ASSESSING NURSES' SATISFACTION ON THEIR WORK-SCHEDULES: THE CASE OF A HOSPITAL IN JAKARTA

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Abstract

Background: Nurses' low satisfaction in their work may affect their performance in providing health services. Reports have noted that nurses' work satisfaction in several hospitals in Indonesia have been below the minimum service standard (90%). Many factors can affect the nurses' satisfaction in their work, including their work schedules.

Objectives: This study aims to determine the association between nurses' work satisfaction and their work schedules.

Methods: This is a cross-sectional study which used the survey to collect data from a group of nurses who were attached to a public hospital in Jakarta. The samples (n=127 nurse) were selected through stratified random sampling based on the determined inclusion criteria. The instrument used to evaluate the satisfaction was the Mines Job Satisfaction Scale (MNPJSS) while the instrument used to evaluate the nurses' scheduling was developed by the authors. Pearson's correlation was applied in the analysis.

Results: The mean score of the nurses' satisfaction was 60.2% while the mean score for the nurses' scheduling was 76.2%. The results also indicated a positive significant correlation between nurses' scheduling with nurses' satisfaction (p-value = 0.001), with a moderate strength of correlation (r = 0.421). The nurses' satisfaction rate in their work within the hospital involved in this study was lower than the minimum standard rate for hospitals in Indonesia. The nurses' highest dissatisfaction was with their salary (59.1%) followed by their career development (38.5%). Although the nurses' scheduling had been implemented, it seems that factors such as nurse to patient ratio and nurses' mixed level of skills had not been fully considered in the scheduling. As the score of the nurses' scheduling increased, the satisfaction rate among the nurses also climbed higher.

Conclusion: The nurses' satisfaction in their work was affected by the nurses' scheduling duties, thus hospital managers need to manage the nurses' scheduling appropriately so as to improve their work satisfaction.

Keywords: *Health service, Job satisfaction, Management, Nurse scheduling, Nurse*

Introduction

In this era of accreditation and competitiveness, hospitals have a duty of care to sustain a proper quality of their nursing services. This is because nursing services is part of the healthcare services provided to the public, which offer professional nursing care for the individuals, families, and the communities concerned. Nursing care involves having specific knowledge and competency (1,2), hence poor quality nursing services may affect patients' well-being. The higher the nurses' satisfaction in their work, the higher the quality and standard of the hospital services. Thus, it is important to maintain nurses' work satisfaction.

Nurses' work satisfaction is the perception derived from the comparison between expectations and the reality of the service. The satisfaction response of an individual may vary according to the individual's evaluation of his/her own work, work life, and working environment (3). In the case of work satisfaction, the rate is derived from the employee's affective evaluation of the work aspects involved (4).

A nurse who is satisfied with his/her work has a lot to contribute to the hospital he/she works in. Satisfied nurses, as a whole, offer many advantages to the hospitals, such as their loyalty, their expertise, and their high work commitment (5,6). Nurses' work performance tends to improve when they are satisfied with their work milieus. In contrast, nurses' dissatisfaction would also affect the hospitals they are attached to in a number of ways, such as high turnover rates, absenteeism, and sickness (7,8). As a result of this, the hospitals would incur losses associated with the poor services provided by the dissatisfied nurses.

Some of the factors that can affect nurses' satisfaction at work had been identified. Work satisfaction and dissatisfaction are associated with the nature of the job, and the individual's expectation of his/her own job (4). They identified that the factors which can affect nurses' work satisfaction include the nurses' respective characteristics (age, work experience, educational background, gender), salary, working environment, appreciation, managerial support, career opportunity, and work scheduling (8,9).

A quality nursing service should be supported by appropriate scheduling management where scheduling refers to time management and time allocation provided for performing the planned tasks (10). The scheduling management of nurses is implemented by the head nurses who set those nurses within a unit certain complex duties. Scheduling management is accomplished through the process of planning, organizing, staffing, actuating, and controlling (11). A proper scheduling roster is aimed at reducing costs, and for improving nurses' satisfaction. It involves distributing the workload (12).

Nurses' work scheduling set by the head nurse may affect the nurses negatively, hence their work performance. The negative consequences derived from the nurses' poor scheduling include an increase in their absenteeism (12), a deterioration in work performance (13), burnouts (14), and sleep disorders (15). This may also incur higher operation costs for the hospitals (16,17). Poor or inappropriate nurses' work scheduling management may also affect the patients, such as error of care, and higher mortality rates (13,14,18). These negative consequences that may affect patients' satisfaction should be addressed by the managers so that the quality of nursing care can be maintained.

The phenomenon of poor quality nursing care is still prevalent among many hospitals in Indonesia, and attempts are being made to address this accordingly. In a recent incident, a nurse was reported to have fallen asleep during his night duty at a hospital in Jambi. This had angered the governor of Jambi as it affected the reputation of the hospital involved. The incident is inevitable because nurses often experience burnouts due to excessive workloads, and frequent and long work shifts. Moreover, there are contract nurses with lower salaries when compared to the civil servant nurses. This gap between what

they earn and what civil servant nurses earn can also cause the nurses grievances besides their career development. There is thus a need for the hospitals involved to take the right steps in addressing these issues. A pilot study which executed a short interview with the nursing manager of a hospital revealed that effective scheduling management is still lacking while nurses mixed skills have not been taken into account yet. Another study conducted in a hospital in China involving 191 participants also confirmed that nurses' dissatisfaction was high due to the lower wages, and the lack of work promotions (4). Studies addressing nurses' scheduling generally focused on aspects of the scheduling method. This can be traced to Koning's study on self-scheduling and flexibility which had likewise impacted on patient's satisfaction (19). Another study on centralized scheduling also reported its influence on nurses' satisfaction (16). Nonetheless, there are only a few studies which have attempted to address the scheduling management for nurses in Indonesia. This study aims to examine the association between nurses' satisfaction and nurses' work schedules in one hospital in Jakarta.

Methods

This is a cross-sectional study which utilized the survey to collect data from 127 inpatient nurses attached to a selected hospital in Jakarta. A total of 127 nurses were selected through stratified random sampling to cover all the wards with face to face to nurses. Calculation of the number of sample used the Lemeshow formula. As a public hospital owned by the Ministry of Health, Indonesia, this hospital has been accredited with "perfection" by the Joint Commission International (JCI) in 2017. The inclusion criteria imposed in this study was that the inpatient nurses must possess a minimum pre-clinic level, and had at least one-year's work experience. The instrument used to assess the nurses' work satisfactions was the questionnaire called *Mines Job Satisfaction Scale* or the Minnesota Satisfaction Scale (MSQ) which was developed by Weiss in 1967. The MSQ comprises 20 items with a response scale of 1 to 5 that includes

'Very satisfied', 'Satisfied', 'Neutral', 'Dissatisfied', and 'Very dissatisfied' (3,20). The MSQ offers more specific information of the working aspects that could make an individual perform certain tasks with more satisfaction rate than the general standards of work satisfaction. The MSQ can be completed within five minutes; it is easy to use, and it had been tested for validity and reliability (3,21). The translated version of the MSQ had also been tested in career pathway programs between Japan International Cooperation Agency (JICA) and the Ministry of Health, Indonesia, revealing a validity of between 0.56 to 0.83, and a reliability of 0.91 (22).

Another instrument used in this study was the nurses' scheduling management questionnaire which assesses the implementation of the nurses' scheduling management. We developed this questionnaire, based on Marquis and National Health Service (NHS) (11,23). This instrument have 39 questions which is composed of 20 questions which used the Likert scale (never, rarely, often, always) for responses, and 19 questions with Guttman scale (Yes= 1 or No=0). The result of the reliability test using Guttman's scale showed the alpha as 0.701 while the items with the Likert scale showed the alpha of 0.900.

All data were tested with the statistical program, for example, a descriptive analysis was conducted to examine the characteristics of each variable in terms of percentage, frequency, mean, confidence interval (CI), and standard deviation. Pearson's correlation, the independent-t test, and the one-way ANOVA were used to analyze the data with 95% confidence level ($\alpha = 0.05$).

This study was approved by the Research Ethics Committee from the Faculty of Nursing, Universitas Indonesia (No. 150/UN2.F12. D /HKP.02.04/2017).

Results

The characteristics of the nurses were noted. They include gender, educational background, career level, age, and years of service. Table 1 reveals that majority of the nurses in this study

were females, (n=101, 79.5%). Most of them were Diploma III graduates (n=84, 66.1%). It was observed that the mean score of the nurses' satisfaction increased corresponding to their level of education and career (Table 1).

Table 1: Difference of Job Satisfaction Score (MSQ) according to Demographic and Job-related Characteristics (n= 127)

Variables	n	%	MSQ Mean	SD	p
Sex					
Male	26	20	57,12	9,77	0.076
Female	1011	80	61,00	9,90	
Education level					
High school of Nursing	1	1	57,00	–	0.843
Diploma	84	66	59,85	10,08	
Bachelor	2	2	67,00	12,72	
BSN	39	31	60,59	9,96	
Master of Nursing	1	1	65,00	–	
Career Level					
Non PK	35	28	53,50	12,80	0,206
PK I	47	37	60,06	9,74	
PK II	19	15	62,23	10,99	
PK III	26	20	59,50	8,47	

Table 2 illustrates the mean age of the nurses as 33.83 years (65% of them were in the older age range), with the youngest being 22, and the oldest being 52 years old. The average years of service among the nurses was 10.34 years (32.3% of them had the longest years of service), with the shortest being one year, and the longest being 32 years. Both Tables 1 and 2 indicated no significant correlation between age, years of service, gender/sex, educational background, career level, and nurses' satisfaction ($p = 0.272 - 0.843$; $\alpha = 0.05$). The mean score of nurses' job satisfaction was 60.2. The mean score showed lower satisfaction when compared to the cut of point of 75 (20). The highest dissatisfaction perceived by nurses was on their salary (59.1%) and career development (38.5%).

Table 2: Correlation of age and work experience to Job Satisfaction

Variables	Mean	SD	Min – max	95% CI	r	p
Age	38.83	8.16	22-52	32.40-35.26	0.108	0.225
Work Experience	10.34	8.61	1-32	8.83-11.85	0.116	0.193

The mean score of the nurses' perception on the implementation of scheduling management was 89.91 with the lowest score being 65 and the highest being 112. 20.5% of nurses perceive that the head nurses rarely supervised long shift, 40.3% of nurses also perceive Imbalance distribution of PK nurse in every shift (morning, afternoon, and night), and 67.2% of nurses are in charge of more than 7 patients during afternoon shift. The mean score of the management functions for the nurses' scheduling management was 7.14, with the function of organizing ranked as the highest. The function of actuating was ranked the lowest, with the mean score of 16.63. A positive significant correlation was noted between the nurses' scheduling, and the nurses' satisfaction (p-value = 0.001), with a moderate strength of correlation (r = 0.421). The results suggested that there was a significant association between the management functions (planning, organizing, staffing, actuating, and controlling) on the nurses' scheduling and the nurses' satisfaction ($p= 0.001 - 0.031$), with a weak positive relationship ($r= 0.192 - 0.375$) (see Table 3).

Table 3: Correlation of Nurse Scheduling Management to Job Satisfaction

Variables	MSQ Mean	SD	Min – max	95% CI	r	p
Implementation of Nurse Scheduling Management	89,91	9,47	65 – 112	88,25 – 91,58	0,421	0,001*
Planning	21,13	2,01	15 – 24	20,78 – 21,49	0,192	0,031*
Organizing	7,14	0,69	5 – 8	7,02 – 7,26	0,308	0,001*
Staffing	27,29	3,36	20 – 35	26,72 – 27,88	0,256	0,004*
Actuating	16,63	2,91	9 – 24	16,12 – 17,14	0,375	0,001*
Controling	17,72	3,62	8 – 24	17,08 – 18,35	0,371	0,001*

Discussion

The findings of this study revealed that the rate of the nurses' satisfaction in the selected hospital was still below the 90% minimum service standard for Indonesia; it was also below the mean score of the *Minnesota Satisfaction Questionnaire (MSQ)* of 75.4. Low nurses' satisfaction also seemed to prevail in several other countries. For instance, nurses' satisfaction only reached 46.3% in several hospitals in China (24). Nurses who were given opportunities to develop themselves articulated their through formal and non-formal training which makes them report higher satisfaction rate (25). This implied that salaries matching the nurses' job responsibilities would improve the nurses' satisfaction (26,27). Another study had reported that career development opportunities facilitated by managers may also affect nurses' work satisfaction (28).

The results generated in this study indicated that nurses' scheduling management had not been properly implemented. Result of perception nurses in this study show that the nurse to patient ratio was not considered while the nurses' mixed skills and abilities were also ignored. It appears that the nurse to patient ratio should not exceed more than seven patients per nurse, otherwise it could lead to higher workloads, and also burnouts (29,30**).** Another study had stressed that the nurse to patient ratio needs to be considered by the managers when working on nurses' scheduling management. Doing so can prevent an increase in the nurse's workload (31). Clearly, fair work scheduling for nurses must be considered seriously since many nurses are also involved with frequent long work shift. This study had found that 67.2% of the nurses were in charge of more than 7 patients, particularly during the afternoon shifts.

The imbalanced distribution of the nurses' career level (PK) for every shift (morning, afternoon, and night) showed that there was about 40.3% chance of a difficulty to mix the skills of the nurses. Mixing the skills of the nurses for work scheduling purposes allowed nurses to practice their competence with other fellow nurses so as to improve themselves (32). A pilot study had also expressed that the head nurse is important for the scheduling management because he/she is equipped with the authority to promote the available nurse workforce with the assistance of the duty nurse (33).

A fair time allocation in the nurses' work schedules had not been properly implemented, causing 77.2% of the nurses to perceive that the policy regarding overtime compensations, and off duty opportunities during national holidays had not been

established while 36.5% of the nurses were of the opinion that it had been fairly determined. It seems obvious that fair scheduling can create a positive impact on the nurses' personal work-life balance, hence the nurses' satisfaction (34,35). Long work shifts should not exceed 12 hours, and the head nurse, as a low-tier manager, is responsible for this supervision in order to prevent burnouts among nurses (36,37). Long work shifts certainly affect nurses' performance which, in turn, put the patients at risk, causing a higher error of care (38).

The results of this study also revealed that there was a significant association between nurses' work satisfaction and the implementation of nurses' scheduling management, with a moderate strength of correlation. This outcome is consistent with previous research who stated that nurses' work scheduling management affects nurses' work satisfaction (8). Clearly, improper nurses' work scheduling influences nurses' job satisfaction (9,27,39).

The function of planning is a benchmark of the management process. It helps organizations to improve on the nurses' work satisfaction. Planning is manifested by establishing strategic plans and policies in the scheduling management (11,40). In this study, the organizing function had the highest mean score. The organizing function is critical for encouraging all human beings, and other (material) resources of an organization into motion in order to achieve the organization's goal. Organizing prepares the organization for developing the policy, procedure, and for assigning tasks to employees (11,41). In the staffing function, a head nurse is responsible for managing the nurses according to their competencies and career level. Actuating is fundamental for the successful implementation of the plans set by the higher-level manager. A head nurse must have the skills to do this, such as interpersonal skills, communication skills and motivating skills. The head nurses also needs to have adequate information for the tasks executed within the leadership function (42). Controlling is another function applied. It is executed through the

total quality management (TQM) process by evaluating the implementation of an activity, and then referring to the determined objectives (43).

The limitation of this study is the short time given to the nurses to complete the questionnaire, and the limited units visited. A more reasonable time may have made some impact to the results generated. Future research may thus consider another method of gathering the data via the survey approach. This study also did not address other factors that may affect the nurses' work satisfaction. Future research may consider other relevant factors.

Conclusion

This study had shown that the lower mean of the nurses' work satisfaction was lower than the minimum service standard established by the Ministry of Health. The low satisfaction rate may have resulted from their low salaries and the lack of career development. The implementation of the nurses' scheduling management by all the management functions was proven to be significantly correlated with the nurses' satisfaction, with a moderate positive correlation. It appears that the better the nurses' scheduling management, the higher the nurses' satisfaction. Thus, it is proposed that all head nurses of hospitals take this factor into consideration in their work functions which include planning, organizing, staffing, actuating, and controlling. It is also recommended that top-level managers develop a proper policy for nurses' work schedules by taking into account the nurses' diverse skills, and the nurse to patient ratio. Finally, head nurses would need to improve their actuating functions in socializing, and in providing information to all the nurses under their care.

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