Factors Affecting Work Stress in Nurses in Inpatient Rooms Kwaingga Regional General Hospital, Keerom Regency

Miptahul Janah Awalia\textsuperscript{a}, Novita Medyati\textsuperscript{b*}, Zakaria Giay\textsuperscript{c}, Yacob Ruru\textsuperscript{d}

\textsuperscript{a}Postgraduate Master Program of Public Health, Faculty of Public Health, Cenderawasih University
\textsuperscript{b,c}Faculty of Public Health, Cenderawasih University, Jayapura Papua, Indonesia, 99351
\textsuperscript{d}Department of Statistics, Faculty of Mathematics and Natural Sciences, Cenderawasih University

\textsuperscript{a}Email: miftaawalia84@gmail.com; \textsuperscript{b}Email: novitamedyati2021@gmail.com

Abstract

Background: Work stress can be triggered by various factors, both internal and external. Working conditions are one of the factors of work stress. Nurses in inpatient rooms can experience work stress during the COVID-19 pandemic. Data on cases of COVID-19 in Papua Province on December 1, 2020 confirmed positive for COVID-19 amounted to 11,821 people and 200 people died, while in Keerom Regency who were confirmed positive for COVID-19, 141 patients and 2 people died. Data from the Kwaingga Regional General Hospital, recorded 16 nurses who were confirmed positive for COVID-19. Along with the addition of these cases, nurses experienced physical and psychological disorders, namely stress due to the COVID-19 pandemic. Objective: To determine the factors that influence work stress on nurses in the inpatient room of Kwaingga Hospital, Keerom Regency. Methods: This type of research is quantitative analytic with a cross sectional study design. The research was conducted in the inpatient room of Kwaingga Hospital, Keerom Regency which was conducted in December 2020-January 2021. The population of this study were all nurses in the inpatient room of Kwaingga Hospital, Keerom Regency. The sample of this research is using the total sampling technique. Data collection used online questionnaires, and the data was processed by bivariate analysis using chi-square with p-value = 0.05.
**Results:** The results of the bivariate analysis obtained variables of education (p-value = 0.553), marital status (p-value = 0.547), and employment status (p-value = 0.749) were all not significantly affect the work stress in nurses.

**Keywords:** Nurse; work stress; inpatient room; Covid-19; Kwaingga.

**1. Introduction**

Efforts to equalize health services and referring to Government Regulation (PP) No.22 of 2002 concerning Regional Autonomy, the government system has undergone changes in governance policies in all lines, both from the central, provincial and district levels. Efforts to improve health services are one of the priorities for regional development in Keerom Regency and as the main focus is emphasized on special efforts to increase Life Expectancy (UHH) as an indicator of the Human Development Index (HDI). In this regard, as a new autonomous region, namely Keerom Regency which was established in 2002, the development policy in the health sector in Keerom Regency is directed at efforts to reduce cases of maternal mortality, infant mortality, increase community nutritional status and efforts to reduce morbidity rates of infectious diseases in the end it is expected to increase life expectancy [1]. Nursing personnel are a component of the hospital's Human Resources (HR) as well as members of the frontline health team who play a role in dealing with patient health problems for 24 hours continuously. The distribution of health workers is uneven around the world. Countries with relatively low need have the largest number of health workers, while countries with the greatest burden of disease have to make do with a much smaller health workforce, one of them is Indonesia. Nurses are one of the important elements of a hospital in providing health services to the community. These are professionals who interact more frequently with patients or other recipients of healthcare services in the hospital. They are part of the health team who face patient health problems every day for 24 hours and one of them is services in the inpatient room. Inpatient service is a health service that is quite dominant and is a service that makes a big contribution to the recovery of inpatients. Nurses in providing very complex services can face various things that can trigger work stress [2]. The National Institute for Occupational Safety and Health (NIOSH) states that health workers are a job that has a high risk of stress. Stress is a stimulation or action from the human body both from outside and inside the human body which can cause adverse effects ranging from decreased health to suffering from a disease. Job stress is also an emotional and physical response that is disturbing or detrimental in nature, which occurs when the demands of the job do not match the capabilities, resources, or desires of the worker. Jobs that are most associated with hospital or health care have a high tendency to develop stress or depression. Health workers who have a high risk of experiencing work stress are nursing personnel. According to the International Labor Organization (ILO) in 2014, work-related stress is the most frequently reported health problem, as much as 50-60% of all lost work days are associated with work-related stress. The number of people suffering from stressful conditions caused or exacerbated by work tends to increase [3]. Many factors that cause work stress really depend on the nature and personality of a nurse. A situation that can cause stress to a worker will not necessarily cause the same thing to another worker. The difference in response between individuals is due to social and psychological factors that can change the impact of stressors on the body. Job stress is one of the important factors that need to be considered in improving the quality and performance of nurses in achieving nursing care goals. This work stress can be caused by social factors, individual factors, and factors outside the...
organization. Social factors are the easiest factors to identify and intervene. One of the social factors is excess workload. This results in not achieving targets or expectations. In addition, the problem of role conflicts and responsibilities towards others affects job stress. Job stress has a significant relationship with symptoms of mental emotional disorders through responsibility stressors towards others. The period of assignment to the role conflict stressor and responsibility towards others is at risk of job stress. Compulsion or ambiguity in assignments will also be a source of high work tension and stress [4]. Individual characteristics possessed by a person can be one of the causes of work stress and will also affect the level of stress experienced. Individual characteristics include age, education level, marital status and years of service. Ansori & Martiana (2017) state that there is a sufficient relationship between age factors and the onset of work stress, gender has a strong relationship strength as a factor affecting work stress, tenure has a strong enough relationship as a factor that affects work stress, job support has a strong enough relationship as a factor that causes job stress [5]. Research conducted by Sulistyawati, Purnawati, & Muliarta (2019) states that there is an influence on the level of education with the work stress of nurses. The knowledge and skills possessed will make it easier for someone to receive information and implement it in everyday life. Characteristics of respondents in this study, namely shift worker nurses in the emergency room of Karangasem Hospital, the average age of the respondents was 28.4 years, most of the respondents were male and married and most of them worked in the range of 6 months-3 years. The majority of nurses who work in the ER at Karangasem Hospital experience moderate work stress. The distribution of medium level work stress for emergency room nurses at Karangasem Hospital based on their characteristics, which is based on gender evenly between men and women, seen from the marital status shows that unmarried respondents experience a higher level of moderate work stress and nurses with a working period of 6 months-3 years mostly experienced stress [6]. Research conducted by Aini & Purwaningsih (2013) at the Semarang District Hospital states that there is a relationship between workload and work stress on nurses in the emergency department of RSUD Semarang Regency where the results of high workload are 93.1% and low workloads are 6.0 %. The results of this study indicate that most of the nurses who work in the emergency department of the Semarang District Hospital have a high workload. This is in line with research conducted by Chindy at the Hermana Lembean Hospital, namely that there is a relationship between workload and work stress on nurses in the inpatient room, with most of them having heavy workloads [7]. Job stress that appears and is not handled properly will certainly have an impact, both on physiology, psychology and attitude. Physiological changes characterized by fatigue, exhaustion, dizziness, indigestion and for psychological changes characterized by prolonged anxiety, difficulty sleeping, and subsequent changes in attitude such as stubbornness, irritability and dissatisfaction with what is achieved [8]. Another factor that causes work stress is the work environment. The work environment is everything that is around the worker and can affect workers in carrying out tasks which include physical, chemical, biological, ergonomic and psychological factors that affect workers in carrying out their work. The workplace has various potential hazards that can affect the health of workers or cause occupational diseases. An unsafe and comfortable work environment can cause stress for workers so that environmental conditions need to be considered to protect workers from dangers that may arise in the workplace, especially now that Indonesia is dealing with the COVID-19 pandemic and Kwaingga Hospital in Keerom Regency is one of the houses. Sick in Keerom Regency who handles & cares for patients who are confirmed positive for COVID-19 [9]. In dealing with COVID-19 patients, nurses must use complete personal
protective equipment (PPE) when they have to make direct contact with patients. You must use complete PPE in accordance with the SOP for handling COVID-19, even though you have used PPE, the risk of contracting COVID-19 still occurs and triggers stress levels for nurses. Positive cases of COVID-19 health workers were exposed to 295 people and 181 health workers who died, with details of 112 doctors and also 69 nurses (WHO, 2020). Update on COVID-19 cases dated December 1, 2020 in Papua Province which was confirmed positive for COVID-19, totaled 11,821 patients and 200 people died, while in Keerom Regency who were confirmed positive for COVID-19 there were 141 patients and 2 people died [10]. Data from the Kwaingga Regional General Hospital stated that 16 nurses were confirmed positive for COVID 19. In addition to the increasing problem of COVID 19 and the insufficient number of health workers, the workload of nurses at Kwaingga Hospital in Keerom Regency increased and became one of the triggers for work stress that had an impact on optimal or not the services provided [9]. Based on the description of the background above, the researcher feels it is important to conduct research on "Factors That Influence Work Stress in Nurses in Inpatient Rooms at Kwaingga Hospital, Keerom Regency."

2. Materials and Methods

The research design used in this study is a quantitative analytic study with a cross sectional study design, in which the two variables are observed simultaneously at one time or the same period [11]. This research was conducted in the inpatient room of Kwaingga Hospital, Keerom Regency in December 2020-January 2021. The target population in this study were 53 nurses in the inpatient room at Kwaingga Hospital, Keerom Regency. The sample consists of an affordable part of the population that can be used as research subjects through sampling. While sampling is the process of selecting the portion of the population that can represent the existing population [11]. The sample in this study was total sampling.

3. Result and Discussion

3.1 Univariate Analysis

The univariate is used to classify each variable of the sample. This study only shows the frequency and percentage of each variable. This can be found in Table 1:

Table 1 shows that regarding the level of work stress of respondents in the inpatient room of Kwaingga Hospital, it can be seen that of the 53 respondents, 33 respondents (62.3%) experienced heavy work stress and 20 respondents (37.7%) experienced light work stress. The majority of respondents were those with low education (D1-D3) with a total of 42 respondents (79.2%) and those with high education (D4 / S1) with a total of 11 respondents (20.8%). There were 24 respondents who were married (45.3%) and 29 respondents (54.7%) who were not married / widowed / widower. Twelve respondents (22.6%) had civil servant status and 41 respondents (77.4%) who had non-PNS status.
Table 1: Distribution of respondents by education, marital status, employment status, and work stress in Inpatient rooms of Kwaingga Regional Hospital, Keerom Regency.

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low (D1-D3)</td>
<td>42</td>
<td>79.2</td>
</tr>
<tr>
<td></td>
<td>High (D4-S1)</td>
<td>11</td>
<td>20.8</td>
</tr>
<tr>
<td>2</td>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not married / widowed / widower</td>
<td>29</td>
<td>54.7</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>24</td>
<td>45.3</td>
</tr>
<tr>
<td>3</td>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-PNS</td>
<td>41</td>
<td>77.4</td>
</tr>
<tr>
<td></td>
<td>Civil Servants (PNS)</td>
<td>12</td>
<td>22.6</td>
</tr>
<tr>
<td>4</td>
<td>Work Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heavy</td>
<td>33</td>
<td>62.3</td>
</tr>
<tr>
<td></td>
<td>Light</td>
<td>20</td>
<td>37.7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>53</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Primary Data, 2021

3.2. Bivariate Analysis

Bivariate analysis was performed to determine the relationship between independent and dependent variables, i.e. education, marital status, and employment status. In order to assess the association between the risk factors and the work stress, the chi-square test was used at a significant level of 5%. The results of the bivariate analysis are shown in the following tables:

a. The Effect of Education on the Work Stress of Nurses

Based on Table 2 shows that of the 42 respondents with low education (D1-D3) there were 27 respondents (64.3%) who experienced heavy work stress and 15 respondents (35.7%) who experienced light work stress. Meanwhile, of the 11 highly educated respondents (D4-S1), there were 6 respondents (54.5%) who experienced heavy work stress and 5 people (45.5%) who experienced light work stress. The results of statistical analysis
obtained a significance value of p = 0.728 > 0.05 and the results of the prevalence ratio test obtained RP = 1.179 (CI 95%: 0.657-2.115). This shows that there is no significant effect between education and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency. The value of RP = 1.179 means that respondents who have low education (D1-D3) tend to experience heavy work stress by 1.179 times compared to respondents who have higher education (D4-S1), even though the 95%CI of RP show is no significant.

**Table 2:** Distribution of Education and Work Stress of Nurses in Inpatient Rooms of Kwaingga Regional Hospital, Keerom Regency.

<table>
<thead>
<tr>
<th>Education</th>
<th>Work Stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heavy</td>
<td>Ligh</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Low (D1-D3)</td>
<td>27</td>
<td>64.3</td>
</tr>
<tr>
<td>High (D4-S1)</td>
<td>6</td>
<td>54.5</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>62.2</td>
</tr>
</tbody>
</table>

P-value = 0.728; RP = 1.179; CI95% = (0.657 – 2.115)

*Source: Primary Data, 2021*

**b. The Effect of Marital Status on the Work Stress of Nurses**

Based on Table 3, it shows that of the 23 respondents who were not married, 15 respondents (65.2%) experienced heavy work stress and 8 people (34.8%) experienced light work stress. Meanwhile, of the 30 respondents who were married, there were 18 respondents (60.0%) who experienced heavy work stress and 12 respondents (40.0%) who experienced light work stress. The results of statistical analysis obtained a significance value of p = 0.918 > 0.05 and the results of the prevalence ratio test obtained RP = 1.087 (CI 95%: 0.716-1.650). This shows that there is no significant effect between marital status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency. RP value = 1.087 means that respondents who have unmarried status tend to experience heavy work stress by 1.087 times compared to respondents who are married, even though the 95%CI of RP show is no significant.

**Table 3:** Distribution of Marital Status and Work Stress of Nurses in Inpatient Rooms of Kwaingga Regional Hospital, Keerom Regency.

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Work Stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heavy</td>
<td>Ligh</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Not Married</td>
<td>15</td>
<td>65.2</td>
</tr>
<tr>
<td>Married</td>
<td>18</td>
<td>60.0</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>62.2</td>
</tr>
</tbody>
</table>

P-value = 0.918; RP = 1.087; CI95% = (0.716 – 1.650)

*Source: Primary Data, 2021*
c. The Effect of Employment Status on the Work Stress of Nurses

Based on Table 4, it shows that of the 40 respondents who were non-civil servants, there were 26 respondents (65.0%) who experienced heavy work stress and 14 people (35.0%) who experienced mild work stress. Meanwhile, of the 13 respondents who were civil servants, there were 7 respondents (60.0%) who experienced heavy work stress and 6 respondents (40.0%) who experienced mild work stress. The results of statistical analysis obtained a significance value of $p = 0.522 > 0.05$ and the prevalence ratio test results obtained $RP = 1.207$ (CI 95%: 0.685-2.097). This shows that there is no significant effect between employment status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency. The value of $RP = 1.207$ indicates that respondents who have non-PNS employment status tend to experience work stress by 1.207 times compared to respondents who have PNS status, even though the 95% CI of RP show is no significant.

Table 4: Distribution of Employment Status and Work Stress of Nurses in Inpatient Rooms of Kwaingga Regional Hospital, Keerom Regency.

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Work Stress</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heavy</td>
<td>Ligh</td>
</tr>
<tr>
<td>Non-PNS</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Civil Servants (PNS)</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>20</td>
</tr>
</tbody>
</table>

P-value = 0.522; RP = 1.207; CI95% = (0.695 – 2.097)

Source: Primary Data, 2021

4. Discussion

4.1. The Effect of Education on the Work Stress of Nurses

The results showed that the level of education of the respondents in the inpatient room of Kwaingga Hospital, it can be seen that the majority of respondents had a D3 education with a total of 42 respondents (79.2%) and those with an undergraduate degree with a total of 11 respondents (20.8 %). Education is a person's experience in developing abilities and improving intellectuality, which means that the higher the level of education, the higher the level of knowledge and expertise. The level of education affects the power of criticism and reasoning power, so that individuals are increasingly able to solve the problems they face, deal with the pressure or workload they face, are able to adjust to their work, and in the end are able to control the stress they experience. Education is one of the characteristics of individuals that can affect the results of perceived stress, highly educated individuals have an increase in confidence in their own abilities, coping mechanisms, knowledge of professional skills needed to meet the demands of their duties in their workplace [12]. If it is related to work stress, the results of this study indicate that there is no significant effect between education and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency ($p = 0.728 > 0.05$, and $RP = 1.179$ (CI
95%; 0.657-2.115)). This research is in line with research by Yana (2015) that there is no relationship between education and the incidence of work stress. The most educational background in this study is Diploma (95%). The level of education will affect the quality of work. The lowest quality can result in increased workload, and cause work stress and have an impact on nurse performance. This research is in line with research conducted by Sari and his colleagues (2017), which obtained a p value of 0.114> 0.05, which states that there is no relationship between education and work stress of nurses [13]. This is also in line with research conducted by Sukmono (2012) that there is no significant relationship between education and work stress, because a person's education is not necessarily a trigger for work stress, because there are other factors such as task demands, role demands, interpersonal demands, the organizational structure that may be a trigger for stress [14]. This research is in line with research conducted by Pramadi and Lasmono (2011) that the education level of a nurse is not necessarily a trigger for stress, stressors for each individual can differ depending on the understanding of stress management and work stress of nurses can occur because the number of actions that must be completed, so education does not necessarily affect job stress [15]. Education has no effect in this study because education is related to the competence of nurses on duty, there is no direct influence on the work stress experienced by nurses, but nurses who have higher education tend to be better at controlling work stress than those with low education. Education aims to develop and expand individual knowledge, experience and understanding. The higher a person's education level, the easier it is for someone to think broadly, the higher the initiative, and the easier it is to find efficient ways to get a job done well [16].

4.2. The Effect of Marital Status on the Work Stress of Nurses

The results of this study indicate that there is no significant effect between marital status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency (p-value = 0.918; RP = 1.087; CI95% = (0.716 – 1.650)). This research is in line with research conducted by Aprianti & Surono (2018) which shows that there is no significant relationship between marital status and work stress [17]. This is also in line with research conducted by Nurhidayati (2016), which states that there is no significant relationship between marital status and work stress in employees [18]. This research is also supported by Raj's (2015) research which explains that marital status is not related to work stress. The research was conducted on nursing staff who work in the critical care unit at Trivandrum Hospital Kerala [19]. This is also supported by research conducted by Noviati (2016), who found that there was no relationship between marital status and work stress [20]. However, this study is not in line with research conducted by Nurcahyani, Widodo, & Rosdiana (2016) which shows that there is a relationship between marital status and work stress, because employees who have marital status have different stress adaptations and different stress levels, employees who having a married status is the risk of having family problems which can have a negative impact on work [21].

4.3. The Effect of Employment Status on the Work Stress of Nurses

The results showed that there was no significant effect between employment status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency (p-value = 0.522; RP = 1.207; 95% CI = (0.695 - 2.097)). Work stress is one of the problems experienced by almost all nurses who work, whether civil servants or non civil servants in the inpatient room of Kwaingga Hospital, Keerom Regency. stress caused by work will
affect the work results of the nurse in carrying out their work without distinction. By realizing that in every job, in reality it has different levels of difficulty and challenges, especially the workload during the Covid-19 pandemic like today. This research is in line with research conducted by Yana (2015) that there is no relationship between employment status and the occurrence of work stress, but the work stress of nurses occurs because nurses who have non-PNS status have very low self-confidence compared to nurses who are PNS status, and the proportion High stress is greater in female nurses, unmarried, having S1 education, and having non-PNS status [22]. Research conducted by Yana (2015) shows the distribution of employment status to work stress, as many as 5 (45.5%) respondents who are civil servants experience high work stress, while among respondents who are non PNS status, there are 6 (46.2%) people with high work stress. Low work stress was found in 6 (54.5%) respondents who were civil servants and 7 (53.8%) respondents who were non civil servants [22]. Research conducted by Fitriantini, Agusdin, & Nurmayanti (2020) states that the stress level of contract workers or non-PNS workers is higher than civil servants due to the high level of turnover intention that contract workers have to do compared to civil servants [23]. The results above indicate that, not all nurses with civil servant status as civil servants have a low level of work stress. Working conditions, high workloads, and career paths are most likely the cause of the high work stress of nurses with civil servant or contract status. Research conducted by Fuada and his colleagues (2017) shows a significant relationship between career development and work stress. The stress felt by nurses who feel they have poor career development can be due to a lack of promotion and salaries received by some nurses. Salaries are not satisfactory because some nurses are still classified as non-civil servants so that the salary they receive is less than those who are already civil servants even though they have the same workload [24]. The research at Kwaingga Hospital shows that the lower the employment status, the higher the level of job insecurity felt by nurses. The items of the questionnaire show that for the employment status of civil servants who have a high level of job insecurity, the most important aspect of the job is that the results of the work given have a meaningful impact on others.

5. Conclusion

On the basis of the findings of the data analysis and the hypothesis testing, it can be inferred as follows:

1. There is no significant effect between education and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency (p = 0.728> 0.05, and RP = 1.179 (CI 95%: 0.657-2.115)).
2. There is no significant effect between marital status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency (p-value = 0.918; RP = 1.087; CI95% = (0.716 – 1.650)).
3. There is no significant effect between employment status and work stress on nurses at the Kwaingga Regional General Hospital, Keerom Regency (p-value = 0.522; RP = 1.207; 95% CI = (0.695 - 2.097)).

6. Suggestion

1. Nurse: a) Forming a support team to control the work stress of nurses; b) Performing early screening for the risk of work stress and doing positive stress adaption.
2. Hospital: a) It is necessary to analyze the workload by: Rationalizing the target time for completion of work more humanely by considering the physical abilities and work skills of the nurses, increasing the
number of nurses adjusted to the ratio of increasing the number of patients; b) Equip nurses with adequate personal protective equipment when working in an environment that contains the potential for bacteria / disease or the danger of work accidents; c) Providing regular training and development of stress management among Health Workers, both formally and informally, by forming a Support Community, will make officers closer to psychological services and get proper information.

3. Next researcher: It is necessary to do further research related to work stress among nurses in the hospital, by adding qualitative methods to dig deeper information related to phenomena that affect the completeness of data entry.

Acknowledgment

We would like to extend our gratitude to the Kwaingga Regional General Hospital, Keerom Regency for all the facilitation that has been made available to us. We would also like to express our appreciation to the study participants and data collectors.

References


