

## Perceived Work Environment and Associated Factors among Nurses Working in Jimma University Medical Center, Oromia Regional State South-West Ethiopia

Gizaw AB\*, Gemed TL and Yunka TT

Department of Nursing, Jimma University School of Nursing and Midwifery, Ethiopia

### Abstract

**Background:** Globally, the environments in which nurses work influence the quality of nursing practice and health care. In recent decades, the nursing work environment has become a central foundation to provide quality, safe, ethical nursing care. Nurses' Work environment can be described as the system that supports nurses' control over the delivery of nursing care, the environment in which care is delivered and the characteristics of an organization that facilitate or constrain professional nursing practice. A supportive and enabling work environment promotes professional development and the safety and quality of health care. Addressing these factors is important in optimizing work place environments.

**Objective:** The main objective of this study was to assess perceived work environment and associated factors among nurses working in Jimma University Medical Center, Jimma town, south west Ethiopia.

**Methods:** Institution based cross-sectional study design was done from March 15 to 27, 2018. Data was collected by using a modified nurse work index questionnaire. 250 participants were included in the study by simple random sampling technique. Data was entered into Epidata version 3.1 and exported to SPSS version 20 for analysis. Descriptive statistics and linear regression were done to describe and identify factors associated with perceived level of work environment. P-value of <0.05 at 95% CI was used to declare statistical significance.

**Results:** More than half (54%) of the respondents had low perception to their work environment. Control over the practice setting, autonomy and nurse physician relationship had significant association with perception towards nurse work environment.

**Conclusion:** Overall level of nurses' perception towards work environment was low. Autonomy, control over the practice setting and nurse-physician relationship were identified as factors significantly affect the level of nurses perception towards their working environment.

**Keywords:** Jimma University Medical Center; Perception; Nurses' work environment

### Introduction

A nurse work environment can be described as the system that supports nurses' control over the delivery of nursing care, the environment in which care is delivered and the characteristics of an organization that facilitate or constrain professional nursing practice. It is under the spotlight of international interest as it has been scientifically approved to help in providing opportunities to improve working conditions which play a major role in maintaining adequate level of staff, and other nurses' outcome such as job satisfaction and retention [1,2]. Globally, the environments in which nurses work influence the quality of nursing practice and health care. In recent decades, the nursing work environment has become a central foundation to provide quality, safe, ethical nursing care and employee satisfaction [3,4]. Nurses who had high perception concerning their work environment were more committed to the organization; more satisfied, could create a culture of safety and were able to provide the highest quality of care [4-6]. A study done in Saudi Arabia showed that healthy work environments have mutually benefited patients, nurses, nurse managers, health-care providers, the health team, administration, the institution and the community at large [7,8].

The International Council of Nurses suggest that, due to today's global health workforce crisis, establishing favorable work environments across health sectors worldwide is of paramount importance if patient safety and health workers' wellbeing are to

be guaranteed [8,9]. In a study done in the United States showed unfavorable work environment contributed to higher rates of mortality and morbidity. The presence of poor relationships among nurses and physicians may result in an increased risk of mortality and length of a stay among patients [9,10]. The current nursing workforce shortage represents one of the most serious crises that threatening the quality health care industry. In response to such crisis, health care industry had failed to maintain a work environment that is conducive for safe and quality nursing practice. As a result, the health care industry was failed to retain experienced nurses within patient care settings [10]. While improvements in nurse work environment are considered essential to address the nursing shortage, relatively little is known about the nurse work environment in most hospitals. Quality of care is subject to the influence of organizational factors, of which the nurse work environment is a critical one [11,12].

\*Corresponding author: Admasu Belay Gizaw, Department of Nursing, Jimma University School of Nursing and Midwifery, Ethiopia, Tel: 251925270512; Fax: 0471-11-14-50; E-mail: [admasu2004@gmail.com](mailto:admasu2004@gmail.com)

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In Australia, a lack of control over nurse work environment has been identified as a significant stressor for mental health nurses. In combination with other work environment characteristics, poor collegial relationships have been linked to higher rates of patient mortality and complications in intensive care units [13]. The mean level of work environment characteristics was moderate [14,15]. A study done in Malaysian private hospital showed that, nursing foundations for quality of care was rated highest, and followed by nurse manager ability, leadership, and support of nurses” [16]. A cross-sectional study done in Belgium hospitals revealed that, Nurse physician relations and nurse management at the unit level was related with good perceived work environment [17]. The study conducted on 519 USA stated, nurse work environment was favorable in all unit types [18]. Study conducted in Sao Paulo Brazil indicated that, the environment was more favorable for the “relationships between physicians and nurses and less favorable for the “organizational support” and “control of the environment” domains [19]. N study done in South Africa using cross-sectional study design, more than half of the nurses (52.3%) rated their work environment as poor. A high perception towards work environment has a significant association on most nurse reported quality of care and all nurse workforce outcomes [20-22]. A study done in Japanese teaching hospital indicated that, absence of significant associations between the PES-NWI composite or subscale scores and nurse demographics [23].

The study done in China revealed that, control over practice, nurse manager ability, leadership and support of nurses, nurse physician relationship and autonomy were identified as factors that affect nurses perception to their work environment [24]. Identifying levels and associated factors of perceived nurse work environment is crucial for nursing profession, nursing care quality and overall health care quality improvement. Therefore, the main objective of this study was to assess perceived work environment and associated factors among nurses working at Jimma University Medical Center, Jimma town, south west Ethiopia, 2018.

## Methods and Materials

### Study area and period

The study was conducted in Jimma University Medical Center (JUMC) which is found in Jimma town, Oromia regional state. Jimma town is found at 352 km distance from Addis Ababa, the capital city of Ethiopia. JUMC is one of the oldest public hospital in the country. It was established in 1930 E.C by Italian invaders for the service of their soldiers. It is the only teaching referral hospital in the southwestern part of the country, providing services for approximately 15 million people. It has out-patient and inpatient services, maternal and child health services, referral and follow-up services, physiotherapy and rehabilitative services, intensive care and recovery services. The hospital has a total of 550 nurses and total bed of 555 based on data from statistics office of Jimma University Medical Center 2008. The study was conducted from March 15 to 26, 2018G.C.

### Study design

Institutional based cross-sectional study design was used.

### Sample size determination

Two hundred fifty (250) study participants were selected from the total 550 nurses by using simple random sampling technique.

### Data collection tools

To assure the quality of data, before data collection, the valid tool for perception of nurses’ towards their work environment was adapted. A self-administered questionnaire was adapted and used for collecting data for this study [8]. The questionnaire comprised five parts; first part: socio-demographic characteristics. Second part: Control over the practice setting. Third part: Autonomy. Fourth part: Nurse-physician relationships and the fifth: Nursing Work environment Index Revised (NWI-R) scale which was used to measure perception towards nurse work environment.

### Data collection procedure

First numbers corresponding to the nurses’ name were taken, and then the numbers entered into the computer and run for the computer generated random numbers. Finally, the questionnaire was distributed to each study participants.

### Data quality assurance

Pre-testing was conducted at Agaro Hospital on 5% of the total sample size to identify any weakness in the organization and structuring of the research instruments. Training was provided for the facilitators and two supervisors. The filled questionnaire was checked for completeness by investigator and supervisors every day.

### Data processing and analysis

First, data was checked for completeness and then each complete questionnaire was given a code. Data was entered into Epidata version 3.1 and exported to the statistical package for social science (SPSS) version 20 for analysis. Descriptive statistics were used to describe the sample and results of the questionnaires. Bivariate and multivariable linear regression was used to determine significant associations among the study variables. P-value of  $\leq 0.25$  was used to select candidate variable for multivariate linear regression and finally p-value of  $<0.05$  at 95% CI was used to declare statistical significance.

### Ethical consideration

Ethical clearance was obtained from Institutional Review Board of Jimma University. A formal letter from Institute of health was given to JUMC and Agaro hospital administration to obtain their co-operation. Written informed consent was taken from respondents, and the participants were assured that their participation kept anonymously.

## Results

A total of 250 questionnaires distributed and returned complete which provides a response rate of 100%. Most of the participants’ ages were between 20-40 years, 200 (80%). More than half of the participants were male which accounts, 128 (51.2%). Most of the participants were Bachelor degree holder 148 (59.2%), followed by diploma 102 (40.8%). From the total number of nurses who participated in this study, majority of them were staff nurses, 231 (92.4%). 55 (22%) of the study participants were from the medical ward; followed by surgical ward, 48 (19.2%). About sixty-one percent of the study participants 152 (60.8%) had experience of  $<5$  years; followed by, 93 (37.2%) 5 to 10 years’ experience (Table 1).

### Perception towards nurse work environment

The overall composite mean score for nurses’ perception towards work environment was 2.33 (SD=.591). The study revealed that all the three subscales’ composite mean score were found to be less than 2.5

which indicated low perception towards nurse work environment, which indirectly showed the unfavourability of the nurse work environment. In terms of subscale analyses, “nursing foundations for quality of care” subscale (M= 2.47, SD =.964) was rated highest, and followed by “nurse manager ability, leadership, and support of nurses” subscale (M= 2.27, SD=.933).

Conversely, “nurse participation in hospital affairs” subscale (M= 2.23, SD= .978) was rated lowest, where items “Nursing administrators consult with staff on daily problems and procedures” (M= 2.14, SD= 1.02), “Staff nurses are involved in the internal governance of the hospital (e.g. practice and policy committees)” (M= 2.17, SD= .985) and opportunities for advancement (M= 2.17, SD = .984) were rated poorly.

Besides, the participants had rated lower for items on “A nurse director equal in power and authority to other top level hospital executives” (M = 2.19, SD = .978), “Career development/clinical ladder opportunity” (M= 2.21, SD= .992), and “Opportunity for staff nurses to participate in policy decisions” (M= 2.21, SD= 1.01) (Table 2). This study indicated that, more than half 137(54.8%) of the study participants had control over the practice setting. While 53.2% of nurses were autonomous, 53.6% of them had also good physician relationship (Table 3).

Socio-demographic Variables		f	%
Age	20-30	200	80
	30-40	45	18
	40-50	3	1.2
	>50	2	0.8
Sex	Male	128	51.2
	Female	122	48.8
Marital status	Single	110	44
	Married	135	54
	Widowed	2	0.8
	Divorced	2	0.8
	Separated	1	0.4
Monthly Salary	<3653	104	41.6
	3653-6488	134	53.6
	>6488	12	4.8
Educational status	Diploma	102	40.8
	Bsc	148	59.2
Years of experience	<5	152	60.8
	5-10	93	37.2
	10-20	3	1.2
	>20	2	0.8
Current job position	Head nurse	16	6.4
	Staff nurse	231	92.4
	Supervisor	3	1.2
Current work unit	Critical care unit	30	12
	OPD	24	9.6
	Medical	55	22
	Surgical	48	19.2
	Pediatric	41	16.4
	Psychiatry	29	11.6
	Ophthalmology	9	3.6
Others*	14	5.6	

\*Others: Oby/Gyn ward, Maternity ward, Dental clinic, chronic illness clinic.

**Table 1:** Socio-demographic characteristics of study participants in the study of Perceived work environment and associated factors among nurses working in Jimma University Medical Center, Oromia regional state; South-West Ethiopia, 2018 (n= 250).

## Factors associated with perceptions of nurse work environment

Socio-demographic characteristics, control over the practice setting, autonomy and nurse-physician relationship were entered for bivariate analysis and three variables (control over the practice setting, autonomy and nurse-physician relationship) were become candidates for multi-variable linear regression analysis at P-value less than or equal to 0.25. According to this study, controls over the practice setting, autonomy and nurse-physician relationship were identified as contributing factors for perceived work environment. For a unit increased in the score for control over the practice setting, perception towards work environment also increased by 0.348 (p <0.001, CI= 0.623, 1.205). It increased by 0.297 (p <0.001, CI=0.967,) for a unit increased for the score of nurse-physician relationship. And also for a unit increased in score for autonomy, perception towards work environment also increased by 0.255 (p <0.001, CI= 0.60, 1.618) (Tables 4 and 5).

## Discussion

A nurse work environment is a system that supports nurses' control over the delivery of nursing care, the environment in which care is delivered and the characteristics of an organization that facilitates or constrains nursing work. This study examined Jimma University medical center nurses' perceptions of their work environment and its associated factors. This study found that the overall nurse work environment composite mean score (M= 2.33, SD=.591), which showed relatively low perception regarding nurse work environment. On the other hand, the study done in Saudi Arabia showed that, perception of nurse work environment was moderately high. The other study done in Israel stated that the perception towards nurse work environment was moderate [2,3]. The other study done in South Africa indicated that, more than half of nurses (52.3%) rated their work environment as poor [22]. The discrepancy might be due to study area and sample size difference. In this study, items “Nursing administrators consult with staff on daily problems and procedures”, “Staff nurses are involved in the internal governance of the hospital (e.g. practice and policy committees)” and opportunities for advancement were rated poorly. But the study conducted at four private hospitals in the Peninsular Malaysia, “Staff nurses are involved in the internal governance of the hospital (e.g. practice and policy committees)” and opportunities for advancement were rated moderate [17].

Besides, the participants had rated lower for items on “A nurse director equal in power and authority to other top level hospital executives”, “Career development/clinical ladder opportunity and “Opportunity for staff nurses to participate in policy decisions”. But the study conducted at four private hospitals in the Peninsular Malaysia revealed items “A nurse director equal in power and authority to other top level hospital executives”, “Career development/clinical ladder opportunity”, and “Opportunity for staff nurses to participate in policy decisions” were rated high moderate [17]. Accordingly, the nurses perceived that nurse director was not equal in power and authority to other top level hospital executives and also they perceived that nurses had no opportunity to participate in policy decisions. Regarding to control over the practice setting, in this study more than half (54.8%) of the study participants, reported that they had control over nursing practice but the study done in Egypt Port Said hospitals using cross-sectional study design indicated that nurses had no control over the practice setting. In this study, the highest mean score for the components of the nurse work was 2.47 for nursing foundation for

Variables	Mean	SD
<b>Nurse manager ability, leadership and support of nurses</b>	<b>2.27</b>	<b>0.933</b>
A supervisory staff that is supportive of nurses	2.30	.933
Supervisors use mistakes as learning opportunities, not criticism	2.22	.922
Praise and recognition for a job well done	2.28	.945
<b>Nursing foundation for quality of care</b>	<b>2.47</b>	<b>0.964</b>
Active staff development/continuing education programs for nurses	2.25	.963
High standards of nursing care are expected by the administration	2.39	.964
A clear philosophy of nursing pervades the nursing environment	2.42	.963
Working with nurses that are clinically competent	2.70	.967
An active quality-assurance program	2.33	.960
A preceptor program for newly hired nurses	2.41	.920
Nursing care is based on nursing rather than a medical model	2.63	.928
Written up to date nursing care plans for all patients	2.47	1.03
Use of nursing diagnosis	2.64	.985
<b>Nurse participation in hospital affairs</b>	<b>2.23</b>	<b>0.978</b>
Career development/clinical ladder opportunity	2.21	.992
Opportunity for staff nurses to participate in policy decisions	2.21	1.01
A nurse in senior management is highly visible and accessible to staff	2.32	.937
A nurse director equal in power and authority to the top level hospital executives	2.19	.978
Opportunities for advancement	2.17	.984
Administration that listens and responds to employee concerns	2.24	.939
Staff nurses are involved in the internal governance of the hospital (e.g. practice and policy committees)	2.17	.985
Staff nurses have the opportunity to serve on hospital and nursing committees	2.32	.961
Nursing administrators consult with staff on daily problems and procedures	2.14	1.02

**Table 2:** Level of perception regarding work environment in the study of Perceived work environment and associated factors among nurses working in Jimma University Medical Center, Oromia regional state; South-West Ethiopia, 2018.

Variables	Mean	SD
<b>Control over the practice setting</b>	<b>2.44</b>	<b>0.962</b>
Adequate support services allow me to spend time with my patients	2.56	1.01
Enough time and opportunity to discuss patient care problems with other nurses	2.57	.955
Enough professional nurses on staff to provide quality patient care	2.44	.972
A nurse manager who is a good manager and leader	2.36	1.01
Enough staff to get the work done	2.32	.919
Opportunity to work in a specialized unit	2.39	.908
Patient assignments foster continuity of care (i.e. the same nurse cares for the same patient from one day to the next)	2.43	.959
<b>Autonomy</b>	<b>2.45</b>	<b>0.947</b>
Nursing controls its own practice	2.6	.953
Freedom to make important patient care and work decisions	2.59	.941
Not being placed in a position of having to do things that are against my nursing judgment	2.47	.910
A nurse manager backs up the nursing staff in decision making even if the conflict is with a physician	2.25	.984
<b>Nurse-physician relationship</b>	<b>2.27</b>	<b>0.987</b>
Physicians and nurses have good working relationship	2.32	.949
Much teamwork between doctors and nurses	2.22	.988
Collaboration ( joint-practice) between nurses and physicians	2.26	1.02

**Table 3:** Mean score and standard deviation for items of contributing factors in the study of Perceived work environment and associated factors among nurses working in Jimma University Medical Center, Oromia regional state; Southwest Ethiopia, 2018.

quality of care on the contrary the study done in Egypt in Port Said Hospital using cross-sectional study design indicated, the highest mean score for the components of the nurse work was for nurse manager ability, leadership and support of nurses [8]. The difference might be due to study area difference.

The least mean score for the components of the nurse work environment was 2.27 for 'nurse manager ability, leadership and support of nurses' and the highest score was 2.47 for nursing foundation for quality of care. On the contrary, the study done in Israel stated that

the least mean score for the components of the work environment was 2.47 for nurse participation in hospital affairs and the highest score was 3.00 for collaboration between physicians and nurses [14]. This study revealed that; the staff nurses were not comfortable with the managerial and leadership ability their managers. The finding of this study showed that; no significant association was found between perceptions towards work environment and socio-demographic characteristics. The finding is similar with the finding from a study done in Japanese teaching hospital with cross-sectional study design [23].



According to this study, controls over the practice setting, autonomy and nurse-physician relationships were attributable for the perceptions towards nurse work environment. Accordingly, nurses who had control over the practice setting had high perception on nurse work environment than nurses who had no control over the practice setting. Nurses who were autonomous tended to perceive nurse work environment high. Those nurses, who had good relationships with physicians perceived nurse work environment as high. In general, low perception towards work environment directly and indirectly affect nursing care quality by increasing the level of job dissatisfaction, turnover intentions and stress level among nurses. On the other hand, those nurses who have good perceived work environment have better level of professional and organizational commitment, motivation and satisfied with their work environment and job. These will enhance organizational effectiveness, performance and productivity [24].

### Conclusion and Recommendation

Over all, nurses' perceptions towards their work environment were low. Controls over the practice setting, autonomy and nurse-physician relationships were attributable for the perceptions towards nurse work environment. The findings from this study provided empirical support for the future practical and theoretical structure of nursing work environment. To increase the level of perceptions towards nurse work environment among nurses, the hospital administrator should work on enhancing nurse-physician relationship, autonomy and control over the practice setting in addition to the above points. JUMC administrator should give emphasis on nurse career development/clinical ladder opportunity and opportunity for advancement. Nursing director need to engage, guide and teach nurse managers to empower

their staff by creating a healthy work environment. Nursing director need to provide healthy work environment to encourage the nurses' managers to involve their staff in decision making activities, to be more confident and aware to shape the departmental policy.

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Control over the practice setting	
Mean	2.44
Standard deviation	0.962
Have control	137(54.8%)
Have no control	113(45.2%)
Autonomy	
Mean	2.45
Standard deviation	0.947
Not autonomous	117(46.8%)
Autonomous	133(53.2%)
Nurse-physician relationship	
Mean	2.27
Standard deviation	0.987
Poor relationship	116(46.4%)
Good relationship	134(53.6%)

**Table 4:** Level of control over the practice setting, autonomy and nurse physician relationship sorted by mean and standard deviation in the study of Perceived work environment and associated factors among nurses working in Jimma University Medical Center, Oromia regional state; Southwest Ethiopia, 2018.

Model	Standardized Coefficients Beta	p	95% CI for B	
			L B	U B
(Constant)		<.001	8.337	16.749
Autonomy	0.255	<.001	.600	1.618
Control over the practice setting	0.348	<.001	.623	1.205
Nurse physician relationship	0.297	<.001	.967	1.939

**Table 5:** Multivariable linear regression in the study of Perceived nurses work environment and associated factors among nurses working in Jimma University Medical Center, Oromia regional state; Southwest Ethiopia, 2018.

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