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Social Media Distraction and Medication Error: A Quantitative Patient Safety Analysis in Nursing Practice across Teaching Hospitals in North-Central Nigeria

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Abstract **Original Research Article**

Medication error remains a persistent and clinically significant patient safety concern within nursing practice, particularly in resource-constrained healthcare systems such as Nigeria, where structural pressures intersect with emerging digital behaviours. In recent years, the increasing penetration of smartphones and social media platforms into clinical environments has introduced a measurable form of cognitive distraction that may compromise attentional stability during medication administration. This study quantitatively examined the relationship between social media distraction and medication error among nurses in selected teaching hospitals across the North-Central geopolitical zone of Nigeria.A cross-sectional survey design was employed, involving 180 registered nurses selected through stratified random sampling from major teaching hospitals, including University of Abuja Teaching Hospital (Gwagwalada), Jos University Teaching Hospital, University of Ilorin Teaching Hospital, Federal Medical Centre Lokoja, Federal Medical Centre Makurdi, and Benue State University Teaching Hospital. Data were collected using a structured questionnaire titled Social Media Distraction and Medication Error Scale (SMDMES) and analysed using descriptive statistics, Pearson Product Moment Correlation, and simple linear regression at a 0.05 level of significance.Findings revealed a statistically significant positive relationship between social media distraction and medication error ($r = 0.63$, $p < 0.05$), while regression analysis indicated that social media distraction significantly predicted medication error, accounting for 40% of the variance ($R^2 = 0.40$, $F = 118.45$, $p < 0.05$). The study concludes that medication error in nursing practice is influenced not only by structural healthcare limitations but also by cognitive fragmentation induced by social media engagement during clinical duties. Strengthening institutional regulation, workload management, and cognitive discipline training is recommended to improve patient safety outcomes.

Keywords: Social media distraction, medication error, nursing practice, North-Central Nigeria, teaching hospitals, patient safety, cognitive load, clinical governance.

Introduction

Background to the Study

Medication administration remains one of the most sensitive and high-risk responsibilities in nursing practice, largely because it directly determines patient safety outcomes and treatment effectiveness. Nurses occupy a critical position in the medication use process, serving as the final checkpoint between prescription and patient administration. This position demands sustained attention, clinical accuracy, and strict adherence to established safety protocols such as the "five rights" of medication administration. Despite advancements in patient safety frameworks and clinical governance globally, medication errors continue to occur with concerning frequency, thereby posing a significant burden on healthcare systems.

In many developing healthcare systems, including Nigeria, the persistence of medication errors is strongly linked to structural and operational constraints within healthcare delivery. Teaching hospitals, particularly in high-demand regions such as North-Central Nigeria, often operate under conditions characterised by high patient inflow, inadequate nurse-to-patient ratios, and prolonged working hours. These pressures create an environment of cognitive overload where nurses are required to make rapid clinical decisions under time constraints. In such settings, even minor lapses in attention can result in significant clinical consequences, particularly during medication preparation and administration phases.

Concurrently, the modern clinical environment has undergone substantial transformation due to the widespread adoption of digital communication technologies. Smartphones have become an integral part of daily life, including within healthcare settings, where they are used for communication, coordination, and information sharing. However, the increasing presence of social media platforms such as *WhatsApp, Facebook, Instagram,* and *X (formerly Twitter)* has introduced an additional layer of non-clinical engagement into clinical environments. While these platforms may enhance interpersonal communication and professional coordination, their use during duty hours presents a potential source of cognitive distraction that can interfere with clinical tasks requiring precision and sustained focus.

The concern surrounding social media distraction in healthcare is not merely theoretical, as emerging empirical evidence suggests that interruptions during clinical tasks significantly increase the likelihood of medication errors. Studies have shown that even brief attentional disruptions during medication preparation can compromise working memory, reduce procedural accuracy, and increase the probability of near-miss events (Alomari et al., 2021). In Nigerian teaching hospitals, where nurses frequently manage multiple patients simultaneously under demanding conditions, the introduction of social media-related interruptions further complicates an already high-risk clinical environment. Informal observations suggest that nurses often engage with mobile devices during duty hours, particularly for communication purposes, thereby unintentionally increasing exposure to attentional fragmentation.

Against this backdrop, the relevance of examining the relationship between social media distraction and medication error becomes increasingly important, particularly within the context of North-Central Nigerian teaching hospitals. Institutions such as the University of Abuja Teaching Hospital (Gwagwalada), Jos University Teaching Hospital, University of Ilorin Teaching Hospital, Federal Medical Centre Lokoja, Federal Medical Centre Makurdi, and Benue State University Teaching Hospital represent major referral centres where nursing workload is consistently high and clinical demands are intense. Within these environments, understanding how digital behaviours intersect with clinical performance is essential for strengthening patient safety systems. This study therefore situates itself within this emerging discourse by empirically investigating the extent to which social media distraction influences medication error among nurses in these teaching hospitals.

Conceptual Review

Social Media Distraction in Nursing Practice

Social media distraction, within the context of nursing practice, is increasingly understood as a form of cognitive interference arising from non-clinical digital engagement during duty hours. It involves the use of smartphones and related devices for accessing social networking platforms such as *WhatsApp, Facebook, Instagram,* and *X(formerly Twitter)* while performing clinical responsibilities. Conceptually, this behaviour extends beyond mere phone usage; it represents a shift in attentional focus from patient-centred care to digitally mediated social interaction. In nursing environments where precision and continuity of attention are essential, such shifts may introduce clinically significant risks.

From a conceptual standpoint, social media distraction is characterised by its interruptive and self-reinforcing nature**.** Unlike traditional workplace interruptions that are externally imposed and often brief, social media engagement is voluntary, continuous, and psychologically rewarding. Notification systems, message alerts, and algorithm-driven content streams are intentionally designed to capture attention repeatedly, thereby increasing the likelihood of sustained disengagement from clinical tasks. In Nigerian teaching hospitals, this phenomenon is further reinforced by the dual functional use of smartphones for both professional communication and personal social interaction, making it difficult to clearly separate essential communication from non-essential engagement during duty hours.

Empirical literature supports this conceptualisation by linking smartphone use during clinical duties to reduced attentional control and increased error propensity. For instance, Kim et al. (2024) found that healthcare workers who frequently engage with smartphones during clinical tasks exhibit higher rates of near-miss events and procedural inaccuracies. Similarly, studies within African healthcare contexts suggest that mobile phone use among nurses is often rationalised as necessary for coordination, particularly in understaffed environments, yet this practice inadvertently contributes to attentional fragmentation and reduced clinical vigilance (Eze et al., 2023).

Medication Error in Nursing Practice

Medication error is conceptually defined as any preventable event that may lead to inappropriate medication use or patient harm while the medication is under the control of healthcare professionals. Within nursing practice, it primarily occurs during medication preparation, dosage calculation, verification, and administration processes. Nurses occupy a critical position in this chain as the final checkpoint, making their attentional accuracy central to patient safety outcomes.

Conceptually, medication error is best understood not merely as a procedural failure but as a patient safety outcome influenced by cognitive, environmental, and organisational factors**.** It reflects a breakdown in the sequential decision-making process required for safe medication administration. These breakdowns may result from memory lapses, misinterpretation of prescriptions, incorrect dosage calculations, or failure to adhere to established safety protocols such as the “five rights” of medication administration.

In the Nigerian healthcare context, medication errors have traditionally been associated with systemic issues such as inadequate staffing, high workload, poor supervision, and communication gaps among healthcare professionals (Ogunleye et al., 2023). However, contemporary patient safety discourse increasingly recognises the role of cognitive and behavioural factors, particularly distraction and multitasking, in exacerbating error occurrence. This shift in conceptual understanding highlights the need to examine not only structural determinants but also attentional and digital behavioural influences within clinical environments.

Empirical and Theoretical Positioning of the Constructs

Recent empirical studies have strengthened the conceptual linkage between clinical distraction and medication error. Alomari et al. (2021)

demonstrated that interruptions during medication administration significantly increase error likelihood due to disruption of working memory and task sequencing. Similarly, Zhang et al. (2022) observed that cognitive overload and divided attention impair clinical decision-making accuracy, particularly in high-pressure healthcare environments.

Within this emerging evidence base, social media platforms are increasingly recognised as significant sources of clinical interruption. Unlike conventional workplace distractions, social media engagement introduces a unique form of cognitive pull that is both frequent and emotionally engaging, thereby increasing the difficulty of disengagement during clinical tasks. This is particularly relevant in nursing practice, where sustained attention is essential for safe medication administration.

In synthesising these perspectives, it becomes evident that social media distraction and medication error are conceptually linked through the mechanism of attentional disruption and cognitive overload**.** This relationship is particularly pronounced in Nigerian teaching hospitals, where high patient volume, workforce limitations, and informal smartphone usage culture intersect to create a high-risk clinical environment for medication errors.

Conceptual Framework

The conceptual framework for this study is built on the premise that medication error in nursing practice is not an isolated procedural failure, but the outcome of interacting cognitive, behavioural, and environmental factors within clinical settings. In this study, emphasis is placed on the role of social media distraction as an independent cognitive-behavioural variable**,** which influences attentional stability and subsequently affects medication error occurrence among nurses in teaching hospitals in North-Central Nigeria.

At the centre of the framework is the understanding that nursing tasks, particularly medication administration, require sustained cognitive engagement and sequential information processing. This process depends heavily on working memory, attention continuity, and procedural discipline. Any interruption within this cognitive chain introduces the possibility of deviation from standard medication protocols. In this regard, the framework assumes that attentional stability is a critical mediating mechanism through which external and internal distractions translate into clinical outcomes.

Independent Variable: Social Media Distraction

Social media distraction represents the independent variable in this framework. It refers to non-clinical engagement with digital platforms such as *WhatsApp, Facebook, Instagram*, and *X* during official clinical duties. This engagement includes activities such as messaging, browsing, responding to notifications, and engaging in social media interactions while performing nursing tasks.

Conceptually, social media distraction is treated as a continuous cognitive interference variablerather than a single event. Its effect is cumulative, as repeated interruptions gradually weaken sustained attention capacity. In Nigerian teaching hospitals, this variable is particularly relevant due to the widespread use of smartphones among healthcare professionals for both professional communication and personal social interaction during duty hours.

Mediating Variable: Attentional Stability

Attentional stability serves as the mediating construct in the framework. It refers to the nurse's ability to maintain consistent focus on medication-related tasks without cognitive interruption or task-switching. This construct is central to safe medication administration because it governs the continuity of cognitive processes required for accurate dosage calculation, patient identification, and adherence to medication protocols.

Within the framework, social media distraction negatively affects attentional stability by introducing competing cognitive demands. Each instance of digital engagement interrupts the cognitive flow of medication-related tasks, thereby

reducing working memory efficiency and increasing the likelihood of procedural lapses. Over time, reduced attentional stability becomes a key pathway through which distraction translates into clinical error.

Dependent Variable: Medication Error

Medication error is the dependent variable in this framework and represents the primary patient safety outcome of interest. It is conceptualised as any preventable deviation occurring during the medication administration process that may lead to inappropriate medication use or patient harm.

These errors may manifest as incorrect dosage administration, delayed medication delivery, wrong patient identification, documentation inaccuracies, or failure to adhere to prescribed protocols. Within the framework, medication error is understood as the final outcome of a disrupted cognitive process, where attentional instability compromises the accuracy and reliability of nursing actions.

Contextual Moderating Variables

The framework further acknowledges that the relationship between social media distraction and medication error does not occur in isolation but is influenced by contextual and organisational factors. These include nurse-to-patient ratio, workload intensity, shift patterns, institutional policies on smartphone use, and the general clinical environment.

In North-Central Nigerian teaching hospitals, high patient turnover and staffing shortages intensify cognitive load, thereby increasing the susceptibility of nurses to distraction-related errors. In such environments, even minimal attentional disruptions may have amplified effects on medication safety outcomes.

Integrated Conceptual Linkage

The framework proposes a directional relationship in which social media distraction (independent variable) reduces attentional stability (mediating variable)**,** which in turn increases the likelihood of medication error (dependent variable)**.** This relationship is strengthened or weakened by contextual factors such as workload pressure and institutional regulation.

The theoretical foundation of this linkage is supported by Cognitive Load Theory, which argues that working memory has limited processing capacity. When nurses engage in social media activities during clinical tasks, extraneous cognitive load is introduced, thereby reducing available cognitive resources for medication-related decision-making. This increases the probability of error, particularly in high-pressure clinical environments such as Nigerian teaching hospitals.

Statement of the Problem

Medication error continues to represent a persistent and preventable threat to patient safety within nursing practice, despite the existence of established clinical guidelines, safety protocols, and institutional monitoring systems. In nursing care, particularly within teaching hospital environments, medication administration is expected to follow strict procedural standards designed to minimise risk and ensure optimal patient outcomes. However, evidence from both global and local healthcare systems suggests that these errors remain recurrent, thereby raising concerns about underlying contributory factors that extend beyond conventional explanations such as staffing shortages and workload pressure.

In the Nigerian healthcare context, particularly within teaching hospitals in the North-Central geopolitical zone, medication errors persist in spite of ongoing efforts to strengthen clinical governance. Institutions such as the University of Abuja Teaching Hospital (Gwagwalada), Jos University Teaching Hospital, University of Ilorin Teaching Hospital, Federal Medical Centre Lokoja, Federal Medical Centre Makurdi, and Benue State University Teaching Hospital continue to operate under conditions characterised by high patient inflow, limited nursing personnel, and time-sensitive clinical demands. These structural constraints have traditionally been identified as major contributors to

medication errors. However, emerging realities within clinical environments suggest that additional non-structural factors may also be influencing error occurrence.

Objectives of the Study

1. To determine the level of social media distraction among nurses.
2. To assess the prevalence of medication errors in nursing practice.
3. To examine the relationship between social media distraction and medication error.
4. To determine the predictive effect of social media distraction on medication error.

Hypotheses

H_{01}: There is no significant relationship between social media distraction and medication error.
H_{02}: Social media distraction does not significantly predict medication error.

Methods

Research Design

This study adopted a cross-sectional quantitative survey research design. The choice of this design was informed by the need to obtain measurable data on the relationship between social media distraction and medication error at a specific point in time. A cross-sectional approach is considered appropriate in behavioural and health sciences when the objective is to examine associations between variables without manipulating the study environment. In this context, it allowed the researcher to capture real-time self-reported experiences of nurses regarding digital distraction and medication safety outcomes within their clinical practice.

Study Area

The study was conducted in selected teaching hospitals in the North-Central geopolitical zone of Nigeria, a region characterised by a high concentration of federal and state-owned tertiary health institutions. The selected hospitals include:

- University of Abuja Teaching Hospital (Gwagwalada)
- Jos University Teaching Hospital
- University of Ilorin Teaching Hospital
- Federal Medical Centre Lokoja
- Federal Medical Centre Makurdi
- Benue State University Teaching Hospital

These institutions were purposively selected due to their status as referral centres with high patient turnover, diverse clinical departments, and significant nursing workload. The healthcare environment in these hospitals provides a relevant setting for examining medication administration practices under conditions of operational pressure and cognitive demand.

Population of the Study

The population for this study comprised all registered nurses working in clinical units (medical, surgical, emergency, paediatrics, and outpatient departments) across the selected teaching hospitals in North-Central Nigeria. These nurses are directly involved in medication preparation and administration, making them suitable respondents for the study.

Sample Size and Sampling Technique

A total of 180 registered nurses were selected as the sample size for the study. This sample size was considered adequate for statistical generalisation in quantitative behavioural research.

A stratified random sampling technique was employed to ensure proportional representation across the selected hospitals and clinical units. Each hospital constituted a stratum, and within each stratum, nurses were randomly selected based on their availability and inclusion criteria. This approach ensured fairness in representation and reduced sampling bias, while also capturing

variations in clinical exposure across different hospital environments.

Instrument for Data Collection

Data were collected using a structured questionnaire titled "Social Media Distraction and Medication Error Scale (SMDMES)". The instrument was designed by the researcher based on extensive literature review and conceptual understanding of the study variables.

The questionnaire was divided into three sections:

- **Section A:** Demographic information of respondents (age, gender, years of experience, department)
- **Section B:** Items measuring social media distraction during clinical duties
- **Section C:** Items measuring self-reported medication error occurrences

Responses were measured using a 5-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1). The instrument focused on frequency, behavioural patterns, and perceived impact of social media use during medication-related tasks.

Validity and Reliability of Instrument

To ensure the quality and appropriateness of the instrument, content and face validity were established through expert review by specialists in nursing science, clinical governance, and health research methodology. Their feedback was used to refine item clarity, relevance, and measurement accuracy.

Reliability of the instrument was tested using Cronbach's Alpha coefficient, yielding a value of 0.82**,** which indicates a high level of internal consistency. This confirms that the instrument is reliable for measuring social media distraction and medication error constructs in a nursing population.

Method of Data Collection

Data collection was carried out through direct administration of questionnaires to respondents across the selected teaching hospitals. Permission was obtained from relevant hospital authorities, and ethical considerations such as confidentiality, voluntary participation, and anonymity were strictly observed. Respondents were assured that the data collected would be used solely for academic purposes.

Method of Data Analysis

Data obtained from the field were analysed using both descriptive and inferential statistical techniques. Specifically:

- **Descriptive statistics** (frequency, mean, and standard deviation) were used to summarise respondents' demographic characteristics and variable distributions.
- **Pearson Product Moment Correlation Coefficient (PPMC)** was used to test the relationship between social media distraction and medication error.
- **Simple linear regression analysis** was employed to determine the predictive effect of social media distraction on medication error.

All hypotheses were tested at a 0.05 level of significance, and results were interpreted based on probability values and coefficient strength.

Ethical Consideration

Ethical integrity was maintained throughout the study. Participation was voluntary, informed consent was obtained from all respondents, and confidentiality was strictly upheld. No personal identifiers were collected, and respondents were assured that their responses would not affect their professional standing in any form.

Results

This section presents the empirical findings of the study in line with the stated objectives and hypotheses. Data analysis was carried out using descriptive statistics, Pearson Product Moment

Correlation, and simple linear regression. The results are presented in a structured manner to reflect the relationship and predictive influence of social media distraction on medication error among nurses in selected teaching hospitals in North-Central Nigeria.

Demographic Characteristics of Respondents

The demographic profile of respondents was analysed to understand the distribution of nurses involved in the study across selected teaching hospitals.

The results showed that a higher proportion of respondents were female nurses, reflecting the general gender distribution in the nursing profession in Nigeria. A significant number of respondents fell within the age range of 25–40 years, indicating a predominantly young and active nursing workforce. In terms of professional experience, most respondents had between 3 and 10 years of clinical experience, suggesting that the sample consisted largely of moderately experienced practitioners who are actively engaged in clinical duties, including medication administration.

The distribution across hospitals also indicated relatively balanced participation from the selected teaching hospitals, thereby enhancing the representativeness of the data collected from University of Abuja Teaching Hospital (Gwagwalada), Jos University Teaching Hospital, University of Ilorin Teaching Hospital, Federal Medical Centre Lokoja, Federal Medical Centre Makurdi, and Benue State University Teaching Hospital.

Descriptive Analysis of Study Variables

Level of Social Media Distraction

The descriptive analysis revealed a moderate to high level of social media engagement among nurses during clinical duty hours. A considerable number of respondents indicated that they frequently check messages or notifications on social media platforms such as WhatsApp and Facebook during work shifts, including periods close to or during medication rounds.

The mean score for social media distraction items indicated an overall tendency towards agreement that smartphones are actively used during duty hours for non-clinical communication. This suggests that social media engagement has become a routine aspect of nursing workflow in the selected teaching hospitals, despite its potential implications for patient safety.

Prevalence of Medication Error

The analysis of medication error indicators showed a moderate level of occurrence among respondents. Reported incidents included delayed medication administration, occasional dosage inconsistencies, documentation errors, and near-miss events.

While respondents did not indicate extremely high levels of severe medication errors, the presence of recurrent minor errors suggests underlying vulnerabilities in the medication administration process. These findings are particularly significant because even minor medication errors can escalate into serious patient safety concerns if not properly managed.

Test of Hypothesis One

H_{01}: There is no significant relationship between social media distraction and medication error.

A Pearson Product Moment Correlation analysis was conducted to determine the relationship between social media distraction and medication error among nurses.

Result:

- $r = 0.63$
- $p = 0.000$ ($p < 0.05$)

Decision:

The null hypothesis was rejected.

Interpretation:

The result indicates a strong and statistically significant positive relationship between social media distraction and medication error. This implies that an increase in social media engagement during clinical duties is associated with an increase in the occurrence of medication errors among nurses in the selected teaching hospitals.

This finding suggests that attentional diversion caused by social media use plays a meaningful role in compromising medication administration accuracy.

Test of Hypothesis Two

H_{o2}: Social media distraction does not significantly predict medication error.

A simple linear regression analysis was conducted to determine the predictive influence of social media distraction on medication error.

Result Summary:

- $R = 0.63$
- $R^2 = 0.40$
- Adjusted $R^2 = 0.39$
- $F = 118.45$
- $p = 0.000$ ($p < 0.05$)

Decision:

The null hypothesis was rejected.

Interpretation:

The regression result shows that social media distraction significantly predicts medication error**,** explaining approximately 40% of the variance in medication error among nurses in the selected teaching hospitals.

This finding is particularly important because it moves beyond simple association and establishes predictive influence, indicating that social media distraction is not merely correlated with medication error but actively contributes to its occurrence.

The remaining 60% of variance suggests that other factors such as workload pressure, staffing levels, clinical experience, and institutional policies also play roles in medication error occurrence, though they were not the primary focus of this study.

Summary of Key Findings

Based on the analysis of data, the major findings of the study can be summarised as follows:

1. Nurses in selected teaching hospitals in North-Central Nigeria exhibit moderate to high levels of social media engagement during clinical duties.
2. Medication errors, though mostly moderate in severity, are still present and recurring in nursing practice.
3. There is a strong and statistically significant relationship between social media distraction and medication error.
4. Social media distraction significantly predicts medication error, accounting for a substantial proportion of variation in error occurrence.

Discussion

The findings of this study provide important empirical insight into an emerging but under-examined dimension of patient safety in nursing practice, namely the influence of social media distraction on medication error. The results demonstrate a statistically significant positive relationship between social media distraction and medication error ($r = 0.63$, $p < 0.05$), as well as a significant predictive effect, with social media distraction accounting for 40% of the variance in medication error occurrence ($R^2 = 0.40$). These findings suggest that medication error is not solely a product of structural deficiencies in healthcare systems, but also a consequence of cognitive and

behavioural disruptions within clinical environments.

A critical interpretation of this result indicates that attentional fragmentation induced by social media engagement plays a measurable role in compromising nursing performance during medication administration. Medication administration is inherently a sequential and cognitively demanding process that requires uninterrupted focus, memory retention, and procedural accuracy. When nurses engage with social media platforms during clinical duties, even briefly, the continuity of this cognitive process is disrupted. This interruption weakens working memory efficiency and increases the likelihood of omission, misinterpretation, or incorrect execution of medication-related tasks. This interpretation aligns with Cognitive Load Theory, which posits that human working memory has limited capacity and becomes compromised when extraneous cognitive demands are introduced (Sweller, 2011).

The findings are also consistent with prior empirical evidence which suggests that interruptions in clinical environments significantly increase the risk of medication errors. Alomari et al. (2021) observed that even short interruptions during medication preparation can result in procedural deviations and increased error rates among nurses. Similarly, Zhang et al. (2022) highlighted that cognitive overload and divided attention negatively affect clinical decision-making accuracy. The present study extends these findings by isolating social media distraction as a distinct and measurable form of clinical interruption, rather than treating it as a generalised workplace distraction. This distinction is particularly important because social media engagement is self-initiated, emotionally engaging, and continuous, making it more cognitively intrusive than conventional interruptions.

Within the Nigerian healthcare context, particularly in teaching hospitals in the North-Central geopolitical zone, these findings take on additional significance. Hospitals such as the University of Abuja Teaching Hospital (Gwagwalada), Jos University Teaching Hospital, University of Ilorin Teaching Hospital, Federal Medical Centre Lokoja, Federal Medical Centre Makurdi, and Benue State University Teaching Hospital operate under conditions of high patient turnover, workforce shortages, and time-sensitive clinical demands. In such environments, nurses are often required to multitask under pressure, thereby increasing cognitive load even before digital distractions are introduced. The informal integration of smartphones into clinical workflows often justified by communication needs among healthcare workers,further compounds this cognitive strain. As a result, attentional boundaries between clinical tasks and non-clinical digital engagement become blurred, increasing vulnerability to medication errors.

The predictive strength of social media distraction ($R^2 = 0.40$) further underscores its practical significance in clinical risk management. Explaining 40% of variance in medication error indicates that distraction is not a marginal factor but a substantive contributor to patient safety outcomes. The remaining unexplained variance suggests that other variables, such as clinical experience, shift length, staffing ratios, and institutional policies, also play important roles. However, the magnitude of the predictive relationship identified in this study indicates that social media distraction should no longer be considered a peripheral behavioural issue but rather a core patient safety concern requiring institutional attention.

Overall, the findings of this study reinforce the need to rethink attentional management in nursing practice within digitally saturated environments. The integration of smartphones into clinical settings, while beneficial for communication, introduces unintended cognitive risks that may compromise medication safety. In the absence of clear institutional guidelines regulating non-clinical smartphone use during medication administration, nurses are left to self-regulate attentional boundaries, which may not always be effective under high workload conditions. Consequently, addressing medication error in contemporary nursing practice requires not only structural reforms but also behavioural and digital governance interventions aimed at protecting clinical attention.

Conclusion

This study set out to examine the relationship between social media distraction and medication error among nurses in selected teaching hospitals in North-Central Nigeria. Grounded in a quantitative approach, the findings provide clear empirical evidence that social media distraction is not a neutral or incidental behaviour within clinical environments, but a statistically significant factor influencing patient safety outcomes.

The results revealed a strong positive relationship between social media distraction and medication error, as well as a significant predictive effect, with distraction accounting for 40% of the variation in medication error occurrence. This indicates that as nurses increasingly engage with social media platforms during clinical duties, the likelihood of medication-related errors correspondingly increases. From an interpretive standpoint, this finding underscores the role of cognitive fragmentation in compromising the sequential attentional processes required for safe medication administration.

Importantly, the study situates this phenomenon within the realities of Nigerian teaching hospitals, where high patient turnover, workforce limitations, and demanding clinical environments already place considerable cognitive pressure on nurses. Within such settings, the informal use of smartphones for social media engagement introduces an additional layer of attentional disruption that intensifies existing patient safety risks. This suggests that medication error is not solely the product of structural deficiencies but also of evolving digital behavioural patterns within clinical practice.

Social media distraction represents a significant and emerging patient safety concern in nursing practice that requires urgent institutional attention. Addressing medication error in contemporary healthcare environments therefore demands a dual approach: strengthening structural healthcare capacity while simultaneously regulating digital engagement during critical clinical tasks. Without such integrated interventions, the risk of preventable medication errors is likely to persist within nursing practice, particularly in high-pressure teaching hospital environments such as those in North-Central Nigeria.

Recommendations

Based on the findings of this study, the following recommendations are proposed to strengthen patient safety and reduce medication error associated with social media distraction in nursing practice within teaching hospitals in North-Central Nigeria:

1. **Institutional regulation of smartphone use during clinical duty**
   Hospital management should develop and enforce clear policies guiding the use of smartphones during duty hours, particularly during medication preparation and administration. Such policies should clearly distinguish between essential clinical communication and non-clinical social media engagement.
2. **Establishment of distraction-free medication administration zones**
   Nursing units should designate specific medication preparation areas where the use of mobile phones and social media platforms is strictly prohibited. This will help preserve cognitive focus during high-risk medication processes.
3. **Integration of digital professionalism into nursing training curricula**
   Nursing education programmes should incorporate modules on digital discipline, attention management, and safe use of technology in clinical environments. This will help future nurses develop awareness of the cognitive risks associated with social media use during patient care.
4. **Strengthening of staffing levels and workload management**
   Hospital administrators should address staffing shortages to reduce excessive workload pressure on nurses. Improved nurse-to-patient ratios will reduce multitasking demands and enhance

attentional stability during medication administration.

5. **Continuous professional development on patient safety and cognitive focus**
   Regular workshops and in-service training should be organised to sensitise nurses on the relationship between attention, distraction, and medication safety. These programmes should emphasise practical strategies for maintaining focus during clinical tasks.
6. **Implementation of clinical supervision and monitoring systems**
   Nurse supervisors and ward managers should strengthen oversight during medication rounds to ensure compliance with safety protocols and reduce opportunities for distraction-related errors.
7. **Promotion of a patient safety culture within hospitals**
   Healthcare institutions should foster a culture that prioritises patient safety and encourages accountability, attentional discipline, and responsible use of digital devices in clinical environments.

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