adequate supervision and post conferences/debriefing sessions via meaningful scenarios during clinical/simulation experiences for relevant student learning to progressively build confidence in readiness for transition into practice to avoid medication errors.
- More and frequent use of the simulation centers to provide real life patient care scenarios to enhance students' cognitive skills enabling critical thinking and clinical judgment to help build their confidence in future practice as new nurses.

Nursing Research

There is a dearth of studies related to nurses' lived experiences and perceptions of making medication errors in the USA and globally. The following are recommendations to consider for further research:

- Qualitative medication error studies of nurses' lived experiences may be conducted in other states of the USA, other countries and globally for a varied perspective of medication errors in other healthcare systems currently across the USA and worldwide.
- Quantitative medication error studies to compare and correlate medication errors to staff nurse concerns about patients and nurses across the healthcare systems.
- Research studies to further investigate medication error categories to understand what really constitutes a medication error in the administration process and staff nurse involvement.
- Studies for in-depth investigation of medication errors from the perspective of student concerns to understand challenges of transition into practice. This may assist nurse educators to formulate ways for seamless transition of new nurses into practice.

Conclusion

Research suggests that even though healthcare organizations have diligently worked towards improvement of existing systems, medication errors continue to be the highest among all medical errors of which administration errors are the top most among all medication error occurrences. This poses a vital question which calls for the organizational and nursing leaders to delve beyond the surface to identify and address the concrete causes of medication errors that exist within individual organizational setups and develop unique ways to resolve these issues. This study identifies important issues that are relevant to medication errors and recommends ways to reduce medication error incidents through the descriptions of the lived experiences of nurses that were involved in medication errors to build a future of a safer patient care environment in contemporary healthcare systems.

References

Agyemang, R., & While, A. (2010). Medication errors: Types causes and impact on nursing practice. *British Journal of Nursing, 19(6)*, 380-385.

Antonow, J. A., Smith, A. B., & Silver, M. P. (2000). Medication error reporting: A survey of nursing staff. *Journal of Nursing Care Quality, 15(1)*, 42-48.

Bates, D., Spell, N., Cullen, D., Burdick, E., Laird, N., & Peterson, L. (1997). The costs of adverse drug events in hospitalized patients. *Journal of the American Medical Association, 277*, 307-311.

Benner, P. (1984). From novice to expert: excellence and power in clinical nursing practice. Menlo Park, CA: Addison- Wesley.

Benner, P., Tanner, C., &Chesla, C. (1992). From beginner to expert: Gaining a differentiated clinical world in critical care nursing. Advances in Nursing Science, 14(3), 13-28.

Biron, A. D., Lavoie-Tremblay, M., & Loiselle, C. G. (2009). Characteristics of work interruptions during medication administration. *Journal of Nursing Scholarship, 14(4)*, 330-336.

Buchini, S., & Quattrin, R. (2011). Avoidable interruptions during drug administration in an intensive rehabilitation ward: Improvement project. *Journal of Nursing Management*, 1-9. http://dx.doi.org/10.1111/j.1365-2834.2011.01323.x

Classen, D., Pestotnik, S., Evans, R., Lloyd, J., & Burke, J. (1997). Adverse drug events in hospitalized patients: Excess length of stay, extra costs, and attributable mortality. *Journal of American Medical Association, 277*, 301-306.

Colaizzi, P. F. (1978). *Psychological research as the phenomenologist views it. In R. Valle & M. King (Eds.)*. New York, NY: Oxford University Press.

Cousins, D., Dewsbury, C., Mathew, L., Nesbitt, I., & Warner, B. (2007). Safety in doses: Medication safety incidents in the NHS. *National Patients Safety Agency, London*.

Dickson, G. L., & Flynn, L. (2011). Nurses' clinical reasoning: Processes and practices of medication safety. *Qualitative Health Research, 22(1)*, 3-16.

Elganzouri, E., Standish, C., &Androwich, I. (2009). The mat study: Global insight into medication administration process. *Studies in Health Technology and Informatics, 146*, 424-428.

Gibson, T. (2001). Nurses and medication error: A discursive reading of the literature. *Nursing Inquiry, 8*, 108-117.

Hayes, C., Jackson, D., Davidson, P., & Power, T (2015). Medication errors in hospitals: a literature review of disruptions to nursing practice during medication administration. *Journal of Clinical Nursing24,* 3063–3076, doi: 10.1111/jocn.12944

Husserl, E. (1965). *Phenomenology and the crisis of philosophy.* New York, NY: Harper & Row.

Institute of Medicine. (2006). Preventing medication errors. Washington DC: National Academy Press.

Institute of Medicine. (2000). To err is human: Building a safer healthcare system. National Academy Press, Washington, DC.

Institute of Medicine of the National Academies. (2007). Preventing medication errors. Washington DC: The National Academies Press.

Joolaee, S., Hajibabaee, F., Peyrovi, H., Haghani, H., &Baharani, N. (2011). The relationship between incidence and report of medication errors and working conditions. *Clinical Issues,* 37-44.

Kim, K., Kwon, S., Kim, J., & Cho, S. (2011). Nurses' perceptions of medication errors and their contributing factors in South Korea. *Journal of Nursing Management, 19,* 346-353.

Lawton, R., Carruthers, S., Gardner, P., Wright, J., &McEachan, R. C. (2012). Identifying the latent failures underpinning medication administration errors: An exploratory study. *Health Services Research, 47(4),* 1437-1459.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry.* Newbury Park, CA: Sage Publications.

National Medicines Information Centre. (2001). NMIC bulletin on medication errors., *7(3)* (1-4).

Osborne, J., Blais, K., & Hayes, J. (1999). Nurses' perceptions: When is it a medication error? *Journal of Nursing Administration, 29*(4), 33-38.

Pape, T. M. (2003). Applying airline safety practices to medication administration. *MEDSURG Nursing, 12(2),* 77-93.

Pepper, G. (1995). Errors in drug administration by nurses. *American Journal of Health System Pharmacy, 52,* 390-395.

Petrova, E., Baldacchino, D., & Camilleri, M. (2010). Nurses' perceptions of medication errors in Malta. *Nursing Standard, 24(33)*, 41-48.

Reason, J. (1995). Understanding adverse events: Human factors. *Quality in Health Care, 4(2),* 80-89.

Roche, M., Diers, D., Duffield, C., &Catling-Paull, C. (2010). Violence toward nurses, the work environment, and patient outcomes. Journal of Nursing Scholarship, 42(1), 13–22.

Schelbred, A., & Nord, R. (2007). Nurses' experiences of drug administration. *Journal of Advanced Nursing, 60(3),* 317-326.

Shenton, A. K. (2004). Strategies of evaluating trustworthiness in qualitative research projects. *Education for Information, 22,* 63-75.

Stevens, K. R, Engh, E. P., Tubbs-Cooley, H., Conley, D. M., Cupit,T., D'Errico, E.,DiNapoli,P., Fischer, J. L., Freed, R., Kotzer, A. M., Lindgren, C. L., Marino, M.A., Mestas, L., Perdue, J., Powers, P.,Radovich, P., Rice, K., Riley, L. P., Rosenfeld, P., Roussel, L., Ryan-Wenger, N. A., Searle-Leach, L., Shonka, N. M., Smith, V. L., Sweatt, L., Townsend-Gervis, M.,Wathen, E., Withycombe, J. S. (2017). Operational failures detected by frontline acute care nurses. *Research in Nursing & Health 1-9.* Wiley Periodicals, Inc.

Streubert, H. J., & Carpenter, D. R. (2011). *Qualitative research in nursing: Advancing the humanistic model* (5th ed.). Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.

Treiber, L. A., & Jones, J. H. (2010). Devastatingly human: An analysis of registered nurses' medication error accounts. *Qualitative Health Research, 20(10),* 1327-1342.

Vogelsmeier, A., Scott-Cawiezell, J., Miller, B., & Griffith, S. (2010, October-December). Influencing Leadership Perceptions of Patient safety Through Just Culture Training. *Journal of Nursing Care Quality, 25(4),* 288-294.

VesseyJ. A., DeMarco. R., &DiFazio. R. (2011). Bullying, Harassment, and Horizontal Violence in the Nursing Workforce.The Workplace 141 Debisette PTR Chapter 6, 133-158.