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Quality of nursing care and nurses' working environment in Ethiopia: Nurses' and physicians' perception

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ABSTRACT

Background: Nurses play critical roles as patient advocate, regulating quality of care and improve health care values. Data are scarce regarding quality of nursing care in Ethiopia.
Objective: To assess quality of nursing care and convenience of the nurse working environment to provide quality of nursing care in a tertiary hospital in Ethiopia.
Methods: Data was collected prospectively using Quality of Nursing Care Questionnaires of Safford & Schlotfeldt and Practice Environment Scale of Nursing Work Index (PES-NWI). One hundred seventeen nurses and 51 physicians were included and data was analyzed using SPSS for windows version-20.
Result: Four of the five PES-NWI variables had mean score less than 2.5, suggesting the nursing environment and management was unfavorable to assure quality care. All nursing care performances were low. The highest score was in nurse carryout orders (66.7%) and lowest in nurse-physician collaboration (24.8%).
Conclusion: The quality of nursing care is substandard. Favorable environment and nurse physician relationship must be established to provide quality care.

1. Introduction

Healthcare quality is defined as "the application of medical science and technology in a manner that maximizes its benefit to health without correspondingly increasing the risk" or "provision of care that exceeds patient expectations and achieves the highest possible clinical outcomes with the resources available" (Donabedian & Health Administration Press, 1980; Ovretveit, 1992).

Nursing care is among the most important components in provision of quality health care (Ali, 2012; Leana & Joanne, 2004; Lois, 1996; Total quality management, 2011). Nurses play critical roles acting as patient advocate, regulating quality care and improving health care values (Leslie, 2008). Hospitals are expected to participate in a range of quality improvement activities which will inevitably influence the quality of nursing care (Center for Studying Health System, 2018).

Quality of nursing care is affected by resource limitations, nursing documentation, the hospital nursing system, knowledge, skill and attitude, and communication with other care takers, patients and their families (Andaleeb, 2001; Center for Studying Health System, 2018; The Joint Commission, 2010; Donabedian, 1988; Leslie, 2008; Total quality management, 2011; Ward, Lindeman, & Government Printing Office, 1979).

Quality assessment studies measure the three aspects of quality – *structure, process, and outcome* and the most recently well-organized approach is available from Standards for Quality Improvement Reporting Excellence (SQUIRE) Guidelines (Donabedian, 1988; squire-statement.org, 2018). The structure and process of nursing quality can be evaluated by assessment of the nursing staff, nursing management, and their working environment (Donabedian, 1988; The Joint Commission, 2010).

A recent survey of Jordanian nurses on quality of care showed that nurses usually provide high quality of care and the most important variables were adequate time to complete assignment, nurse assistance to physician, time to carry out orders and give on time treatment, and

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availability of Equipments and supplies readily and in good condition (Mrayyan, 2006). On the contrary a Brazilian study showed low quality of nursing care but high patient satisfaction (Burhans, 2010). A study from South Africa identified different quality of care level from 11 to 73 % performance in different districts (Leana & Joanne, 2004).

A recent study showed that nurses perceive the quality of nursing care as meeting human needs through caring, empathetic, respectful interactions within which responsibility, intentionality and advocacy form an essential, integral foundation (Burhans, 2010).

Though quality of health is an important objective in Ethiopia (moh.gov.et, 2018; sphmmc.gov, 2018), there are limited data on status of quality of nursing care (Abdosh, 2006; Azanu, 2014; Burhans, 2010; Mrayyan, 2006). In Ethiopia, the highest level of clinical nursing degree for patient care is mainly BSc while MSc and PHD nurses holding academic and administrative responsibility. Nurses are paid 1500–2400 USD per year and there is no retention strategies in most Ethiopian health institutions with high nurse turn over being a common challenge in the country. The nurse to patient ratio ranges from 1:6 to1:12 based on the individual institution patient load and nurse availability.

The primary aim of this study was to assess the convenience of the nursing working environment and nursing management and the way these factors influence the quality of nursing care at a tertiary care center in Ethiopia. The second aim of the study was to evaluate the physicians' and head nurses' perception on quality of nursing care.

2. Methods

This study was a cross-sectional descriptive study done at Saint Paul's Hospital Millennium Medical College (SPHMMC) within the Departments of Pediatrics, Obstetrics/Gynecology, Medicine and Surgery. SPHMMC is a 392 bed teaching hospital with total patient load of up to 300,000/year including emergency and outpatient visits.

Data was collected prospectively over a one-month period from April 1 to May 1, 2016. Data collection was done by giving questionnaires which was returned the next day after completion. The questionnaires were distributed and collected back from participants by two data collectors and completed questionnaires were returned in envelopes provided with the questionnaires on distribution. Included in the study were nurses, consultant clinicians and resident doctors who were working in the four departments during the data collection. A total of nearly 250 nurses were working in the four departments during the study period. Only those who were working during the day time shift and worked at least for six months before data collection time were included in the study. Accordingly, 12 head nurses, 105 nurses and 51 physicians were included.

2.1. System and working atmosphere

In our study, the practice environment scale-nursing work index (PES-NWI) was used to assess the nursing quality structure (The Joint Commission, 2010). PES-NWI is a well validated and reliable tool (with a Cronbach's alpha of the subscales between 0.75 and 0.92) and is in use by many quality evaluators including Joint Commission International (JCI) (The Joint Commission, 2010). This has five variables (subscales): nurse participation in hospital affairs, nursing foundations for quality of care, nurse manager ability, leadership, and support of nurses, staffing and resource adequacy and collegial nurse-physician relations. Based on the means of the five PES-NWI variables, the practice environment is grouped into: Favorable (four or more subscale means exceed 2.5), Mixed (two or three subscale means exceed 2.5), or Unfavorable Work environment (zero or one subscales exceed 2.5).

2.2. Process

Nursing quality assessment tools were used to assess the quality of nursing care. Quality of nursing care questionnaires of Safford & Schlotfeldt (which has content and predicted validity and reliability with Cronbach's alpha of 0.71) were provided, which had specific separate questionnaires for the head nurse and the physicians (Ward et al., 1979). Data was collected by two trained nurses.

2.3. Data analysis

Frequency analysis and proportions was done using SPSS for windows version 20.0. Ethical clearance was obtained from Institutional Review Board of SPHMMC. Consent was sought from all participants of the study.

3. Result

3.1. Nursing care environment

Nursing care environment was measured by the Practice Environment Scale of the Nursing Work Index (PES-NWI). A total of one hundred and five nurses participated in the study. The mean score of only one of the five subscales was above 2.5 suggesting that the nursing working environment was unfavorable. Staffing and resource adequacy scored highest (mean of 2.65) whereas the nurse physician relation had the least of all the 5 subscales with a mean of 1.80 (Tables 1 and 2).

3.2. Perception of head nurses on the quality of nursing care

Head nurses' perception of the quality of nursing care was assessed by five subscale variables: Physical care, Emotional care,

Table 1
Practice Environment Scale of Nursing Work Index (PES-NWI) result summary for selected items.

R.N	Variable	Item	Value (%)
1	Nurse participation in hospital	no opportunity to participate in policy decisions	64(61)
		not involved in the internal governance	74(67.6)
2	Nursing foundations for quality of care	active staff development and continuing education programs for nurses	38(36.2)
		high standards of nursing care expected by the administration	42(40)
		nurses are clinically competent	53(50.5)
		No active quality assurance program	(36.3)
		no patient care assignments that foster continuity of care	63(63)
3	Nurse Manager Ability, leadership and support of nurses	nurse manager backs up the nursing staff in decision making	38(36.2)
		no praise and recognition for a job well done	38(36.2)
		supervisors don't use mistakes as learning opportunities	40(38.1)
4	Staffing and resource adequacy	enough nurses to provide quality of care	39(37.1)
		Enough time and opportunity to discuss patient care problems with other nurses.	37(35.2)
5	Collegial relations between nurses and physicians	physicians and nurses have no good working relationship	67(63.8)
		No collaboration (team work) between nurses and physicians.	79(75.2)

Table 2
Comparison between results; head nurse and physician perception of quality of nursing care.*

R.N	Nursing care variable (mP/mHN)	Item	Head nurse %	Physician %
1	Physical care (3.20/2.90)	Accurate patient information	33.3 (us)	33.3(Nev)
		Carryout orders on time	66.7(al)	39.2(us)
		Precautions to prevent patient injury	66.7(al)	35.3(Stm)
		Notify changes in the patients' condition	58.3(us)	37.3(us)
2	Emotional care (3.61/3.53)	Patients satisfied by quality of care	75(us)	43.1(Stm)
		Nurses attend emotional need	58.3(Stm)	47.1(al)
		Attend to the patients' religious needs	33.3(Nev)	43.1(al)
		Keep the patients' rooms neat and orderly	41.5(us)	66.7(Stm)
3	Administration (3.51/3.28)	Keep supplies and equipment readily available	41.7(us)	43.1(sel)
		Chart keeping	58.3(us)	62.7(Stm)
4	Teaching and preparation for home care (3.70/2.78)	Instruct the patients and their families	33.3(us)	52.9(Nev)
		Prepare for continued care after discharge	33.3(Stm)	37.3(par)
5	Nurse-physician relationship (3.66/3.21)	Inform patients' progress	50(us)	49(Stm)
		Harmonious and smooth team work	50(us)	72.5(Stm)
		Appropriate courtesy to the physicians	50(Stm)	37.3(us)

Key: us – usually, al – always, Stm – sometimes, Nev – never, sel – seldom, par – partially, mP – mean of physicians' score of a variable, mHN – mean of head nurses' score of a variable.

* N.B: the figures show the highest and lowest values in each for comparison.

Administration, Teaching and preparation for home care, and Nurse-physician relationship. A total of 12 head nurses participated in the survey. The result showed that all the five components of care were low with only rarely "nurses performing quality service always". They perform best for teaching for home care preparation and least for physical care (Table 2).

3.3. Perception of physicians on the quality of nursing care

Physician's perceptions of the quality of nursing care was also assessed by five variables similar to the head nurse (Physical care, Emotional care, Administration, Teaching and preparation for home care, and Nurse-physician relationship) from a total of 51 physicians. The highest score was for emotional care and least for teaching and preparation for home care in contrary to the head nurses perception (Table 2).

4. Discussion

Our study assessed the perception of nurses towards nursing working environment and nursing management system and head nurses and physicians' perception on quality of nursing care in SPHMMC. The study showed that the working environment and management is not convenient to assure quality of nursing care and the status of nursing care is poor compared to national and international standards, in both the structure and process (Ethiopian Standard, 2012; Ethiopian Hospital Management Initiative Hospital, 2010; College of Registered Nurses of British Columbia, 2012).

4.1. Nursing work environment and management

The nursing work environment index is unfavorable. The majority of the practice environment scales (4 of the 5) were less than 2.5. Recent studies emphasized that superior quality and patient safety outcomes are associated with favorable perceptions of nurse work environment (Laschinger, 2014; Van Bogaert et al., 2013, 2014). Our nursing leaders and hospital administrators should create a favorable nurse work environment to bring the quality of nursing care to the standard.

Sixty-four (61%) and 74(67.8%) nurses, respectively, reported that they do not have the opportunity to participate in hospital affairs and governance (Table 2). We find this alarming, as nurses are vital to achieve the goals a hospital is built for, the provision of high quality patient care! Most components of the foundation for quality of care including continued professional development (38(36%)), high standards of nursing care expected by the administration (42(40%)), clinical competence of the nurse (53(50.5%)), preceptor program for new nurses 52(49.5%), and absence of specific patient care assignment (63(63%)) were all far less than the standard (100%) showing the inadequate attention given to the quality of nursing care.

Among the five components of the PES-NEWI, the nurse-physician relationship was the least favorable with a mean of 1.80 (Table 1). Sixty-seven (63.8%) nurses reported that physician and nurses don't have a good working relationship, and 79(75.2%) nurses reported that there is no collaboration (team work) between nurses and physicians. Data from head nurses and physicians also showed similar results regarding nurse-physician relationship and teamwork, with only 7 (58.3%) head nurses reporting that nurses usually inform the physicians of their patient's needs, and 37 (72.5%) physicians reporting that nurses are available only sometimes when the physician needed her help. Considering the central role of a team work for quality of care and better patient outcome, it is understandable that this poor relationship and team work have a negative impact on the quality of care. In line with this, a study from California has shown that active teamwork practice was associated with increased job satisfaction of the staff which will also contribute to a better quality of care, double productivity (Ajeigbe, 2014).

Our study also showed that the nursing management was not supportive or suitable for quality of nursing care (mean, 2.04). Thirty-eight (36.2%) nurses reported that there is no praise and recognition for a job well done. They also reported that supervisors don't use mistakes as learning opportunities in as high as 40(38.1%) of the nurses. Additionally, the adequacy of staff and other resources were felt to be limited in the hospital (adequate only in 37.1% and 35.2% respectively).

4.2. Head nurses' and physicians' perception on quality of nursing care

According to the head nurses' and physicians' quality perception questionnaires, all of the nursing care components were substandard.

4.2.1. Physical care

Out of the 12 head nurses only 4(33.3%) reported that they usually get accurate information concerning the patients' condition and 6(50%) usually answer patient calls promptly. Eight (66.7%) of them noticed that their ward nurses always carryout orders for medications and treatment on time and also take adequate precautions to prevent patient injuries. However Out of 51 physicians, 24(47.1%) reported that nurses intelligently understand patient's physical status only sometimes; 21(41.2%) nurses seldom know their patients, and 20(39.2%) nurses

never give accurate information concerning their patient but usually carried out orders on time. Nineteen (37.3%) nurses usually answer patient calls promptly and 18(35.3%) sometime take adequate precautions to prevent patient injuries.

Physicians perceives a lower performance of nursing physical care (mean, 2.9) compared to their head nurses (mean, 3.49). One hypothesis for this discrepancy could be that nurses self-report their duties to the head nurse, who functions as their manager. The physician usually directly observes the care and tends to have a more collegial relationship with the nurses, compared to the relationship between the head nurse and the other nurses. Another possible reason may be higher perspectives of quality of care by physicians as seen from a recent study in Canada, Norway, and the United States. None of these three highly-resourced countries have achieved an ideal health care system from the perspective of their physicians (Tyssen et al., 2013).

4.2.2. Emotional care and administration

Eight (66.7%) head nurses reported that patients know their nurses whereas 22(43.1%) physicians reported patients seldom know his/her nurses. Seven (58.3%) head nurses reported that nurses are usually interested in their patients and 8(66.7%) reported that they are sympathetic. However, 32 (62.7%) physicians reported that nurses are seldom interested in their patient, and only 18(35.3%) nurses usually care properly for their patients showing a much lower performance as perceived by the physicians than the head nurses.

Similar to the physical and emotional care, the administration performance is lower as observed by physicians compared to the head nurses and similar reasons described above might explain the discrepancies (Table 2).

4.2.3. Teaching and preparation for home care

The teaching and preparation for home care was also found to be inadequate in our study (Table 2). A similar result was found in a recent multicenter European hospitals study in which 41% of patients and families reported not being given adequate education, though the extent of care may differ significantly (Ausserhofer, 2014).

In contrast to our result a study from Jordan using the same quality of nursing care – head nurse questionnaire showed that nurses usually provided high quality of care (Mrayyan, 2006). A recent similar study of 136 nurses in a Brazilian pediatric hospital showed favorable work environment and good level of quality care perceived by the nurses unlike our result (Alves & Guirardello, 2016). Cross-sectional US hospitals survey on quality of nursing care and their working environment in different units also revealed 58% excellent quality of care in average which is significantly higher than our result (Chenjuan, 2015). Dutch nursing home study demonstrated that the nurses are generally satisfied with their quality of care (Backhaus, 2017). While there is limited data from similar settings, the above studies from middle and high income countries yielded superior results. This is explainable partly by the high emphasis, perception and expectation of quality of care in these settings than in low income countries. However, provision of quality care should be part of the primary goal in these low income settings as well.

Our data also reflected the objectivity of the day to day nationwide complaints and dissatisfaction on the quality of health care, and more specifically the status of quality of nursing care. We evaluated only one hospital, and no private institution was included, so the generalizability of the result may be difficult to all Ethiopian hospitals. SPHMMC is one of the largest hospitals in the country with more advanced medical staff and equipment than most other public hospitals in the country. The structure and process of the nursing system are similar however, and thus, we expect similar results of quality of nursing care exist in the other public hospitals of the country. The other limitation is that patient perspective regarding quality nursing care is not included in the study.

In conclusion status of quality of nursing care in SPHMMC is poor and requires urgent attention. Our nursing leaders and hospital administrators should create a favorable nurse work environment and establish good nurse physician relationship to improve the quality of nursing care and patient outcome to the standard.

5. Ethical considerations

The study was approved by SPHMMC institutional review board (IRB). Participants of the study had the right not to participate in the study and all participants gave informed consent to participate in the study. Anonymity and confidentiality were maintained with no use of persona identifiers in the study.

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Disclosure

All the authors have no conflict of interest to disclose.

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