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Nursing Clinical Instructors' Perceived Supports and Barriers to Reporting Medication Errors, Near Misses, and Discovered Errors

by:

Karly Mendler

A Thesis
Submitted to the Faculty of Graduate Studies
through the Faculty of Nursing
in Partial Fulfillment of the Requirements for
the Degree of Master of Science in Nursing at the
University of Windsor

Windsor, Ontario, Canada

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Nursing Clinical Instructors' Perceived Supports and Barriers to Reporting Medication Errors, Near Misses, and Discovered Errors

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DECLARATION OF ORIGINALITY

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ABSTRACT

Introduction: Medication administration errors (MAEs) are common in healthcare, and one of the leading causes of harm and death. Not only do these errors lead to a decrease in overall patient safety, but they are also a large financial burden globally. It is essential that nurses report MAEs so that healthcare systems can identify causative factors and implement preventative measures. **Purpose:** The purpose of this study was to explore clinical instructors' perceptions of the supports and barriers experienced when prompting student nurses to report medication incidents during clinical rotations. **Methods:** This study utilized a descriptive, cross-sectional method and convenience sampling to recruit clinical instructors currently employed in a baccalaureate nursing program in Southwestern Ontario. A Qualtrics survey was emailed to all potential participants. Data was analyzed utilizing SPSS software. **Results:** A total of 28 surveys were completed out of the potential 96 participants, yielding a 29.1% response rate. The average years of experience was 17 years as a registered nurse and 6.5 years as a clinical instructor. A total of 86% of participants stated that they encourage their students to report all types of MAEs 76% - 100% of the time. The strongest supports identified were: "education at clinical meetings help me to understand the reporting system and importance of reporting" and "thank you for reporting email". The largest barrier identified was "I don't have the time to encourage reporting because I am busy with other clinical instructor responsibilities". **Conclusion:** Due to the small sample size obtained and skewness of the data, further research is recommended. Clinical instructors are essential to the hands-on learning of nursing students. Decreasing the barriers and increasing the supports to reporting is a crucial strategy to decrease the number of MAEs in the future.

DEDICATION

I would like to dedicate this thesis to my fiancé Devin Cashman. You were there with me through every stage of this process providing nothing but support and encouragement the entire way. When I had doubts in myself, you were there, believing in me enough for the both of us. I know at times you must have been tired of hearing me talk about this thesis, and tired of the countless hours I spent working on it instead of spending time with you. However, your patience and support never wavered. Thank you for your ever-lasting love. I could not have done it without you.

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CHAPTER I

Introduction

Medication errors are one of the most frequent types of errors that occur in healthcare (Bayazidi et al., 2012) and contribute the highest proportion of injuries in the health care system (World Health Organization [WHO], 2019). These errors are the result of poor medication management pathways and/or human factors that affect the medication delivery process, increasing the risk for patient harm or death (WHO, 2019). According to the WHO (2019), these errors lead to a minimum of one death per day and roughly 1.3 million people harmed annually in the United States (US). Medication errors account for 24% of preventable adverse health events (Baker et al., 2004). Furthermore, the global cost associated with medication errors is approximately 42 billion US dollars, which is roughly 1% of total global health expenditures (WHO, 2019). Hospitalizations due to preventable medication errors cost over $140 million Canadian (CAD) (Baker et al., 2004). Globally, medication errors cost an estimated $55 billion CAD per year.

It is well known that to err is human (Institute of Medicine, 1999). According to the Joint Commission [JCO] (2015), these errors can be summarized into three groups. Firstly, knowledge-based errors are mistakes made due to a deficiency in knowledge or skill with a process. The second group is rule-based errors which are made due to a misunderstanding or poor use of a rule or set of data. Finally, the third group is skill-based; when the nurse has a lapse in attention and memory, which includes neglected tasks (JCO, 2015). An increase in education can help decrease knowledge-based errors. Analyzing medication administration error (MAE) reports to discover systemic errors can

decrease rule-based errors. Skill-based errors relates to human error and is challenging to prevent.

To prevent MAEs from occurring, organizations benefit from having a just culture and reporting system in place. An organization utilizing just culture has a framework of trust where employees are not only encouraged but rewarded for reporting vital safety-related information (Reason, 1997). Just culture is further defined in the theoretical perspective section below. When safety-related events are reported, organizations can study errors, discover contributing factors and learn from these mistakes, thus allowing for the design of interventions to prevent them from occurring in the future (Alqubaisi et al., 2016; Bayazidi et al., 2012; Chiang et al., 2010).

A very low percentage of MAEs are reported, resulting in MAEs going unnoticed and unmanaged in real time (Bayazidi et al., 2012; Chiang et al., 2010). It is estimated that only 2% to 20% of MAEs that occur are actually reported (National System for Incident Reporting, 2012). Frontline nurses need to report MAEs and identify barriers that result in underreporting (Chiang et al., 2010). From a thorough review of the literature, many perceived barriers were explored from nurses' perspectives, as well as some from nursing students. Only two articles discussed RNs' perceived supports (Brubacher et al., 2011; Stewart et al., 2018). Additionally, no studies were found that examined MAE reporting by nursing clinical instructors and the supports and barriers that they experience. The aim of this study is to identify these perceptions and the contextual factors surrounding them.

Undergraduate nursing students are paired with clinical instructors to help them make the link between theory and practice (Registered Nurses of Ontario [RNAO],

2016). Specifically, students are required to be placed in clinical settings to gain practical education to enhance clinical competencies needed for independent practice post-graduation (RNAO, 2016). During clinical experiences, students practice and improve upon skills such as therapeutic communication, critical thinking, physical assessments, documentation, and medication administration (RNAO, 2016). To assist with this transition, students are placed with clinical instructors who are licensed RNs with significant clinical experience. Clinical instructors oversee students in the clinical setting to facilitate hands-on learning (RNAO, 2016). They also oversee the administration of medications by nursing students. As part of this role, they may be involved in a medication incident. It is an expectation by this Faculty of Nursing that clinical instructors are ensuring student medication incidents are being reported by the student. Three different types of medication incidents are identified at the nursing school where the study was conducted. These include medication errors, medication near misses and medication discovered errors.

Medication errors are defined as mistakes involving medications that reach the patient (University of Windsor, 2019b). An example of this would be if a RN administered Patient A's medications to Patient B. Medication near misses are defined as medication errors that occur, but are caught before they reach the client (University of Windsor, 2019b). If a RN was about to administer a full pill to a patient, but on their final check noticed the dose was actually half a pill and correctly split the pill before administering, this would be a near miss. This was almost a medication error but was caught before reaching the patient. Medication discovered errors are defined as errors that are discovered after the fact by someone other than the person who made the error

(University of Windsor, 2019b). If the student nurse and clinical instructor checked a patient's intravenous fluid at the start of the shift and discovered that it had another patient's name on it, this would be categorized as a discovered error. This university currently utilizes an online reporting system. The student filing the report will select which of the three types of errors it was, an explanation of the event, and then identify potential contributing factors (University of Windsor, 2019a). According to the College of Nurses of Ontario [CNO] (2020), reporting errors and near misses is an entry to practice expectation. The reporting of these three types of medication incidents was investigated in this study. The purpose of this study was to explore clinical instructors' perceptions of the supports and barriers they experience when expected to report student nurses' medication incidents made or discovered during their clinical rotations.

Theoretical Perspective

The theoretical foundation used to inform this study was James Reason's culture of safety (1997). According to James Reason (1997), there are four different components to safety culture including: *reporting culture, just culture, learning culture* and *flexible culture.* Together, these create an *informed culture*, which Reason states is equivalent to *safety culture*. Reason (1997) describes *reporting culture* as a culture that makes people feel safe to report safety issues. Staff should feel confident when reporting that they will not be blamed, and the report will remain confidential (Reason, 1997). It is important to note that a *just culture* is not a blame-free culture (Reason, 1997). If an unintentional error is made in a *just culture*, the employee should not be punished, but supported and educated. Conversely, deliberately reckless acts are subject to punishment. As previously stated, *just culture* utilizes a framework of trust. Bringing forward safety concerns is

essential. Rather than instantly blaming all mistakes on human error and negligent behaviour, *just culture* analyzes these errors against the systems in place, knowing there are hidden weaknesses and failures that need to be addressed (Reason, 1997). Furthermore, when a report is made, staff should be able to trust that the report will be acted upon, to solidify there is a need to report (Reason, 1997). An organization that learns from mistakes and redesigns the education and processes to prevent a similar incident from happening in the future follows a *learning culture*. The final characteristic, *flexible culture*, is where hierarchies are reduced and everyone (e.g. nursing students) involved are encouraged to be part of the reporting process (Reason, 1997).

Increasing patient safety and implementing preventative measures, is dependent upon error reporting (Reason, 1997). From reports, analyses are performed to discover the root cause. Therefore, any errors that can inform safety practices by identifying the root cause should be reported. Nurses need to feel safe and empowered to report any mistakes, and feel confident that they will receive constructive feedback (Reason, 1997). This is the responsibility of an organization. Setting the standards of acceptable and unacceptable behaviour is a must (Reason, 1997). Furthermore, sharp enders (individuals involved in the incident) are generally not the only cause of the incident, but usually only one part of several system issues that converge over a long time (Reason, 1997).

James Reason's culture of safety relates to the topic of MAE reporting. RNs' perceived supports and barriers to reporting MAEs influences the number of reports submitted. A lack of reporting prevents necessary learning from taking place, and future preventative methods are not put in place. Nursing students discover MAEs in their

clinical placement, and also make MAEs themselves. It is imperative that clinical instructors are ensuring their nursing students report these MAEs.

CHAPTER II

Literature Review

Supports and barriers to medication error, near miss and discovered error reporting among registered nurses, nursing students, and clinical instructors were investigated in this literature search. Databases searched to discover applicable literature included: Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Ovid MEDLINE and ProQuest Nursing and Allied Health Source (ProQuest). The inclusion criteria comprised scholarly literature that was: peer reviewed, published between January 2009 and December 2020 and written in English. Articles were excluded if the main focus was on MAE causes rather than supports and barriers to reporting errors. The date restriction was established to include relevant literature as, generally, reporting methods have changed from paper to online systems. Along with medication administration errors, near misses and discovered errors, the following search terms in multiple groupings were used: nurse attitudes, medication incidents, incident reports, voluntary reporting, self-reporting, barriers to reporting, supports to reporting, nurse, nursing student, and clinical instructor. A total of 242 articles were found and reviewed for relevancy.

Themes in the Literature

The number of MAEs reported are significantly less than the number of MAEs actually taking place (Almutary & Lewis, 2012). Registered nurses' (RNs') perceived barriers to reporting MAEs may be a large contributor to the lack of MAE reporting. These MAE reporting systems only provide insight into preventative measures if RNs are willing to identify and voluntarily report their own mistakes (Almutary & Lewis, 2012).

The literature review revealed the following four main themes: 1) a personal fear associated with reporting MAEs, 2) nursing administration concerns, 3) reporting effort, and 4) disagreement over the definition.

Fear of Reporting

The first theme of fear was often cited as the largest barrier to reporting MAEs (Alqubaisi et al., 2016; Dyab et al., 2018; Hammoudi et al., 2018; Khalil & Lee, 2018; Lee, 2017; Rutledge et al., 2018; Stewart et al., 2018; Yung et al., 2016). A culture of fear is still prominent in nursing today, and leads to a lack of reporting (Barnsteiner & Disch, 2017; Brubacher et al., 2011; Dyab et al., 2018; Fathi et al., 2017; Haw et al., 2014; Khalil & Lee, 2018; Mansouri et al., 2019; Rutledge et al., 2018; Stewart et al., 2018). When RNs fear extreme disciplinary actions for MAEs, such as getting fired or having it appear on their permanent record and evaluations, the chances of the error being reported, understandably, drops significantly (Almutary & Lewis, 2012; Bayazidi et al., 2012; Dyab et al., 2018; Fathi et al., 2017; Haw et al., 2014; Hosseinzadeh et al., 2012; Lee, 2017; Mansouri et al ., 2019; Rutledge et al., 2018; Sharma et al., 2016; Yung et al., 2016). Furthermore, due to the vulnerable state of patients and the position of power nurses hold in this position, trust is something nurses work very hard to obtain. The threat of looking incompetent (Almutary & Lewis, 2012; Mansouri et al., 2019; Yung et al., 2016) and fear of losing their trust is another barrier (Almutary & Lewis, 2012; Mansouri et al., 2019; Yung et al., 2016). Nurses do not want the care they provide to appear inadequate (Almutary & Lewis, 2012; Mansouri et al., 2019; Yung et al., 2016).

Fear of having a MAE negatively impact their evaluation was found to be a large barrier to reporting (Almutary & Lewis, 2012; Alqubaisi et al., 2016; Bayazidi et al.,

2012; Haw et al., 2014; Khalil & Lee, 2018; Mansouri et al., 2019; Stewart et al., 2018; Yung et al., 2016). Not only is there a fear of appearing incompetent to patients, families and administration, but also if colleagues were to find out about the MAE, this could negatively affect their working relationship (Almutary & Lewis, 2012; Alqubaisi et al., 2016; Dyab et al., 2018; Fathi et al., 2017; Haw et al., 2014; Hammoudi et al., 2018; Hosseinzadeh et al., 2012; Hung et al., 2015; Lee, 2017; Mansouri et al., 2019; Rutledge et al., 2018; Yung et al., 2016). Stewart et al. (2018) stated that when reporting an error made by a colleague, it could damage the professional relationship. If the employee is close to this colleague, it could lead to a compulsion to hide mistakes. Creating a just culture in order for nurses to feel safe to report MAEs is essential (Reason, 1997).

Nursing Management Concerns

The second reported theme is the lack of support of nursing leadership. Management fostering a culture of blame, rather than focusing on system factors that lead to the error, was found as a barrier to MAE reporting (Almutary & Lewis, 2012; Bayazidi et al., 2012; Mansouri et al., 2019; Rutledge et al., 2018; Yung et al., 2016). Nurses state that when reporting errors, they receive no feedback, or only negative feedback, which makes them question why they even bothered to report (Alqubaisi et al., 2016; Dyab et al., 2018; Khalil & Lee, 2018; Mansouri et al., 2019; Rutledge et al., 2018; Sharma et al., 2016; Yung et al., 2016). Committing an error is a very morally distressing event (Covell & Ritchie, 2009; Koharchik & Flavin, 2017; Yung et al., 2016). RNs stated that a lack of support from administration after reporting leads them to not report again (Covell & Ritchie, 2009). From these findings, it is evident that the nursing administration plays a large role in whether nurses report their MAEs.

Differences in Definition of MAE

The third theme that emerged from the literature review is a general disagreement over the definition of MAEs (Fathi et al., 2017; Hammoudi et al., 2018; Haw et al., 2014; Hosseinzadeh et al., 2012; Mansouri et al., 2019; Rutledge et al., 2018; Sharma et al., 2016; Yung et al., 2016). If a clear definition is not understood, or RNs have different definitions, it is no surprise that RNs would be unaware if an error took place and have disagreements whether one occurred or not. When clear definitions do not exist, RNs may find reasonable excuses for the error (Haw et al., 2014; Mansouri et al., 2019; Rutledge et al., 2018; Yung et al., 2016), especially when the patient experienced no harm, which supports the "no harm no foul" ideation (Bayazidi et al., 2012; Covell & Ritchie, 2009; Haw et al., 2014; Hung et al., 2016; Rutledge et al., 2018). Additionally, it was perceived that there is a deficiency in education related to medication safety (Khalil & Lee, 2018). A lack of education regarding the importance and steps to increase safety and minimize errors could lead to an increase in errors. Therefore, it is important that there is a clear definition of medication errors and an increase in medication safety in order for prevention and reporting to occur.

The Reporting Process

The final theme is related to the reporting process. RNs expressed that reporting is too time consuming to handle on top of their already heavy workload (Almutary & Lewis, 2012; Alqubaisi et al., 2016; Dyab et al., 2018; Fathi et al., 2017; Haw et al., 2014; Hung et al., 2015; Mansouri et al., 2019; Rutledge et al., 2018; Yung et al., 2016). Dyab et al. (2018) found that when nurses are too tired, reporting MAEs is not a priority. Concern regarding whether the reporting system is fully confidential was frequently

mentioned as a barrier (Almutary & Lewis, 2012; Dyab et al., 2018; Mansouri et al., 2019; Rutledge et al., 2018; Stewart et al., 2018; Yung et al., 2016). Another reporting process issue was regarding system malfunctions. If the system is not working, or it is not readily available for use, RNs will not take the time to complete reporting (Hung et al., 2015; Khalil & Lee, 2018; Mansouri et al., 2019; Rutledge et al., 2018; Sharma et al., 2016). Furthermore, adequate training on how to properly use the reporting system and what to include in the report is imperative and has been found to be lacking (Haw et al., 2014; Hung et al., 2015; Khalil & Lee, 2018; Rutledge et al., 2018; Yung et al., 2016).

Nursing Student Barriers

Several of the perceived barriers among nurses were also discovered in the literature among nursing students. Koohestani and Baghcheghi (2009) stated that fear and manager responses were barriers to students reporting MAEs. The reporting process was not found to be of importance to these students. Underreporting is also an issue within nursing students (Koohestani & Baghchegi, 2009). Additionally, a systematic review by Asensi-Vicente et al. (2018) found that fear of reduced grades and administrative response were barriers for students. Therefore, clinical instructors have an important role in increasing nursing students' reporting by demonstrating positive responses to reporting (Koohestani & Baghchegi, 2009).

Interventions Supporting Reporting

Minimal literature was identified discussing the supports RNs perceived for MAE reporting. According to Brubacher et al. (2011), when RNs receive feedback after reporting and are made to feel reporting is important, they feel more supported in making the report. Additionally, RNs find an increased incentive to report when they notice

changes implemented to enhance safety based on their reports. Additionally, when there is more than one way to report errors, RNs are more likely to report their errors (Brubacher et al., 2011). Stewart et al. (2018) explained that reporting promotes patient safety. The goal of improving patient safety and preventing future errors are facilitators to reporting. Nurses also reported that understanding the error reporting process was a facilitator (Stewart et al., 2018). Furthermore, nurses acknowledge that reporting is a professional obligation which is another facilitator.

Other Themes

Although many themes were found repeatedly throughout the literature, there were some identified less frequently. It is still important to mention these findings as they may be pertinent when studying nursing clinical instructors. Dyab et al. (2018) found that shame and embarrassment are deterring factors. Khalil and Lee (2018) stated that there is a substantial difference between nursing and healthcare culture in hospital settings when compared to community settings. The majority of research identified in this literature review was based on acute care facilities. Due to the cultural difference in these two settings, the different potential barriers to reporting MAEs was something to be considered. Finally, Mansouri et al. (2019) stated that nurses believed that the reactions from others were too severe when taking into consideration the type of error.

Gaps within the Literature

Several gaps were discovered in the literature on barriers to reporting MAEs and near misses. An important observation is the lack of Canadian research on this topic. As healthcare systems vary across the globe, the supports, and barriers to reporting MAEs within Canada may be different. Another gap is that almost half the relevant literature

included in this review were published over five years ago. Reporting systems utilizing paper format are not as common in recent years (Brubacher et al., 2011; Haw et al., 2014; Hung et al., 2015; Penn, 2014; Stewart et al., 2018), especially in higher-income countries (Alqubaisi et al., 2016; Dyab et al., 2018; Sharma et al., 2016). Additionally, minimal research was found from the perspectives of individuals and/or groups involved in education. Specifically, no literature was found from the perspective of clinical instructors in this literature review. Some articles question nursing students' views on MAE and near miss reporting. Therefore, this thesis studied clinical instructors' perceived supports and barriers to MAE and near miss reporting.

CHAPTER III

Methodology

Purpose Statement

The purpose of this research project was to explore clinical instructors' perceptions of the supports and barriers they experience when expected to report student nurses' medication incidents made or discovered during their clinical rotations.

Research Questions

1. How frequently do clinical instructors encourage their nursing students to report the three types of medication incidents (medication administration error, medication near miss, discovered error) to the university?
2. What clinical instructor-specific characteristics are associated with an increased adherence to medication incident reporting by clinical instructors?
3. What are the supports and barriers that influence clinical instructors' medication incident reporting with their nursing students?

Research Design & Participants

This study utilized a descriptive, cross-sectional method. Participants were recruited using a convenience sample. At the time of the study, participants were currently employed as clinical instructors for baccalaureate nursing students in a Southwestern Ontario university through the Faculty of Nursing. The Faculty hires sessional instructors to teach any course that needs to be filled. All clinical instructors are sessional instructors and/or sessional lecturers. At the time of the study, there was a total of 96 nursing sessional instructors who worked as clinical instructors at this university.

Sample Demographics

Participants who agreed to participate had experience as a registered nurse that ranged between six years and 45 years of experience, with an average of 17 years of experience. The respondents had been clinical instructors at this university for a minimum of one year and a maximum of 20 years, with the average being 6.5 years. Fifteen respondents have Bachelors of Science in nursing (BScN) degree as their highest level of education, 10 have either their Masters of Nursing (MN) or Masters of Science in Nursing (MScN) degree as their highest level of nursing education, and three have a Masters of Nursing- Nurse Practitioner degree. Within the last three years, there was a total of eight nurses who have taught 1st year clinical, 21 who have taught 2nd year clinical, 23 who have taught 3rd year clinical, and 10 who have taught 4th year clinical. Thirteen (46%) respondents are current employees at the site that they teach clinical, and 15 (54%) are not.

Table 1

Demographic data of the clinical instructors (n=28)

Demographic question	**Frequency**	**Percentage (%)**
Years as a Registered Nurse (years)[a]		
- 1-10	7	25
- 11-20	11	39.2
- 21-30	8	28.6
- 31-40	1	3.6
- 41-50	1	3.6
- Average years =17	-	-
- SD = 8.9[b]		

Demographic question	Frequency	Percentage (%)
Years as a UWindsor Clinical Instructor (years)[c]		
- 1-5	16	57.1
- 6-10	6	21.4
- 11-15	5	17.9
- 16-20	1	3.6
- Average Years = 6.6	-	-
- SD = 4.4	-	-
Highest Level of Education		
- BScN	15	53.6
- MN/MScN	10	35.7
- MN/NP	3	10.7
Undergraduate Nursing Cohort Groups Taught Within the Last 3 Years[d]		
- 1st year	8	28.5
- 2nd year	21	75
- 3rd year	23	82.1
- 4th year	10	35.7
Are you currently employed at the site where you teach clinical?		
- Yes	13	46.4
- No	15	53.6

[a]Participants reported their years of experience as an RN in a text box but they have been placed in categories to condense data
[b] SD = standard deviation
[c]Participants reported their years of experience as a clinical instructor in a text box but they have been placed in categories to condense data
[d]The percentages add to greater than 100% as participants can teach in multiple cohorts within the same semester.

Data Collection

Determining the a priori sample size was not possible due to the descriptive and exploratory nature of this study. A survey was created on Qualtrics (2020), and the link was sent out electronically to all clinical instructors through their university email (see Appendix A). A ten-dollar gift card was offered as an incentive to participate and was provided to each clinical instructor who completed the survey. Once the survey was completed, participants were directed to a separate data collection site in Qualtrics for personal identifier data collection. Participants provided their name and email, allowing

the incentive to be delivered while keeping personal identification data separate from their completed survey responses. To obtain informed consent, before opening the survey, participants were informed that by completing the survey, they were consenting to participate. Participants were given the option to exit the survey at any time.

Inclusion Criteria

Participants included in this study were sessional instructors in the Faculty of Nursing. For the purpose of this study, a sessional instructor is defined as an individual contracted by the Faculty of Nursing to teach a course for an academic semester. Sessional instructors were eligible to participate in this study if they met the following criteria: a current RN in the province of Ontario, a sessional instructor in the Faculty of Nursing who taught a clinical course between January 2019 and May 2020.

Exclusion Criteria

Sessional instructors were ineligible to participate in this study if they were hired by the Faculty of Nursing to teach a theory course, not a clinical course, and if they were approved for hire by the Faculty of Nursing but had not yet started a teaching contract.

Instrument and Measurement

Due to the absence of a specific instrument related to the research questions, a survey was created with the input of three RNs who have qualifications that include undergraduate and graduate degrees in nursing, expertise and experience in nursing research, and certified professional in patient safety (CPPS) certifications. The survey (see Appendix B) was web-based and contained two sections. Section one investigated the frequency of medication incident reporting, as well as the barriers and supports in place for reporting and section two requested demographic information. Reporting

frequency was asked in the form of percentages. The supports and barriers were individually listed and clinical instructors rated them on a four-point Likert scale. The survey was tested for validity prior to implementation. Face and content validity was obtained by reviewing the questionnaire with a group of three content experts who have the following qualifications: RN, BScN, MN, MScN, PhD, and CPPS. Furthermore, a think-aloud session with a different group of three RNs took place, giving professionals an opportunity to read and question the content and structure. The experts were current or retired professors at this university, to avoid testing the survey with potential participants. Due to the descriptive and exploratory nature of this study and the small sample size, we were unable to test internal consistency reliability of the instrument.

Data Collection Procedure/Ethical Consideration

Approval was obtained from the Research Ethics Board (REB) (see Appendix C) through the University of Windsor. The research data from the clinical instructors was de-identified, and all data was stored on a locked, personal computer to enhance privacy. An information session (see Appendix D) was held with the clinical instructors online at the end of their semester meeting. The clinical instructors were informed of the study, pending survey delivery, and provided information regarding the incentives. Reminder emails were sent at one-week, two-week, and three-week post survey delivery.

Data Analysis

Statistical Package for the Social Sciences (SPSS) software was used to analyze the data for this research study. The data was screened for normal distribution, the presence of outliers and for missing data prior to analysis. All respondents met the inclusion criteria and answered 10% or greater of the survey. Therefore, no data needed

to be removed. The demographic data was analyzed using descriptive statistics. Specifically, measures of central tendency, variance and frequency were assessed. Statistical analyses specific to each research question were attempted.

Research Question 1- *How frequently do clinical instructors encourage their nursing students to report the three types of medication incidents to the university?*

Descriptive statistics were performed, including measures of central tendency, frequency and variance (mean, median, frequency, standard deviation) for all three types of medication incidents.

Research Question 2- *What clinical instructor-specific characteristics are associated with an increased adherence to medication incident reporting by clinical instructors?*

To address this question, we planned on completing bivariate tests for comparison, such as Pearson, Spearman rank or Kendall's Tau, to determine if there were any correlations between the proportion of participants reporting the three types of medication incidents and the characteristics of clinical instructors. Data was recoded in attempts to create more meaningful categories. Unfortunately, due to the small sample size and the skewed data, only descriptive statistics could be performed.

Research Question 3- *What are the supports and barriers that influence clinical instructors' medication incident reporting with their nursing students?*

To address this question, we planned on completing bivariate tests for comparison, such as Pearson, Spearman rank or Kendall's Tau, to determine if there are any correlations between the proportion of reporting the three types of medication incidents and the supports and barriers clinical instructors identified to reporting. Data

was recoded in attempts to create more meaningful categories. Unfortunately, due to the small sample size and the skewed data, only descriptive statistics could be performed.

CHAPTER IV

Results

Survey Responses

There were 96 prospective clinical instructors eligible to participate in the survey at this Southwestern Ontario university. A total of 28 clinical instructors responded to the survey, with a response rate of 29.1%. The survey was open from November 6, 2020 to December 23, 2020. Initially, the survey was set to close on December 6th, 2020, but was extended due to a minimal number of responses.

Research Question #1- *How frequently do clinical instructors encourage their nursing students to report the three types of medication incidents (medication administration error, medication near miss, discovered error) to the university?*

Table 2

Frequency of Reporting Medication Incidents (n=28)

Type of Medication Incident	Frequency	Percentage (%)
I have instructed my students to report medication errors at this University:		
- 0-25% of the time	1	3.6
- 26-50% of the time	0	0
- 51-75% of the time	0	0
- 76-100% of the time	27	96.4
I have instructed my students to report medication near misses at this University:		
- 0-25% of the time	1	3.6
- 26-50% of the time	1	3.6
- 51-75% of the time	4	14.3
- 76-100% of the time	22	78.6
I have instructed my students to report medication discovered errors at this University:		
- 0-25% of the time	2	7.1
- 26-50% of the time	1	3.6
- 51-75% of the time	2	7.1
- 76-100% of the time	23	82.1

Table 3

Composite Scores of Frequency of Reporting Medication Errors

Type of Medication Incident	Frequency	Percentage (%)
I have instructed my students to report medication incidents (all 3 types reported together)[a]	1.3	4.6
- 0-25% of the time	0.7	2.5
- 26-50% of the time	2	7.1
- 51-75% of the time	24	85.7
- 76-100% of the time		

[a]The composite frequency numbers were created by adding the total number of participants of each percentage category together for the three type of medication incidents and dividing by three

Figure 1

Frequency of Reporting Medication Errors

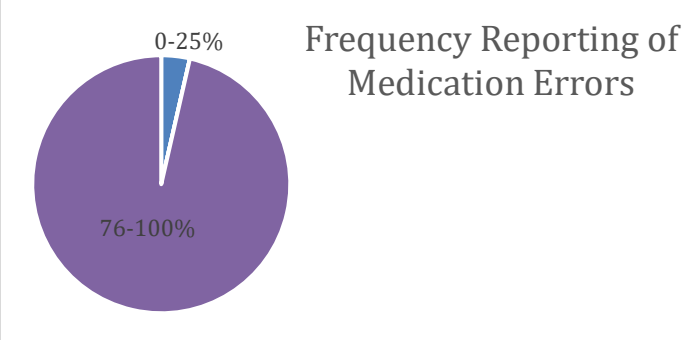


Figure 2

Frequency of Reporting Medication Near Misses

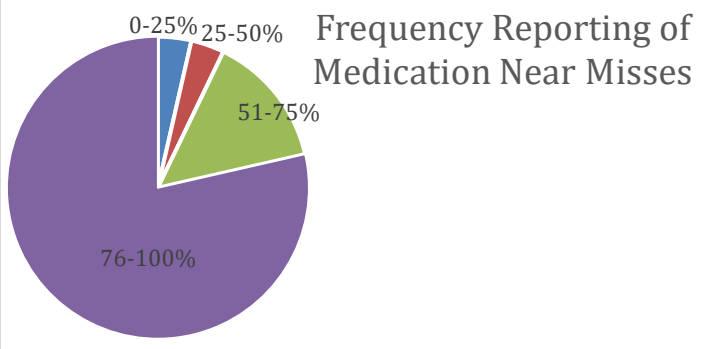
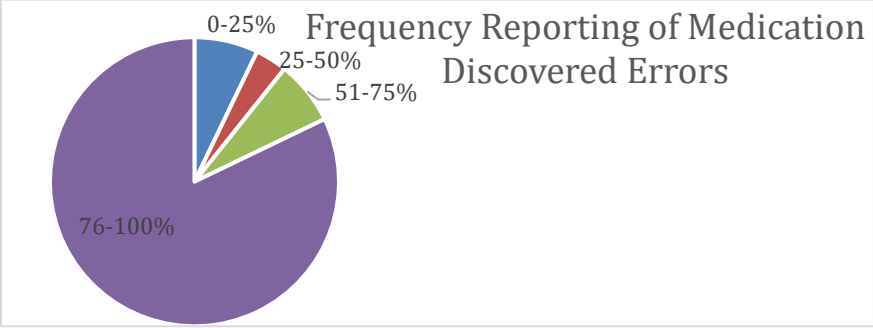


Figure 3

Frequency of Reporting Medication Discovered Errors



Research Question #2 and # 3- *What clinical instructor-specific characteristics are associated with an increased adherence to medication incident reporting by clinical instructors?*

The researcher attempted to perform Pearson and Spearman Rank Correlational tests however, due to the small sample size and skewness of the results, the 'p' and 'r' values were extremely high. Therefore, no correlational statistics could be completed. Repeat studies with larger sample sizes are recommended to obtain any possible correlations between clinical instructor-specific characteristics and adherence to medication incident reporting.

Table 4

Potential Supports in Encouraging Students to Report Medication Incidents

Variable	Strongly Disagree and Somewhat Disagree[a] (%)	Neither Agree or Disagree (%)	Somewhat Agree and Strongly Agree[a] (%)
1. The form is easy to use	2 (7.1)	5 (17.9)	21 (75)
2. Students can complete the form[b]	2 (7.1)	4 (14.3)	21 (75)

Variable	Strongly Disagree and Somewhat Disagree[a] (%)	Neither Agree or Disagree (%)	Somewhat Agree and Strongly Agree[a] (%)
3. Education at clinical meetings help me to understand the reporting system and importance of reporting	2 (7.1)	1 (3.6)	25 (89.3)
4. "Thank you for reporting" email reinforces the importance of reporting	1 (3.6)	3 (10.7)	24 (85.7)
5. Seeing changes being made based on the reports made	2 (7.1)	6 (21.4)	20 (71.4)

[a]Due to small sample sizes, the categories of "somewhat disagree" and "strongly disagree" have been condensed and the categories of "somewhat agree" and "strongly agree" have been condensed
[b]One participant did not answer this question, so percentages do not add up to 100%

Most respondents either somewhat agreed or strongly agreed with all of the supports to medication incident reporting statements. Specifically, 71-89% of responses were for somewhat agree and strongly agree for all supports. Most respondents (61%) strongly agreed that "education at clinical meetings help me to understand the reporting system and importance of reporting" is a support to reporting, as well as the "thank you for reporting" email at 54% of respondents. Conversely, there was not a clear consensus regarding supports that were the least helpful as each support statement only had one to two participants who selected "somewhat disagree" or "strongly disagree". Participants were provided with a free text box asking if there were any other supports to reporting that we had not listed. One participant stated that it would be beneficial if students were able to "submit practice examples as part of the clinical experience".

Figure 4

Supports in Encouraging Students to Report Medication Errors

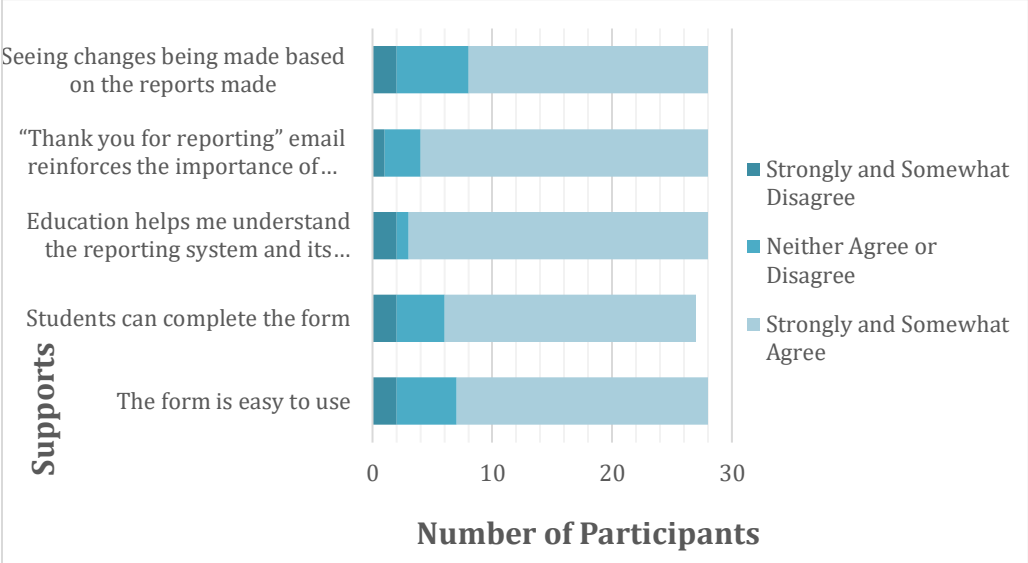


Table 5

Potential Barriers to Student Medication Incident Reporting

Variable	Strongly Disagree and Somewhat Disagree[a] (%)	Neither Agree or Disagree (%)	Somewhat Agree and Strongly Agree[a] (%)
1. I am afraid to report because I fear I will be blamed for the incident	17 (60.7)	6 (21.4)	5 (17.9)
2. I am afraid to report because I fear the student will be blamed	19 (67.9)	5 (17.9)	4 (14.3)
3. I don't understand the reporting process	24 (85.7)	0 (0)	4 (14.3)
4. I don't have the time to encourage reporting because I am busy with other clinical instructor responsibilities	14 (50)	3 (10.7)	11 (39.3)

Variable	Strongly Disagree and Somewhat Disagree[a] (%)	Neither Agree or Disagree (%)	Somewhat Agree and Strongly Agree[a] (%)
5. My clinical placement site discourages reporting	24 (85.7)	2 (7.1)	2 (7.1)
6. I don't understand what constitutes a medication error	27 (96.4)	1 (3.6)	0 (0)
7. I don't understand how reporting improves the clinical education of nursing students	26 (92.9)	0 (0)	2 (7.1)
8. I have previously reported a medication error and had a negative experience	23 (82.1)	3 (10.7)	2 (7.1)

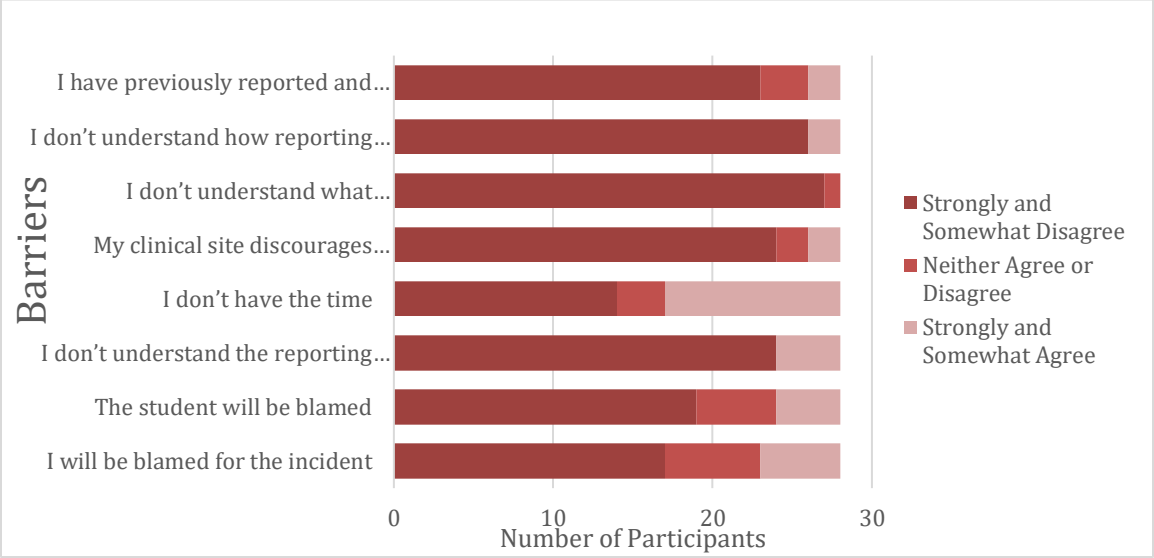
[a]Due to small sample sizes, the categories of "somewhat disagree" and "strongly disagree" have been condensed and the categories of "somewhat agree" and "strongly agree" have been condensed

Most respondents either "somewhat disagreed" or "strongly disagreed" with all of the barriers to medication incident reporting statements. Specifically, 50-96% of responses were for "somewhat disagree" and "strongly disagree" for all barriers. "I don't understand the reporting process", "my clinical placement site discourages reporting", "I don't understand what constitutes a medication error", "I don't understand how reporting improves the clinical education of nursing students", and "I have previously reported a medication error and had a negative experience" are all barrier statements that participants strongly disagree with. The barrier that participants agreed with the most (39.3%) was "I don't have the time to encourage reporting because I am busy with other clinical instructor responsibilities". Participants were provided with a free text box asking if there were any other barriers to reporting that we had not listed. Two participants stated that due to time constraints during clinical, students are encouraged to perform the MAE

report independently, but this means the instructor often has no way of knowing if the student actually filed the report. Another instructor stated they don't keep reminding them because they know the students are already overwhelmed with their studies and assignments. Finally, one instructor stated that reporting MAEs is not a part of the culture in the hospital facilities they have taught at.

Figure 5

Barriers to Student Medication Incident Reporting



CHAPTER V

Discussion

Interpretation of Findings

The purpose of this study was to explore clinical instructors' perceptions of the supports and barriers experienced when prompting student nurses to report medication incidents during clinical rotations. Demographics of the 28 respondents were collected and descriptive data were analyzed for implications. To discover if the demographics of this study are comparable to previous studies, three different journal articles that studied clinical instructor characteristics were analyzed. Bownes (2018) performed a study at the same university as this study. There were 113 eligible clinical instructors at that time, and only 27 responded (23.9%). Of the 27 respondents, eight had their BScN degree, and the remaining 19 were at least masters level prepared. Fourteen participants had 21 or more years of experience as a RN, and 11 were employed solely by the university.

Poor response rates tend to be a common occurrence when surveying nursing clinical instructors. Astrella (2017) collected demographic data on clinical instructors in a nursing program at a university in Wisconsin. There were 122 eligible clinical instructors however, only 37 responded (30%) after removal of incomplete responses. Only two respondents had greater than 20 years of experience as an RN and five worked at the same facility where they teach clinical. Davidson and Rourke (2012) had 44 respondents out of 265 clinical instructors (16.6%) from a university in Alberta, Canada. In this study, 32% of participants had six to ten years of experience as an RN and 15% had less than five years; 80% had their BScN degree only, and 20% had their MN degree or higher as

their highest degree. When comparing these three articles to the sample demographics of this study, there are many similarities.

There was a hypothesis among this team of researchers that if clinical instructors were employed by their clinical placement site, they would be more apprehensive to encourage students to report MAEs to avoid negative repercussions at their primary place of employment. Additionally, we were interested to see if their years of experience as an RN, years of experience teaching clinical at this university, and their highest level of education correlated to their frequency of reporting the different types of medication incidents. There was quite a large range in years of experience as an RN and years of experience teaching clinical identified in the survey responses. Unfortunately, due to the small sample size (29%) and skewness of data, no correlational statistics could be performed. According to Fincham (2008), it is expected to receive around 25% to 30% response rate when utilizing email to deliver surveys. It is possible to increase response rate to 70% or greater if multiple methods, including email, are utilized (Fincham, 2008). The other three studies that looked at clinical instructors had a 16%-30% response rate (Astrella, 2017; Bownes, 2018; Davidson & Rourke, 2012).

This university in Southwestern Ontario has created a first of its kind medication reporting system. It has been adapted over the years since its initial creation using best practice and literature to guide it. The barrier that clinical instructors agreed with the most (39%) was “I don’t have the time to encourage reporting because I am busy with other clinical instructor responsibilities” (only 50% of respondents selected strongly or somewhat disagree with this statement). Additionally, in the free text boxes, two respondents stated that the students end up reporting independently due to time

constraints and therefore, had no way to know if the student actually completed the report. One respondent stated that they know students are already overwhelmed with their studies so they don't like to add to it. Time is frequently identified in the literature as a large barrier to reporting as well (Almutary & Lewis, 2012; Alqubaisi et al., 2016; Dyab et al., 2018; Edrees et al., 2017; Fathi et al., 2017; Haw et al., 2014; Hung et al., 2015; Mansouri et al., 2019; Rutledge et al., 2018; Yung et al., 2016). It is important to note that utilizing the incident reporting form should take less than five minutes to complete (Freeman et al., 2020). Specifically, it generally only takes two minutes to complete. Knowing that time is still perceived as a large barrier among this group of clinical instructors, the nursing faculty at this university should invest in further education regarding the form to reduce the perception of this barrier. Additionally, both the student and the clinical instructor receive emails post reporting, thanking them for their efforts of improving patient safety. Therefore, there is an apparent gap between the perceived understanding of the reporting system as a whole among the clinical instructors and clinical leads at this university.

Survey respondents most frequently identified: "education at clinical meetings help me to understand the reporting system and importance of reporting" and "the thank you for reporting email" as supportive measures. There was limited literature that identified supports to reporting MAEs. However, the follow-up email that this university sends to students and clinical instructors post reporting was also found to be a strong support among nurses (Brubacher et al., 2011). Additionally, Stewart et al. (2018) reported that having a good understanding of the reporting process was a facilitator among nurses, which appears consistent among clinical instructors. The survey questions

focused on support for medication incident reporting had very few people who selected strongly disagree or somewhat disagree. This makes it difficult to discern which supports are the least helpful. It is, however, beneficial to know that the current supports in place at this university are positive supports to encourage MAE reporting. Further efforts could be made to continue to increase the identified supports to increase adherence to reporting.

It is important to note that clinical instructors have a very different role in MAE reporting than nurses and nursing students. When nurses and nursing students make the error, it is their responsibility to make the report. However, clinical instructors are overseeing students during medication administration, and will see errors take place. They are not committing the errors themselves, and therefore, are not reporting the error themselves. The role of the clinical instructor in the event of a MAE is vital in that they are to ensure the student knows an error took place, understands the gravity of the situation, and the next steps, such as caring for the patient post error, and specifically, reporting of the error. Therefore, knowing that 86% of clinical instructors encourage students to report medication incidents 76% to 100% of the time is very important.

Respondents stated that they almost always encourage students to report medication incidents, and they mostly disagreed with the barriers to reporting medication incident reporting. With these responses, it should correlate to a higher amount of medication incident reports than there are. One potential barrier to reporting that was not explored in the current study is the fact that the local hospitals did not utilize electronic health records at the time of this study. Medication administration was documented on paper medication administration records (MARs). It is possible that MAEs would be easier to identify on an electronic MAR (eMAR). Additionally, the current global

COVID-19 pandemic could be an additional potential barrier to reporting MAEs. As previously stated, education had a major shift online which removed students from some clinical placements in hospitals, decreasing medication administration. Furthermore, fatigue from emails and reports online could decrease the likelihood of MAE reporting adherence.

Freeman et al. (2020) found that most errors that were made by students at this university during September 2017 and June 2018 were near misses (61%). Discovered errors accounted for 22% of the reports made, and only 17% were medication errors. In comparison, 78.6% of clinical instructors stated that they encourage their students to report near misses 76%-100% of the time. This is significantly lower than the number of clinical instructors who are encouraging students to report medication errors and discovered errors at 96.4% and 82.1% respectively. Reason (2000) states that near misses are free lessons and this university follows this guideline. Reporting near misses provides the student an opportunity to learn about any individual or systemic issues that could have contributed to the error without actually causing harm to a patient. Further research into how to increase near miss reporting with clinical instructors is needed.

The incident reporting form at this university attempts to follow Reason's culture of safety framework (1997). This university follows a reporting culture and flexible culture. The students and clinical instructors are well informed of the incident reporting form, and the expectations of reporting errors. There does seem to be a gap in the education provided to clinical instructors and their understanding. Specifically, the incident report form takes minimal time to complete. Additionally, two respondents stated that they had no way of knowing whether a student completed a report or not when

clinical instructors receive a thank you email post report. Therefore, improvement on the learning culture aspect is needed. Moreover, knowledge of just culture could be improved as there was 18% of participants who stated they were afraid of being blamed for the incident and 14% who stated they were afraid the student would be blamed.

Despite efforts to ensure patient safety as a priority, and the many systemic prevention methods in place, MAEs will continue to occur (Institute of Medicine, 1999). People often self-report in surveys in accordance with the social standard to avoid social undesirability (Meisters et al., 2020). As identified in the literature, the fear of appearing incompetent and the loss of patient trust is a barrier to reporting (Almutary & Lewis, 2012; Mansouri et al., 2019; Yung et al., 2016). Social desirability bias in self reporting likely contributed to the results of this survey. This could account for the disparity between the survey results and actual number of MAEs reported at this university. Additionally, the sample size is rather small, with only a 29% response rate. As no other study on this topic among clinical instructors was identified, we are only able to speculate the reasoning for the results obtained. Selection bias is something to consider as well. It is possible that the respondents are the people who truly do see value in reporting and do encourage their students to report MAEs; whereas the remaining 71% of clinical instructors who did not respond, possibly do not encourage students to report due to the many barriers identified in the literature (Nohr & Liew, 2018). Conversely, there is potential that there are supports and barriers to reporting MAEs that affect clinical instructors that are very different from that of nurses and nursing students.

The global COVID-19 pandemic may have also contributed to poor response rates for this study. The pandemic brought about many changes to the delivery of education in

a short period of time. Most classes were changed to online, including clinical placements. As such, students were not consistently in traditional placements in the hospitals, essentially removing or reducing the opportunity for medication administration practice. Forty-six percent of clinical instructors are employed by the site that they teach clinical and the remaining 54% may potentially work at the other local hospitals. Working at the bedside during a pandemic brings additional stress and distractions that likely added to the low response rate. Additionally, with the move to online education, this created an increase in email correspondence which drastically increases the chance of email fatigue. Finally, this research team was unable to attend the clinical instructors start of the semester meeting in person to discuss the study and survey.

Implications

Nursing Education

To increase the rate of MAE reporting, it is essential for nurses to understand the importance and the impact that it can have (Khalil & Lee, 2018). This education should begin during undergraduate nursing education programs (Asensi-Vicente et al., 2018). By beginning this early, it is possible to instill the culture of safety and role nurses play before commencing independent practice (Asensi-Vicente et al., 2018). Students can learn about these skills in the classroom setting, but require plenty of opportunity to practice during clinical placements under the supervision of clinical instructors. It is essential for universities to have a medication error reporting system in place for a multitude of reasons. Having an established reporting system helps increase nursing students' comfort with reporting by creating a reporting culture that they can continue to utilize in independent practice. Students can also have significant learning experiences

from errors made, which in turn decreases the likelihood of reoccurrence. Additionally, educators have the chance to see weak spots among their students and where they need to focus and reinforce learning opportunities during clinical placements and lab classes. Finally, educators can gather insight into the best way to teach students about medication administration to decrease errors in the future.

The practice of reporting needs to be acknowledged and encouraged by clinical instructors to ensure the system is utilized by nursing students. At this university, there are approximately 800 nursing students among the four-year program, every year. This university encourages their clinical instructors and nursing students to utilize the medication incident reporting system, and the system is easily accessible and fast to complete (Freeman et al., 2020). Specifically, the form should take five minutes or less. Therefore, time should not be listed as a barrier to reporting. From the year 2017 to 2018, there were 88 reports submitted by students. Discovered errors and medication errors are not only reported through this school's reporting system, but also through the hospital facility's reporting system as well. This hands-on practice is intended to increase exposure and comfort with this practice. From the reports, clinical instructors have a great opportunity for education with the student to increase competency. The survey results stating that 86% of respondents are encouraging students to report medication incidents greater than 75% of the time is promising (see Table 3). However, with 800 students annually enrolled, there should be more than 88 submissions, as near misses happen frequently. Results from this study indicate there is a gap between the education clinical instructors receive and their understanding. As stated above, two respondents

stated that they wouldn't know if a student actually completed a report when they would have received a thank you for submitting email post report.

Clinical instructors at this university are required to have a minimum of their BScN degrees, although graduate degrees are preferred, and current registration with the CNO with no restrictions placed on their license, as well as to have worked a minimum of three years of full-time hours (University of Windsor, 2021). There is no requirement for clinical instructors to have previous experience with teaching prior to applying. Additionally, there are no requirements for them to have taken any courses specific to teaching and mentoring. Clinical instructors attend meetings with faculty prior to the start of the semester to go over curriculum and expectations. It is unknown if clinical instructors in this study have adequate knowledge of a just culture however, it is essential that they understand and apply a just culture to their teaching techniques to create a safe learning environment for their nursing students. As part of the CI meetings prior to the start of the semester, faculty could incorporate education on just culture and how to incorporate it into their teachings.

Nursing Research

As there were no studies identified in the literature search on clinical instructors and supports and barriers to students reporting medication incidents in clinical placements, there is a great necessity for research into this area. This study is a novel study in this area, but due to limitations, there are still many unknowns. There was a large limitation regarding the analyses that could be completed because there was such a low response rate. It would be interesting to understand why there has been low response rates with clinical instructors and what could potentially increase them in the future.

Perceptions of low anonymity is a deterrent to participation. To aid with anonymity, this study could be performed again and include more than one university nursing program. Perhaps a qualitative or mixed-method study would be beneficial to help understand this topic and receive a larger response rate and/or more in-depth information. As no literature on this subject was identified, it is important to use more than one method to gain as much insight as possible. Qualitative methods would allow for clinical instructors to have an open dialogue and provide context to their responses. Nursing students' understanding and increased comfort with reporting medication incidents before becoming independently practicing nurses are essential to increasing reporting compliance in the future. There is a great need to begin this critical practice early. A future study could survey nursing students as well to inquire their perceptions on clinical instructor encouragement to report MAEs. This would help to expose any potential response bias. Therefore, additional research into supports and barriers among clinical instructors is imperative.

A lack of time to report MAEs was identified as the largest barrier among respondents (39%) and is consistent with the literature. The second largest at 18% was fear of blame. It is interesting that differences in the definition of MAEs and nursing management concerns were not identified as barriers among clinical instructors. Given that no literature on supports and barriers to reporting MAEs among clinical instructors was identified, it is difficult to fully understand the reason for these differences or if they are consistent. A follow up qualitative study is recommended to further explore this topic. A qualitative study may be able to reveal more context to the responses we received in this survey.

Nursing Policy

Nurse administration has a large responsibility in raising awareness and comfort with reporting MAEs. If systems do not already utilize a just culture framework, it is imperative they adopt it (Reason, 1997). Policy creation to follow the four components of Reason's safety culture will increase adherence to reporting and patient safety. Fear of being blamed was identified as a contributing factor by 18% of respondents. This is significantly higher than many of the other barriers (0%-14%). Fear was also identified in the literature as an extremely large barrier. Nurses should have the option to submit the MAE report anonymously. However, nursing students will have committed the error under the direct supervision of a clinical instructor, and therefore, anonymity is not a factor. Additionally, it is important that nurses understand just culture and that truly negligent behaviour is cause for discipline. By adapting policies to learn from mistakes, provide education, and update processes, systems can prevent error reoccurrence (Reason, 1997). Specifically, policy change on the medication administration process is critical.

As stated above, time was identified by the clinical instructors in this study as the largest barrier to encouraging their students to report. Facilities must have an easy to access, and easy to use reporting system to increase adherence to reporting expectations. It may also be prudent to research ways to decrease the time it takes to make a report as well as ways to enhance the known supports to reporting. Furthermore, administration should concentrate on creating policies that focus on enhancing the supports to reporting MAEs to raise compliance.

Limitations

There were several limitations to our study that are important to mention. One of the largest contributors to the small sample size was likely the current global pandemic of COVID-19. Some of the normal practices at this university in Southwestern Ontario were halted since the outbreak in North America. Clinical instructors at this university often work at many locations. Public health concerns caused nurses to have to decide between locations. Therefore, many clinical instructors who would have normally been easily accessible, may not have been checking their university email as frequently. Email was the major form of contact for study recruitment. Additionally, there were a lot of changes that clinical instructors had to adapt to over the study period. They often hold floor nursing positions in addition to their clinical instructor positions. Even with the incentive offered, it is likely that this survey was not a priority and this contributed to the low response rate. Finally, no literature was identified studying barriers and supports among clinical instructors. Therefore, using identified barriers and supports to reporting MAEs identified among nurses and nursing students were used to create the survey for this study but may not have been inclusive to clinical instructors. Further research with a larger sample size is recommended.

Conclusion

Medication errors in health care are an ever-growing concern that strongly affects patient safety and the cost to the system globally is astronomical. Research into the rates of reporting and the supports and barriers in place to reporting have been studied in detail among nurses, and even among nursing students. Strides have been made in increasing reporting compliance, but there is still a gap in the number of reports and the amount of

medication errors taking place. It is essential to continue to attempt to understand this phenomenon. Studying the barriers and supports among clinical instructors is another step in this process. They have a direct role in educating and encouraging future nurses to report.

This study delivered an online survey to clinical instructors at a Southwestern Ontario university. Out of 96 clinical instructors employed at this university, a total of 28 responded. Due to the small number of participants and skewness of the data, only descriptive analyses were performed. A lack of time and fear of being blamed were identified as the largest barriers to reporting MAEs. Education and thank you emails delivered post reporting were considered the largest supports to reporting MAEs among this group of CIs. Eighty-six percent of the participants stated they encouraged their students to report all MAEs 76%-100% of the time. Education about just culture to clinical instructors is essential in reducing fear to reporting. Further research among clinical instructors on this topic is needed. Qualitative or mixed-method studies may add more in-depth context to these concepts. The information gained from this study can potentially help improve the rates of reporting among nursing students in the future, which may increase reporting when they become nurses.

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Appendix A

Email Invitation to Participate in the Survey

You are asked to participate in a research study conducted by Karly Mendler, BScN, RN, from the faculty of nursing at the University of Windsor. The results will be contributed to a thesis project.

If you have any questions or concerns about the research, please feel to contact:

Jody Ralph, PhD, RN: [redacted]
Natalie Giannotti, PhD, RN, BHK: [redacted]

PURPOSE OF THE STUDY-
To explore clinical instructors' perceptions of the supports and barriers they experience when expected to report student nurses' medication incidents made or discovered during their clinical rotations. The literature suggests that there are many factors that can encourage and discourage medication incident reporting. Medication incidents include medication errors, near misses and discovered errors. Your responses will help the faculty to improve the reporting process.

PROCEDURES-
If you volunteer to participate in this study, you will be asked to:
Participate in a survey. The total length of time for participation in each procedure: 8 minutes for survey completion and 2 minutes to input personal information. The total length of time for participation is approximately 10 minutes.
Plan for contact- You will receive three reminder emails at one-week, two-weeks, and three-weeks post initial survey delivery.

Please find the link to the survey below. The beginning of the survey provides you with a consent form. You can exit the survey at any time you like. Once you have completed the survey, if you are a sessional instructor working as a clinical instructor at the University of Windsor, you will be redirected to a second site that will ask for your personal information in order for you to receive a $10 gift card to Tim Hortons. This section will ask for your name and email address. The two sections of the survey are separate so that there will be no personal information linked to your responses, allowing for de-identification. All data will then be stored on the researchers' personal password protected computer. Only the researcher committee will have access to the data. The survey will remain open until X date. Thank you for your time and consideration in completing this survey.

Sincerely,

Karly Mendler, BScN, RN, MScN Student
University of Windsor
https://uwindsor.ca1.qualtrics.com/jfe/form/SV_3Qawi8XQc6xUyfH

Appendix B

Medication Incident Survey

Instructions: The literature suggests that there are many factors that can encourage and discourage medication incident reporting. Medication incidents include medication errors, near misses and discovered errors. By responding to this survey, you will help the faculty to improve the reporting process.

Please respond to the following questions.

What is your highest level of completed nursing education?

- BScN
- MN/MScN
- MN/NP

How many years have you been a Registered Nurse? _____

How many years have you taught clinical? _____

What levels(s) have you taught clinical courses during January 2019 to May 2020? **Select all that apply.**

- Year 1
- Year 2
- Year 3
- Year 4

Medication errors are defined as mistakes involving medications that reach the patient (University of Windsor, 2019a)

I have instructed my students to report medication errors at this university.

- 100% of the time (Always)
- 75% of the time

- 50% of the time
- 25% of the time
- 0% of the time

Medication near misses are defined as medication errors that occur but are caught before it reaches the client (University of Windsor, 2019a).

I have instructed my students to report medication near misses at this university.

- 100% of the time (Always)
- 75% of the time
- 50% of the time
- 25% of the time
- 0% of the time

Medication discovered errors are defined as an error made by someone else that was found by the student (University of Windsor, 2019a).

I have instructed my students to report medication discovered errors at this university.

- 100% of the time (Always)
- 75% of the time
- 50% of the time
- 25% of the time
- 0% of the time

The following questions address potential supports in encouraging student incident reporting.

The form is easy to use

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

Students can complete the form

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

Education at clinical meetings helps me to understand the reporting system and importance of reporting

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

"Thank you for reporting" email reinforces the importance of reporting

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

Seeing changes being made based on the reports made

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

Other: _____

The following questions address potential barriers to student incident reporting.

I am afraid to report because I fear I will be blamed for the incident

- Strongly disagree
- Disagree
- Neither disagree or agree

- Agree
- Strongly Agree

I am afraid to report because I fear the student will be blamed

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

I don't understand the reporting process

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

I don't have the time to encourage reporting because I am busy with other clinical instructor responsibilities

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

My clinical placement site discourages reporting

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

I don't understand what constitutes a medication error

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree

- Strongly Agree

I do not understand how reporting improves the clinical education of nursing students

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly Agree

Other: _____

Appendix C

Research Ethics Board Approval, University of Windsor

Today's Date: October 23, 2020
Principal Investigator: Miss Karly Mendler
REB Number: 38519
Research Project Title: REB# 20-173: "Nursing Clinical Instructors' Perceived Supports and Barriers to Reporting Mediation Errors, Near Misses, and Discovered Errors"
Clearance Date: October 23, 2020
Project End Date: December 01, 2020

This is to inform you that the University of Windsor Research Ethics Board (REB), which is organized and operated according to the Tri-Council Policy Statement and the University of Windsor Guidelines for Research Involving Human Participants, has granted approval to your research project. This approval is valid for one year after the clearance date noted above.

An annual Progress Report must be submitted for renewal of the project. The REB may ask for monitoring information at some time during the project's approval period. A Final Report must be submitted at the end of the project to close the file.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the REB. Approval for modifications to an ongoing study can be requested using a Request to Revise Form.

Investigators must also report promptly to the REB:
a) changes increasing the risk to the participant(s) and/or affecting the conduct of the study;
b) all adverse and unexpected events that occur to participants;
c) new information that may affect the risks to the participants or the conduct of the study.

Forms for submissions, notifications, or changes are available on the REB website: [redacted]
If your data are going to be used for another project, it is necessary to submit a secondary use of data application to the REB.

Sincerely,

[redacted], Ph.D., MSS, MLSP
Chair, Office of Research Ethics
University of Windsor
2146 Chrysler Hall North
[redacted]
Email: [redacted]

Appendix D

Speech to be Read to Potential Participants

My name is Karly Mendler and I am a graduate student here at the University of Windsor in the Masters of Science in Nursing stream. I am currently working on my thesis which is studying clinical instructors' perspectives on the supports and barriers they face with reporting medication errors with their students in clinical placements. My thesis committee includes Dr. Ralph, Dr. Giannotti, Dr. Freeman, and Dr. Chung-Yan. The literature suggests that there are many factors that can encourage and discourage medication incident reporting. Medication incidents include medication errors, near misses and discovered errors. By responding to this survey, you will help the faculty of nursing improve the reporting process.

There will be a Qualtrics survey link emailed to you through your university email. The survey will start with the consent form. You can exit the survey at any time you like. Once you have completed the survey, if you are a sessional instructor working as a clinical instructor at the University of Windsor, you will be redirected to a second site that will ask for your personal information in order for you to receive a $10 gift card to Tim Hortons. This section will ask for your name and email address. The two sections of the survey are separate so that there will be no personal information linked to your responses, allowing for de-identification. All data will then be stored on my personal password protected computer. Only myself and my committee will have access to the data. The survey link will arrive in your email around the end of April/beginning of May. The survey will remain open for four weeks. Thank you for taking the time to listen to me and your consideration in completing this survey.

Vita Auctoris

Name:	Karly Mendler
Place of birth:	Windsor, Ontario, Canada
Year of birth:	1992
Education:	General Amherst High School Amherstburg, ON, 2010
	St. Clair College- Pre-Health Sciences- Nursing Windsor, ON, 2014
	University of Windsor- B.Sc. (Nursing), Windsor, ON, 2018
	University of Windsor- M.Sc. (Nursing), Windsor, ON, 2021