Original Research **Open Access**

Balancing Specialist with Holistic Care: Challenges for Nurses in Managing Comorbidities of Hypertension and Diabetes in Orthopaedic Wards in Tanzania

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Abstract

Background: The greater prominence of hypertension and diabetes in the Tanzanian population poses challenges for nursing care in hospital settings because of the increased likelihood of comorbidities among in-patients. Comorbidity refers to one or more conditions that exist during the clinical care of a patient who has a specific injury or disease as the presenting condition. This study looks at nursing care in orthopaedic in-patient wards where many patients also have high blood pressure and diabetes. Nurses spend more time with patients than other health workers and thus are better informed about patients' overall health during hospital stays. Through interviews with nurses, this study explores how the hospital's focus on orthopaedic care impacts on the nursing care also needed to manage hypertension and diabetes among patients in the wards.

***Objective**:* To investigate nurses' experiences in balancing orthopaedic care of hospitalised patients with also caring for those patients with diabetes and hypertension and to enlist their suggestions and recommendations as professionals on how to adopt a more holistic approach to the care of these patients.

Methodology: A qualitative exploratory research design was used. In-depth interviews with ten registered nurses on orthopaedic wards explored their experiences of caring for orthopaedic in-patients with comorbidity conditions of hypertension or diabetes. Purposive sampling was used to recruit nurses from male and female general wards. Based on in-depth reading of the English language transcripts, open coding of responses generated an initial set of codes. These were then grouped systematically into broader themes presenting evidence on the nature and sources of nursing challenges, implications for patients, and nurses' proposals for improvement.

***Results**:* Key problems identified include: poor teamwork in the flow of information and communication between nurses and between nurses and other healthcare workers; deficiencies in the availability of functioning essential equipment and consumable and lack of training about comorbidities; and patients' limited knowledge about their condition and medications. These challenges reinforce each other and amplify work pressure on nurses. This results in poorer health outcomes, delayed surgeries, prolonged wound healing, extended hospital stay, and increased mortality rates among patients with comorbidity.

Conclusions and recommendations: This study concludes that moving from specialist towards more holistic care requires a systemic change at hospital level towards more effective team work and collaboration in information sharing between doctors, nurses and patients. This requires not only changes in the nursing process itself, but also in the overall approach to patient care.

Keywords: Comorbidity, Hypertension, Diabetes, Holistic nursing practice, Teamwork, Orthopaedic wards, Tanzania.

Introduction

In Africa, the prevalence of hypertension and diabetes has increased more among the adult population. Levels of diagnosis, treatment, control are low, patients, even when diagnosed, often lack awareness of their condition, and medication adherence is low (1, 2, 3). This greater prominence of hypertension and diabetes in the population poses challenges for nursing care in hospital settings in Tanzania due to the increased likelihood of comorbidity with hypertension and diabetes among in-patients across the different departments in a hospital (4). Nursing care in orthopaedic hospital wards, however, takes an approach in which the focus of attention lies on the presenting condition for admission. Apart from orthopaedic care, however, nurses also have to deal with comorbidities that they encounter among patients in the wards.

The definition of comorbidity differs from that of multimorbidity. Multimorbidity refers to a number of coexisting diseases within one person when no condition is given privilege over another, while comorbidity refers to one or more health conditions that exist during the clinical care of a patient who has a specific disease as the presenting condition. Comorbidity, therefore, implies “a disease focus and reflects the preoccupation with a single disease” (5). The greater prevalence of comorbidities when hospital care is based on a single-disease model, however, can result in poorer patient outcomes in terms of mortality and morbidity (5). In particular, the experience of other disorders or diseases in addition to the presenting condition of the patient causes increased complexities of care, greater resource use, and poorer patient outcomes. The implication is that nursing care under these conditions needs to develop new, patient-centred, and more holistic models of care (5).

The need for greater attention to comorbidities rather than a single-disease orientation, therefore, gives ‘nurses the opportunity to re-establish their professional basis within the multidisciplinary team’ (5). Effective communication between nurses, clinicians and patients has been associated with better hypertension control and positive outcomes in chronic care (6). The reason is that nurses ‘are in the unique position of being the professional that is present throughout the patient’s pathway’, and thus play a central role within the multidisciplinary team (5).

This study uses a qualitative enquiry to investigate nurses’ experiences and challenges in dealing with orthopaedic in-patients who are hypertensive or diabetic in a context where their work environment is mainly focused on specialised orthopaedic care. More specifically, this study investigates how nurses balance orthopaedic care with care of patients with hypertension and diabetes in their daily work, and describes the problems and challenges nurses identified that point to how caring for comorbidities could be improved.

Methods

Study design

This study used a qualitative exploratory research design based on interviews with registered nurses about their experiences in dealing with the challenges they encountered when caring for orthopaedic patients in the wards who also have comorbidity conditions of

diabetes or hypertension. Fieldwork was conducted at Muhimbili Orthopaedic Institute (MOI), the national referral hospital that caters for trauma and injury.

Sampling

Purposive sampling was used. During fieldwork the principal researcher visited all male and female public wards at MOI, each ward on a different day. All nurses who were present in the ward, had at least three years of work experience, and consented to take part in the study were included in the sample. None of the eligible available nurses declined to take part in the study. In total 10 nurses (3 male and 7 female) were thus selected in the sample.

Data collection and management

Face-to-face in-depth interviews were conducted by the principal researcher with respondents using a structured interview guide with open-ended questions. Data collection was done in June and July 2020. The interviews took approximately 30 to 45 minutes each and were recorded digitally. Additional notes were taken during the interviews. All nonverbal responses were noted and taken into account. After each interview the researcher took notes of emerging key themes and issues. Interviews were conducted when nurses were on their break to avoid interfering with their duties in the ward.

The audio recordings were transcribed verbatim and the Kiswahili transcripts were then translated into English by the principal investigator. Subsequently, the researchers cross-checked the original Kiswahili and English transcripts with the original audio files.

Data Analysis

A thematic approach was used for analysing the qualitative data. Based on in-depth reading of the English language transcripts, open coding of responses to each question of the interview guide by the principal research jointly with one of the co-authors generated the initial set of codes (7). Coding was done inductively based on what nurses said in the interviews. Subsequently, the codes were then grouped systematically into broader themes presenting evidence on the nature and sources of nursing challenges, implications for patients' health, and nurses' proposals for improvement. This process of data analysis was done manually based on the transcripts of the interviews.

Findings

Demographic characteristics of respondents

Table 1 gives the demographic characteristics of the nurses interviewed for this study.

All the nurses interviewed for this study said that dealing with orthopaedic patients with hypertension and diabetes presented real challenges in their daily work. None said it was not a problem.

Overview of themes and codes

Table 2 shows the key themes and codes that resulted from the process of data analysis as described in the methods section.

Table 1: Demographic characteristics of participants

Participants	Age	Gender	Education status	Years of work experiences
RN 1	45	F	Diploma level	4
RN 2	34	F	Degree level	3
RN 3	36	M	Diploma level	3
RN 4	51	F	Diploma level	9
RN 5	57	F	Diploma level	17
RN 6	48	M	Degree level	6
RN 7	52	M	Diploma level	14
RN 8	40	F	Degree level	7
RN 9	35	F	Diploma level	5
RN 10	55	F	Diploma level	14

Table 2: Overview of themes and codes

No	Themes	Codes
1	Problems arising in the nursing process: team work, information sharing and competing pressures on nurses' work	○ Emphasis on presenting orthopaedic condition. ○ Failure to pass on vital information about comorbidities. ○ Not reporting where medicines are kept. ○ Lack of team work in night shift. ○ Spending time with comorbid patients.
2	Problems of lack of functioning equipment, consumables and training needed for caring for comorbidities.	○ BP machine not functioning and need to borrow from other wards ○ Test kit for diabetes not available in ward or in neighboring ward ○ No training available for dealing with hypertension or diabetes
3.	Problems arising from knowledge deficit of patients about chronic illness and patients' inability to pay for medicines	○ Patients unaware of their comorbidity ○ Patients lack of knowledge on use of medicines ○ Inability to pay for medicines ○ Medicines not covered by insurance ○ Delays due to lack of medication.
4	Poorer health outcomes and longer stay of patients in the ward	○ Comorbidity only dealt with when a crisis occurs ○ Postponement of surgery due to hypertension ○ Slow healing of wounds due to undiagnosed and uncontrolled diabetes ○ Longer stay at hospital because of hypertension or diabetes ○ Sudden crisis and danger of mortality ○ Problem persists even when patients are re-admitted
5	Nurses' suggestions for improvement	○ Nurses to act proactively, not reactively ○ Nurses' opinions to be taken into account, not be ignored in team work with doctors

Theme 1: Team work, information sharing and competing pressure on nurses' work

Many respondents observed that nursing care is focused on the presenting (orthopaedic) condition, with hypertension and diabetes only dealt with when it manifests itself as a problem.

Usually, it takes time to discover whether patients were hypertensive or diabetic, because this hospital deals with orthopaedic, trauma and neurological conditions, you know (RN6).

As a result of this focus on the presenting condition team work and information flows among nurses and between nurses and other health workers were ineffective in dealing with comorbidity.

> "*You find patients are brought in the ward with no information on vitals and you get tired of starting afresh when you have other things to do. When the outpatient's department or the emergency departments transfer patients to the ward, they often don't come with a clear report; those coming from high dependency unit (HDU), to be honest, they do a good job: when they bring patients to the ward, they give a proper report" (RN4).*

Another nurse pointed out that there is also the lack of communication between nurses or between shifts.

> *"When a nurse checks a patient's vitals for blood pressure and blood sugar and finds them to be high, it is important then to report this to other nurses who have to deal with this patient" (RN10).*

Lack of coordination among health professionals is particularly manifested during the night shift. One nurse gave the example of a hypertensive patient.

> *"You find yourself alone as registered nurse supported by some attendant nurses, the condition of the patient changes suddenly …. you notice that the blood pressure is too high. You contact the doctor on call … but doctors often take a long time to respond. The problem with the protocol, however, is that I cannot take a patient immediately to the emergency unless the doctor on-call comes and gives clearance … for the patient to be sent" (RN6).*

The increase in work pressure due to comorbidity puts an extra burden on nurses:

> *"… with a number of 30 patients in the ward and you receive patients from outpatients or emergency who need ECHO and ECG tests, and then you note this patient might be diabetic and hypertensive, … it is tiresome you know" (RN2).*

The resulting competing pressures on their working time pose a dilemma for nurses in caring for patients with comorbidity. One nurse explained this dilemma:

> *"It is true that we have staff shortage, but I do spend 3 minutes to talk with each patient individually to get a history. I think by doing this it helps me to note other issues – apart from orthopaedic – like blood pressure or diabetes early and educate them on how to deal with it. Because our purpose is to treat patients right, isn't?" (RN4).*

Theme 2: Missing /non-functioning equipment, lack of consumables and lack of training

Nurses are aware of the need to check blood pressure or blood glucose level, but this is not always feasible.

> *"We encounter a shortage of equipment here, sometimes you want to take the blood pressure of patients, but you find the machine is not working so you have to go and borrow from other wards. We have only one machine in each ward; if it has a problem, you have to stop or find it somewhere else" (RN2).*

In other instances, the problem often is that insufficient equipment combines with lack of information sharing.

> *"I took the file and noticed that she is diabetic. The problem of keeping blood sugar medicine here in our ward is an issue; we don't have a fridge. … I looked for the medicine, couldn't find it and asked the assistant nurse to go look in the neighbouring ward but they did not have it either. He found the medicine for our patient kept in the fridge in another ward! The good thing was that her name was written on it" (RN6).*

Irregular availability of equipment and consumables poses another problem for nursing care.

> *"Medical equipment is sometimes available and sometimes it is not … there are no consumables for testing diabetes and when you go to the neighbouring ward they haven't got them, you see" (RN3).*

Finally, as one nurse attested, there are no opportunities for training available for nurses to improve their capabilities for dealing with hypertensive and diabetic patients.

> *"At MOI, there is some training that I received like phlebotomy and customer care, and there are others, like HDU nurses, who also went for critical care training. But to say comorbidity training – no! I have not gone myself or heard about it here" (RN2).*

Theme 3: Patients' lack of knowledge about chronic illness and problem of paying for medicines

Patients are often unaware that they suffer from hypertension or diabetes:

> *"Many patients I get to meet do not even know whether they are hypertensive or diabetic, so they say 'I didn't know I was hypertensive'" (RN8).*

But diagnosed patients also do not always take their medication.

> *"Many patients are unaware of the use of medicines so they take the dose from a single prescription and after finishing they stop because they don't know the importance of continuing to take them" (RN10).*

A further problem is that patients often are not able to pay for their medication for blood pressure or diabetes because, as one nurse explained, they also have to pay the costs of orthopaedic surgery and care.

> *"Another issue is that patients who pay cash … they cannot afford the medicine because they come with [orthopaedic] injury… and don't know about comorbidity. So, you tell a patient about it but they don't agree because then they cannot afford to pay for operation …. When you tell them they have another problem they get confused" (RN5).*

The availability of health insurance, however, does not always solve the problem:

> *"The National Health insurance (NHIF) is a problem. Sometimes … patients are told that certain medicines are not covered by the insurance so they have to buy them with*

cash. Sometimes the prescribed medicines are not available at that time" (RN5).

A further implication is that work pressure on nurses increases in dealing with comorbidity because, if "*medication often takes long time to arrive for cash patients, it means that patients have to wait" (RN9).*

Theme 4: Poorer health outcomes and longer stay of patients in the ward

Undiagnosed and uncontrolled hypertension or diabetes lead to poorer health outcomes and often a longer stay by patients in the hospital.

> *"It happens many times in my shift that patients get planned for surgery but they get cancelled and sent back to the ward because of high blood pressure. Anesthetists often don't check patients' blood pressure but just ask a few questions to patients and copy the earlier measurements from what nurses have written. I think that is also a challenge!" (RN4).*

Another outcome is that diabetes often slows down the healing process of patients after surgery.

> *"One day a patient came in the ward, but we did not discover that this patient was diabetic. This patient was taken for operation and brought back OK. … The patient's wound took a long time to close and heal. … We asked ourselves why? We said let's check the blood sugar level. ...oooh! … We discovered he was diabetic" (RN3).*

The worse outcome is that, as one nurse put it, "*patients with hypertension or diabetes may change condition and even die suddenly if not watched carefully" (RN10).*

Finally, it often occurs that patients who have been discharged previously are readmitted to the ward while still having undiagnosed or uncontrolled hypertension or diabetes.

> *"Yes! There is challenge. Sometimes you find patients get readmitted with high blood pressure again while it was discovered before. I think there is a need for regular health education for patients about what food to eat and how to use medication at home before being discharged to avoid this kind of situation" (RN7).*

Theme 5: Nurses' suggestions for improvement

A point several of the nurses made in various ways is that "*we nurses have big role to play with patients, because we are the ones who stay with patients all the time but we don't take that chance and we have not made sufficient effort to do so*" (RN8).

Moreover, as another nurse put it: *"there is a problem of working as a team here" (RN6).*

The implication of this is that, as one nurse explained, nursing care tends to be reactive rather than proactive in dealing with comorbidity.

> *"We do a nursing diagnosis and assessment but we don't discuss and present it among ourselves or with others. I find the patient has high blood pressure, I call the physician, and that is it. It is as if we have separated ourselves in dealing with medical issues of patients; we deal with orthopaedic issues and we are done. We don't discuss issues we find after our diagnosis like what doctors do. … We don't act as professionals!" (RN1).*

As another nurse pointed out, this reactive response affects how nurses perceive their own

role and how this role is perceived by other health care workers.

> *"As a nurse, there are certain things concerning responsibility I wish they would change: doctors to play their part in their responsibilities and nurses to have their own opinion and responsibility concerning patients … but the problem is that we get ignored and many times nurses have no say … We must have the mandate and respect nursing care practice. … I wish we could have round discussion between doctors and nurses about patients in the wards. Aga Khan Hospital has that coordination between nurses and doctors" (RN8)*

Discussion

The findings in this study highlight the different dimensions of the challenges nurses face when taking care of orthopaedic patients who suffer from comorbidity with hypertension and diabetes. As the results show, these main challenges they experience include (1) lack of team work and poor flow of information between health workers; (2) missing or non-functional equipment and lack of consumables; lack of training of nurses to deal with comorbidity; and (3) patients' unawareness and lack of knowledge about the condition and about medication use. These findings resonate well with similar issues raised in the literature. Lack of team work and coordination among nurses and between nurses, doctors and other health care providers is a theme frequently raised in the literature (8,9,10). Missing or defective equipment and lack of consumables in delivering health care is also a common concern (11). Studies done in Ethiopia and South Africa showed the devastating effects of lack of working equipment in resource-poor settings (12, 13). The South Africa study, in particular, concluded that not only do shortages of medical equipment have a negative impact on patients' health but also on the hospital and on the nursing profession (11).

Patients' unawareness of their comorbidities and their limited understanding of use of medication and their implications for outcomes in hospital care is a problem commonly raised in the literature (14). A study on Ghana further suggested that engaging competent and knowledgeable family members to provide support can help improve patients' knowledge and self-management of diabetes (15). Other studies found that undiagnosed hypertension among trauma patients and poor medication adherence among diabetic and hypertensive patients contribute to increased length of stay, follow-up care and readmission, and mortalities (15, 16).

Moreover, these different sets of challenges tend to reinforce each other by amplifying rather than reducing the problem of dealing with comorbidity. The interactions between these sets of challenges, therefore, constrain the environment in which nursing practice has to operate. For example, work pressure on nurses increases when information is not shared or teams do not operate properly, equipment or consumables are not functioning or not available, or nurses do not have sufficient training in dealing with comorbidity. But, in turn, working under pressure limits nurses' capacity to attend to information sharing, checking equipment and availability of consumables, learning about dealing with comorbidity, or informing and assisting patients to manage their

condition. The consequences of these negative interactions are shown to be poorer health outcomes, postponement of surgery and slow healing of wounds, longer length of stay of comorbid patients in the ward, and the danger of increased mortality among these patients.

The consequences of these challenges and their negative interactions are shown to be poorer health outcomes, postponement of surgery and slow healing of wounds, longer length of stay of comorbid patients in the ward, and the danger of increased mortality among these patients.

Finally, the findings also show that nurses are well aware that they have to play a role in taking holistic care of patients but that the singular focus on the presenting condition limits their professionalism to do so.

This is a common theme in the literature on nursing. As one source argues: nurses 'are in the unique position of being the professional that is present throughout the patient's pathway', and thus have to play a central role within the multidisciplinary team (17). The isolation experienced by nurses when dealing with comorbidity affects how nurses perceive their own role and how this role is perceived by other health care workers. As one reference argues: "the underlying problem has less to do with lack of commitment or of morale of nurses – for which nurses are often blamed or blame themselves – but rather is inherently systemic in nature." (18). As pointed out in the literature, for example, effective communication between patients, nurses and clinicians has been associated with better hypertension control and positive outcomes in chronic care (6).

Conclusion and recommendations

The basic premise underlying this study is that nurses spend more time with patients than any other health workers and, therefore, have valuable insights into what is happening to patients' general health when hospitalized in the ward. This paper has shown, however, that the single disease focus of hospital care makes it difficult for nurses to deal effectively with the care required for dealing with the prevalence of comorbidities with hypertension and diabetes among in-patients in the wards.

On the basis of nurses' experiences this study identified three sets of causes that make it difficult for nurses to adopt a more holistic approach to care. First, information flows and effective communication among nurses and between nurses and other health care workers mainly concern the presenting condition, but not the comorbidities prevalent among patients in the ward. Second, the lack of functioning equipment and of consumables that nurses require to deal with patients who suffer from hypertension and diabetes, as well as the lack of additional training for nurses about dealing with comorbidities. Third, the knowledge gap and inability to pay for medications many patients encounter with respect to their condition of hypertension or diabetes puts an additional burden on nursing care which is insufficiently catered for. The study then showed that the consequences of these limitations on the care of hypertension and diabetes are poorer health outcomes of these patients and longer length of stay at the hospital.

Finally, this study lists some of the suggestions nurses made concerning the care of patients with hypertension and diabetes. The key issue

here is that holistic care can be improved by taking nurses' opinions more effectively into account and thus recognising the specific responsibilities of nurses as professionals as a key part of team work. This requires more effective team work and collaboration in information sharing between doctors, nurses and patients.

Limitations of the study

This study was based on a single centre – a national referral hospital dealing with orthopaedic and neurological injuries. The literature suggests, however, that similar challenges are widely found in specialist wards.

Ethical considerations and clearance

Ethical clearance was obtained from the Senate Research and Publication Committee of Muhimbili University of Health and Allied Sciences (MUHAS) - Reference No. DA. 282/298/01/C. Consent forms in Kiswahili were provided to all nurses in the sample for signing prior to data collection. Participants who gave their consent were able to withdraw from the study at any time during the interview. To secure confidentiality, each transcript of the interviews was given an ID number without mentioning the respondents' names.

Acknowledgments

The authors wish to thank Maureen Mackintosh, Pam Smith, Marc Wuyts, Gift Lukumay and Edith Tarimo for their comments and suggestions on successive drafts. Special thanks to the nurses who agreed to be interviewed. Without them this study would not have been possible. The authors thank the Executive Director of MOI for supporting this study.

Authors' contributions

CSF and DAM conceptualised and developed the design and the interview guide for this study. CSF collected the data. CSF and SMM undertook the data transcriptions in Kiswahili and in English and did the data analysis (coding and selection of themes). CSF, SMM, FLM, and DAM wrote, discussed and edited the successive drafts. All authors read and approved the draft for submission.

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