Analysis of the relationship of reduction of non-ASN health workers on ASN workload

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Abstract

The reduction in labor has implications for the workload, this condition can affect employee well-being, morale and overall operational efficiency. This research aims to analyze the relationship between the reduction of non-health ASN on the workload of ASN. This type of study is an observational study using a cross sectional design. This research was conducted at the Gorontalo District Health Office, Gorontalo Province, Indonesia. The data used in this study are primary data and secondary data. Primary data were sourced from respondents based on interviews using questionnaires, which consisted of data: workload, work stress, work discipline, work motivation, and leadership. While secondary data is research supporting data sourced from the health office and other stakeholders. In this study, the sample that became the object of research amounted to 100 people, consisting of all 73 ASN health workers and 27 non-ASN people. Sampling using total sampling technique. The research data were analyzed by bivariate analysis using Chi-square test and multivariate analysis with multinominal logistic regression test. The results showed that there was a relationship between the reduction of non-health ASN in the workload of ASN, namely; there is a relationship between work discipline and workload, and there is a relationship between work motivation and the workload of ASN. The results of the research also explained that there was no relationship between leadership and the workload of ASN at the Gorontalo District Health Office. ASN is able to manage work stress well. Thus, efforts to reduce work stress and improve workload balance and increase employee motivation have a significant impact on improving employee performance.

Keywords: ASN; Workload; Work Discipline; Work Leadership; Work Motivation; Work Stress

1. Introduction

The State Civil Apparatus has an important and decisive role in the administration of state government in accordance with laws and regulations to realize the goals and objectives of the implementation of public services that have been determined in the framework of national goals. According to Veronica (2022), every government agency has a key element as its main actor, namely civil servants, who have the duties and responsibilities to carry out government and development tasks. To find out the extent of the level of achievement of organizational goals, an assessment system of ASN performance is needed which is carried out intensely. ASN performance appraisal is an activity that can be used to describe the good and bad work performance of achieving the goals of government agencies (Vagner et al, 2024). Work performance is the result of work both in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him (Jaideep, 2023).

In line with the times, human resource management needs to be considered by the organization. According to Michele (2022), Human Resource Management is a process consisting of planning, organizing, leading and controlling activities related to job analysis, job evaluation, procurement, development, compensation, promotion and termination of employment in order to achieve the goals set by the organization. Mohammad et al (2024) explained that, conditions
like this cause human resources to be required to perform at their best, because human resources have a very vital role for an institution to improve its quality and capacity in order to serve the needs of the community effectively and efficiently.

Contract workers in government agencies are known as honorary workers or non-permanent employees. Honorary personnel are employees recruited by officials in government agencies who have the status of non-ASN employees (Caroline, 2020). Problems are often found from work with a contract system, which has only been considered as a disadvantage to workers because the form of employment relations is always in an irregular form, always associated with low minimum wages, inappropriate benefits, limited social security, job security, and no prospects for career development, so that this situation is considered to improve the welfare of non-ASN who are contract employees (Ancy et al., 2024).

The duties of honorary employees of the Gorontalo Regency Health Office include assisting administrative input data, archiving incoming and outgoing letters, making activity accountability letters, inputting monthly reports in each field. Based on various theoretical concepts that have been discussed, the purpose of this research is to analyze the relationship between the reduction of non-health ASN on the workload of ASN.

2. Material and methods

2.1. Place and Time of Research

This research was conducted at the Gorontalo District Health Office, Gorontalo Province, Indonesia. The research time is from January to April 2024.

2.2. Research Methods and Design

This research used analytical observational methods with quantitative research types. According to Burak et al (2023), observational analytics is a type of research that looks at and tries to explore how and why health phenomena occur and then analyze the dynamics of correlation between phenomena or between risk factors and effect factors. The research design used is a cross sectional design because this research was carried out at the same time. Matheus et al (2021) explain that, cross sectional is a type of observational research that analyzes variable data collected at a certain point in time on a predetermined sample population or object.

2.3. Population and Sample

Population is an object/entity that has certain dimensions and characteristics that are determined by researchers to be examined and then drawn conclusions (Rene et al., 2023). The sample is part of the population that is the source of research data, where the population is part of the characteristics possessed by the population (Supriyo et al., 2024). The population in this research was all ASN totaling 73 people and non-ASN totaling 27 people at the Gorontalo Regency Health Office. While the research sample is the entire population of respondents who are the object of research whose sampling technique is carried out by total sampling. The total respondents who became the research sample amounted to 100 people. According to Fatimah (2024), total sampling is a sampling technique whose number of samples is equal to the population.

2.4. Data Collection Techniques

The data used in this research are primary data and secondary data. Primary data is the main data of research sourced from a sample of respondents, consisting of data: workload, work stress, work discipline, work motivation, and work leadership. While secondary data is research supporting data sourced from the health office and other stakeholders. Data collection techniques are carried out through direct interviews with respondents using questionnaires for primary data. Meanwhile, secondary data is obtained through documents that have been available at the health office and other stakeholders.

2.5. Data Analysis Techniques

The research data were analyzed using univariate analysis techniques and bivariate analysis through Chi-square test and multivariate analysis with multinominal logistic regression test.
2.5.1. Univariate Analysis

Univariate analysis aims to explain the characteristics of each research variable research, namely independent variables (work stress, work discipline, work motivation, leadership) and dependent variables (ASN Workload). Univariate analysis is analyzed by the formula:

\[ P = \frac{F}{n} \times 100\% \]

Captions:
P = Percentage
F = Number of correct answers
n = Total number of inquiries

2.5.2. Bivariate Analysis

Bivariate analysis was conducted on two variables that are thought to be related, namely the independent variable (work stress, work discipline, work motivation, work leadership) and the dependent variable (ASN Workload). The statistical test used in this analysis is Chi Square with a confidence level of 95% (\( \alpha = 0.05 \)). According to Nuran and Cemalettin (2021), the Chi Square test is a type of non-parametric comparison test carried out on two variables where the data scale of the two variables is nominal. Chi Square test formula:

\[ X^2 = \frac{n(a \cdot d - a \cdot c) - 1/2n^2}{(a + b)(a + c)(b + d)(c + d)} \]

Captions:
\( x^2 \) = Chi square
n = Number of samples
a = The average number of adverse impacts of non-ASN reductions on ASN workloads is reduced
b = The average number of adverse impacts of non-ASN reductions on ASN workloads does not decrease
c = The average amount of impact of both non-ASN reductions on ASN workloads is reduced
d = The average amount of good impact of non-ASN reductions on ASN workload does not decrease
Criteria: If \( x^2 \) count > \( x^2 \) table = Ho rejected and if \( x^2 \) count < \( x^2 \) table = Ha accepted.

2.5.3. Multivariate Analysis

Multivariate analysis is a statistical method used to analyze more than one variable at a time, multivariate statistics is used to analyze the influence of several independent variables on several dependent variables simultaneously (Yunus and Songul, 2024). Multivariate analysis in this study used the Multinomial Logistic Regression Method. Logistic regression analysis is used to analyze anemia status variables, which consist of two categories, namely anemia and not anemia, because these variables are in the form of categories.

Multivariate analysis begins by conducting a bivariate analysis of each independent variable with a dependent variable. If the results of bivariate analysis show a p-value (sig.) of \( \leq 0.25 \), then the research variables can be included in multivariate analysis modeling. Conversely, if the results of bivariate analysis show a p-value (sig.) \( \geq 0.25 \), then the variable cannot be included in multivariate modeling. After obtaining variables that are modeling candidates in multivariate analysis, the next stage is to make a model to determine the independent variable that is most related to the dependent variable.

The creation of a model of this determinant factor is carried out using multiple logistic regression analysis. If the test results show that there is a variable that has a p-value (sig.) \( \geq 0.05 \), then the variable must be excluded from the model. Multiple logistic regression tests have a p-value (sig.) of \( \geq 0.0 \). Formula of the logistic equation:

\[ \ln \left( \frac{\hat{p}}{1-\hat{p}} \right) = B_0 + B_1 X \]
Captions:
ln : Natural logarithms
$B_0 + B_1X$ : Commonly known equations in OLS
P : Obtained logistic probability logistic regression probability formula
Logistic regression probability formula

$$\hat{p} = \frac{\exp(B_0 + B_1X)}{1 + \exp(B_0 + B_1X)} = \frac{e^{B_0 + B_1X}}{1 + e^{B_0 + B_1X}}$$

2.6. Observed variables

The variables observed in this research, namely; independent variable (x) and bound variable (Y). The independent variable (X), consists of; Work stress, work discipline, work motivation, and work leadership. While the dependent variable (Y), namely: workload.

3. Results and Discussion

3.1. Characteristics of Respondents of non-ASN and ASN health workers

Respondent characteristics are criteria given to subjects so that research or experimental data sources can be right on target and as expected. The characteristics of respondents in this study are the overall data and information of respondents, consisting of; age, gender, and education. The characteristics of respondents in this study are explained in Figure 1.

The results of the study in Figure 1 show that, the age characteristics of non-ASN and ASN health workers range from 26 – 57 years. Most non-ASN and ASN health workers at the Gorontalo Regency Health Office are aged 26-35 totaling 43 people (43.0%). Non-ASN and ASN health workers at the Gorontalo Regency Health Office are dominated by the female sex with a total of 72 people (72.0%). While the characteristics of respondents of non-ASN and ASN health workers in terms of education are the most graduates totaling 75 people (75%). This shows that non-ASN and ASN health workers are the basic capital of human resources at the Health Office, because they are still very productive age, who are female employees and have undergraduate education, so they are able to carry out all work programs of the Gorontalo Regency Health Office in the aspects of administrative arrangement, program data management and reporting work programs related to public health interests.

The results of this research are in line with the results of research from Leng Leng et al (2019) which explained that the productive age ranging from 15 to 64 years is the age when a person can still work and produce something in accordance with the vision and mission of the organization. The results of research from Jiyea (2024) explain that women who work professionally are women who can manage their work as housewives and career women who work as employees or civil servants who work systematically and continuously according to the duties and responsibilities given by the organization. Furthermore, the results of research from Nadia et al (2023) concluded that employees with
undergraduate education have the ability in the fields of practical science, managerial, and work implementation based on their education and competence.

### 3.2. Univariate Analysis

Univariate analysis was conducted on all research variables, consisting of workload, work stress, work motivation, work discipline, and work leadership. The results of univariate analysis are described in Figure 2.

![Univariate test results of research variables](image)

**Figure 2 Univariate test results of research variables**

The results of the research in Figure 2 show that non-ASN and ASN health workers at the Gorontalo Regency Health Office have the most moderate workload, amounting to 49 people (49.0%), while non-ASN and ASN health workers who have a light workload of 28 people (28.0%), and those with a heavy workload are only 23 people (23.0%). This can be explained that, the workload given by the leadership to non-ASN health workers and ASNs is in accordance with the availability of work time, so that they are able to complete the work at a predetermined time. The workload given to non ASN and ASN at the Gorontalo Regency Health Office is balanced with their abilities and competencies.

The results of this research are in accordance with the results of research from Ruizh *et al* (2022), which explains that workload is the work capacity received by employees by taking into account the working time and competence of employees in the field of work they are responsible for.

Non-ASN and ASN health workers at the Gorontalo Regency Health Office have the most moderate work stress as many as 46 people (46.0%), light work stress as many as 40 people (40.0%), and non-ASN and ASN health workers who have severe work stress only as many as 14 people (14.0%). This shows that non-ASN and ASN who have a moderate workload do not experience heavy work stress, so they do not cause problems for them when carrying out work. The existence of work stress that is in the medium category, then non-ASN and ASN health workers can control emotions and think positively about the workload they receive.

The results of this research are in line with the results of research from Yelin *et al* (2024) which concluded that work stress can be influenced by workloads that are not in accordance with employee abilities, so that employees will experience psychological pressure in completing their work.

In the category of work discipline the results of univariate analysis showed that non-ASN and ASN health workers at the Gorontalo Regency Health Office had high work discipline of 49 people (49.0%), who had moderate work discipline of 36 people (36.0%), and who had low work discipline of 15 people (15.0). It can be explained that, high work discipline will deliver non-ASN and ASN health workers to be able to complete the job properly in accordance with the workload and ability at the level of work entrusted to them by the leadership.

The results of this research are in line with the results of research from Nisreen *et al* (2023) which explains that work discipline is one of the keys to realizing the goals of companies, employees and society, where good work discipline will foster employee awareness to carry out all their duties properly.
The work motivation of non-ASN and ASN health workers in the Gorontalo Regency Health Office was in the medium category of 50 people (50.0%), the high work motivation category of 33 people (33.0%), and low work motivation of 17 people (17.0%). This indicates that work motivation is able to provide a driving force that creates job excitement for non-ASN and ASN health workers at the Gorontalo Regency Health Office, so that they are able to cooperate, work effectively, and have integrity with all their efforts to achieve job satisfaction.

The results of this research are in line with the results of research from Sonja et al. (2021) which explains that work motivation is the most important thing, so that everyone has the desire and spirit to work, good work motivation provides employee satisfaction in every work.

In the aspect of work leadership of non-ASN and ASN health workers at the Gorontalo Regency Health Office, 61 people (61.0%) had good leadership, 37 people (37.0%) had sufficient work leadership, and as many as 2 people (2.0%) non-ASN and ASN health workers who had less work leadership. This shows that good work leadership from non-ASN and ASN health workers is the potential of human resources that become the basic capital in career development in accordance with their basic duties and functions at the Gorontalo Regency Health Office.

The results of this research are in line with the results of research from Balbinder et al. (2024) which concluded that work leadership is the main factor of an employee in planning work programs based on the goals of the organization.

3.3. Bivariate Analysis

Bivariate analysis was conducted to see the relationship between the two variables by using chi-square test at a significant level of P-value (0.05). The results of bivariate analysis in this study are described as follows:

3.3.1. The relationship of work stress with the workload of non-ASN and ASN health workers

The results of the bivariate analysis of the relationship of work stress to workload get a significant value (P value = 0.01 < α = 0.05), it can be concluded that there is a relationship between work stress with the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office. This is explained in Table 1.

Table 1: The effect of work stress on the workload of non-ASN and ASN health workers

<table>
<thead>
<tr>
<th>Work Stress</th>
<th>Workload</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F %</td>
<td>F %</td>
</tr>
<tr>
<td>Light</td>
<td>17 42.5</td>
<td>17 42.5</td>
</tr>
<tr>
<td>Medium</td>
<td>10 21.7</td>
<td>26 56.5</td>
</tr>
<tr>
<td>Heavy</td>
<td>1 7.1</td>
<td>6 42.9</td>
</tr>
<tr>
<td>Amount</td>
<td>28 28.0</td>
<td>49 49.0</td>
</tr>
</tbody>
</table>

The results in Table 1 show that there is a relationship between work stress with the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office. This indicates that the workload in quantity exceeds the number of tasks from non-ASN and ASN health workers, it will cause work stress that interferes with the process of completing work. Work stress will be experienced by non-ASN and ASN health workers, if they do not have the expertise and knowledge of the tasks that become their workload.

The results of this research are in line with the results of research from Meizhen et al. (2024) which concluded that employees must experience work stress when their workload is too heavy and not in accordance with their skills and knowledge to achieve company goals.

3.3.2. The relationship of work discipline with the workload of non-ASN and ASN health workers

The results of the bivariate analysis of the influence of work discipline on workload obtained a significant value (P value = 0.79 < α = 0.05), it can be concluded that there is no relationship between work discipline and the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office. This is explained in Table 2.
Table 2 The influence of work discipline with the workload of non-ASN and ASN health workers

<table>
<thead>
<tr>
<th>Work discipline</th>
<th>Workload</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td>Medium</td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>Medium</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>Height</td>
<td>16</td>
<td>27.6</td>
</tr>
<tr>
<td>Amount</td>
<td>28</td>
<td>28.0</td>
</tr>
</tbody>
</table>

The results of Table 2 can be explained that the work discipline of non-ASN and ASN health workers at the Gorontalo Regency Health Office does not have an impact on their workload, because work discipline is a means used by managers to communicate with employees, to be ready to change their behavior and increase awareness and willingness to comply with all regulations and social norms in the company.

The results of this research are in line with the results of research from Victoria et al (2024) which explains that work discipline is a management action that aims to encourage awareness and willingness of employees to obey all regulations and voluntarily implement organizational or corporate social norms.

3.3.3. The relationship of work motivation with the workload of non-ASN and ASN health workers

The results of the bivariate analysis of the effect of work motivation on workload get significant value \((P \text{ value} = 0.04 < \alpha = 0.05)\), it can be concluded that there is a relationship between work motivation and workload of non-ASN health workers and ASN in Gorontalo Regency Health Office. This is explained in Table 3.

Table 3 The effect of work motivation with the workload of non-ASN and ASN health workers

<table>
<thead>
<tr>
<th>Work motivation</th>
<th>Workload</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td>Medium</td>
</tr>
<tr>
<td>Low</td>
<td>9</td>
<td>52.9</td>
</tr>
<tr>
<td>Medium</td>
<td>8</td>
<td>16.0</td>
</tr>
<tr>
<td>Height</td>
<td>11</td>
<td>33.3</td>
</tr>
<tr>
<td>Amount</td>
<td>28</td>
<td>28.0</td>
</tr>
</tbody>
</table>

The results in Table 3 show that, work motivation can provide encouragement to non-ASN and ASN health workers in carrying out their duties according to the workload at the Gorontalo Regency Health Office. Work motivation is an movement that encourages every non-ASN and ASN health worker to work in carrying out their duties. With good work motivation, non-ASN and ASN health workers will feel joy and enthusiasm in completing their workload, thus having an impact on the development and growth of the organization significantly.

The results of this research are in line with the results of research from Shankhadeep \textit{et al} (2023) which concluded that, the work motivation of individuals is influenced by the strength of the stimulus inherent in the individual. External stimuli can also affect motivation, but motivation itself reflects the individual’s response to these stimuli.

3.3.4. The relationship of work leadership with the workload of non-ASN and ASN health workers

The results of the bivariate analysis of the influence of work leadership on workload obtained significant value \((P \text{ value} = 0.63 < \alpha = 0.05)\), it can be concluded that there is no relationship between work leadership and the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office. This is explained in Table 4.
**Table 4** The influence of work leadership with the workload of non-ASN and ASN health workers

<table>
<thead>
<tr>
<th>Work leadership</th>
<th>Workload</th>
<th>Sig</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light</td>
<td>Medium</td>
<td>Heavy</td>
<td>Total</td>
<td>F %</td>
<td>F %</td>
</tr>
<tr>
<td>Less</td>
<td>1</td>
<td>50.0</td>
<td>1</td>
<td>50.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Enough</td>
<td>13</td>
<td>31.5</td>
<td>16</td>
<td>43.2</td>
<td>8</td>
<td>21.6</td>
</tr>
<tr>
<td>Good</td>
<td>14</td>
<td>23.0</td>
<td>32</td>
<td>52.5</td>
<td>15</td>
<td>24.6</td>
</tr>
<tr>
<td>Amount</td>
<td>28</td>
<td>28.0</td>
<td>49</td>
<td>49.0</td>
<td>23</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Source: Primary data processing, 2024.

The results of the study in Table 4 can be explained that, work leadership does not affect the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office, because work leadership is the ability of non-ASN and ASN health workers to cooperate to plan and complete tasks that become their workload.

The results of this research are in line with the results of research from Hussam *et al* (2023) which explains that, work leadership is a way in which a leader can influence the behavior of his subordinates to cooperate and work effectively to achieve organizational goals.

### 3.4. Multivariate Analysis

Multivariate analysis aims to determine the influence between many independent variables with a dependent variable. Multivariate analysis used in this study is multinomial logistic regression analysis, it is based on the scale of measurement of variables there are more than two categories. Variables included in the analysis of logistic multinomial regression is a variable that has a significant value ($P \leq 0.05$) in the previous bivariate analysis. According to the results of bivariate analysis, it is known that the variables of multivariate analysis are work stress and work motivation. This is explained in Table 5.

**Table 5** Mutivariate analysis of the workload of non-ASN and ASN health workers

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Sig.</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work stress</td>
<td>0.828</td>
<td><strong>0.021</strong></td>
<td>2.288</td>
</tr>
<tr>
<td>Work motivation</td>
<td>0.098</td>
<td>0.786</td>
<td>1.103</td>
</tr>
</tbody>
</table>

Source: Primary data processing, 2024

The results of multivariate analysis in Table 5 showed that, in getting the results of work stress variables with a significant value ($P \text{ value} = 0.021 < \alpha = 0.05$) can be interpreted that there is a significant influence between work stress on the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office. Variable work motivation with a significant value ($P \text{ value} = 0.870 < \alpha = 0.05$) can be interpreted that there is no meaningful influence between work motivation to workload.

The results of this study are in line with research from Abdulaziz *et al* (2024) which explains that work stress will be experienced by individuals in carrying out their tasks according to workloads that are not based on individual skills and abilities and the number of tasks they are responsible for. Furthermore, the results of Anna *et al* (2022) research concluded that, work motivation will encourage individuals to carry out their duties according to organizational goals, because individuals will always improve their achievements to produce good performance in achieving organizational goals.
4. Conclusion

Based on the results of research and discussion, this study can be concluded that, there is a relationship between work stress and workload of non-ASN and ASN health workers, there is no relationship between work discipline and workload of non-ASN and ASN health workers, there is a relationship between work motivation and workload of non-ASN and ASN health workers, there is no relationship between work leadership and workload of non-ASN and ASN health workers. There are variables that are most related to the workload of non-ASN and ASN health workers at the Gorontalo Regency Health Office, namely work stress variables.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

The author states that there is no conflict of interest in the implementation of this research.

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