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“It’s the patient that suffers from poor communication”: Analyzing communication gaps and associated consequences in handover events from nurses’ experiences

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ABSTRACT

Background: Although routine communication gaps among clinical shift teams significantly account for adverse care and treatment outcomes, existing analysis of the phenomenon remain limited in low middle income countries battling with patient safety issues. This study analyzed the drivers and associated episodic consequences of communication gaps from nurses’ experiences in Ghana.
Methods: Qualitative design implemented in two referral hospitals. Data collection involved site observations and in-depth interviews with general nurses, midwives, and staff nurses across 3-cycle shift regimes in the emergency, ICU, inpatient wards, and maternity units. A two-stage data analysis was adopted by integrating deductive and inductive codes into broad thematic typologies explaining drivers of communication gaps and the consequences thereof.
Results: Communication gaps among shift teams were largely driven by a combination of three broad factors: *a*) Attitudinal elements of poor work ethics, poor documentation, interpersonal conflicts and use of unconventional language that impaired effective communication; *b*) organizational dynamics of taxing job demands, limited training exposure and lack of formal handover communication procedures which allowed shift teams to adopt default patterns of communication behavior; and *c*) cultural values, stereotyping and prejudicing behaviors that restricted inclusive interactions among shift teams. These communication gaps produced adverse episodic effects of diagnostic and treatment errors, complications, and extended hospitalizations.
Conclusion: The findings underscore the need to develop standard guidelines to direct structured communication alongside equipping shift teams with competences on emotional intelligence to overcome cultural and behavioral adversities that influence communication breakdown.

1. Introduction

In routine healthcare practice, appropriate handover of patients from health professionals across shift regimes is crucial to improve care continuity and outcomes. The exchange of tasks and clinical appropriate information between outgoing and incoming clinical staff ensures that the latter is abreast with treatment approaches and recommendations (Bakar et al., 2020). Handover is traditionally a continuous cycle requiring that health professionals (nurses, physicians and related clinicians) transfer patient specific case notes, clinical records, care plans, medication and related information to in-coming clinicians to reference and make informed decisions on care continuity (Abou Hashish et al., 2023). For quality handover, a patient’s clinical information must be complete, accurate, decipherable, and transferred at the right time, from the right staff and received by the right staff.

Effective communication is an integral element of quality handover. Communication whether of written, verbal or other forms must convey exact and precise information on treatment procedures as well as care plans and clinical decisions taken among a shift team (Manser & Foster, 2011). Studies show that handover characterized by lack of or inappropriate communication were potential and actual causes of treatment errors, medical errors and poor patient safety (Ahn et al., 2021). Poor

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handover communication arising from insufficient details, inconsistent or missing information and poor clarity were risk factors for adverse clinical decision making in an emergency care setting (Ahn et al., 2021). Communication failure or weak information clarity has been responsible for an estimated 50% and 70% of adverse treatment outcomes in handover events and healthcare delivery respectively (Ahn et al., 2021; Wibrandt & Lippert, 2020). On the contrary, structured communication during handover better informs health professionals' clinical actions and decisions, thereby improving overall therapeutic approaches.

The mechanisms of achieving effective communication during handover include but not limited to having written logs, appropriate schedules or roaster, working with functional checklists, and engaging in two-way discussions between shift teams (Manser & Foster, 2011). Some scholars have also suggested the need to implement and work with a standardized handover protocol that streamlines clinical notes, transfer procedures and shift staff engagements and communication mechanisms in a coordinated manner (Jaulin et al., 2021). For instance, Clark et al. (2009) suggested a simple handover model which allows for easy information transfer in a logical sequence: a) diagnosis status/-purpose of admission; b) clinical background information/context; c) current condition status; and d) action taken or recommended. This simple model is helpful for bedside nurses often caught up with an array of clinical activities that compromise handover procedures. The model may not be exhaustive, but it provides the foundation for a seamless and harmonized communication flow in routine handover activities among shift teams.

Unstandardized handover procedures largely account for communication gaps common in most health facilities especially in Low Middle-Income Countries (LMICs) (Kaye et al., 2015; Rickard et al., 2022). Communication gaps occur when there is a failure, breakdown or distortion in communication, or poor mechanisms of sharing handover information accurately, or the misinterpretation of information handed to receiving staff (Clark et al., 2009). Communication gaps in handover events could emanate from the source, transmission process or the receiving end. Of these three, communication gaps from the source point seem prevalent in most practice settings accounting for a significant proportion of adversities in handover activities (Barbeito et al., 2018). These include medication and treatment errors, misdiagnosis, treatment delays and preventable mortalities (Abou Hashish et al., 2023; Bakar et al., 2020). To avert these outcomes, the World Health Organization (WHO) has integrated quality communication in handover procedures in its patient safety framework to improve country level patient transition processes (WHO, 2007). This necessitates in-country implementation of handover procedures to ensure optimal communication and achieve patient safety. Yet, the literature continue to point to communication gaps in handover activities as one of the underlying causes of poor treatment outcomes in most countries (Barbeito et al., 2018).

Although studies on the phenomenon exist, they do not provide an adequate understanding of the problem in specific contexts as they are largely theoretical reviews (Ahn et al., 2021; Raduma-Tomàs et al., 2011; Wibrandt & Lippert, 2020). Moreover, the root causes of communication gaps in shift handover and their link to adverse outcomes especially among hospitalized patients have been poorly studied in LMICs. Furthermore, literature on the mechanisms through which adverse outcomes of shift handover events are managed to improve quality and care continuity is sparse. Drawing on these gaps, this study qualitatively explored the pathways in which communication gaps in shift handover occur and the resulting effects on treatment outcomes in selected hospitals in Ghana. Findings of the study will inform policy responses on standardizing and improving handover procedures to improve patient safety and care quality.

2. Materials and methods

2.1. Research setting, design and sampling

The study formed part of a larger investigation into the root cause analysis of adverse events, and treatment and medication errors leading to medico-legal issues across government and quasi-government hospitals in Ghana. This study reports initial findings from two referral hospitals - a public tertiary hospital (PTH) and a quasi-government hospital (QGH), where aspects of treatment and medication errors resulted from communication gaps among clinical teams assigned to shift schedules. Both hospitals are located in the country's capital, Accra, in the Greater Accra region. The PTH is a high-end facility for advanced care, training and research with an average monthly outpatient and inpatient numbers of about 18,500 and 1700 respectively in 2023. In addition to providing family medicine and wellness services, the hospital operates 9 specialized units, 42 in-patient wards and has 474 beds, making it one of the largest public providers in the regional health system. The QGH largely offers general care together with specialized clinics for public health, maternal, pediatrics, dental and internal medicine. It has 5 wards with 130 beds and an estimated average monthly outpatient and inpatient numbers of 5300 and 350 respectively.

Qualitative methods were deployed to capture in-depth account of participants narratives of the drivers and associated adversities of handover communication gaps. Target participants included registered general nurses and midwives, and staff nurses who oversee handover activities in the emergency, maternity, inpatient wards, and ICU. In Ghana registered nurses and midwives are typically degree holders with four years of tertiary training. They perform a broad spectrum of clinical functions and maintain supervisory control over all other nurse cadre. Staff nurses and midwives on the other hand, often receive a diploma certificate after three years of studies in Nursing Training Colleges.

We purposively sampled all the registered nurses and midwives assigned to shift work. The key duties of such nurses and midwives in relation to handover events included monitoring vital signs, conducting physical examination, updating patient treatment records, debriefing on care plans, and interpreting handover information to auxiliary nurses. Staff nurses and midwives work closely with and under the supervision of registered nurses and midwives in handover situations. In the hospitals studied, staff nurses were pivotal in delivering clinical support services to their superiors and participated in debriefings on patient transition processes. For this reason, these cadres were sampled using opportunistic sampling to share their experiences on communication gaps and their outcome effect.

2.2. Data collection

Data were collected using an interview guide fashioned from elements of the Communication Accommodation Theory (CAT) (Gallois et al., 2005). The CAT provides understanding of the mechanisms through which personal and interpersonal dynamics interact to shape and predict communication patterns. The theory explain how individuals and groups accommodate communication, the motivation for that and the consequences (Giles & Ogay, 2007). Its proponents theorized that: a) communication is influenced not only by an individual's immediate environment, but also the wider social and historical context; b) communication is a function of the interactions and negotiations embedded in group norms or social structures; c) prevailing social and situational norms determine mechanisms of accommodating communication; and d) individuals use specific communication strategies to signal attitudes toward others to the extent that social interactions are used as subtle balance between social inclusiveness and exclusiveness (Giles & Ogay, 2007). Drawing on the CAT, the interview guide featured questions on factors driving communication gaps from attitudinal elements of shift teams; the organizational, social and environmental factors shaping communication gaps; the wider socio-cultural context that

shape interpersonal interactions; and the adverse treatment and associated consequences of communication gaps in shift handover activities.

The data were collected by the second author assisted by a research assistant. They worked closely with the unit in-charges who facilitated the data collection process by providing weekly roster of staff on shift rotation and contact details of the nurses eligible for the study. Data were routinely collected on the 3-cycle shift regimes (8am, 2pm and 8pm) in each hospital. In each shift cycle, incoming staff were met on arrival and introduced to the study. Next, eligible participants were informed of their participation in the interview process after completing debriefing meetings with exiting staff, and attending to the clinical needs of patients or after working hours. Participants agreeing to take part in the study were interviewed in secluded environments to avoid interruptions by other staff.

Each interview commenced with an interviewer directed narrative account of what constitutes a communication gap in shift handover and the form it takes. This was meant to draw clarity on the topic being studied as well as establish a clear boundary within which the interview will proceed. Each round of questions on the broad topics was followed by scenario presentations guided by the work of Barbeito et al. (2018) so that participants can relate and situate their responses appropriately. Inductive probes and prompts were used to ascertain detailed information, clarify ambiguity, and expand the discussion to gain more nuanced perspectives. Interviews were tape recorded in agreement with participants alongside notetaking and lasted an average of 50. The scripted notes were sometimes summarized and read out for participants to confirm if their viewpoints were understood and captured accurately.

The interviews were supplemented by observations of shift teams clinical activities with the objective of documenting behaviors and physical aspects of handover events with adverse effect on communication gaps. The second author routinely observed meeting proceedings, handover procedures, and interpersonal exchanges between incoming and exiting teams. Observational sessions lasted for an average of 25 min.

The Ghana Health Service and Management of each facility provided approval for the study. Informed consent was sought from each participant who was made aware that participation was voluntary and with assurance of the right to withdraw from the study anytime.

3. Data analysis

Data analysis was conducted in two phases. Analysis in phase one was done concurrently with the data collection exercise by synthesizing field notes (notes from interviews) with observational data from each hospital and developing codes describing thematic patterns emerging. During this phase, areas of disagreement between the field notes and observational data were resolved by returning to the appropriate participants for clarity. The second step of analysis involved verbatim transcriptions of the audio-recordings derived from the interview data. The transcripts generated were read and refined to improve language quality and subjected to deductive and inductive coding mechanisms using the Nvivo 12 software.

Deductively, the analysis was guided by the theoretical literature but more informed by conceptual elements of the interview guide around how communication gaps are generated by behavioral factors (e.g. documentation approach, interpersonal factors and nature of information transfer); organizational factors (e.g. job demands, training exposure, and application of formal guidelines) and wider societal factors (e.g. social and cultural norms). As coding progressed, codes derived inductively were nested within the appropriate theoretical codes. Stereotyping behaviors and prejudices, for example, were discovered during the coding process as associated drivers of communication gaps and accordingly embedded in the wider social factors. During both sets of coding processes, the memo function of the Nvivo was used to capture experiences and unique opinions used as illustrative quotes in the findings.

4. Results

Thematic variability and data saturation was reached with 36 participants across the two hospitals. Most of the participants were female (69.4%), registered nurse/midwife (58.3%), and assigned to the afternoon shift (41.7%) and on the ward (33.3%) (Table 1). The findings are presented around three broad thematic typologies of associated drivers of communication gaps. Within each broad thematic area, we present the diverse sub-themes describing participants perspectives of communication gaps and the associated consequences on care quality, care continuity and treatment outcomes. Specific nuanced cases and outcomes of the intricacies of communication breakdown are highlighted to enable understanding of how patients were adversely affected in the process.

4.1. Behavioural factors

Behavioral factors were a product of attitudinal and relational tendencies influencing communication approaches and information transfer among shift teams. A total of 5 themes were derived from the behavioral analysis configuration presented as follows.

4.1.1. Poor documentation

4.1.1.1. Missing pieces of vital information. Incomplete documentation in the form of missing but essential information to aid in clinical decision making was noted as a cause of communication gap in handover activities. Participants explained that shift teams sometimes struggled to maintain care continuity because essential data required to inform treatment plans, next steps, diagnosis, and prescription were missing in patients' records. Too often misdiagnosis and inappropriate treatment were rendered to patients because critical pieces of information were omitted. For instance, a newborn developed complications leading to prolonged hospitalization due to missing piece of information from a morning shift staff.

"A *newborn was admitted with hypoglycemia (low sugar). It was corrected with a bolus and an intravenous fluid was set up for maintenance during the morning. The baby was doing well until the evening when the nurse called the doctor to inform him that the baby looked slightly jaundiced. A sample of serum bilirubin was taken and sent to the laboratory. However, the exiting shift staff did not include this detail in the handing over notes to the night shift to check on the results at night for possible phototherapy. The next morning, the result was traced and indicated that the baby should have had phototherapy which was not done leading to complications and prolonged hospitalization*." (Registered nurse, female).

Remarkably, many of the participants admitted that missing documentations do occur due to forgetfulness or the assumption that incoming team members know what to do, such as "sometimes we assume that the next person should know what to" (Staff nurse, female); and "it sometimes skips our mind, but normally we have the mindset

Table 1
Demographic characteristics of participants.

Characteristic	Description	N (%)
Sex	Male	11 (30.6%)
	Female	25 (69.4%)
Age	Mean (std. dev.), Range	32 (19.3), 24-45
Professional background	Registered nurse/midwife	21(58.3%)
	Staff nurse	15 (41.7%)
Shift schedule	Morning shift	10 (27.8%)
	Afternoon shift	15 (41.7%)
	Night shift	11 (30.6%)
Unit	Emergency	7 (19.4%)
	ICU	6 (16.7%)
	Ward	12 (33.3%)
	Maternity	11 (30.5%)

that the relieving staff can still find a way around" (Registered nurse, female). Whatever the reason, the fact remains that many patients endured diagnostics errors on the part of staff negligence in documenting required information.

"… *it hurts when you think of patient suffering because someone has failed to do his or her job by providing needed information.*" (Staff nurse, female).

4.1.1.2. Failure to record armamentarium for retrieval and use. Shift teams often work with a set of armamentaria for monitoring, diagnosing and treatment of patient conditions. These medical equipment and logistics whether moved or given out to another person or unit must be recorded to inform the incoming team of their location. However, the observational data showed otherwise. Less attention was paid to documenting and communicating relevant information pertaining to equipment, supplies, medication, and related others used to deliver care. This communication gap was common among exiting staff giving out essential equipment but failing to record their location for easy retrieval:

"… *it is frustrating to report to work only to realize that an equipment was given out without being documented so that it can be traced. Sometimes you just don't know what to do.*" (Staff nurse, male).

A midwife shared an experience of a baby who developed a life-threatening condition due to a shift staff's failure to document vital information about a medical device given out to another unit.

"*Our pediatrics Ward has 3 firefly machines for phototherapy. One day I had three babies who needed phototherapy simultaneously. However, a cable for one of the three fireflies couldn't be found, and no one could tell its where about. An investigation revealed that it was taken to a different Ward for use, but the shift in-charge failed to record it in the logbook. This got us stranded. We called for reassessment of the babies by the doctor on duty which showed that two of the babies could start phototherapy later, but the other one needed it badly because the condition was critical.*" (Staff midwife, Female).

4.1.2. Unconventional communication mechanisms

4.1.2.1. Recourse to unofficial language in clinical deliberations. Most of the participants asserted that the use of unofficial language in communicating clinical ideas and decisions posed unacceptable problems to mutual understanding. Some participants raised concerns that the subtle nuances of communicating clinical information in local languages with the assumption that everyone understands was a linguistic challenge to non-native speakers. This was confirmed in observations where *twi* (a local language) was commonly used during interactive handover debriefing sessions, leaving non-native speakers out of the communication loop in crucial decision-making processes.

"*We are sometimes placed out of the conversation because nobody will translate what is discussed. So, decisions are taking, and you are not part because you don't understand.*" (Staff nurse, male).

A participant noted that, they sometimes missed key information during debriefing meetings because colleague team members communicated and responded to questions in *twi,* as for example:

"*I often get frustrated because they assume I understand the language.*" (Registered nurse, male).

"*The addiction to twi is a barrier to effective communication in handover situations.*" (Registered nurse, male).

4.1.2.2. Use of unstandardized abbreviations and acronyms. Another observed phenomenon of communication gap related to the use of unstandardized clinical abbreviations and acronyms that misinformed clinical decisions. Some nurses were sometimes confronted with the confusion of establishing common understanding of unfamiliar abbreviations known only to the proponents. The process of trying to think carefully and decipher obscured and ambiguous abbreviations or acronyms did not only cost time and wrongful interpretation but also delayed treatment.

"*I remember there was a time I spent almost 1-h asking colleagues to help with the full meaning of an abbreviation used. It was ridiculous that none of the 10 people asked knew the meaning. We eventually got the person on call, and he explained it but it delayed medication for the patient.*" (Nurse, surgical ward).

According to some participants unconventional abbreviations were mostly used disparately with the assumption that everyone had comprehensive knowledge of medical terminologies. A participant expressed concern about an ambiguous abbreviation that created confusion about its precise meaning:

"… *we are used to 'bid' which means brought in dead. Someone wrote 'bid' and our understanding was that the patient has passed on arrival. We were busy trying to figure out what happened. But the meaning was different. How will I know that bid means twice a day.*" (Staff nurse, female).

4.1.3. Poor interpersonal relations

4.1.3.1. Interpersonal conflicts driving communication breakdown. Communication gaps were shown to be influenced by weak interpersonal relations arising from petty conflicts and disagreements over matters that were personal and professional. The data showed that interpersonal conflict often evoked unhealthy relational behaviors resulting in weak collaboration and interactivity for quality patient care.

"*Some people can go on and on without talking to each other. They don't ask each other question even if they don't' understand anything.*" (Registered nurse, female).

A participant intimated that shift staff holding grudges against each other usually failed to draw the line between personal and professional levels. For this reason, they often transferred their frustration to work and expressed that by failing to attend debriefing sessions, holding up significant information or putting up a moody attitude toward others, all of which disrupted effective communication for patient care. This is illustrated in a participant's encounter with a colleague:

"*A colleague staff had a grudge against me and will not talk to me. One day she handed over to me, but I had a problem understanding what she wrote. I asked her for clarity, but she didn't mind me. I informed my colleague who took the notes to her, and she explained. It was bad because she was thinking about me and not the patient who needed urgent attention.*" (Registered midwife, female).

4.1.3.2. Poor team spirit distorting information sharing. The strained relations at times created incentives for apathy in which some staff played less active roles in teamwork and interaction. A participant remarked that sometimes communication was paralyzed because petty conflicts intermittently injured team spirit allowing individualism to dominate and interfere with vital information sharing: "*Some staff become individualistic at the least confrontation with others and will not share ideas or become part of what is being discussed. When that happens it is the patient that suffers.*" (Registered nurse, female).

A participant cited an instance where a colleague nurse literally rushed through a debriefing meeting and failed to take questions because of an existing misunderstanding that impaired team chemistry. The quote below further demonstrates how a patient was readmitted owing to communication breakdown attributable to unhealthy relational context of the clinical team.

"*We had a patient who was admitted to the Emergency Unit with Hemoglobin (Hb) of* 3 g/dl. *The investigations confirmed the patient had a second-degree Hemorrhoid, which was bleeding. A Surgeon reviewed the patient and requested for transfusion to be done with 4 pints of Concentrated Red blood Cells (CRCs). This was done and the surgeon discharged the patient and left without consulting the rest of the team due to friction between them. Before the patient could pack out of the Ward, the rest of the team observed the condition deteriorated although Hb had improved to 6*.5 g/dl. *The team readmitted the patient and continued treatment without the surgeon's involvement.*" (Registered nurse, male).

4.1.4. Lateness to work and the rush to exit work puzzle

Lateness to work was reported to disturb smooth patient transition and communication between incoming and exiting staff. The results suggest that staff reporting late to work usually experienced impaired concentration and therefore unable to effectively peruse patient information and seek clarity when necessary, while exiting staff feeling frustrated for extended working hours rushed through their explanation during handover procedures. The puzzle of the scramble to settle down to work and the haste to exit significantly distorted communication during the patient transition process:

"Anytime a staff arrive late, they are usually in a haste to start seeing patients and do not take their time to read the notes and ask questions. Those going too are normally in a hurry because they have stayed for a long time and do not have patience to explain issues clearly. This is the key cause of communication gap." (Staff midwife, female).

A participant narrated an experience of a near fatality from a medication error because the shift in-charge arrived behind time and hurriedly assumed duty without paying particular attention to significant details of the patient's records:

*"… the doctor had prescribed IV artesunate with a dosage of 24.0 (*24 mg*) to a child with malaria. However, the shift staff being late was rushing and did not take time to read the prescription well enough. She ended up mixing* 240 mg *of the said medication. At the dosage of* 24 mg *per syringe, she started administering the medication to the child. No sooner had she given the first three syringes (*72 mg*) then a colleague staff stopped her upon realizing she was administering the medication in error. IV Dextrose was then set up to correct hypoglycemia (an immediate side effect of IV artesunate) because the child was very weak with an RBS of 2.*2 mmol/L. *Fortunately the child survived but had an extended stay in the ward."* (Staff nurse, female).

Additionally, latecomers by their own guilt commonly either skipped questions to exiting staff or did not engage in extensive discussion to clarify issues before attending to patients. The consequences of such actions mirrored in this participant's narrative of an adverse event linked to communication error from a latecomer.

"The lateness of shift nurse almost took the life of a patient. She came to relieve the night shift at about 10pm instead of 8pm. Due to the lateness, she hurried to assume duty and was uncomfortable asking many questions for clarity regarding treatment plans. She did not obtain sufficient details on the size of the diluent used to mix medication for an eleven months old baby who was on rocephin 1g IV. This medication comes in 500 mg*, 1g, and 2g with either* 2 ml *lidocaine (for* 1 ml *use only and* 10 ml *water for injection for IV use only). Rocephin 1g with* 2 ml *lidocaine was supplied and same was administered IV (erroneously). The baby lost temporal consciousness and Cardiopulmonary Resuscitation (CPR) was performed. Fortunately, the child regained consciousness."* (Registered nurse, female).

4.1.5. Verbal information transfer

Verbal information sharing hampered communication among shift teams. Instead of following the standard practice of written handover for easy reference, some doctors and senior nurses were accustomed to verbal information transfer, a practice prone to processing error at execution by the recipient. A nurse revealed that she received verbal instruction on the next steps of treatment to be administered to a patient during the day. However, she got overwhelmed reading different patients' notes to the extent that she could not recall and process the instruction accordingly: *"… I got busy reading different patients notes to determine what to do. In less than 20 min of getting myself prepared to see patients, I partially forgot what the doctor told me. I tried calling him and the number was off. This unfairly delayed needed care for the patient. It is appropriate that everything is put into writing."* (Registered nurse, female).

Verbal information transmission with adverse outcomes were more pronounced in medication administration. During the observations, it was noted that bedside nurses typically received verbal instructions on medication procedures. Some nurses reported being routinely confronted with cognitive overload of having to correctly process medication instruction delivered verbally. A participant narrated an incidence where verbal information transfer generated a gap in communication leading to a patient developing cardiac arrest from medication overdose.

"A patient was put on potassium chloride (KCL) and managed by the morning shift. But the information about how to administer the KCL was handed verbally to the afternoon shift. In the course of mixing the KCL, the afternoon nurse had no notes to refer on the patient in question. She eventually mixed the KCL in error and administered. Within 1 min, the patient suffered a cardiac arrest." (Staff nurse, male).

4.2. Organizational factors

The organizational factors underlying communication gaps in shift activities were heavily dictated by structural dynamics and characteristics of the work environment. We derived 4 themes linked to responses from taxing routines and the physical environment, unavailability of standard protocols and poor exposure to skill building opportunities presented as follows.

4.2.1. Limited training exposure to communication in handover events

The organizational drivers of communication gaps were largely attributable to lack of training on handover communication procedures. Some nurses were assertive that handover communication was rarely prioritised in facility-based professional development programs in comparison with other areas of clinical practice. As a result, shift teams were not exposed to any form of training, and thus, possessed limited knowledge on soft skill around communication management in handover activities. This was buttressed in the manner in which many participants could not clearly articulate what constitute communication gaps in shift work (see examples in Table 2). Similarly, the fact that all the participants held divergent opinions on what could be a structured

Table 2
Participants perspectives on communication gaps among shift teams.

Communication gap	Thematic narrative	Illustrative quote
Workplace problems	• Problems of the workplace that make it difficult to communicate. • Challenges associated with how staff communicate among each other.	*"When there are problems such as staff dissatisfaction with working conditions, it becomes a problem for effective communication."* (Staff nurse, female)
Technological challenges	• When there is system breakdown, that is the internet is not working it can lead to communication gap. • Poor internet connectivity making it difficult to send or receive email is a communication gap.	*"When the internet is down staff cannot communicate among each other and that is a communication gap."* (Staff nurse, male) *"… the internet is everything nowadays. When it is faulty there is no communication. "*
Poor instruction	• Instructions that are not sufficient to determine action to take. • Instructions not specific and directed to pursue a course of action.	*"Some in-charges often give instructions that are not sufficient making it difficult to do what they want."* (Staff midwife, female)
Institutional barriers	• When staff from different departments or units do not talk to each other. • When there is no communication or communication breakdown between doctors, nurses and others.	*"Every unit minds its own business, they don't find out what is happening elsewhere and that can be a communication gap."* (Registered nurse, male)
Poor handwriting	• Poor handwriting that makes it difficult to read and understand what is being said. • Doctors poor handwriting that is often difficult to decipher.	*"A handwriting that is difficult to read is a communication gap."* (Registered nurse, female)

logical approach to effectively communicating patient information to incoming staff reinforced the lack of exposure to best practice. As said by this participant: *"Every unit has its way of communicating handover issues. I have never been educated that this is the right procedure to follow when you are communicating information to staff taking over."* (Staff nurse, female).

4.2.2. Lack of standard communication guidelines

The absence of written standardized guidelines for streamlining communication procedures was a notable cause of communication gap. At the time of the study, none of the units studied were guided by any standard procedure for patient transfer among shift teams. All the participants, meanwhile, recognised standard guidelines as instrumental in ensuring systematic information exchanges while also allowing for benchmarking of communication procedures among shift teams. A participant noted: *"At the moment, it is difficult to tell the best way of communicating handing over information and how to ensure that the procedure for communicating handing over decision is uniform."* (Staff nurse, male).

The effect of the lack of standard guidelines reflected in the mechanisms in which different units variously carried out handing over procedures such as "we discuss with incoming in-charge to tell their people"; "we meet as a team to inform the incoming staff what to do"; "whoever you come to meet will tell you what to do" and encapsulated in this participant's narrative.

"Standardized handing-over procedure should be on the ward and other vantage points for referencing. There are currently no formal guidelines on how handing over should be done so we all do it differently and this brings the communication problems. If there were uniform way of doing it, it will minimize the errors and incomplete information that often create problems for us." (Registered nurse, male).

4.2.3. The effect of taxing work routines

The hospitals studied were operating below stated staffing norms of the health sector. A shift staff in the general ward, for example, was assigned an average of 17 patients, which was well above the recommended threshold. Participants reported being frequently overwhelmed in attending to large patient numbers in addition to combining clinical and non-clinical responsibilities such as feeding and maintaining personal hygiene of patients. Navigating routine workload induced stress and burnout compromising the quality of handing over communication. Some participants explained how they were sometimes mentally removed from handing over discussion sessions due to stress and burnout, as reflected in these statements:

"… sometimes I could be in the briefing meeting but absent minded because of stress." (Staff nurse, male).

"… when you are tired, you don't have the energy to explain things in detail during handing over, the workload is crazy." (Registered nurse, female).

Generally, across the hospitals, it was reported that clinicians with physical exhaustion typically become withdrawn and exhibit forgetfulness during handover sessions. This often worked out to undermine effective information exchanges as portrayed in this statement: *"Because of the workload, you get exhausted at the end of the day. So, usually, though the incoming staff is active and asking questions, you are tired to the extent that your mind is not even there."* (Registered midwife, female).

Some participants shared the experience that chronic stress often impaired concentration during handing over sessions as well as lowered physical and mental health, thereby limiting the capacity for effective engagement and interaction with incoming staff. This participant's perspective about a near fatal episode arising from a stressful nurse's action is noteworthy.

"An asthmatic patient with difficulty in breathing was to be nebulized with salbutamol 5 mg *back-to-back and then continue 2 hourly. During the handing over the nurse was exhausted to the extent that she did not take her time to explain to the incoming staff that only one nebulization was performed. So, the colleague waited for 2 h to do the next nebulization. On examination, however, the doctor had to request for a back-to-back nebulization with salbutamol* 5 mg *and then even added Pulmicort* 5 mg *because of the worsening difficulty in breathing. But for the doctor's intervention, the patient would have died."* (Registered nurse, female).

4.2.4. Physical environmental distractions

Distractions in the form of noise, background conversations and attention to multiple tasks were cited as factors frequently distorting communication in handover activities. Disruption to communication were particularly apparent in the wards, emergency, and maternity where communication procedures during handing over were observed to be distracted by call outs, phones calls, noise and visitor inquiries. For example, during the observation, a joint clinical discussion with incoming, exiting and consultants on a maternal case was interrupted several times by series of phone calls to the extent that the incoming staff literally started working without formal information transfer. Similarly, an ongoing handing over discussion at a maternity unit ended abruptly when incoming nurses were called out to attend to a pregnant woman who arrived with vaginal bleeding. The exiting staff eventually left for home without communicating care plans. Some participants expressed concern about how distractions were a barrier to efficient communication in advancing clinical proceedings between shift teams.

"… we had a meeting to discuss a case before my colleagues close work. That meeting was distracted by too many inquiries from patients' visitors to the extent that some of us forgot some of the issues discussed. It is something we have to deal with as a hospital." (Registered nurse, female).

Physical distraction from unhygienic and uncomfortable environment was reported to affect quality communication among staff. This problem was peculiar among afternoon and night shift regimes where orderlies were rarely proactive in maintaining a hygienically healing clinical environment. As a result, participants with high smell sensitivity reported being severely discomforted and unable to fully cope with handover sessions whenever the environment is polluted by unpleasant stench and bad odor. In one of the units, an unpleasant stench from liquid waste pollutants compelled an outgoing medical team to handover without requisite information transfer to their counterparts. A participant elaborated on the gravity of communication challenges linked to poor clinical environmental quality.

"*When the working environment is not conducive, it affects the effectiveness of the handing over. So, maybe you enter the ward, and then, the ward is smelling, very serious stench, you would not even want to open your mouth let alone to interact with others."* (Registered nurse, male).

4.3. Societal factors

Social norms and stereotyping behaviors embedded in the wider Ghanaian cultural and social environment emerged as factors influencing communication gaps in shift activities. Two themes were produced from the data.

4.3.1. Cultural values

Appropriate communication in handover proceedings requires that every staff is given the opportunity to query, challenge decisions, and ask questions and obtain satisfactory feedback. However, this was not the practice for some participants who felt unable to question their superiors during handover activities. A participant noted that she preferred to remain silent than to disagree with her superiors' because it was culturally inappropriate. Cultural undertones also manifested in how some participants' family values played out within the context of handover communication: *"I see it like the way I have been brought up. When my parents and senior sibling instruct me, I don't ask anything. I try to maintain the same respect for my seniors here."* (Staff nurse, female).

Additionally, the older and more experienced a staff was, the more the person had decisional control and influence over others. Such staff were reported to be less responsive to interactions during handover because their experience could not be questioned. Some middle and

junior staff affirmed that they often held back critical questions in order not to appear disrespectful to their elderly colleagues. They also pointed out that intergroup dynamics at the workplace typically revolved around respect for older staff. For this reason, younger staff often perceived their older counterparts as ambivalent and unquestionable and this created communication gaps affecting handover situations. A participant put it: *"… I have been here for just 2 years. Those much older than me interpret things differently so when they are handing over you ought to be careful by not asking too many questions."* (Staff nurse, female).

4.3.2. Stereotypes and prejudices

Stereotypes and prejudices had an interacting effect on the quality of handover including communication. Some staff disclosed that they were stereotyped and labelled as inquisitive or "too known" by virtue of their scrutiny and being vociferous during handover sessions. Others were assigned derogatory identities that described their behaviors during handover information sharing. These factors combined to contribute to minimal inclusive interactive behaviors in handover events. A participant shared the experience that he used to demand detailed explanation during handover meeting sessions but was eventually labelled as 'petty', 'talkative' or 'Mr. Detail'. To overcome this adverse labeling effect, he simply avoided more engaging questions during handover sessions. However, he reported a circumstantial unpleasant challenge that arose from that.

"Sometimes, you may not understand but have to make do with what you've been told. There was this patient that I saw needed alternative treatment but as I was talking, nobody took me serious because they said I like talking. I left and within 1 h I was given a call to explain what I was saying again because apparently the patient was in critical condition." (Registered nurse, male).

Prejudices were also observed in the use of body language to prevent staff from further commenting on an issue raised by others, however relevant the comment might be. Some participants remarked that such prejudices were often directed at younger staff ostensibly to signal that they have a limitation in taking a position on a clinical issue.

5. Discussion

Communication between shift teams is an integral part of the quest to deliver care quality and continuity to hospitalized patients. Poor information exchange has been responsible for treatment errors, fatality, near-fatality, and other adverse treatment outcomes. Yet, empirical investigations of communication gaps in clinical settings to understand why they occur, the form they take, and the consequences remains limited especially in low middle income countries. This study drew on qualitative methods to investigate the phenomenon in referral hospitals in Ghana. The findings showed that communication gaps among shift teams were driven by an interplay of behavioral, organizational, and wider environmental factors with a range of adverse consequences.

Reflecting earlier studies in related field, we found that diagnostic and treatment errors, and extended hospitalization were the results of communication lapses embedded in routinized behaviors of shift teams (Escrivá Gracia et al., 2019; Tiwary et al., 2019). Of the range of behavioral drivers of communication gaps discovered, incomplete documentation, poor record keeping of clinical logistics, weak team chemistry, unpunctuality, and verbal information transfer were the most disturbing given the magnitude of their associated adverse consequences to patient care and management. Accurate documentation and appropriate information transfer within and across shift teams are the bedrock of a functional shift system that guarantee care continuity and optimal care quality for hospitalized patients (Tasew et al., 2019). Documentation with clarity, precision and sufficient detail is important to keep shift teams better informed on next steps of clinical procedures to be adopted for patient care and management (Demsash et al., 2023). However, incomplete documentation and sub-standard record keeping practices were found to delay care and medication administration compromising patient safety and treatment procedures similar to earlier studies (Bizimana & Bimerew, 2021). Such practices may be attributed to poor familiarity on documentation practices or weak knowledge on the benefits of documentation in authenticating clinical facts, legal defense and promoting quality information exchanges between clinicians, patients and relevant stakeholders (Kasaye et al., 2022).

The findings further demonstrated how communication among shift teams was intermittently disrupted by unhealthy teamwork reinforced by pockets of unresolved interpersonal conflicts and lateness to work with a combined detrimental effect on treatment outcomes. We demonstrated that interpersonal relational breakdown and lateness to work frequently stalled communication inhibiting shared problem solving, work synergy, care continuity and overall clinical efficiency. This finding correlate with others (Greenberg et al., 2007; Street Jr et al., 2019). Clearly, the findings suggest lack of organizational citizenship behaviors that have enabled staff attitudinal problems to dominate and jeopardize communication which is key to building and sustaining mutual relations for quality patient care (Eggins & Slade, 2015). Additionally, lack of or malfunctional conflict management systems to address competing desires, needs, hurt feelings and tensions might have enabled these interpersonal conflicts to thrive and posing as risk factors of healthy interpersonal communication (Rahim, 2023).

A fundamental antecedent of the organizational drivers was lack of exposure to training on clinical communication skills that fueled divergent understanding of what constitutes communication gap in shift practice. Training on staff-staff and staff-patient communication competencies is critical for effective shared decision making and accountability in all aspects of patient care and management (Oliveira et al., 2015). The findings, however, demonstrated pale knowledge and appreciation of communication and its effect on clinical outcomes because on-the-job training programs for both onboarding and existing staff precluded communication management in shift practice. Closely related but distant from training was the absence of a standard guidelines to direct structured, synchronized, and organized patient information transfer (Bakar et al., 2020). Consistent with literature, the absence of formal guidelines constrained the capacity to identify and tick the boxes of missing information, as well as notice and query information loopholes instantly (Eggins & Slade, 2015). The absence of guidelines is systemic. Currently, there is no policy or guidelines for seamless web of verbal and written information exchanges in clinical practices in the health sector in Ghana. This has had a cascading effect on health facilities reluctance to institutionalize clinical communication standards. Consequently, clinicians tend to adopt default patterns of communication behavior with minimal effectiveness in improving care outcomes and continuity (Abor, 2019).

The taxing job demands and physical environmental distractions that influenced communication gaps conform to existing studies (Keers et al., 2018; Stans et al., 2017). Both workload and acoustic environmental activities have been shown to have an elevated effect on cognitive load and reduced mental attention among clinicians (Mcmullan et al., 2021). Workload has been reported as one of the underlying barriers to nurses' quality interpersonal engagements and communication with patients in Ghanaian health facilities. The study by Kokoroko and Sanda (2019), for example, showed that workload imposed significant physical strain on nurses, potentially affecting memory and communication abilities. It was not surprising, therefore, that participants who experienced physical and mental exhaustion from workload reported reduced cognitive capacity to process and accurately communicate clinical decisions during shift sessions.

Generally, unwanted, and unproductive distractions can dramatically increase risk of medical errors as reported in this study. For instance, the study by Murji et al. (2016) found that physician working in quite environments completed surgical task correctly within time compared to those that did not. Similarly, other studies have proven that distractions characterized by uncontrolled phone ringing, loud noise, needless requests, coworker interruptions and conflicting tasks damaged

clinical communication for improved patient care (Feil, 2017; Mackenzie & Foran, 2020). Finally, and as mirrored in the findings, a healthcare environment polluted with disturbing stench significantly detracts cognitive capacity to prioritize and share relevant information with ease (Stenslund, 2015).

A novel finding of this study is how the nuances of beliefs, stereotypes and prejudices embedded within the broader social and cultural environment undermined communication among shift teams. Cultural, stereotypical, and prejudicing behaviors were shown to polarize shift teams along identify and professional lines, undermining effective reciprocity of communication. Cultural beliefs reinforced by the hierarchically structured hospitals system shaped orientation about what individuals chose to say or not during team deliberations. Essentially, the findings pointed to lack of shared organizational culture in fostering harmonious vertical and horizontal communication among shift teams (Smollan & Morrison, 2019). Thus, cultural affinity tended to dictate communication pathways in which silence became a symbol of respect for superiors undermining idea sharing as a prerequisite for quality shift team practice (Alvarez & Coiera, 2006). The prejudicing and stereotyping behaviors used to reduce, ignore, downplay, or devalue opinions held by others presents a significant barrier to healthy communication. Stereotypes and prejudices, when not controlled can pose substantial risk factors in pursuing diversity and inclusivity in clinical teamwork and communication mechanisms.

6. Limitations

A limitation of the study is the sample size - two referral hospitals. Structural, operational and managerial differences between health facilities potentially shape communication patterns and orientations, generally, and in shift practice. This calls for generalization with caution. The use of qualitative methods prevented broad based participation of a range of clinicians involved in shift practice. Further studies deploying quantitative design expanding the clinical cadre beyond registered and staff nurses can provide rich insight on communication dynamics in shift practice.

7. Conclusion

The findings demonstrate that communication gaps among shift teams were largely produced by behavioral, organizational and wider social environmental factors exacerbated by changing dynamics of structural and relational elements of routine clinical practice. From the forgoing analysis, we propose a range of strategies to mitigate the gaps. First, tailor-made competency training programs focusing on enabling shift teams adopt a structured verbal and written communication approach in routine practice holds promise in securing appropriate information exchanges. This should go hand in hand with the development of formal guidelines to direct everyday verbal and written communication among shift teams. The guidelines should clearly define and prioritize key information areas for shared decision making between outgoing and incoming teams. The guidelines can build on elements of the situation-background-assessment-recommendation (SBAR) model for communicating patient information in a clear, precise and unambiguous manner even under overwhelming situations (Leonard et al., 2004). The behavioral drivers of communication gaps can be confronted by equipping shift staff with competence on emotional intelligence to enable them demonstrate self-restraint, assertiveness, and composure in times of disagreement with colleagues. Emotional intelligence can be a huge resource for job control, and alignment of cultural and professional values which ultimately improves communication. Finally, we suggest the need for skill building centered on data quality management including valid and reliable capture and communication of patient information among shift teams.

CRediT authorship contribution statement

Roger A. Atinga: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Mtebi Nkrabia Gmaligan:** Writing – review & editing, Methodology, Conceptualization. **Alice Ayawine:** Writing – review & editing, Methodology, Investigation. **John K. Yambah:** Writing – review & editing, Writing – original draft.

Declaration of competing interest

The authors declare no conflict of interest associated with this paper.

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