Analysis of the Effect of Work Load and the Work Environment on Job Stress and Motivation and Its Impact on the Performance of Aceh Hospital Nurse

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Abstract

This study aimed to look at job stress and motivation in mediating workload and work environment to impact on the performance of nurse at the Aceh Mental Hospital. The total sample was 199 people. All members of the population were sampled because of using the census method. By using the Structural Equation Modeling (SEM) approach, and also Sobel test, this study found that the work motivation and job stress did not act as mediators in workload affecting nurse performance, and acted as partial mediators in work environment affecting nurse performance. In other word, to improve nurse performance, the workload can affect the performance directly, while the work environment can affect the performance both directly or indirectly. These all findings strengthen the prior causality theories, and the novelty lies in the form of the combination of the theories to be one research model. For further researchers, this model also can be more to be developed through adding a mediation variables that can replace the work motivation and job stress in the model of workload affecting the nurse performance, because this study proved that in that model the both variables did not act as mediators. Also, the further researches can add the moderation variable in the model such as work experience and locus of control that will provide a more detailed description of factors that can improve nurse performance.

Keywords: Workload, Work Environment, Job stress, Work Motivation, Performance.

1. Introduction

(Purnamasari and Kapalawi, 2013) explained that the hospital is a unique health service organization that is full of effort, capital, and technological sophistication, Human Resources (HR), and the profession because it deals with the internal impact of multi-hospital businesses, which is problematic. When viewed from the point of view of the frequency of meeting face to face with patients, nurses have an important role in healing the patient. Because it is the nurse who has the most time to interact with the patient and the patient's family. Nurses have many duties and responsibilities, where the duties and responsibilities have been determined by the hospital itself.

Aceh Mental Hospital is an agency that operates in the health sector, namely in psychiatric disorders. Aceh Mental Hospital is divided into two types of services, namely medical and administrative services. Medical services are subdivided into several types of services, namely medical services, nursing and medical support. But with the various existing facilities, the Aceh Mental Hospital cannot be separated from problems. The phenomenon that occurs is the
overcapacity of the Aceh Mental Hospital. This is as published in the electronic news page of news.detik.com, where the Aceh Mental Hospital treats 368 mental patients from all over Tanah Rencong. Meanwhile, the number of beds available is only 354. In this condition, the ones who are very burdened are the nurses, whereas hospital employees of the health personnel group, they are directly dealing with patients. When there is overcapacity, they are thought to be overwhelmed in serving patients, and can and can interfere with their performance.

According to (Sastrohadiwiryo and Syuhada, 2015) performance is an achievement achieved by a person in carrying out the tasks and jobs assigned to him. So it is very important for a company or organization to monitor and see the performance of each employee. An employee is said to have good work results if the employee can carry out his duties and responsibilities properly. (Olusegan, Oluwasayo and Olawoyim, 2015) also found that job stress has a significant negative effect on employee performance, because excessive workload, career development, family problems and organizational problems can reduce employee performance due to the emotional influence felt by employees. Another study conducted by (Ali et al., 2014), (Arbabisarjou et al., 2013), (Bashir and Ramay, 2010) also obtained the same result. (Astuti and Lesmana, 2018) in their research reveal that there is a positive and significant influence on performance through work motivation variables, meaning that there is a direct influence or relationship between workload and performance through real work motivation. (Andriyani, 2018) in her research found that performance, workload and job stress have a significant effect. This is supported by research conducted by (Mahfudz, 2017) which gave results that workload affects performance directly and indirectly through job stress. (Herawati, 2015) found that there is a strong relationship and influence between motivation on employee performance. The results of research from (Kurniawati and Yuliando, 2015) also show that the effect of motivation is quite good. That the effect of motivation is quite good. Without demands to meet needs, there will be no human activity in the form of work to produce performance.

The workload also can later put pressure on employees and ultimately lead to job stress. (Simanjuntak, 2003) stated that the work environment is the entire tooling tool faced, the environment where a person works and work methods that affect work both individually and in groups. (Setyawan and Kuswati, 2006) stated that if the workload increases without the distribution of workloads or work tasks, performance will decrease. This work load occurs as a result of the employee being desired to carry out more work tasks than the available time. (Haryono, 2009) said that too much workload can lead to decreased morale and motivation of nurses and result in fatigue at work. But if employees see that the workers they are burdened with are responsibilities, then the burden will not be felt when completing tasks. And this is supported by research conducted by (Dewi, 2013).

The condition of the work environment also has an effect on employee performance because basically employees are ordinary people. The higher the quality of a person, the higher his expectations about a good working environment. (Moulana, Sunuharyo and Utami, 2017) in his research stated that the work environment has an influence on performance. This is also supported by (Handayani, 2015) which stated that there is an influence between the physical work environment and employee performance. Work environment and job stress have a significant influence on employee performance. This is evidenced by (Yunus, 2014) who obtained research results in the form of work environment variables and job stress which have a significant influence on employee performance variables. Also supported by research from (Manggiasih and Sunardi, 2014) and also (Septianto, 2010). (Jayaweera, 2015) in his research found that work motivation is a variable that is able to mediate the influence of the work
environment on employee performance. Work motivation is able to influence the work environment to the achievement of employee work performance.

Based on the above phenomena and being encouraged to fill the gaps in previous studies, this study aims to explore job stress and motivation in mediating workload and work environment and its impact on nurse performance by taking cases at the Aceh Mental Hospital, Indonesia.

2. Literature Review

Performance

Performance is the result or overall success rate of a person during a certain period in carrying out a task compared to various possibilities, such as work standards, targets or target criteria that have been determined in advance after being mutually agreed (Rivai and Sagala, 2014). (Soedjono, 2005) mentions 7 (seven) criteria used to measure individual employee performance, namely:

a) Quality
b) Quantity
c) On time
d) Effectiveness
e) Independence
f) Work commitment
g) Responsibility

Work Motivation

(Robbins and Judge, 2017) stated that motivation is a process that explains the intensity, direction and persistence of an individual to achieve his goals. According to (Maslow, 1997), quoted by (Hasibuan, 2016), explained that employee motivation is influenced by physical needs, security and safety needs, social needs, self-esteem needs, and self-actualization needs. Then the following indicators will be obtained:

a) Physiological or physical needs
b) Security
c) Social
d) Awards
e) Self-actualization

Job Stress

(Robbins and Judge, 2017) stated that stress is an unpleasant psychological condition that comes from environmental pressures. Job stress can also be referred to as feelings related to pressure, work ambiguity, frustration, and feelings of fear that come from work (Cullen et al., 1985). According to (Mangkunegara, 2013), indicators for measuring job stress are as follows:

a) Intimidation and pressure from coworkers and leaders.
b) Difference between demands and existing resources to carry out duties and obligations.
c) Incompatibility with work.
d) Work that is dangerous, frustrating, boring or repetitive.
e) Overload.
f) Factors expected by oneself such as unrealistic targets and expectations, self-criticism and support.

**Work Environment**

The work environment is something that exists within the workers’ environment that can influence him/her in carrying out tasks such as activities in an optimal, healthy and comfortable manner. Measurement of work environment variables from the working environment scale (WES) is used by (Shah et al., 2011) as described above with research interests consisting of: a. Involvement, b. Cohesion / cohesiveness, c. Autonomy, d. Task orientation, e. Work pressure, f. Clarity of roles and responsibilities, g. Supervision and h. Support of physical facilities.

**Workload**

Permendagri No.12 / 2008, stated that the workload is the amount of work that must be borne by a branch or organizational unit and is the product of the work volume and the time norm. The workload indicator used according to Putra (2012: 22), which includes, among others:
1. Targets that must be achieved
2. Working Conditions
3. Use of Time
4. Work Standards

**Research Model**

(Artadi, 2014) stated that workload has a positive influence on employee performance, where workload pressure becomes positive and this leads to increased performance. (Shah et al., 2011) found that workload has a positive effect on work where high workload makes performance appraisal by supervisors very important, because it relates to performance and the amount of bonus that employees will receive.

(Reksohadiprojo and Gitosudarmo, 2009) stated that a bad work environment will have an effect on workers feeling uncomfortable with their work, so they do not pay attention to their work, resulting in decreased employee performance. Researcher (Jayaweera, 2015) found that work motivation is able to mediate the influence of the work environment on employee performance. Work motivation is able to strengthen the influence of the work environment on employee performance. Work motivation is able to strengthen the influence of the work environment on the achievement of employee work performance.

Based on the explanation above and and previous research, this study proposes a research model as illustrated in Figure 1.
Referring to Figure 1, this study proposes 12 (twelve) hypotheses to be tested as follows:

H1: Workload affected the performance of Aceh Mental Hospital nurse.
H2: Work environment affected the performance of Aceh Mental Hospital nurse.
H3: Workload affected the work motivation of Aceh Mental Hospital nurse.
H4: Work environment affected the job stress of Aceh Mental Hospital nurse.
H5: Work motivation affected the performance of Aceh Mental Hospital nurse.
H6: Stress affected the performance of Aceh Mental Hospital nurse.
H7: Workload affected the job stress of Aceh Mental Hospital nurse.
H8: Work environment affected the work motivation of Aceh Mental Hospital nurse.
H9: Workload affected nurse performance through work motivation in Aceh Mental Hospital.
H10: Workload affected nurse performance through job stress in Aceh Mental Hospital.
H11: The work environment affected nurse performance through work motivation in Aceh Mental Hospital.
H12: The work environment affected nurse performance through job stress in Aceh Mental Hospital.

3. Research Method

The purpose of this study was to see how the stress and work motivation variables mediated the workload and work environment in affecting the performance of nurses at Aceh Mental Hospital, Indonesia. The population in this study was the civil servant nurses at Aceh Mental Hospital, Indonesia. All members of the population as many as 199 people were sampled because of using the census method.

This number was considered to have exceeded the provisions for using the AMOS Structural Equation Model (SEM) as a data analysis tool which requires a minimum sample size of 5 times the number of indicators (F. Hair Jr et al., 2014). In this study, to collect data the researchers used questionnaires. Sobel test was also used to test the indirect effect model.

The questionnaire in this study was divided into two parts, namely the first part covered the characteristics of the respondent, while the second part attached questions made in accordance with the research variables. In this study there were 5 (five) research variables consisted of work motivation (Z2) consisted of 5 indicators, Job stress (Z1) consisted of 6 indicators, Performance (Y) consisted of 7 indicators, Workload (X1) consisted of 4 indicator, Work Environment (X2) consisted of 8 indicators.

The questions in the questionnaires were tested using a Likert scale in the form of intervals and for one choice they were assessed (Score) with a Likert distance 1. The Likert scale was structured to examine how strongly the subject agreed or disagreed with the statement on a 5-point scale with an arrangement of 1-5 were scored as follows:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Less Disagree</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>5</td>
</tr>
</tbody>
</table>
Systematically, the causal relationships between the constructs in this study were as follows:

\[
\eta_1 = \gamma_{1.1} \xi_1 + \gamma_{1.2} \xi_2 + \gamma_{1.3} \xi_3 + \zeta_1 \\
\eta_2 = \gamma_{2.1} \xi_1 + \gamma_{2.2} \xi_2 + \gamma_{2.3} \xi_3 + \beta_{21} \eta_1 + \zeta_2
\]

or:
Job Stress = 11 \ Y \ workload + \beta_{2.1} \ work \ environment + \zeta_1
Work motivation = 11 \ Y \ workload + \beta_{2.2} \ work \ environment + \zeta_2
Performance = 21 \ Y \ workload + \beta_{2.1} \ work \ environment + \beta_{2.2} \ job \ stress + \beta_{2.3} \ work \ motivation + \zeta_2

4. Results and Discussion
Below is a picture that shows the relationship between the indicators and the latent variables in the Measurement Model

**Figure 2. Valid Model with CFA**

Furthermore, below is a table that describes the relationship between indicators and their constructs. If the loading factor used to measure each indicator's value is above 0.5, then the indicator is representative. And from these results, the results of the indicator will be used for further data processing. In the pictures above, there are indicators that have been eliminated, this is because the number does not reach 0.5. Table 2 below shows the indicators and dimensions that were not eliminated from the formed model.
Table 2. Loading Factor Measurement Models

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Variable</th>
<th>Estimate</th>
<th>Cut Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>BK1</td>
<td>Work_Load_X1</td>
<td>0.657</td>
<td>0.50</td>
</tr>
<tr>
<td>BK2</td>
<td>Work_Load_X1</td>
<td>0.719</td>
<td>0.50</td>
</tr>
<tr>
<td>BK3</td>
<td>Work_Load_X1</td>
<td>0.795</td>
<td>0.50</td>
</tr>
<tr>
<td>BK4</td>
<td>Work_Load_X1</td>
<td>0.657</td>
<td>0.50</td>
</tr>
<tr>
<td>LK1</td>
<td>Work_Environment_X2</td>
<td>0.736</td>
<td>0.50</td>
</tr>
<tr>
<td>LK2</td>
<td>Work_Environment_X2</td>
<td>0.638</td>
<td>0.50</td>
</tr>
<tr>
<td>LK3</td>
<td>Work_Environment_X2</td>
<td>0.767</td>
<td>0.50</td>
</tr>
<tr>
<td>LK4</td>
<td>Work_Environment_X2</td>
<td>0.819</td>
<td>0.50</td>
</tr>
<tr>
<td>LK5</td>
<td>Work_Environment_X2</td>
<td>0.548</td>
<td>0.50</td>
</tr>
<tr>
<td>SK1</td>
<td>Job_Stress_Y2</td>
<td>0.693</td>
<td>0.50</td>
</tr>
<tr>
<td>SK2</td>
<td>Job_Stress_Y2</td>
<td>0.566</td>
<td>0.50</td>
</tr>
<tr>
<td>SK3</td>
<td>Job_Stress_Y2</td>
<td>0.714</td>
<td>0.50</td>
</tr>
<tr>
<td>SK4</td>
<td>Job_Stress_Y2</td>
<td>0.878</td>
<td>0.50</td>
</tr>
<tr>
<td>SK5</td>
<td>Job_Stress_Y2</td>
<td>0.817</td>
<td>0.50</td>
</tr>
<tr>
<td>MK1</td>
<td>Work_Motivation_Y1</td>
<td>0.645</td>
<td>0.50</td>
</tr>
<tr>
<td>MK2</td>
<td>Work_Motivation_Y1</td>
<td>0.805</td>
<td>0.50</td>
</tr>
<tr>
<td>MK3</td>
<td>Work_Motivation_Y1</td>
<td>0.599</td>
<td>0.50</td>
</tr>
<tr>
<td>MK4</td>
<td>Work_Motivation_Y1</td>
<td>0.727</td>
<td>0.50</td>
</tr>
<tr>
<td>MK5</td>
<td>Work_Motivation_Y1</td>
<td>0.667</td>
<td>0.50</td>
</tr>
<tr>
<td>KP1</td>
<td>Nurse_Performance_z</td>
<td>0.614</td>
<td>0.50</td>
</tr>
<tr>
<td>KP2</td>
<td>Nurse_Performance_z</td>
<td>0.763</td>
<td>0.50</td>
</tr>
<tr>
<td>KP3</td>
<td>Nurse_Performance_z</td>
<td>0.782</td>
<td>0.50</td>
</tr>
<tr>
<td>KP4</td>
<td>Nurse_Performance_z</td>
<td>0.555</td>
<td>0.50</td>
</tr>
<tr>
<td>KP5</td>
<td>Nurse_Performance_z</td>
<td>0.669</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Analysis of Structural Equation Modeling

The next step is analysis of Structural Equation Mode (SEM) in Full Model which has the objective of testing models and hypotheses. The results of data processing for SEM analysis are shown in Figure 3 below.
Hypothesis testing

Here is the hypothesis tests. Hypothesis testing was done by SEM analysis by analyzing the regression value (Regression Analysis Structural Equation Modeling)

Table 3. Hypothesis Conclusion

<table>
<thead>
<tr>
<th>Endogenous</th>
<th>Exogenous</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job_Stress _Y1</td>
<td>Work_Load_X1</td>
<td>0.180</td>
<td>0.096</td>
<td>2.148</td>
<td>0.032</td>
</tr>
<tr>
<td>Job_Stress _Y1</td>
<td>Work_Environment_X2</td>
<td>0.219</td>
<td>0.085</td>
<td>2.661</td>
<td>0.008</td>
</tr>
<tr>
<td>Work_Motivation _Y2</td>
<td>Work_Load__X1</td>
<td>0.178</td>
<td>0.088</td>
<td>2.092</td>
<td>0.036</td>
</tr>
<tr>
<td>Work_Motivation _Y2</td>
<td>Work_Environment _X2</td>
<td>0.314</td>
<td>0.082</td>
<td>3.585</td>
<td>0.000</td>
</tr>
<tr>
<td>Nurse_Performance _z</td>
<td>Work_Load__X1</td>
<td>0.204</td>
<td>0.082</td>
<td>2.331</td>
<td>0.020</td>
</tr>
<tr>
<td>Nurse_Performance _z</td>
<td>Work_Environment _X2</td>
<td>0.181</td>
<td>0.074</td>
<td>2.046</td>
<td>0.041</td>
</tr>
<tr>
<td>Nurse_Performance _z</td>
<td>Job_Stress_Y1</td>
<td>0.169</td>
<td>0.047</td>
<td>2.935</td>
<td>0.043</td>
</tr>
<tr>
<td>Nurse_Performance _z</td>
<td>Work_Motivation_Y2</td>
<td>0.183</td>
<td>0.070</td>
<td>2.341</td>
<td>0.041</td>
</tr>
</tbody>
</table>

Based on a CR value above 1.96 and a P value <0.05, Ho is rejected, and H1 is accepted, which means that there is a significant relationship between the constructs being tested. The results of the coefficients from SEM show the direct and indirect effects which are described below:
Structural Model 1: Workload, work motivation, and performance of Aceh Mental Hospital nurse

![Figure 4. Workload as antecedent and Work Motivation as a Mediation](image)

The figure 4 above shows that the coefficients A, B, and C are significant and the significant value $c'$ is not significant. This proves all the paths of direct effects are significant while the motivation did not act as mediation because of the indirect effect is not significant. In other word, this test indicates that motivation did not significantly mediate the effect of workload on performance of Aceh Mental Hospital nurse ($p$ value = 0.117 is greater than 0.005).

Structural Model 2: Workload, job stress, and performance of Aceh Mental Hospital nurse

![Figure 5. Workload as antecedent and Job stress as a Mediation](image)

The figure 5 above shows that the coefficients A, B, and C are significant and the significant value $c'$ is not significant. This proves all the paths of direct effects are significant while the job stress did not act as mediation because of the indirect effect is not significant. In other word, this test indicates that job stress did not significantly mediate the effect of workload on performance of Aceh Mental Hospital nurse ($p$ value = 0.084 is greater than 0.05).

Structural Model 3: Work environment, work motivation and performance of Aceh Mental Hospital nurse
Figure 6. Work Environment as antecedent and Work Motivation as a Mediation

The figure 6 above shows the coefficient of path A, path B and C with its p-values that have significant results and the significant value of path c as the indirect effect is also significant. So it proves that work motivation acted as a partial mediation. In other word, this test indicates that work motivation significantly mediated the effect of work environment on performance of Aceh Mental Hospital nurse.

Structural Model : Work environment, job stress, and performance of Aceh Mental Hospital nurse

Figure 7. Work environment as antecedent and Job stress as a Mediation

The figure 7 above shows that the coefficient of path A, pathway B and C, and its significances. The test proves that all of the paths have significant relationships, even the mediation paths. It proves that the stress acted as a partial mediation. In other word, this test indicates that job stress significantly mediated the effect of work environment on Aceh Mental Hospital nurse.

5. Conclusions

The results of testing the hypotheses in the research model in the Aceh Mental Hospital nurse showed that Workload affected the performance of nurse, Work environment affected the performance of nurse, Workload affected work motivation of nurse, Work environment affected job stress of nurse, Work motivation affected the performance of nurse, Stress affected the performance of nurse, Workload affected job stress of nurse, Work environment affected work motivation of nurse, Workload did not effect nurse performance through work motivation, Workload did not affect nurse performance through job stress, Work environment affected nurse performance through work motivation, and Work environment affected nurse performance
through job stress. In the model, the work motivation and job stress did not act as mediators in workload affecting nurse performance, and acted as partial mediators in work environment affecting nurse performance. In other word, to improve nurse performance, the workload can affect the performance directly, while the work environment can affect the performance both directly or indirectly. These all findings strengthen the prior causality theories, and the novelty lies in the form of the combination of the theories to be one research model. This research model contributes to the management field especially for the development pf the concept. For further researchers, this model also can be more to be developed through adding a mediation variables that can replace the work motivation and job stress in the model of workload affecting the nurse performance, because this study proved that in that model the both variables did not act as mediators. Also, because of this study has not included a moderating variable in the full model, the further researches can add the moderation variable in the model such as work experience and locus of control that will provide a more detailed description of factors that can improve nurse performance.

This research model also contributes to the practical managers especially in the Aceh Mental Hospital that has been proven can be implemented in their hospital, especially to formulate strategies related to variables and pathways that influence them. Some recommendations are mapped, that are : 1) In order to improve nurse performance at the Aceh Mental Hospital, what must be done is to improve workload, work environment, job stress and work motivation; 2) The workload can be overcome by nurses if the leadership provides clarity on job targets to the right nurses and in the right place, as well as providing the same job in accordance with their respective main duties and functions with a standard that is in accordance with the ability of the nurse and sufficient time to complete work for the nurse to complete the work; and, 3) The work environment can be improved by always involving nurses in every job, improving the relationship between nurses and superiors, giving equal rights and obligations to all nurses in the organization. The orientation of the assignment is given according to the nurse's ability, provides direction to nurses on their main tasks, provides good supervision to nurses and adequate supporting facilities.

References


