Wiley
Nursing Forum
Volume 2024, Article ID 9664624, 9 pages
https://doi.org/10.1155/2024/9664624

WILEY

Research Article

Nurses' Refusal to Report Medication Administration Errors in a Ghanaian Municipality: Uncovering the Barriers with a Quantitative Approach

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Received 11 October 2023; Revised 9 March 2024; Accepted 2 May 2024; Published 24 May 2024

Academic Editor: Marcos Venícios de Oliveira Lopes

Introduction. Effective self-reporting of medication administration errors (MAEs) is crucial for patient safety globally, yet underreporting persists as a significant challenge, hindering policy interventions. Despite extensive studies on barriers to MAE reporting by nurses, limited attention has been given to this issue in Ghana. This study aimed to explore the reasons behind nurses' reluctance to report MAEs, contributing to a broader understanding of this critical issue. *Methods*. A cross-sectional study was conducted among registered nurses at two public health facilities in the Ashanti Region, Ghana. Self-administered questionnaires were distributed to 153 respondents using stratified and simple random sampling. Descriptive and inferential statistics, including chi-square and logistic regression, were employed to analyze 150 completed questionnaires using SPSS version 23, with a significance level set at $P < 0.05$. *Results*. The majority (60.7%) of nurses reported MAEs, primarily to the ward in-charge (72.0%) and documented in the incidence book (54.3%), while only 9% reported to patients. Reasons for nonreporting included fear of criticism (34.5%), litigation (19.5%), losing practice licenses (18.6%), and stigma (17.7%). Significant correlations were found between nurses' sociodemographic characteristics (age, marital status, years of practice, and rank) and their self-reporting of MAEs ($P < 0.05$). *Conclusion*. Despite high levels of self-reported MAEs among nurses, fear remains a pervasive barrier to reporting. Addressing the culture of blame, criticism, and stigma is imperative to enhance nurses' confidence in reporting MAEs globally, transcending geographical boundaries and fostering patient safety on a broader scale.

1. Introduction

Globally, medication errors constitute a significant concern within healthcare systems, accounting for approximately 10% of overall preventable harm among hospitalized patients [1, 2]. The World Health Organization's 2017 report estimated that an annual global cost of US$42 billion was attributable to medication errors, representing 0.7% of total health expenditure [3, 4]. Furthermore, a 2018 British report estimated 237 million medication administration errors worldwide, with Finland reporting 700 to 1700 deaths annually due to medication-related errors [5, 6]. In the United States alone, these errors result in about 7000 patient deaths and 400,000 cases of avoidable harm each year, amounting to a cost of US$3.5 billion [7]. Particularly impactful in low- and middle-income countries, medication errors lead to approximately twice the number of years of healthy life lost compared with high-income countries [8].

Studies by Pham et al. [9] and Dabaghzadeh et al. [10] underscore the significant role of nurses in medication

errors, with nurses accounting for a substantial majority of reported errors [11, 12]. Research has highlighted the prevalence and nature of medication errors in hospital settings across Africa. In Nigeria, for instance, administration errors constituted over 60% of reported medication errors, with nurses responsible for the majority (85%) [13], while nurse-prepared medications showed an error rate of 19.7%, primarily involving incorrect doses [14]. Kenya reported an overall medication administration error rate of 15.1% among nurses, with omission and wrong dose being the most common errors [15].

Defined as preventable events leading to inappropriate medication use or patient harm, medication errors span various stages of healthcare processes, involving professionals, patients, and consumers [16]. Despite efforts to mitigate them, medication errors persist, necessitating a comprehensive understanding and effective interventions [17]. Regulatory bodies such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) mandate reporting of sentinel events to drive systemic improvements and prevent future mishaps [18]. System modifications prompted by error reporting have shown promise in reducing error rates [18–20].

Nurses play a crucial role in error reporting, contributing to organizations such as the Institute of Safe Medication Practices (ISMP) and the Food and Drug Administration (FDA) [21]. Proactive error reporting by nurses has been shown to significantly mitigate drug administration errors [22]. However, underreporting or nonreporting of medication errors persists, fueled by various individual and contextual factors such as fear of punishment, blame, shame, litigation, administrative repercussions, workload, and time constraints [21, 23–30].

In Ghana, medication administration errors are prevalent, with nurses often identified as the main perpetrators [31, 32]. A study conducted in a tertiary healthcare facility in Accra found that 59.9% of nurses committed one or more medication administration errors [33]. Similarly, in the central region of Ghana, the most common errors committed by nurses include preadministration errors and administration technique errors [32]. Despite recognizing the importance of error reporting in enhancing patient safety, research on the barriers to nurses' reporting behaviour in Ghana remains limited [33, 34]. This study aimed to address this gap by investigating the barriers to self-reporting of medication administration errors among nurses in Ghana. By contextualizing the global issue of medication errors within Ghana's specific healthcare challenges, this research seeks to provide insights crucial for tailored interventions and improved patient safety. Understanding these barriers is essential for developing effective strategies to enhance nurses' reporting behaviour and ultimately reduce medication errors in Ghana and beyond. Our study builds upon existing literature by specifically investigating the barriers to self-reporting of medication administration errors among nurses in our study location to provide insights into context-specific challenges and opportunities for improving medication error reporting systems.

2. Materials and Methods

2.1. Study Design and Settings. The study employed a cross-sectional design with a quantitative approach. The study was carried out in the Kwabre East Municipality in the Ashanti Region, Ghana. For the purpose of this study, two major publicly funded health facilities in the Kwabre East Municipality were used.

The first health facility is a polyclinic, and it is estimated to have a 38-bed capacity that has all the units of a polyclinic including a laboratory. The clinical staff is made up of a team of 1 medical assistant, 1 medical officer, 93 nurses, and other paramedical staff. The second is a primary healthcare facility. It offers general health care delivery services and has a bed capacity of 65. It is staffed with 3 medical assistants, 2 medical officers, and 60 registered nurses, of whom 5 have various specialties. The primary health facility also has 25 auxiliary/enrolled nurses, 27 public health nurses, 27 registered midwives, and other paramedical staff. The males' ward, females' ward, children's ward, and emergency units were used for this study.

2.2. Study Population. The study population for the research was nurses licensed by the Nursing and Midwifery Council of Ghana to administer drugs to patients admitted to the various units of the two publicly funded health facilities. These included registered general nurses with a professional identification number (PIN) and enrolled nurses with an auxiliary identification number (AIN) who have worked in the facilities for not less than 3 months and gave informed consent. Nurses on leave, pensioners, and midwives were excluded from the study.

2.3. Sampling Procedure. Two sampling methods were employed for this study: stratified and simple random sampling techniques. The polyclinic had a total nurse population of 93, and the primary health facility had a total nurse population of 98. Slovin's formula [35] was used to determine the representative sample size (n) for each hospital (Table 1):

$$n = N/\left(1 + Ne^2\right), \tag{1}$$

where n = sample size, N = population size, and e = margin of error (0.05) with a confidence interval of 95%.

The summation of the individual sample size generated for the two health facilities brought the overall justifiable sample to 153. Seventy-five and 78 samples were taken from the polyclinic and the primary health facility, respectively. At the two selected health facilities, the samples were subdivided into three strata. At the polyclinic, 25 nurses each were selected from the males' ward, the females' ward, and the emergency unit. The same procedure was repeated at the primary health facility where 26 nurses each were selected from the males' ward, females' ward, and children's ward. These units/wards were purposefully selected because they represent the areas where MAEs are more likely to occur. Additionally, their selection facilitated the exploration of the

Table 1: The facilities, total population, and sample size are estimated by Slovin's formula.

Facilities	"N"	"n"
Facility 1, polyclinic	93	75
Facility 2, primary health care hospital	98	78
Total	191	153

barriers to MAEs reporting across diverse clinical contexts. Wards are large rooms in hospitals where patients are temporarily kept and nursed. A simple random sampling technique (manual lottery technique) was employed in selecting the representative sample in each ward/unit. The attendance register, which records the presence of nurses on duty during specific shifts, was utilized as the sampling frame by assigning a unique identification number to each nurse listed in the register. This numbering system allowed for the creation of a comprehensive list of all eligible participants within the target population. To ensure randomness and reduce bias in participant selection, a random number generator was then used to select participants from the attendance register.

2.4. Data Collection. A structured questionnaire was developed for the purpose of this study. The design of the questionnaire was influenced by the study objectives, the sample selected, and the mode of administration. The questionnaire was in four sections. Section A captured data on the sociodemographic information of the respondents. Section B included data on the factors contributing to medication administration errors (MAEs), encompassing personal factors, organizational factors, and internal environmental factors. Respondents were asked to indicate their level of agreement with the items using a four-point Likert scale, ranging from "Strongly disagree" (1) to "Strongly agree" (4). Section C gathered information on the barriers nurses face when self-reporting MAEs, such as fear of criticism, stigmatization, and concern about losing their practicing PIN/certificate. Response options were limited to "Yes" or "No." Section D collected data on the channels through which MAEs are reported, including reporting to the senior nurse on duty, colleague nurse on duty, ward in charge, and nurse manager. Response options were also limited to "Yes" or "No."

A pretest of the questionnaire was conducted at a nearby health center involving 15 nurses. This preliminary testing phase facilitated the identification of any ambiguities or misunderstandings regarding the questionnaire items. Feedback from participants allowed for the refinement of questions through rewording and clarification to enhance comprehensibility. Additionally, a thorough review of the questionnaire was conducted by a senior colleague with expertise in the phenomenon under study. This comprehensive evaluation enabled the researchers to assess the face, construct, and content validity of the instrument, ensuring its appropriateness for measuring the intended variables. The questionnaire was further checked for reliability using Cronbach's alpha. The test showed that the reliability of the questionnaire was acceptable ($\alpha = 0.78$).

The questionnaires were administered to the respondents who satisfied the inclusion criteria and gave consent. They were given a maximum of 20 minutes to answer the questionnaire. However, those who could not fill the questionnaire within the time limits were given additional time. The questionnaires were collected back by the researchers themselves that same day or the following day and inspected and checked for completeness. The return rate was high. Only three questionnaires were not returned or completed. Data collection lasted for one month (from 31 May to 30 June 2022). Given the constraints associated with accessing the target population and coordinating data collection efforts, a one-month timeframe was deemed feasible to achieve the desired sample size and data quality within the available resources. Additionally, the predefined study timeline was established to ensure the timely completion of data collection and subsequent analysis. The data collection was carried out by an independent researcher who had no affiliations or prior relationships with the health institutions included in the study.

2.5. Data Analysis. The data collected were coded to enable the responses to be grouped into a limited number of categories and analyzed with the help of SPSS version 23.0. The findings of this study were presented in both descriptive and inferential statistics. Descriptive statistics such as frequency, percentages, mean, and standard deviation were used to describe the data. The results were presented in frequency tables. Inferential statistics were used to make inferences or draw conclusions using data draws [36]. A chi-square analysis was used to determine the relationship between the sociodemographic characteristics of the nurses and the self-report of MAEs. Further analysis was performed with a binary logistic regression model to determine the sociodemographic correlates of nurses' self-reports of MAEs. The crude odds ratio was obtained in the bivariate analysis, and all variables with a P value <0.05 were entered into a second model to obtain the adjusted odd ratio. For all statistical tests in this study, a level of statistical significance was set at a P value <0.05 at a 95% confidence interval.

2.6. Ethical Issues. Administrative approval was obtained from the management and authorities of the two health facilities through an introductory letter. The study was then registered and processed for ethical clearance. The ethical approval was granted by the Committee on Human Research, Publication, and Ethics at Kwame Nkrumah University of Science and Technology (CHRPE/AP/577/21). The study also complied with all the ethical considerations stipulated in the Declaration of Helsinki, which are beneficence, respect for human dignity, and justice. Written informed consent was sought from the respondents.

3. Results

3.1. Sociodemographic Characteristics of Respondents. The majority of the respondents were female (72.0%), and 28.0% were males. Most of the respondents (60%) were between the

ages of 20 and 30 years, 25.3% were staff nurses, 40.7% had work experience between 1 and 5 years, 38.7% had a diploma certificate, 56.0% were single, and 80% were Christians (Table 2).

3.2. Barriers to Self-Reporting of MAEs. The majority (60.7%) of the respondents reported MAEs, while 39.3% did not report these errors when they occurred. The fear of being criticized was the number one reason for not reporting MAEs. Furthermore, respondents were scared of being sued (19.5%) or losing their practicing pins/certificates (18.6%). Fear of losing the patient and the fear of MAEs changing the health outcome of the patient were considered by only a few as a barrier to reporting medication errors (Table 3).

3.3. Channels through Which Medication Administration Errors Were Reported. The most common channel for reporting medication errors among nurses was reporting to a ward in-charge at the time of the errors (72.0%). This was followed by reporting to a senior nurse on duty, writing errors in the incidence book (54.3%), reporting to a colleague on duty (50.5%), and filling of an adverse drug reaction form (41.8%). However, few of the respondents did report medication errors to the nurse manager (12.9%), the pharmacist (19.4%), or the doctor (24.5%). The majority (62.3%) of the respondents reported a lack of standard protocol or procedure for reporting MAEs in the facility, and 91.3 did not report MAEs to the patient (Table 4).

3.4. Sociodemographic Characteristics Affecting the Reporting of Medication Errors among Nurses. A chi-square analysis was used to investigate the correlation between sociodemographic characteristics and the reporting of medication errors among the respondents. Sociodemographic characteristics such as age (P value <0.001), marital status (P = 0.010), number of years of practicing (P value = 0.010), and professional rank (P value = 0.037) were all statistically significant with self-reporting of medication errors among respondents. Gender, religion, and level of education were not statistically significant with the reporting of MAEs among the respondents (P value> 0.05) (Table 5).

3.5. Logistic Regression Model for Sociodemographic Correlates of Nurses' Self-Reporting of Medication Administration Errors. In the unadjusted model, nurses between the ages of 31 and 41 years were 73% less likely to report associated medication errors than those between 20 and 30 years (COR = 0.27, 95% CI = 0.13–0.57, P value = 0.001); the confidence interval ranging between 0.13 and 0.57 reinforces the precision of this estimate, showing a relatively narrow range; the narrow CI and the P value of 0.001 further affirm the statistical significance and the reliability of this association, suggesting a strong and precise effect of age on the reporting of MAEs. Also, for nurses with 1–5 years of practice, the likelihood of them reporting MAEs decreased by 56% (COR = 0.44, 95% CI = 0.20–0.99, P value = 0.048). The CI of 0.20 to 0.99 is wider, indicating less precision in the estimate. The CI's closeness to 1 at its upper limit suggests a weaker association.

Table 2: Sociodemographic details of the respondents.

Variable	Frequency	Percentage
Gender		
Male	42	28.0
Female	108	72.0
Age		
20–30 years	90	60.0
31–41 years	49	32.7
42–52 years	6	4.0
53 and above	5	3.3
Religion		
Christianity	120	80.0
Islam	30	20.0
Marital status		
Married	59	39.3
Single	84	56.0
Divorced	5	3.3
Others	2	1.3
Number of years of practicing nursing		
Less than 1 year	50	33.3
1–5 years	61	40.7
6–10 years	32	21.3
11–15 years	3	2.0
15 years above	4	2.7
Highest level of education		
Certificate	36	24.0
Diploma	58	38.7
Postdiploma	15	10.0
First degree	35	23.3
Master degree	6	4.0
Professional rank		
Enrolled nurse	28	18.7
Senior enrolled nurse	20	13.3
Principal enrolled nurse	7	4.7
Staff nurse	38	25.3
Senior staff nurse	15	10.0
Nursing officer	24	16.0
Senior nursing officer	10	6.7
Principal nursing officer	8	5.3

After adjusting the model, only age was significant, and the likelihood for nurses between the ages of 31 and 41 years to report MAEs decreased by 74% (AOR = 0.26, 95% CI = 0.12–0.58, P value = 0.001). The 95% CI of 0.12 to 0.58 suggests a high level of precision and reliability in this estimate. This demonstrates a strong, precise, and robust association between age and the likelihood of reporting MAEs, confirming that age is a significant factor in MAE reporting, independent of other variables (Table 6).

4. Discussion

The majority admitted to reporting medication errors, which suggests that there is a willingness among nurses to report medication errors. This is consistent with two studies conducted in Ethiopia [37] and Israel [38], which found satisfactory self-reporting behaviour among the nurses. It must be noted that the percentage of the nurses who reported medication errors in this study is relatively higher

Table 3: Barriers to self-reporting of medication administration errors.

Variable	Frequency	Percentage
Do you officially report administration errors when they occur?		
Yes	91	60.7
No	59	39.3
If not, what would be your reason for not reporting?		
Fear of being criticized	39	34.5
Stigmatization	20	17.7
Fear of losing practicing pins/certificate	21	18.6
Fear of being sued	22	19.5
Bad communication	1	0.7
Fear of losing the patient	9	6.0
Fear of MAE affecting the health outcome of the patient	3	2.0

Table 4: Channels through which medication administration errors were reported.

Variable	Frequency	Percentage
Senior nurse on duty		
Yes	59	64.8
No	32	35.2
Colleague nurse on duty		
Yes	47	50.5
No	45	49.5
Ward in-charge		
Yes	67	72.0
No	26	28.0
Nurse manager		
Yes	12	12.9
No	81	87.1
Pharmacist		
Yes	18	19.4
No	75	80.6
Doctor		
Yes	23	24.5
No	71	75.5
Written in incidence book		
Yes	50	54.3
No	42	45.7
Filled ADR form		
Yes	38	41.8
No	53	58.2
Is there any standard protocol/procedure for reporting medication errors in your facility?		
Yes	55	37.7
No	91	62.3
Are medication administration errors reported to the patient?		
Yes	13	8.7
No	136	91.3

ADR = adverse drug reaction form.

Table 5: Sociodemographic characteristics affecting the reporting of medication administration errors among the nurses.

Characteristics	Yes	No	P value
Age			<0.001**
20–30 years	66 (44.0%)	24 (16.0%)	
31–41 years	21 (14.0%)	28 (18.7%)	
42–52 years	4 (2.7%)	2 (1.3%)	
53 and above	—	5 (3.3%)	
Gender			0.571
Male	27 (18.0%)	15 (10.0%)	
Female	64 (42.7%)	44 (29.3%)	
Religion			0.181
Christians	76 (50.7%)	44 (29.3%)	
Islam	15 (10.0%)	15 (10.0%)	
Marital status			0.010*
Single	60 (40.0%)	24 (16.0%)	
Married	29 (19.3%)	30 (20.0%)	
Divorced	2 (1.3%)	3 (2.0%)	
Others	—	2 (1.3%)	
Years of practicing			0.010*
Less than 1 year	37 (24.7%)	13 (8.7%)	
1–5 years	34 (22.7%)	27 (18.0%)	
6–10 years	17 (11.3%)	15 (10.0%)	
11–15 years	3 (2.0%)	—	
Above 15 years	—	4 (2.7%)	
Level of education			0.868
Health assistant certificate	20 (13.3%)	16 (10.7%)	
Diploma	38 (25.3%)	20 (13.3%)	
Postdiploma	9 (6.0%)	6 (4.0%)	
First degree	21 (14.0%)	14 (9.3%)	
Master degree	3 (2.0%)	3 (2.0%)	
Professional rank			0.037*
Enrolled nurse	18 (12.0%)	10 (6.7%)	
Senior enrolled nurse	9 (6.0%)	11 (7.3%)	
Principal enrolled nurse	3 (2.0%)	4 (2.7%)	
Staff nurse	25 (16.7%)	13 (8.7%)	
Senior staff nurse	13 (8.7%)	2 (1.3%)	
Nursing officer	17 (11.3%)	7 (4.7%)	
Senior nursing officer	4 (2.7%)	6 (4.0%)	
Principal nursing officer	2 (1.3%)	6 (4.0%)	

Asterisk values only indicate the level of significant difference between the variables.

than that reported in Jember et al. [37] (57.4%), Kagan and Barnoy [38] (46%), and Degley [32] (35%). Our study is in contrast with Osborne et al. [39], who asserted that medication errors are underreported by nurses. Thus, only 3.5% reported medication administration errors. It is possible that nurses in this study feel confident to report because they were sure the errors they committed and reported would not result in any consequence on their future career, practice, and appraisal. A relatively higher percentage of nurses with positive self-reporting behaviour have been reported in university hospitals in Jordan [27] (78%) and Nigeria [40] (84.4%). The organizational culture within university hospitals in Jordan and Nigeria may have played a significant role in shaping nurses' attitudes towards error reporting. Hospitals with a strong emphasis on transparency, learning

Table 6: Logistic regression model for sociodemographic factors associated with reporting of medication errors.

Factors	COR (95% CI)	*P* value	AOR (95% CI)	*P* value
Age				
20–30 years	Reference		Reference	
31–41 years	0.27 (0.13–0.57)	0.001	0.26 (0.12–0.58)	0.001
42–52 years	0.73 (0.13–4.23)	0.723	0.73 (0.11–4.97)	0.749
53 and above*	—	—	—	—
Gender				
Male	Reference		Reference	
Female	0.81	0.572	—	—
Marital status				
Single	1.45 (0.23–9.32)	0.695	—	—
Married	3.75 (0.59–23.87)	0.162	—	—
Divorced*	—	—	—	—
Others	Reference		Reference	
Years of practicing				
Less than 1 year	Reference		Reference	
1–5 years	0.44 (0.20–0.99)	0.048	1.02 (0.40–2.61)	0.972
6–10 years	0.40 (0.16–1.02)	0.055	2.31 (0.50–10.70)	0.283
11–15 years*	—		—	
Above 15 years*	—		—	
Rank				
Enrolled nurse	Reference		Reference	
Senior enrolled nurse	0.45 (0.14–1.47)	0.187	—	—
Principal enrolled nurse	0.42 (0.08–2.25)	0.308	—	—
Staff nurse	1.07 (0.38–2.97)	0.899	—	—
Senior staff nurse	3.61 (0.67–19.33)	0.134	—	—
Nursing officer	1.35 (0.42–4.35)	0.616	—	—
Senior nursing officer	0.37 (0.08–1.63)	0.189	—	—
Principal nursing officer	0.19 (0.03–1.10)	0.063	—	—

Variables with * were empty because there was no observation. Models were adjusted for significant variables. COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval.

from mistakes, and supportive reporting systems may foster a more positive environment for self-reporting behaviours [41].

The channels through which the errors were reported were mostly to the ward in-charge, followed by the senior nurse on duty, and then transcribed in the incidence book. Reporting to the nurse manager, the pharmacist, and the doctor was the least channel through which the errors were reported. The predominant reporting of medication errors to the ward in-charge and senior nurse on duty in this study may be influenced by a combination of hierarchical structures, established reporting protocols, accessibility and availability of personnel, perceived accountability, and cultural norms regarding communication and authority. Contrary to our study finding, a qualitative study conducted in Australia by Tariq et al. [42] found that nurses mostly report medication errors to nurse managers. Nonetheless, the same study [42] is consistent with our finding that nurses infrequently reported MAEs to the pharmacy. An encouraging 41.8% filled adverse drug reaction form. This finding is contrary to that of Garnerin et al. [43] and Degley [32] that nurses mostly report MAEs to colleague nurses rather than filling an adverse drug event form. The self-reporting behaviour of nurses in this study is commendable especially because information about medication administration errors is needed to help hospital management devise appropriate organizational strategies to reduce or prevent the incidence of subsequent medication administration errors. However, reporting errors exclusively to the ward in-charge or senior nurse on duty may result in limited feedback and learning opportunities for nurses. Without broader involvement from multidisciplinary teams or quality improvement initiatives, opportunities for organizational learning and system improvement may be missed. Reporting the error to the patient involved was not a common practice among the nurses. More than 90% refused to report MAEs to the patient. This is quite unacceptable considering that in recent years, interwoven practices such as communication with patients on issues relating to their health are globally recognized as the gold standard approach to healthcare delivery. It promotes patient engagement, patient satisfaction, and empowerment [44]. Several previous studies [45–47] have recognized the role of the patient in reporting MAEs and adverse drug effects. Reporting MAEs to the patient may be an important step to improving patient awareness and involvement in monitoring their drug therapy, prompting nurses of possible MAEs and reporting adverse drug effects.

Despite the respondents' satisfactory self-reporting behaviour, it was worrying to note that a substantial fraction of them did not report medication errors, suggesting a potential gap in patient safety practices within the healthcare institution. A possible reason for this is that there may be systemic issues within the healthcare institution that discourage or inhibit nurses from reporting medication errors.

These issues could include a lack of a supportive reporting culture, fear of repercussions or punishment for reporting errors, inadequate reporting mechanisms, or a perception that reporting errors is futile or ineffective. Though our finding is consistent with a study in Israel by Kagan and Barnoy [38], it is important to note that a relatively higher proportion (66.7%) of their study participants did not report medication errors. The reason for the difference in the percentage may be increased fear of lawsuits and withdrawal of PIN among the samples in the latter setting (Israel). Among those who responded to not reporting the errors, 34.5% considered fear of being criticized as a reason for not reporting MAEs. This is consistent with the study of Mayo and Duncan [27], which found that a relatively higher percentage of nurses failed to report MAEs due to fear of reaction from administrators and coworkers. Similar findings are reported by Yousef et al. [28] and Afaya et al. [48]. Also, 19.5% and 18.6% did not report MAEs due to fear of being sued and fear of losing practicing PIN/certificate, respectively, which suggests that nurses perceive a high level of personal risk associated with reporting errors. This fear may stem from a lack of clarity or confidence in legal protections or institutional support for nurses who report errors, as well as a general awareness of the potential legal consequences of medication errors. Corresponding findings are reported by Osborne et al. [39] and Vrbnjak et al. [29]. Only a small number of respondents mentioned experiencing stigma as a reason for not reporting MAEs. Nonetheless, it was still surprising as we have yet to find a study that reported stigma as a barrier to the self-reporting of MAEs. Stigmatization of nurses who report MAEs can have significant implications for the safety culture within healthcare institutions. When nurses fear stigmatization or negative consequences for reporting errors, they may be less likely to disclose incidents, leading to underreporting and a lack of transparency in error reporting systems.

A striking and important finding from this study was the fact that the fear of losing the patient and the fear of MAEs changing the health outcome of the patient were not considered significant barriers to not reporting MAEs. This implies that respondents' reasons for not reporting MAEs were centered on self rather than on the patient. Strategically, interventions needed to eliminate barriers and improve MAE reporting should include sensitisation and education of nurses on the fact that the ultimate goal of pharmacovigilance—identifying, reporting, assessing, and preventing MAEs—is for the patients' safety [20].

A chi-square analysis was used to investigate the association between sociodemographic characteristics and the reporting of medication errors among the respondents. The findings showed age, marital status, number of years of practicing, and professional rank were all statistically significantly associated with self-reporting of MAEs among the respondents. The logistic regression analysis showed nurses within the age range of 31–41 years were less likely to report MAEs than those within 20–30 years. Nurses in the age range of 31–41 years may have developed a greater sense of professional confidence and autonomy compared with their younger counterparts (20–30 years). This increased confidence could potentially lead to a perception of self-reliance in managing medication administration errors (MAEs) without feeling the need to report them. However, younger nurses within the age group of 20–30 years, who may be relatively less experienced, might exhibit a greater tendency to report MAEs as they are still adapting to their roles and may perceive reporting errors as part of their learning process and professional development. Our finding highlights the importance of considering age-related factors in understanding nurses' behaviour towards reporting MAEs. Gender and level of education were not significantly associated with the reporting of MAEs. Contrarily, in other studies [49, 50], education was considered a significant predictor of MAE reporting among nurses. Nonetheless, educational programs can enhance nurses' understanding of the importance of error reporting, clarify reporting procedures, and mitigate factors contributing to underreporting. In other settings, the use of educational programs resulted in increased reporting rates and improved perceptions of error reporting among participating nurses [51].

4.1. Limitations of the Study. The study was carried out at two publicly funded health facilities with limited samples. These should be considered important limitations affecting the generalizability of this study. Also, the results and conclusions drawn were based on a one-time assessment of nurses self-reporting behaviour and barriers to reporting MAEs. The possibility of nurses over-reporting their practice behaviours should not be overlooked. The study was solely quantitative and could not generate in-depth data on barriers to nurses' self-report of MAEs. Future studies could employ observational studies or qualitative approaches to data collection to better understand, examine, and evaluate nurses' perceived barriers to reporting medication errors. Future researchers should consider assessing the medication administration error reporting system if there is any.

4.2. Implications for Practice. Practice implications arising from the study findings include the recommendation to implement anonymous reporting systems within healthcare institutions. These systems are essential to encourage nurses to report medication errors without fear of reprisal or stigma, fostering a blame-free reporting culture that facilitates the identification of systemic issues contributing to medication errors. Additionally, comprehensive education and training programs should be provided to nurses to enhance their knowledge and skills related to error recognition, reporting procedures, and the importance of a blame-free reporting culture. Ongoing education initiatives empower nurses to confidently report errors and contribute to a culture of continuous improvement in patient safety. Furthermore, establishing feedback mechanisms within healthcare institutions is crucial to providing timely and constructive feedback to nurses who report errors. These feedback sessions help identify areas for improvement, recognize successes in error reporting, and reinforce the importance of error reporting in enhancing patient safety. Lastly, promoting leadership support and engagement is

essential for driving policy changes, allocating resources for training initiatives, and championing patient safety initiatives at all levels of the organization.

5. Conclusion

The self-reporting of MAEs by the nurses was high compared to previous studies and commendable, which also means eliminating the fear of losing practicing PIN and the fear of being criticized would significantly improve nurses' confidence and self-reporting behaviour. The implementation of anonymous reports via an electronic medication management system is recommended. Anonymity safeguards confidentiality and promotes a blame-free reporting culture, facilitating open communication and transparency in error reporting processes. Furthermore, healthcare institutions should prioritize efforts to eliminate the culture of blaming, criticizing, and punishing associated with error reporting by cultivating a supportive organizational culture and establishing feedback mechanisms.

Data Availability

All data relevant to the manuscript are reported in the tables. The raw data are available from the corresponding author upon a reasonable request.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Authors' Contributions

DSB was involved in the development of the concept, idea, methodology, data collection, and manuscript drafting; EK was involved with the data analysis; EAB, EK, and FD assisted with manuscript drafting, editing, and review; and KOB was involved with project supervision, editing, and review. All authors have approved the manuscript and agreed on submission to the Nursing Forum.

Acknowledgments

The authors wish to acknowledge the management and staff of the two government health facilities for granting us permission to carry out this research. The authors are also grateful to the nurses whose consent and contribution have made this research paper a successful one.

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