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THE EFFECT OF SIMPLE BELL ALARM USAGE ON NURSE'S JOB SATISFACTION LEVELS IN THE RESUSCITATION ROOM OF THE EMERGENCY DEPARTMENT

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Abstract

Background: The Emergency Room (ER) of ER of Haji Surabaya General Regional Hospital consists of many partitions, but there is no code blue activation. The ER staff use the methods by phone calling or shouting, if they need a request for assistance in handling resuscitation patients. The team has the potential to feel dissatisfied with the infrastructure at work.

Objective: The purposes of this research is to analyse the effect of using a simple alarm bell on the job satisfaction of nurses in the emergency room resuscitation. **Methods:** The research design used the Pre-Experimental method (One Group Pretest-Posttest). The population in this study were all nurses in the emergency room at the ER of Haji Surabaya General Regional Hospital in Surabaya, totaling 34 nurses. Using the total sampling technique, a sample of 31 nurses was obtained. The independent variable is the simple use of the alarm bell, and the dependent variable is the level of nurse satisfaction. Data collection tool using a job satisfaction level questionnaire. Data analysis using the Wilcoxon test.

Result: The results of data analysis using the Wilcoxon sign rank test yielded a value of p = 0.051 (0.051 > 0.05) then H0 was rejected, which means that there was no significant difference between the level of job satisfaction of nurses before and after using a simple alarm bell. However, the results of the analysis of the average level of satisfaction before and after using the simple bell alarm were 24.52 and 25.35 points. In the total number of assessments, it was found that the average level of satisfaction after using the simple bell alarm was greater than the average level of satisfaction before using the simple bell alarm, there was a difference of 0.83 points.

Conclusion: The results of this study can be concluded that Job satisfaction of all nurses in the emergency resuscitation room before using the simple bell alarm was satisfied. Job satisfaction of all nurses in the emergency resuscitation room after using the simple bell alarm was satisfied. There is no significant difference between the level of job satisfaction before and after using the simple alarm bell, but there is an increase in nurse satisfaction points descriptively with the infrastructure that supports their work. The use of a simple alarm bell in this study should be evaluated periodically by the nursing department in the hospital in order to determine its effectiveness in patient care.

INTRODUCTION

Emergency Department (ED) provides initial care for patients suffering from illnesses or injuries that could threaten their lives (Government Regulation of the Republic of Indonesia Number 24 of 2018 on Emergency Services, 2018). Response time is a key indicator of emergency medical service (EMS) performance. One of the markers of successful emergency patient management is the speed at which sufficient assistance is provided to emergency patients, both during regular daily conditions and in times of disaster. The duration of the response time is usually dependent on the patient's triage pr severity level.

The Emergency Department (ED) of Haji Hospital Surabaya consists of various partitioned rooms according to triage levels, including resuscitation rooms and treatment rooms. However, there is no code blue activation in the ED. The ED staff uses a manual method by calling other triage rooms or shouting out for help when they need assistance in handling patients with resuscitations needs. This process takes longer for the resuscitation team to respond to the call for help. Additionally, shouting in the ED corridor can make other patients uncomfortable or panicky, as it requires loud voice for other healthcare personnel to promptly respond to the call for help in the resuscitation room. The ED resuscitation team may also feel dissatisfied with their work since the satisfaction of healthcare personnel is influenced, in part, by the facilities and infrastructure in their workplace (Gatot & Adisasmito, 2005).

According to Admosoeprapto (2016:55), job satisfaction is a factor that is directly related to Human resource (HR) as employees in achieving organizational goals. Job satisfaction is the level of pleasure a person experiences in their role or job within the organization. It is the individual's perception that they receive adequate rewards from various aspects of their job and the organization they are in. The factors influenceing job satisfaction can essentially be divided into two parts: intrinsic factors and extrinsic factors. Intrinsic factors originate from within the employee themselves, such as their expectations and individual needs. On the other hand, extrinsic factors come from external sources, including company policies, the physical conditions of the work environment, interactions with ither employees, the compensation system, and so on.

Speed and accuracy of assistance in hospitals can be achieved by improving facilities, infrastructure, human energy resources (including staff job satisfaction), and proper ER management that complies with standards. The process of activating a rapid response system in hospitals, which involves a service flow combining the Early Warning System and competent rapid response team collaboration to immediately handle/ resuscitate patient, can reduce the hospital's mortality rate by 6% (Chen et al., 2014). Effective communication and cooperation can be facilitated by utilizing existing technologies; however, most adequate communication tools require significant costs (Ardlianawati et al., 2022).

Currently, there are several communication tools used in the ER of hospitals to convey the urgency of patients, such as the use of walkie-talkies, pagers, and wireless communication devices that

can sound an alert in case of a call-for-help between teams (Welch et al., 2013). Each of these communication media has its own advantages and disadvantages. The use of electronic devices in various hospital ERs typically incurs high costs.

According to research conducted by Purnomo and Beeh in 2016, through testing and data collection via questionnares on the Emergency Button application, it was found that the Emergency Button could be implemented to deal with emergency situations. Effective communication in an ER setting can be achieved by utilizing existing technology. The study conducted by Ardlianawati et al. in 2022 on the effectiveness of activating the bel call for help on the average patient mortality rate and response time in the ER has the potential for long term use with periodic evaluations on a larger sample size to gain a comprehensive understanding of its effectiveness.

Nurses are ecpected to be innovators in the field of nursing because they are responsive to stimuli from their environment (Maria, 2019). As functional nurses in the ER, researchers see the need to evaluate the use of innovations in the resuscitation process, particularly in team communication. Team collaboration is closely related to the communication process. An effective resuscitation process with appropriate equipment and facilities is also expected to increase the satisfaction of healthcare personnel in the ER. One communication method used by researchers is the use of a simple bell alarm. The implementation of this bell in the ER of Airlangga University Hospital in Surabaya can be potential alternative not only for the ER but also for other critical care units with local code blue teams. This callfor-help bell is an electronic device that is relatively inexpensive compared to other communication tools (Ardlianawati et al., 2022).

In the ER, a call for help can be made using communication tools such as pagers, telephones, or other electronic devices. However, the researchers in this study limited their focus to the use of a simple bell alarm. Based on this, the authors were interested in conducting research to investigate the "Effect of using simple bell alarm on nurse job satisfaction." The aim of the study was to analyze the impact of using a simple bell alarm on nurse job satisfaction in the resuscitation room of the emergency department before and after implementing the bell.

METHODS

Study Design

The research design used was a pre-experimental design with a pretest-posttest approach. The initial observation conducting in this study served as the pretest, which aimed to identify nurse job satisfaction level before the implementation of the simple bell alarm in the resuscitation room of the ER. Subsequently, the final observation (posttest) was conducted to identify nurse job satisfaction after the implementation of the simple alarm bell in the resuscitation room of the ER. The independent variable in this study was the use of simple bell alarm for call-for-help situations, while the dependent variable was the level of job satisfaction.

Settings

This study was conducted in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional. The pretest was conducted on May 25, 2023. Subsequently, the introduction of the use of the simple bell alarm and its installation in the ER was carried out on May 26, 2023. The posttest was conducted on June 9, 2023.

Research subject

The population for the variable of healthcare personnel satisfaction level in this study consists of all nurses in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional, totaling 34 staff members. The sample size used in this study is a total sampling or saturated sampling for the satisfaction level variable. This is commonly done when the population size is relatively small and the study is conducted to achieve a margin of error <1% (Roflin, 2022). Therefore, the researchers used a sample of all 34 nurses in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional, who met the inclusion criteria for the study, namely: (1) Willing to be respondents; (2) Nurses assigned to the resuscitation room of the emergency department. The exclusion criteria for the study were: (1) Nurses on maternity leave in the ER. Ultimately, the researchers obtained 31 respondents, as two respondents did not complete the questionnaire, and one respondent declined to participate in filling out the questionnaire.

Instruments

The researchers collected sample data using a questionnaire consisting of 6 statements about factors influencing nurse satisfaction, modified from a previous questionnaire (Gatot & Adisasmito, 2005).

Data collection

After all the data were collected from the respondents' checklists, they were grouped according to the variables under investigation using a spreadsheet and the SPSS application, and both univariate and bivariate analyses were conducted.

Data Analysis

The Wilcoxon statistical test was used in this research. If Sig > 0.05, the H0 (null hypothesis) is accepted, meaning there is no difference between variables. If Sig < 0.05, then H0 is rejected, indicating that there is a difference between the variables.

Ethical Consideration

It is noted that this study has obtained ethical approval from the research ethics committee of Universitas Airlangga Hospital with the number: 062/KEP/2023.

RESULTS

This general data shows the results of the frequency distribution of the respondents under study in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional. The observed characteristics include age, gender, profession, education level, years of having emergency training, and employment status.

Demographic Data of Respondents

Table 1. Characteristics of Respondents based on Age, Gender, Profession, Educational Level, Years of Working Experience, and Employment Status in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional on May until June 2023 (n = 31).

Variable	Frequency	Percentage
variable	(n)	(%)
Age		
25-34 years old	20	64.5
35-44 years old	8	25.8
45-54 years old	3	9.7
Total	31	100.0
Gender		
Male	17	54.8
Female	14	45.2
Total	31	100.0
Profession		
Nurse	31	100.0
Total	31	100.0
Clinical Competence Level		
PK 1	7	22.6
PK 2	15	48.4
РК 3	9	29.0
Total	31	100.0
Educational Level		
Diploma Degree	18	58.1
Bachelor	13	41.9
Total	31	100.0
Years of Having Emergency Training		
<5 years	21	67.7
>5 years	10	32.3
Total	31	100.0
Employment Status		
PNS	18	58.0
РЗК	2	6.5
BLUD	11	35.5
Total	31	100.0

Sources: Primary Data of Questionnaire, 2023.

Table 1 showed that out of the 31 respondents, all of them (100%) are nurses. The majority (64.5%) as between the ages of 25-34 years. Most of the respondents (54.8%) are male, and the majority

(58.1%) have an educational level of Diploma. Nearly half of them (48.4%) are at the clinical competence level of PK 2. A significant portion (67.7%) have received training certificates within <5 years. Furthermore, most of them (58.0%) are employed as civil servants (PNS).

Distribution of Nurse's Job Satisfaction Level

The special data explains the research results of the independent variable, dependent variable, and cross-tabulation between the dependent variable and independent variable before after the use of simple bell alarm on the level of job satisfaction among nurses in the ER.

Table 2. Distribution of Nurse's Job Satisfaction Level in the Emergency Room (ER) of GeneralHospital of Hajj, Surabaya Regional on May until June 2023 (n = 31).

	Ν	Min	Max	Mean	Sum	SD
Job Satisfaction Level Before	31	19	30	24.52	757	2.540
Job Satisfaction Level After	31	19	30	25.35	786	2.739
	: 2022					

Sources: Primary Data of Questionnaire, 2023.

Table 2 showed that out of 31 respondents, all of them (100%) are nurses. The average satisfaction level analysis before and after the use of the simple bell alarm resulted in scores of 24.52 and 25.35, respectively. The satisfaction level has the same minimum and maximum values, with the lowest score being 19 and the highest score being 30. However, upon totaling the assessments, it was found that the satisfaction level after using the simple bell alarm is higher than before, with a score difference of 0.83 points. This indicates that there is an increase in satisfaction scores after using the simple bell alarm for several aspects in the questionnaire.

Bivariate Analysis Results

The results of the bivariate analysis compared the difference in satisfaction levels before and after using the simple bell alarm using the Wilcoxon test, as well as the cross-tabulation between variables.

The Comparison of Nurse's Job Satisfaction Level Before and After the Use of Simple Bell Alarm

Table 3 showed that of the 31 respondents, all (100%) were nurses, and all (100%) of the results of the analysis of nurse satisfaction before using the simple alarm bell were satisfied. The results of the analysis of nurse satisfaction after using a simple alarm bell are completely satisfied (100%).

In the Wilcoxon signed rank test α 5%, there was no significant difference between nurse satisfaction levels before and after the use of a simple alarm bell (*p*-value = 0.051).

Table 3. Distribution of Nurse's Job Satisfaction Level Before and After the Use of Simple Bell Alarm in the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional on May until June 2023 (n = 31).

Variable	Ν	%	<i>p</i> -value
Job satisfaction level (pre)			
Satisfy	31	100.0	
Not Satisfy	0	0.0	
-			0.051*
Job satisfaction level (post)			
Satisfy	31	100.0	
Not Satisfy	0	0.0	

Sources: Primary Data of Questionnaire, 2023.

Table 4. Crosstabulation of Respondents' Characteristics based on Age, Gender, Profession, Educational Level, Length of Service, Employment Status with Nurse Satisfaction Before and After Use of Simple Bell Alarm the Emergency Room (ER) of General Hospital of Hajj, Surabaya Regional on May until June 2023 (n = 31).

	Job Sat	isfaction	Job Satisfaction		
	Leve	l (Pre)	Level (Post)		
Variabel	Satisfy (%)	Not Satisfy (%)	Satisfy (%)	Not Satisfy (%)	
Age					
25-34 years old	64.5	0.0	64.5	0.0	
35-44 years old	25.8	0.0	25.8	0.0	
45-54 years old	9.7	0.0	9.7	0.0	
Total	100.0	0.0	100.0	0.0	
Gender					
Male	54.8	0.0	54.8	0.0	
Female	45.2	0.0	45.2	0.0	
Total	100.0	0.0	100.0	0.0	
Clinical Competence Level					
PK 1	22.6	0.0	22.6	0.0	
PK 2	48.4	0.0	48.4	0.0	
PK 3	29.0	0.0	29.0	0.0	
Total	100.0	0.0	100.0	0.0	
Educational Level					
Diploma Degree	58.1	0.0	58.1	0.0	
Bachelor	41.9	0.0	41.9	0.0	
Total	100.0	0.0	100.0	0.0	
Years of having emergency training					
< 5 years	67.7	0.0	67.7	0.0	
> 5 years	32.3	0.0	32.3	0.0	
Total	100.0	0.0	100.0	0.0	

	Job Sat Leve	isfaction l (Pre)	Job Satisfaction Level (Post)		
Variabel	Satisfy (%)	Not Satisfy (%)	Satisfy (%)	Not Satisfy (%)	
Employment Status					
PNS	58.0	0.0	58.0	0.0	
P3K	6.5	0.0	6.5	0.0	
BLUD	35.5	0.0	35.5	0.0	
Total	100.0	0.0	100.0	0.0	

Sources: Primary Data of Questionnaire, 2023.

Table 4 showed that of the 31 respondents, all (100%) were nurses, based on the age of the respondents, the majority (64.5%) aged 25-34 years, all (100%) scores of pre and post satisfaction levels stated that they were satisfied, almost half (25.8%) aged 35-44 years, all (100%) scores of pre and post satisfaction levels expressed satisfaction, a small proportion (9.7%) aged 45-54 years, all (100%) scores of pre and post satisfaction levels stated satisfied. Based on gender, the majority (54.8%) of all men (100%) scored pre and post satisfaction levels stated they were satisfied, almost half (45.2%) all women (100%) scored pre and post satisfaction levels stated they were satisfied. Based on the competency level, a small proportion (22.6%) of PK 1, all (100%) scores of pre and post satisfaction levels stated that they were satisfied. Nearly half (48.2%) of PK 2 (100%) the pre and post satisfaction level scores stated they were satisfied, almost half (29%) PK 3 entirely (100%) the pre and post satisfaction level scores stated they were satisfied. Based on the level of education, the majority (58.1%) of all D3 education (100%) scores of pre and post satisfaction levels stated that they were satisfied, almost half (41.9%) of D4/S1 education entirely (100%) scores of pre and post satisfaction levels express satisfaction. Based on the last year of emergency training, most (67.7%) less than five years in total (100%) pre and post satisfaction scores stated that they were satisfied, almost half (32.3%) more than five years in total (100%) score pre and post satisfaction levels expressed satisfaction. Based on employment status, the majority (58%) were civil servants, all (100%) pre and post satisfaction scores stated that they were satisfied. (35.5%) is that all BLUDs (100%) score the level of pre and post satisfaction expressing satisfaction.

DISCUSSION

Identify Nurse's Job Satisfaction Before Using the Simple Alarm Bell in the Resuscitation Room of the Emergency Department

The results showed that all respondents expressed satisfaction. This satisfaction level can be influenced by several factors, among others related to employment status. This is in line with a study at a hospital in East Java which looked for the relationship between employment status and workload and job satisfaction. The results of this study indicate that respondents with non-PNS status have a high

level of workload (Kusumawati & Frandinata, 2015). High workload, low compensation, can lead to low job satisfaction (Juliati et al., 2021). The researcher concluded that because there were more nurses who had civil servant status, their satisfaction levels also tended to be higher when compared to the satisfaction levels of hospital nurses who had more non-PNS staff.

Apart from being influenced by employment status, job satisfaction can also be influenced by the level of clinical competence. In terms of clinical competency classification in the scope review (Suroso, 2011), it can be said that almost half of the nurses who were respondents were at clinical nurse level 2 (PK 2), indicating that the competency of the IGD nurse at ER of General Hospital of Hajj, Surabaya Regional was at an intermediate level (advance beginner). Nearly half are PK level 3 (advanced clinicians), and a small proportion are PK level 1 (junior/novice clinicians). If an analysis is carried out, then almost all nurses have a level of competence above junior staff. A review of the literature on nursing studies found that increasing clinical competency levels can increase nurse job satisfaction in general, due to personal and professional development in the process (Wijaya et al., 2023). The Haj Hospital IGD has met the clinical level increase. Therefore, researchers can conclude that the greater number of PK 2 and PK 3 clinical levels in the ED does indeed affect the high level of nurse job satisfaction.

Identify Nurse's Job Satisfaction After Using the Simple Bell Alarm in the Resuscitation Room of the Emergency Department

The results showed that all respondents expressed satisfaction, the same as before using the simple bell alarm. However, in the results of the nurse's method of conveying the emergency situation of priority 1 triage patients, there was a very significant change. If before socialization, almost all of the nurses used the shouting method, then after the process of using the simple bell alarm, all nurses used the bell in communicating to ask for help in resuscitation cases. This shows that all respondents have understood when the socialization was carried out by researchers.

In addition, there is a difference in the score of 0.83 points in the total number of assessments before and after, where the score after use has more value. This shows that there was an increase in satisfaction scores on several aspects of the questionnaire, one of which was on questionnaire number 4 (infrastructure points questionnaire). After the simple use of the alarm bell, the respondents who "quite agree" fell by 16.1%. This decrease was followed by an increase in the "agree" score of 12.9%, and an increase in the "strongly agree" score of 3.3%.

Respondents whose satisfaction increased was in line with research on the influence of the relationship between improved work environmental factors (including facilities and infrastructure) on increasing nurse job satisfaction. The provision of facilities that support the work of nurses in a unit can increase the level of job satisfaction of nurses in that unit (Gatot & Adisasmito, 2005). Descriptively, this indicates that respondents are likely to benefit from the simple use of alarm bells in the emergency

room, so that the percentage who answered "quite agree" decreased, and was followed by an increase in respondents who answered "agree" and even "strongly agree".

The researcher concluded that although statistically this is not too much different, this can be a positive signal for future research. Having facilities, in this case the simple use of an alarm bell in the emergency room, can increase nurse job satisfaction.

Analyzing the Nurse's Job Satisfaction Before and After Using the Simple Bell Alarm in the Resuscitation Room of the Emergency Department

This study found that there was no significant difference between the level of nurse satisfaction before and after using the simple bell alarm (p>0.05, so H0 was rejected). Even though this is not statistically significant, using the descriptive method, it can be seen that there is indeed an increase in the level of satisfaction between before and after using the simple bell alarm by 16.2%.

The reason for this satisfaction can be seen from the initial data prior to the intervention, that some respondents said that they used the "shout" method when they needed help from other colleagues in the resuscitation process. The process of "shouting" can distract the patient and the concentration of other colleagues in providing services. Then after the intervention using a simple alarm bell, all respondents have used a simple alarm bell in the communication process. Communication is expected to be effective, so that it can help speed up services in the emergency room, especially during the resuscitation process for triage level 1 patients.

The researcher collected pre and post data within 15 days, because the recredential process would be carried out for nurses at ER of General Hospital of Hajj, Surabaya Regional, and the researcher was worried that if it took too long to collect post data, there would be differences in filling in demographic data related to clinical competency level status which could obscure the data. pre and post research. A study on nurse job satisfaction conducted in a hospital, showed significant results when carried out 2 months after the intervention process (MPKP Team, 2016). The researcher concluded that this is also possible if data collection is carried out for a longer period of time than 15 days, so that satisfaction levels can be studied longer.

This study has limitations related to researchers not being able to control the certainty of filling in each respondent. The questionnaire in the form of a G form was distributed via the whatsapp group of nurses in the Emergency Room at ER of General Hospital of Hajj, Surabaya Regional by the person in charge of the room. The researcher can only ensure that the initials of the fillers before and after are the same through the filling instructions on the distributed questionnaires.

In the end, researchers can state that this research can be the basis for innovative actions in hospitals to improve the response of emergency room attendants, when resuscitation patients are present. Although there is no statistically significant difference in nurse satisfaction, descriptively, the average ER nurse is satisfied with the infrastructure that supports their work. This innovation can still be done, especially if the emergency room is very large, with a limited number of human resources, or

when there is a crowded number of patients in the emergency room. The use of innovation in the field of nursing services is expected to increase nurse job satisfaction, so that emergency room nurses can provide excellent service to the community. Research can also be used as additional information for nursing students and academics. Research results can be further developed in the future by improving methods or by expanding the research sample, for example by prolonging data collection, or using the IGD of another hospital as sampling and implementing interventions.

LIMITATION

There is no conflict of interest in this research.

CONCLUSION

The results of this study can be concluded that Job satisfaction of all nurses in the emergency resuscitation room before using the simple bell alarm was satisfied. Job satisfaction of all nurses in the emergency resuscitation room after using the simple bell alarm was satisfied. There is no significant difference between the level of job satisfaction before and after using the simple alarm bell, but there is an increase in nurse satisfaction points descriptively with the infrastructure that supports their work. The use of a simple alarm bell in this study should be evaluated periodically by the nursing department in the hospital in order to determine its effectiveness in patient care.

AUTHOR CONTRIBUTION

Sundawan Priyo Seputra: Literature review, conceptualization, methodology, investigation, resources, project administration, and manuscript drafting.

Arif Helmi Setiawan: Methodology, investigation, resources, project administration, and manuscript drafting.

Nety Mawarda Hatmanti: Methodology, investigation, resources, and manuscript drafting.

Imamatul Faizah: Methodology, investigation, resources, and manuscript drafting.

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Sundawan Priyo Seputra	: None.
Arif Helmi Setiawan	: None.
Nety Mawarda Hatmanti	: None.
Imamatul Faizah	: None.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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