

Working Environment of Nurses in Public Referral Hospitals of West Amhara, Ethiopia, 2021

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Abstract

Background: Safe working environment is a key part, and professional right of nurses. But findings indicated nurses work environment as stressful and complex. The negative effects of a negative nurses' work environment lead to poor nurse-sensitive patient outcomes, such as increased mortality, pressure ulcers, medication errors, and complications. It has also an effect on their professionalism, practice of patient's handover. Studies have shown working conditions, professionalism, patient handover and nurse-sensitive patient outcomes are interrelated and form a critical foundation for promoting patients' and nurses' safety in hospitals. However, in Ethiopia, there is scarcity of data on this issue. Therefore, the objective of this study was to assess the working environment of nurses in Public Referral Hospitals in Public Referral Hospitals of West Amhara Regional State, Ethiopia, 2021.

Methods: An institution based cross-sectional study was conducted among 423 nurses from January to February 2021. Random sampling was used to select nurses from each hospital. Structured, self-administered questionnaires were used to collect the data. EPI- DATA 3.1 was used for data entry and SPSS version-23 software for data analysis. Descriptive statistics were made using statistical measurements. Frequency, percentages, means, and standard deviations were calculated. Practice Environment Scale of the Nursing Work Index tool was used to measure the outcome variable. Binary and multivariable logistic regression analyses were computed to identify associated factors. Finally, texts, tables and graphs were used to report findings.

Results: The response rate for the study was 96.2%. One hundred eighty eight (46.2%) nurses perceived that their working environment was conducive, while 219 (53.8 %) perceived it as not conducive. Nurses who were working in pediatrics wards (AOR= 0.13, 0.02, 0.1) and nurses who gave care for 7-12 patients per day (AOR =0.21, 0.05, 0.98) were less likely to have a conducive working environment, respectively. Nurses who perceived the Ministry of Health to give focus to the nursing profession were 0.27 more likely to have a conducive environment (AOR= 0.27; 0.09, .82).

Conclusion and recommendations: More than half of nurses reported that their working environment was not conducive to appropriate practice. Hence, introducing systems to improve participation of nurses in hospital affairs and patient care is essential. It is also important to give attention to nurses who are working at pediatrics wards, and for nurses who give care more than the standards.

Introduction

The nursing work environment is defined as an organizational feature that helps the nurses to engage in the work processes or limit professional nursing practice one or the other way ¹⁻³. The World Health Organization defines it as an environment where workers and managers collaborate to achieve sustainable protection of patients and workers way ⁴. Nurses can only provide quality services if their work environment keeps their safety ³. In addition, working in a conducive environment is an important professional right for nurses that allows them to act in accordance with professional standards, legally

authorized scopes of practice, and code of ethics⁵. The nursing working environment is too complex and characterized by: nursing involvement in hospital affairs, the basis of nursing quality, the ability, leadership and support of nurse managers, adequate staffing and resources and good professional relationships, a balanced work schedule, adequate time to meet patients' needs and professional advancements options^{1,6,7}. Studies reported that a positive work environment is associated with fewer occupational injuries, less burnout, and increased job satisfaction^{8,9}. It impacts nurses' perception and loyalty to the organization¹⁰, and helps to improve the overall quality of nursing care¹.

Although, the nature of the work environment varies across institutional settings¹¹, nurses often assess their work environment as stressful and complex while meeting the physical and psychological needs of patients⁸. Nursing is inseparably linked to patient safety and poor working conditions for nurses and inadequate nurse staffing levels increase the risk for errors such as risk of health-care-associated infections and occupational injuries¹².

In a study of 12 countries in Europe showed that nurse had a concern regarding their workforce management and adequate resources, and nurses reported that important nursing tasks were often left undone because of lack of time¹³. In another study in Turkish hospital showed that, control of nursing practice', 'middle management accountability' and 'quality initiatives' had the highest mean scores³. But, a single study in Ethiopia reported that the nursing environment and management was unfavorable to assure quality care¹⁴. In Peru and Mexico organizational factors like resource and infrastructure deficit, work overload, job performance evaluations the working condition affect¹⁵. In another, cross sectional study in Shenzhen, china reported that the practice environment of nurses was satisfactory¹.

Nurses are the largest group of employees in hospitals that deliver most bedside patient care. It is clear that a good working environment is important in achieving patient and employee safety, and nurses can only render quality services if their work environment provides conditions that support them. However, there is limited evidence specifically on nurses' working condition until this study. Yet, non-conducive working environments and the risks involved in these conditions cause nurses to become distracted and alienated from their profession and even leave. Considering this, undoubtedly nurses should have a positive work environment that supports superior performance and attracts them to the profession. But, before forwarding suggestions, establishing standards, and approaches, it would seem necessary to conduct a research aimed at assessing working conditions of nurses in Public Referral Hospitals of Amhara Regional State.

The findings would help nursing staff gain a deeper understanding of the importance and contribution of nurses working environment. It will give directions for operational-level hospitals managers, Amhara National Regional State Health Bureau, Federal Ministry of Health, Ethiopia, and Ethiopian Nursing Association to plan such interventions and policy making, aiming to improve nurses' working conditions.

Methods

Study settings and period

This study was conducted in Public Referral Hospitals of West Amhara Regional State, Ethiopia from January to February, 2021. The regional state contains; 28 million population in mid – 2018 and it has 14 Zones, three city administrations, and 180 woreda (139 rural and 41 urbans ¹⁶. It also has 80 hospitals (8 referral, 2 general and 73 primary), 847 health centers, and 3,342 health posts ¹⁷. Despite the increased number of health facilities, shortages skilled health personnel, medical equipment, drugs, and medical supplies, inefficient and inequitable use of health resources are the challenges of the region ¹⁸. Five referral hospitals (Debre markos referral hospital, Tibebe Gion referral hospital, Felege Hiwot referral Hospital, Debre Tabor Referral Hospital and University of Gondar referral Hospital) were included in the study.

Study design and population

An institution-based cross-sectional study was conducted among nurses who were working in Public Referral Hospitals in Amhara region. The source population were all nurses working in each hospital. All permanently employed nurses with work experience of equal or greater six months during and working the time of study, and who agreed to participate in the study were included.

Sample Size, Sampling Technique and procedures

To calculate the sample size, we considered the working condition as 50% and with an alpha error of 5% and a power of 95%. Then, 423 sample sizes were required for the study. Currently, there are five referral hospitals in West Amhara regional state from which samples were selected. For each hospital, the total sample size was allocated proportionally based on the number of nurses they had. Then, systematic random sampling was used to select nurses from each hospital.

Study variables

The dependent variable of the study was working condition. Age, sex, marital status, education status, position at work, professional experience, , working unit, salary, patient nurse ratio, , working shift, hours worked, autonomy, flexibility schedule, participation in decision making, relationships with physicians, recognition of work, professional advancement opportunity, organizational commitment, professional identification, satisfaction with salary were the explanatory variables.

Operational definition:

Nurses working environment: Composite score was computed and nursing work environment was classified as conducive if the participants scored mean and above, and non-conductive if they scored

below the mean ¹⁴.

Data collection tools, Measurements and procedures

The data were collected using self-administered English version questionnaires which were adapted from validated and standardized existing tools. The tools have two sections. Part-I: Socio-demographic and professional-related characteristics of nurses, and Part-II: working environment of nurses measurement scales.

The working environment was measured by the Practice Environment Scale of the Nursing Work Index ¹⁹ and which was validated in Spanish with Cronbach's alpha coefficients of 0.90 ²⁰. The scale was a five-point Likert scale (5 = Strongly Agree, 4 = agree; 3 = neutral; 2 = disagree, and 1 = strongly disagree) which consisted of 32 items. Nurses indicated the degree, according to what had been presented in each item in their work. In this study the scale has an item reliability of Cronbach's alpha coefficients of 0.92 and has five outcome subscales (nurse participation in hospital affairs - α =0.87, nursing involvement for quality of care- α =0.83, nurse manager ability- α =0.8, leadership and support of nurses, staffing and resource adequacy- α =0.76 and collegial nurse-physician relationships- α =0.89).

The overall Practice Environment Composite score was calculated from the average of subscale scores. Then, the mean score was used to classify the working environment of nurses in to two groups (conductive and non-conductive). Respondents who scored mean (98.3 ± 18.4) and above the mean score were classified as conducive, while those who scored less than the mean score were classified as non-conductive nursing environments.

Data management and analysis

EPI- DATA 3.1 was used for data entry and SPSS version-23 software for data analysis. Descriptive statistics were made using statistical measurements. Frequency, percentages, means, and standard deviations were calculated. The outcome variable was categorized as conducive and non-conductive environment. Normality tests were performed using the normal Q-Q graph and the Kolmogorov- Smirnov goodness adjustment test and Practice Environment Scale of the Nursing Work Index admit the normal model. Binary and multivariable logistic regression analyses were computed to identify associated factors. Finally, texts, tables and graphs were used to report findings.

Quality assurance mechanisms

Before collecting the data, the face and content validity of the data collection tool was assured, checked by inviting experts in the field. The data collectors and supervisors were trained about the study purpose, and protocol. The research data collection tool was piloted (pre-tested) to check the fitness of the tool for

the study settings and necessary corrections were made. The investigators exchanged all the necessary information regarding the data collection procedures with the supervisors on the daily basis. Furthermore, the respondents had been given brief information sheets to read before the filling in the questionnaires, and supervision was also done at the spot by the supervisors. In addition, detailed feedback was provided to the data collectors. The collected data were coded per operational definitions of the study variables and cheek-rechecked by the principal investigators for its completeness.

Results

Socio-demographic and professional related characteristics of nurses

Of the 423 study participants, 407 nurses responded to the questions fully that gave the response rate of 96.2%. The age of the nurses ranged from 20-65 years (mean: 31.67±5.8). In terms of gender and marital status, most of the participants were male 210 (51.6%) and married 270 (66.3 %) respectively. A higher proportion of the participants, 358 (88 %) were degree holders. More than half of the nurses 205 (50.4%) had 5-10 years of professional experience. Around, 189(46.4%) nurses are members of professional associations. Of which 135 (33.2% were members of the Ethiopian nursing association. The majority, 316 (77.6%) of them were not satisfied with their current salary. (Table-1)

Table1

Socio-demographic and professional related characteristics of nurses in Public Referral Hospitals of West Amhara Regional State, Ethiopia, 2021 (N=407).

Variable category		Frequency	Percent
Age Category	<30 years	181	44.5
	30-40 years	118	29.0
	> 40 years	108	26.5
Gender	Male	210	51.6
	Female	193	47.4
Marital Status	single	137	33.7
	ever married	270	66.3
Educational level of nurses	diploma	17	4.2
	Degree	358	88.0
	Msc and above	30	7.4
Position at work	positioned	32	7.9
	staffs	375	92.1
Professional experiences	<5 years	133	32.7
	5-10 years	205	50.4
	>10 years	69	17.0
Working unit category	Surgical ward	131	32.2
	Medical ward	68	16.7
	Chronic OPD	27	6.6
	OPD	30	7.4
	ICU	31	7.6
	Oby-gyn ward	10	2.5
	Emergency	24	5.9
	Pedy ward	37	9.1
	others	31	7.6
Salary category	<=5000 birr	36	8.8
	5001-8000 birr	254	62.4
	>8000 birr	117	28.7
Number of patient to whom the care is delivered per day	<=6 patients	135	33.2

	7-12	105	25.8
	>12	167	41.0
Working shift during the data collection period	morning	294	72.2
	Night	112	27.5
working hour per day	<=8 hours	192	47.2
	>8 hours	215	52.8
Are you a member of any professional association?	yes	189	46.4
	no	218	53.6
professional association that participants are members	Amhara health association	18	4.4
	Ethiopian nursing association	135	33.2
	Others*	4	0.9
Flexibility of your working schedule	Yes	281	69.0
	No	121	29.7
Do you have Professional identification/batch in your hospital	Yes	227	55.8
	No	177	43.5
Are you satisfied with the current salary	Yes	91	22.4
	No	316	77.6
Do you have a future vision to the nursing profession development	Yes	256	62.9
	No	146	35.9
Is there a focus of ministry of health to the nursing profession?	Yes	132	32.4
	No	273	67.1
Is there free medical services available for nurses in your hospital?	Yes	191	46.9
	No	214	52.6
* Amhara Public health association, Epidemiology association, Midwifery association			

Nurses' perception on their working environment

Composite score and mean for each sub-scale and the total working environment of nurses were calculated. Accordingly, a higher mean score (33.4 ± 6.3) was observed in nursing involvement for quality of care in the hospital. More than half the participants perceived that the working environment was not

conductive in terms of nurse participation in hospital affairs, 208 (51.1%) and nursing involvement for quality of care, 204 (50.1%). (Table-2)

The overall composite mean score for the working environment was 98.3 ± 18.4 . Round 188 (46.2%, CI: 41.5%- 51.4%) perceived that their working environment was conducive, while 219 (53.8%, CI: 48.6%-58.5%) perceived it as not conducive. (Fig. 1)

Table 2

Nurses' perception on working environment sub-scales in Public Referral Hospitals of West Amhara Regional State, Ethiopia, 2021 (N=407).

Nurses' working environment Sub-scales	Mean \pm SD	Nurses' working environment category			
		Conductive		Non- conducive	
		Frequency	Percent	Frequency	Percent
Nurse Participation in Hospital Affairs	24 \pm 7.3	199	48.9	208	51.1
Nursing involvement for Quality of Care	33.4 \pm 6.3	203	49.9	204	50.1
Nurse Manager Ability, Leadership and Support of Nurses	15.8 \pm 4	245	60.2	162	39.8
Staffing and Resource Adequacy	15.8 \pm 3.9	233	57.2	174	42.8
Collegial Nurse-Physician Relationships	9.6 \pm 3	213	52.3	194	47.7

Factors associated the nurses' perception on their working environment

Bivariate and multivariable logistic regression analysis was carried out to see the effect of independent variables on the dependent variable. In the bivariate analysis age category from > 40 years, work experience of 5-10 years, working in chronic outpatient department, caring ≤ 6 patients per day, being a members of professional association, having professional identification/batch in the hospital, being satisfied with the current salary, having a future vision to the nursing profession development, focus of ministry of health to the nursing profession were significant factors for working environment of nurse.

While working in pediatrics ward, caring 7-12 patients per day and focus of ministry of health to the nursing profession were significant factors in the multivariable logistic regression analysis.

Nurses who were working in pediatrics ward were 0.13 more likely to have non-conducive working environment as compared to their counter parts (AOR= 0.13, 0.02, 0.1). nurses who gave care for 7-12 patients per day had 0.21 less likely to have conducive environment as compared to those nursing giving care >12 patients(AOR =0.21, 0.05, 0.98). Nurses who perceived as ministry of health give focus to the nursing profession were 0.27 more likely to have conducive environment than their counter parts (AOR= 0.27, 0.09, .82) (**Table-3**).

Table 3

Factors associated with Nurses’ perception on working environment sub-scales in Public Referral Hospitals of West Amhara Regional State, Ethiopia, 2021 (N=407).

Variable category		Nurses' working environment category		COR 95%CI	AOR 95% CI
		Conductive	Non-conductive		
Age Category	<30 years	75	106	1	1
	30-40 years	48	70	1.03(0.64,1.65)	0.49(0.12,2)
	> 40 years	65	43	0.47(0.29,0.76)*	0.26(0.07,1.01)
Gender	Male	99	111	1	1
	Female	87	106	1.09(0.73,1.61)	1.28(0.45,3.66)
Marital Status	Single	55	82	1.45(0.95,2.2)	2.01(0.59,6.85)
	Ever married	133	137	1	
Educational level of patient	Diploma	9	8	1.02(0.32,3.35)	1.01(0.04, 26.34)
	Degree	163	195	1.37(0.65,2.89)	0.56 (0.12,2.56)
	Msc& above	16	14	1	1
Position at work	positioned	20	12	0.49(0.23,1.03)	0.39 (0.08,1.86)
	staffs	168	207	1	1
Professional experiences	<5 years	48	85	1	
	5-10 years	112	63	0.47(0.3,0.73)*	0.29 (0.08, 1.1)
	>10 years	28	41	0.83(0.46,1.5)	0.9,(0.16, 5.06)
Working unit category	Surgical ward	56	75	1	
	Medical ward	31	37	.89 (.494,1.607	0.77(.19, 3.14)
	Chronic OPD	18	9	.37(0.16,0.89)*	1.25(0.22,7.01)
	OPD	9	21	1.74(0.74,4.09)	0.85(.09, 7.84)
	ICU	16	15	.70 (0.32, 1.53)	2.04(0.44, 9.41)
	Oby-gyn ward	5	5	.75(0.21, 2.70)	

	Emergency	9	15	1.24 (0.51, 3.05)	1.82(0.2,16.68)
	Pedy ward	19	18	.71(0 .34, 1.47)	0.13(0.02,0.1)*
	others	15	16	.8(.036, 1.75)	0.35 (0.04, 3.11)
Salary category	<=5000 birr	19	17	.74 (0.35,1.57)	1
	5001-8000 birr	116	138	.99(0.64, 1.53)	3.94(0.39, 39.6)
	>8000 birr	53	64	1	2.01(0.64, 6.37)
Number of patient to whom the care is delivered per day	<=6 patients	73	62	.53 (.033, .84)**	0.81(.18, 3.53)
	7-12 patients	51	54	.66(0.40,1.08)	0.21(0.05, 0.98)*
	>12 patients	64	103	1	
Working shift during the data collection period	morning	138	156	1	
	Night	50	62	1.1(.708, 1.699)	1.07(0.38,3.02)
working hour per day	<=8 hours	83	109	1	
	>8 hours	105	110	1.25 (0.85,1.85)	1.58(0.41, 6.11)
Are you a member of any professional association?	yes	103	86	0.53 (0.36, 0.72)**	0.32(0.02, 6.34)
	no	85	133	1	
Flexibility of your working schedule	Yes	135	146	1	
	No	50	71	1.313(0.85,2.02)	1.26(0.40, 3.96)
Do you have Professional identification/batch in your hospital	Yes	117	110	1	
	No	70	107	1.63 (1.09, 2.421)*	1.36(0.46, 4.1)
Are you satisfied with the current salary	Yes	56	35	0.45 (0.28,.72)***	0.42(.12, 1.38)
	No	132	184	1	
Do you have a future vision to the	Yes	136	120	0.46(0.30, 0.70)***	1.3(0.46, 3.73)

nursing profession development	No	50	96	1	
Is there a focus of ministry of health to the nursing profession?	Yes	78	54	0.46(0.30, 0.70)***	0.27(0.09, .82)*
	No	109	164	1	
Is there free medical services available for nurses in your hospital?	Yes	97	94	0.70(0.46,1.04)	1.65(0.60, 4.51)
	No	90	124	1	

Discussion

In this study, around 46 % (CI: 41.5%- 51.4%) of nurses perceived that their working environment was conducive while around 54% (CI: 48.6%-58.5%) nurses perceived that their working environment was not conducive, especially in terms of nurse participation in hospital affairs (51.1%) and nursing involvement for quality of care (50.1%). Working in pediatrics ward, caring for 7-12 patients per day, focus of Ministry of health to the nursing profession were significant factors for working environment of nurses.

This study revealed that more than half (54%) of the nurses perceived that their working environment was not conducive. This indicates that the importance of developing nursing related work policies and procedures like nursing involvement in quality care, adequate staffing and collegial relations^{21,22}. This percentage is not consistent with the study conducted in five tertiary general hospitals in Shenzhen, China where majority of nurses reported that the practice environmental of nurses was satisfactory¹. This difference might be due to the fact that in china new nurses' standardization training program was introduced to improve nursing services and quality of nursing cares. But, this finding is consistent with a qualitative study finding in united kingdom where participants expressed worries over their workplace environment²³. This finding supports the finding in a study conducted 12 countries in Europe where nurse had concerns with workforce management and adequate resources, and reported that important nursing tasks were often left undone because of lack of time¹³.

Nurses who gave care for 7-12 patients per day had 0.21 less likely to have conducive environment as compared to those nursing giving care >12 patients. This finding is consistent with a qualitative study conducted in Peru and Mexico where nurses reported experiencing work overload and having an excessive number of patients¹⁵. It also supports a study finding in Dutch where nurses stated that the number of nurses available influences how patients experience the quality of care²⁴.

Nurses who perceived as ministry of health give focus to the nursing profession were 0.27 more likely to have conducive environment than their counter parts (AOR= 0.27, 0.09, .82). This finding supports the ideas that leadership had an impact on the work environment of nurses²⁵. It also support the fact that

the use of a transformational leadership style can foster the autonomy and empowerment of nurses to cultivate a positive work environment ²⁶.

The interpretation of this finding should account the following limitations. The finding is based on the nurses self-report of their working environment. Hence, it would over/under report the findings.

Conclusion And Recommendations

More than half nurses reported that their working environment is not-conducive for appropriate practice especially in terms of nurse participation in hospital affairs and nursing involvement for quality of care. Working in pediatrics ward, caring 7-12 patients per day, focus of ministry of health to the nursing profession were significant factors for working environment of nurses.

Hence, introducing systems to improve participation of nurses in hospital affairs and patient care is essential. It is also important to give attention to nurses who are working at pediatrics ward, and for nurses who give care more that the standards.

Abbreviations

AOR: Adjusted Odds Ratio, CI: Confidence interval COR: Crude Odds Ratio,

Declarations

Availability of data and materials

The data set generated in this study will be available upon reasonable request from the corresponding author.

Ethical considerations and consent to participate

The overall study protocol was approved by Institutional Ethical Review Board of University of Gondar (December 15th, RNo: V/P/RCS/05/SAS/2020). Supportive letters were obtained from Amhara Regional state health bureau and then, its copies were delivered to each hospital. Written consent was obtained from each participant after clearly informing the purpose of the study. Name and other personal identifiers were not be recorded to maintain the privacy and confidentiality of the data. The chance to ask anything about the study as well as right to refuse or stop to provide response at any moment were given to participants. In addition, all methods were performed in accordance with the relevant guidelines and regulations.

Consent for publication

Not applicable.

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Authors' contributions

CWK, ATA, ZBT, DTB, CDA, MAG, HKA, BGY and MTA conceived and designed the study, analyzed and interpreted the data, wrote the manuscript, read and approved the final version of the manuscript.

Competing interests' disclosure

The authors declared that there is no competing interest.

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Figures

Figure: 1

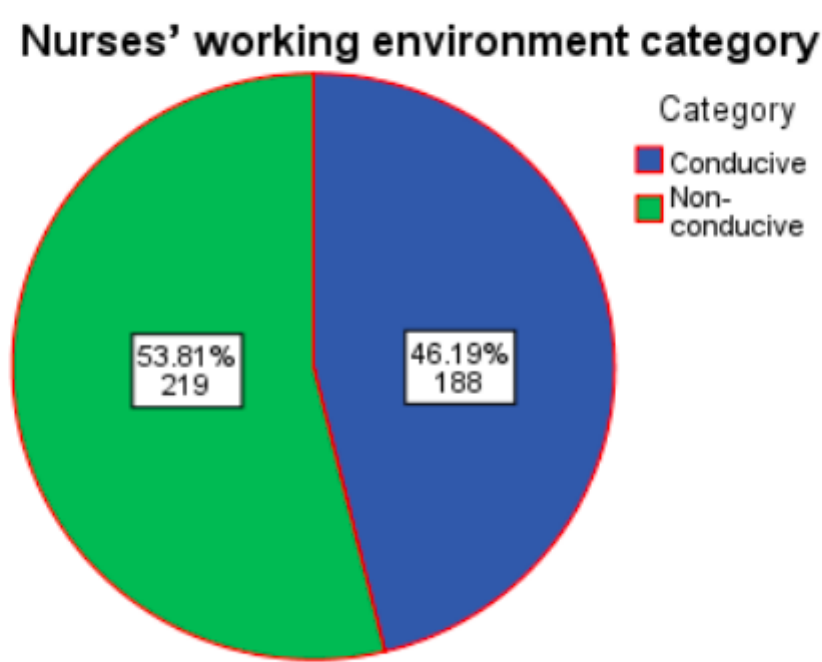


Figure 1

Nurses’ perception on their working environment in Public Referral Hospitals of West Amhara Regional State, Ethiopia, 2021 (N=407).