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Implications of Resource Constraints and High Workload on Speaking Up About Threats to Patient Safety: A Qualitative Study of Surgical Teams in Ghana

ABSTRACT

Background Although under-resourcing of healthcare facilities and high workload is known to undermine patient safety, there is a dearth of evidence about how these factors affect employee voice and silence about unsafe care. We address this gap in the literature by exploring how resource constraints and high workload influence the willingness of staff to speak up about threats to patient safety in surgical departments in Ghana.

Method Semi-structured interviews with a purposeful sample of 91 multidisciplinary professionals drawn from a range of specialities, ranks and surgical teams in two teaching hospitals in Ghana. Conservation of Resources theory was used as a theoretical frame for the study. Data were processed and analysed thematically with the aid of NVivo 12.

Results Endemic resource constraints and excessive workload generate stress that undermines employee willingness to speak up about unsafe care. The pre-occupation with managing scarce resources predisposes managers in surgical units to ignore or downplay concerns raised and not to instigate appropriate remedial actions. Resource constraints lead to rationing and improvising in order to work around problems with inadequate infrastructure and malfunctioning equipment, which in turn creates unsupportive environments for staff to air legitimate concerns. Faced with high workloads, silence was used as a coping strategy by staff to preserve energy and avoid having to take on the burden of additional work.

Conclusion Under-resourcing and high workload contribute significantly towards undermining employee voice about unsafe care. We highlight the central role that adequate funding and resourcing play in creating safe environments and that supporting 'hearer' courage may be as important as supporting speaking up in the first place.

Key Words: Workload, Resource Constraints, Patient Safety, Voice and Silence

INTRODUCTION

Health systems around the globe are investing significant resources in efforts to improve patient safety and reduce the burden of patient harm [1]. But progress in making care safer for patients, particularly in low-and middle-income countries (LMICs) has been slow [1 2] with an estimated 2.6 million patients dying annually due to poor quality care [3]. The risk of surgical harm is particularly high in LMICs with perioperative and anaesthetic mortality over twice that of high-income countries (HICs) [4 5]. Patient harm and poor clinical outcomes have been linked to understaffing and excessive workloads [6-10] as well as limited resources and unserviceable equipment [11-14]. These problems are particularly prevalent in LMICs where health care facilities labour under severe resource constraints and high workloads [15-17]. Although Ghana has made significant progress in achieving universal access to healthcare, resource constraints, high workload and understaffing remain persistent challenges for the delivery of high-quality care. [18-20].

A growing body of research has highlighted the vital contribution that employee voice and silence – the discretionary expression or withholding of information about threats to patient safety- can play in the detection and prevention of harm to patients [21-23]. Empirical studies demonstrate how a wide range of personal and situational factors, including steep organisational hierarchies, power differences and entrenched professional boundaries can adversely affect the willingness of employees to speak up about threats to patient safety [24-28]. Research from an Organisational Behaviour perspective has found that workplace stressors and strains can undermine prosocial behaviour such as employee voice [29-31]. For example, a study exploring the impact of burnout among physicians found that the loss of mental resources led to a lower tendency to communicate concerns and take remedial action to address problems [32]. These findings suggest that resource constraints and high workloads are potential stressors that can hinder speaking up about threats to patient safety. Although previous studies have

highlighted how resource constraints and high workloads can undermine patient safety, they have tended to ignore how these limitations impact on the willingness of frontline staff to raise concerns and the willingness of senior managers to respond appropriately when they do.

In this paper we draw on Conservation of Resources (COR) theory to shed new light on this subject. COR theory focuses on psychological responses to stressful circumstances and is based on the assumption that individuals are motivated to obtain, retain and protect those things they perceive as valuable to them [33 34]. These things that they value are termed resources. The theory has two core tenets: the inclination to acquire resources (resource acquisition) and the motivation to preserve resources (resource conservation). Stress occurs whenever resources (e.g., material objects, personal characteristics such as self-esteem, and energies associated with being well rested or sufficient time availability) are under threat of being lost, have been lost, or when significant effort at gaining these resources fail [35]. COR theory posits that the inability to replenish lost resources leads to a potential vicious cycle resulting in the further loss of energy, chronic exhaustion, defensiveness and withholding of further resource investment [33 34]. For example, material resource constraints and high workload constitute a significant source of physical and mental strain that can influence staff attitude and team functioning. Viewed from this perspective, individuals experiencing highly stressful situations are unlikely to invest their time in exercising voice [31 33]. Against this theoretical and empirical background, the aim of this study is to fill an important evidence gap by exploring how high workload and severe resource constraints affect the ability and willingness of frontline staff to raise concerns about threats to patient safety in surgical departments in Ghana.

METHODS

Study Design and setting

We used an interpretivist qualitative study design which is suitable for providing rich insights into dynamic social phenomena [36 37]. The study was conducted in surgical departments linked to two public teaching hospitals in Ghana (Hospital A and B). Hospital A has over 1,500 beds and ten specialised surgical units. Hospital B is a 400-bed facility and has five specialised surgical units. The study was conducted in six (6) surgical specialities spread across both hospitals.

Sample and Interviews

A total of 91 face-to-face semi-structured interviews with surgical professionals were conducted between October 2017 and April 2018 following ethical approval obtained from the Institutional Review Boards (IRB) in each hospital. Purposive sampling was used generate interviewees from across surgical specialities, teams, and professional groups and ranks to maximise diversity of perspectives [38-40]. Details of the sample are presented in Table 1. Interviews were conducted in English, in offices to ensure privacy and lasted between 40 to 70 minutes. After 91 interviews no new insights emerged and data saturation was achieved [41].

Table 1 Interview Sample in the two hospitals (created by the authors)

	Professional Groups	Hospital A	Hospital B	Subtotals/Totals
Doctors	Consultants	4	4	8
	Specialists	8	3	11
	Residents	5	4	9
	House Officers	5	7	12
Total Doctors				40
Nurses	Peri Operatives	12	6	18
	Nurse Anaesthetists	10	3	13
	Ward and Recovery	13	7	20
Total Nurses				51
Subtotals/ Totals		**57**	**34**	**91**

Interviews were conducted by one of the authors (EK), who had previous experience of qualitative research and was familiar with the study context. The focus of the interviews centred on how comfortable staff felt when raising concerns, what organisational and personal factors made raising concerns particularly easy or difficult, as well as views on what organisational strategies could be implemented to improve speaking up. Specific examples of voice or silence reported in the interviews were explored in more detail to uncover the key contextual issues surrounding them. Questions were adapted during the course of the study in order to capture relevant emerging issues [42].

All participants consented to the interview by signing the consent form and their permission was obtained to record the interviews. Three (3) interview requests were declined. Field notes provided contextual information to aid analysis and interview notes were taken for three (3) participants who declined recordings of their interviews.

Analysis

Interviews were transcribed verbatim and checked for accuracy. Analysis was based on inductive grounded theory which is a process of iteratively linking the data to the emerging theoretical framework and vice versa [43]. Preliminary analysis started during fieldwork [44]. Interview transcripts were uploaded into NVivo 12 to facilitate data storage and retrieval in analysis.

The first author (EK) undertook open coding with a guide of literature and initial data insight from fieldwork. This process sorted responses into meaningful categories using the words of respondents. This process helped to break down responses into common issues, ideas, and events which were then coded. The second author (RM) reviewed a sample of transcripts and then both authors discussed the emerging codes for consistency. The next stage of analysis examined connections within the initial codes generated. This was achieved through an inductive and iterative process of back-and-forth reflections between data and the literature and used to revise codes into major patterns [44-46]. These emerging findings were further discussed between the authors. Through this iterative process, codes were revised and merged into broader meaningful patterns and themes. The paper is reported according to the COREQ guidelines.

RESULTS

The key findings are presented under the following four themes: Resource and Logistical Constraints; Transgressing Normalised Work Boundaries; High Workload and Unsupportive Atmosphere for Raising Concerns; Silence for the Avoidance of Additional Work. Quotes are used to illustrate each theme and have been edited for language and flow.

Resource and Logistical Constraints

Surgical team members highlighted the daily struggles they faced in having to cope with inadequate facilities, obsolete and malfunctioning laboratory equipment and overcrowded clinical areas. Taken together, these factors created unsafe environments. There were ongoing difficulties with obtaining basic medical consumables such as gloves, syringes, sanitisers, and sutures. These items are frequently unavailable or only in limited quantities and are often of poor quality or the wrong size. Some essential items such as gloves are strictly allocated for specified periods or a particular shift irrespective of how patient needs for care unfold. Moreover, we heard reports that vital equipment that should be available in each theatre is sometimes shared or surgeries have to be relocated at short notice to theatres where equipment is available. This is typical of extreme deprivation of materials and equipment which is common in developing countries [15 47].

> *I am supposed to work with gloves, especially there are gloves that you need when a woman retain placenta you go in it, but these are not there. So, you use the short one and blood covers all your hands (Consultant Surgeon 2 B)*

> *sometimes you have only one machine maybe 3 or 4 theatres and there are only two diathermy machines, and you have to move one from this theatre to the other so that you can have the case done (Peri Operative 5 A)*

Team members reported that they adjusted to resource constraints by maximising the use of available resources in ways that can give rise to unsafe care. This practise was commonly referred to as ‘improvising’ and involved conscious deviations from standard guidelines and procedures. Examples included using disposable items more than once and generally ‘cutting corners’ to circumvent or temporarily ‘fix’ inadequate technology and equipment. Improvising also involved compromising on the quality of items. For example, expired vital drugs and poor-quality sutures that easily tear after surgery and expose patients to infection, were used when

management declined to fund replacements. These situations align with previous studies which have found that temporary 'quick fixes' and workarounds are often necessitated because of inadequate supplies, understaffing and malfunctioning equipment [11 12].

Sometimes we don't have the requisite equipment, materials at hand so that we will be able to perform surgery satisfactorily. You get to the theatre and it like what you get is what you use, we always improvise (Consultant Surgeon 2 B)

Like if we need a specific syringe or a sterile glove and that one is not there, you will be forced to use a disposable glove and therefore infection will set in. So improvising is common here and it is not helping (Surgical Ward Matron 1 A)

Transgressing normalised working boundaries

It was reported that the normalisation of unsafe practice makes it difficult to speak up about concerns. Healthcare professionals are primarily concerned with managing limited material resources for care. This makes it problematic to question long-established norms of behaviour that have been affirmed over many years and woven into the fabric of care delivery. When concerns are raised, they are generally not welcomed by those in authority. This reflects strong social and group conformity [48] that legitimises harmful 'improvision' and elicits silence when confronted with threats to patient safety.

most of the issues have to do with people's frustrations with things like equipment, rather than team issues like voice. Not that it doesn't exist, but it is not recognised as a major factor because people will say but if I don't have this or that to work with why should I worry about team problems? It is the least of their problems! (Manager, Consultant Surgeon 1 A)

Sometimes we are supposed to use something for patients 'one time' but because we don't get it, we will use it 3 or 4 times and …it becomes the

norm such that if you want the correct thing done, people will say -ooooh you want to waste it [resources]– NO (Peri Operative Nurse Matron 1 A)

There are far less instrument at the ward for dressing wounds and managing patients and they have 'manufactured' way of doing things [improvising]. So, if you come and you are not privy to that normal way of doing things then it becomes a problem for you (Surgical Ward Nurse 3 B)

The situation is reinforced by a steep authority gradient and leaders' preoccupation with managing with severely limited resources. According to respondents, although they work together as a team, the strong authority gradient which underpins their work enables leaders to exercise strict control over how and when care is delivered.

…in the surgical team, we are all not the same – we are not at the same level. The surgeon is a doctor and a specialist… The scrub nurse might be a degree holder– so even if you are right, you are told to be wrong (Peri-Operative Nurse 3 B)

Power as in who is in authority, power as in who will find himself head of the team. And the way he or she sees things. That is how it must go (Senior Nurse Anaesthetist 3 A)

In addition, we found the onerous demands associated with managing with limited resources inclines heads of units, teams and departments to downplay and trivialise employee voice. Some senior managers showed little appreciation for employee voice and were not motivated to hear and act on concerns when they are raised.

I know attitude of seniors can inhibit voice, but such is not common in our system. My mistakes as a surgeon cannot make much difference, cause any much harm. The issue of harm is due to people not being listened to is somehow exaggerated. The problem we have is lack of resources (Manager, Consultant Surgeon 3 B)

Moreover, we found that surgical leaders apply coercive power to ensure economical use of resources and punish staff who do not manage to work within these constraints. For example, we heard reports that staff are sometimes required to squeeze blood out of gauzes for re-use in surgical dressings. Others are ostracised, reprimanded or punished for insubordination for raising concerns and trying to maintain standards and protect patient safety against the wishes of their superiors.

> *A matron told me I could use only one pack of gauze for the case, but I needed more to work with. There was blood all over and we had to mop and clean with the gauze. But she kept telling me I should use only a pack of gauze. And I didn't know what to do but like she said I have to manage with it (Senior Peri Operative Nurse 5 A)*

> *Sometimes if you stand by your point and it is reported, you are given a query letter. Should I be the one to say it for them to take me on? – (Peri Operative Nurse 2 A)*

We found that the daily stress associated with having to work with unserviceable and malfunctioning equipment engendered unsafe care and employee silence. For example, we heard reports of surgeons using inappropriate instruments in ways that risk safety as well as surgeons becoming so frustrated with malfunctioning instruments during procedures that they threw them away. Previous studies have found problems with surgical instruments as a source of stress [13 14] with surgeons sometimes engaging in unsafe practices which is rarely criticised [49 50]. We found that team members are hesitant about making suggestions about improving safety to surgeons who are already struggling with equipment and making the best of what they had. And surgeons on their part tended to disregard suggestions about how care could be improved.

> *Sometimes the surgeons can throw away the instrument. some will also break the instrument and tell you – this is not the instrument I need, get me*

a better or the right instrument. He can just throw it away. So, whether it hits you or not (Senior Peri Operative Nurse 5 A)

Maybe you are telling the surgeon something, and he is struggling with the instrument, he will not listen to you (Peri Operative Nurse 3 B)

Resources are not available, so the lead surgeon is probably looking at how he does something which works and not necessarily how it is done internationally. So even though what he is doing is not necessarily right he probably wouldn't listen to anyone because he just wants to do what he does which is safe for the patient. So, if anyone makes a suggestion you are likely to ignore them (Specialist Surgeon 4 A)

High Workload and Unsupportive atmosphere for raising concerns

Both hospitals have a high patient to staff ratio with long lists of daily scheduled surgeries. Each theatre undertakes seven to eight surgeries daily and wards are always full of patients being prepared for surgery or recovering. Stress from such an intensive workload and inadequate working space creates an unsupportive atmosphere for voicing concerns.

Yes, there is excessive work demand, if you pick the list of cases [surgeries] today like 8 cases in one theatre so we need to be working briskly and it can be hostile (Consultant Anaesthesiologist 3 A)

...the day that the list is short everybody is friendlier but when you have a long list there is potential acrimony (Resident Surgeon 1 A)

Attending to so many patients within a limited time frame, makes it difficult for team members to comply with safety standards or raise concerns with colleagues when these are not met. This reflects how high workload leads to poor care and silence. Beyond the tendency to remain silent, team members reported how high workload and stress in surgical units engenders harsh voice and responses. Raising concerns even in a 'cordial manner' sometimes led to negative

reactions. The stress resulting from high workload takes a toll on personal resources such as physical energy and emotions [34] leading to an unfriendly and hostile voice atmosphere and failure to act upon patient safety concerns.

> *You know sometimes the stress of work – the person is looking at workload and also looking at what you are doing which he thinks is not in the right channel. The tendency is to flare up. They easily get pissed off (Peri Operative Nurse 5 A)*

> *It was a difficult operation, after doing it we realise that we had turned the intestine upside down then I drew his attention [the lead surgeon] to it. He said oooh the child's prognosis is not good and coming to do all that is going to be very difficult. So, we left it so (Resident 4 B)*

Silence as Avoidance of Additional Work

We found that overwhelming workload inclines many team members to remain silent to avoid the burden of having to take on additional work to remedy patient safety situation. Similarly, it was reported that some surgical leaders tended to disregard or trivialise concerns due to the implications of having to take on the burden of the additional responsibilities required to deal with the situation.

> *We had a very difficult case that took about 8 hours and in the recovery room we realise there was a problem, so we went to call this boss. But going back to look for another blood for the additional procedure will even be another headache. He [the boss] just told us - at this point there is nothing he can do. So, we left it so (Resident 5 A)*

> *Sometimes you are too stressed, that is one of the reasons why you may not like to go an extra mile. If I tell my boss that we should do it this way, we are going to spend another one hour on the ward. But I am tired, so fine we will just do it the way he wants it done even though I know it is not the right*

way or the best… So, if your boss says it is a hopeless case well you leave it (House Officer 1B)

Some people go about the work at baseline level because they are just not satisfied with number one –lack of basic things to work, remuneration. So, they just perform basic functions they don't want to do anything out of their way. They will never speak - they have nothing to say about anything. Just come and do the barest minimum and go away (Senior Specialist Surgeon 2 A)

Responses revealed that speaking up about patient safety concerns is a strenuous and taxing act, not only for observers of unsafe care, but also for colleagues who are already overwhelmed with work. This reflects the inclination to conserve and refrain from investing further resources when experiencing persistent loss of personal resources such as energy and emotions [34].

You see! when you are tired with a lot of workload you don't feel like talking. The little energy you have you will rather reserve it for something else rather than talking which of course might not be taken at the end of the day so why bother yourself to talk (Senior Peri Operative Nurse 2 A).

DISCUSSION

This study makes a novel contribution to understanding how severe resource constraints and high workload influence the willingness of staff working in surgical teams to raise concerns about patient safety. Previous research has examined how a range of personal, situational, and hierarchical factors affect voice and silence [24 25 27 28]. Our study in addition, contributes the finding that material resource constraints and high workload can create an unsupportive atmosphere for staff to raise legitimate concerns about unsafe care. This is because stress associated with high workload and inadequate equipment can quickly deplete personal resources (e.g., physical energy, emotions), encourages unsafe culture of care and leads to

systemic silence about poor care. These create strong group norms [48] that are inimical to patient safety and which are difficult to defy.

While previous research highlights how hierarchy and power asymmetry engender employee silence [24 27], our study brings new insight to the understanding of leaders' behaviour and exercise of power in surgical units. Surgical leaders' arbitrary use of power may be primarily motivated or at least heightened by the stress of having to manage within severe resource constraints. Indeed, the authority gradient may be far more damaging to employee voice in LMICs health care contexts where severe resource constrains are commonplace.

Consistent with COR theory, overstretched or exhausted resources predisposes individuals to be protective, defensive and aggressive [35]. The lack of material resources and high workload generates stress that takes a toll on physical energy and the emotional reserves of staff. As employee voice is a discretionary act that sits outside core job roles [51], staff under such stressful situations are motivated to conserve their energy and disinclined to report concerns about unsafe care as this may exacerbate the levels of stress they are subject to in the long term. While employee silence is prevalent under circumstances of resource constraints and high workload, these situations also give rise to harsh voice and harsh responses which similarly have a negative effect on the voice atmosphere. Leaders' tendency to insist on the economic use of material resources through coercion and power makes employee voice instrumental in maximising material resources. This is consistent with voice itself being used as a resource in stressful circumstances [31] and aligns with the resource acquisition tenet underpinning COR theory [33 35].

Our study presents evidence of missed opportunities for improving patient safety in LMICs. It has been noted that safe care and harm prevention is an imperative in LMICs which are characterised by high disease burdens and a pressing need to avoid wasting scarce resources [52].

However, we found that the lack of material resources and high workload fundamentally work against employee voice and engenders further harm to patients.

Implications

While the availability of sufficient resources and a satisfactory workload do not guarantee employee voice, these are *a sine qua non* for creating a supportive atmosphere in which staff are able to air concerns and those in authority are motivated to listen and act when concerns are raised. This reinforces the need to provide essential equipment and human resources for patient safety in LMICs [15]. However, due to the obvious risks of imposing inappropriate and unrealistic standards in LMICs [47 53], we do not advocate the use resources in exactly the same way they are used in HICs. For example, while improvisation practices such as the reuse of single-use item are inimical to safe care, these simply reflect the stark reality of coping with the vicissitudes of providing care against the background severely limited resources in LMICs.

Limitations

It is important to note the study limitations. Despite the large sample size across surgical units and specialities, our findings are largely limited to hospitals in similar contexts. It will therefore be important to extend this study to more facilities in other developing country contexts to understand more about this phenomenon. Moreover, because voice and silence are influenced by personality factors such as assertiveness, this may potentially have influenced participation and responses in the study. Finally, the inherent limitations of interviews such as recollection bias and the influence of social desirability factors on answers given may potentially skew responses. Observation and ethnographic work could therefore be added to strengthen these limitations in future research.

CONCLUSION

Our study contributes understanding as to how high workload and severely resource constrained environments influence employee attitudes to speaking up about unsafe care. The daily stress, and frustrations associated with working in such environments normalises unsafe practice and creates an atmosphere which is unsupportive for voicing concerns. In such situations, those in authority are often unwilling to listen or take action in response to legitimate issues raised. While it is widely recognised that it takes a degree of courage for someone to speak up, it is less immediately obvious that it may also take a degree of courage for those in authority to take on board the issues raised and act on them, since this may involve challenging colleagues, changing routines and redirecting resources [25]. Therefore, in highly resource constrained environments such as those typical of LMICs health settings, supporting 'hearer' courage may be as important as supporting speaking up in the first place.

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