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THE RELATIONSHIP BETWEEN WORK SHIFT WITH WORK STRESS AND NURSES' ABSENTEEISM

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ABSTRACT

This study aims to determine the differences in the level of work stress and nurse absenteeism on each shift and the relationship between work stress and the nurse's attendance rate in each hospital and to find the difference between the two hospitals. The study employs a non-experimental study with cross-sectional design by using point-time approach. This research was conducted on all nurses in inpatient rooms of Dr. Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital of Aceh Province, Indonesia. The number of samples meeting the inclusion criteria was 121 nurses at Dr. Zainoel Abidin Banda Aceh Hospital. The key findings suggest that the level of stress of the nurses working night shift was lower than that of the nurses working afternoon shift while the stress level of afternoon shift nurses was lower than that of morning shift nurses. However, in Dr Zainoel Abidin Banda Aceh Hospital, the work stress levels of the nurses differed between each shift. Further research may examine the cause for nurses' absenteeism as there were no significant relationship between total stress and nurses' absenteeism.

Keywords: work shift; work stress; absenteeism; hospital

1.0 INTRODUCTION

Competition and increasing job demands leads to huge pressures by individuals in the work environment. Furthermore, the economic challenges in Indonesia contribute to the persistent pressures. Socio-economic contexts are so intertwined that they are distinguishable but indivisible (Pillai and Ahamat, 2018). Continuous and persistent pressures have the potential to cause anxiety. The adverse effects of anxiety disorders that are often experienced by the public and the workforce, in particular, are called stress. The stress is the result of emotional and physical reactions due to individual failure to adapt to the fluid environment. Stress on performance can play a positive as well as destructive role, as elaborated in "Yerkes Podson's (1904) law which states the relationship between stress and performance is like the inverted letter U" (Mas'ud, 2002). Hence, stress is understood as a threatening, pressing and unpleasant condition of the individual. Interpersonal or intrapersonal conflicts, changes in the daily routine, the loss of something or someone important are stressful conditions. Humans respond to stimuli that are considered threatening with the reaction of flight (escape) or fight (reaction). This reaction begins with the activation of hormonal and sympathetic nervous system so that it collects energy and body ready to take an action (Taylor, 1995). In this context, stress is defined as a negative emotional experience followed by

physiological, cognitive, emotional and behavioural changes. Robbins (1998) posits that stress is a developing psychological condition in a person because the individual is faced with situations that overburden or exceed existing abilities. Conditions that burden a person is often encountered in the work environment hence may cause work stress.

The work stress occurs when the physical components of the work or social environment cause tension in humans because of complicated or simple causes (Anoraga, 2001). Stress is experienced by someone who has a weak psychological type with multiple chronic conditions (Setyawati, 2001). A person can experience mental illness such as stress due to the weak mental constitution, childhood stress, and other stressful events. The work stress is also a condition that occurs when a person is faced with opportunities, obstacles, and unbalanced demands so that the imbalance results in the uncertainty that a person feels in his or her working life (Robbins, 1998). Grandjean (1995) and Setyawati (2000) suggest that work stress is the physical and psychosocial stress experienced by the workforce. While, Setyawati (2000) views that noise, lighting, vibration, pressure, radiation, chemical, microorganism and ergonomic factor can influence physical health and psychosocial condition of workers. Thus, these factors may directly or indirectly and independently or collectively, influence the causes of work stress.

According to Anderson (1982), a new staff with high expectations but the educational background that does not support the work will often experience a bum out or a process that resulted in the loss of attention to work. (Robbins, 1998), Sheridan and Radmacher, 1992 (Setyawati, 2000), posited that there are three elements of potential work stress sources:

1. Environmental factors include uncertainty in the economic field, political uncertainty, and technological uncertainty.
2. Organizational factors such as task demands, role demands, interpersonal demands, organizational structure, and leadership of an organization.
3. Individual factors include economic problems and family problems.
4. Something that can cause stress is called a stressor.

Stress will arise in the work environment when the basic needs at work are not met (Soewadi, 1999). The basic needs are suggested are;

1. Biological needs. Biological needs are often not met because of factors such as inadequate wages, no or less old age insurance, lack of health insurance, over-working hours, less rest and overload.
2. The need for affection. The need for affection is often not met because of factors, that is, there is no individual to be able to communicate freely both vertical and horizontal, the gap is too big on vertical relationships, bureaucracy, unhealthy competition so that the environment grows mutually suspicious and intercept each other.
3. The need for security. The need for this sense of security is often unmet because of the following factors: lack of adequate tools, social isolation, poor management, lack of or absence of real organization in conflict resolution that often leads to conflict arise often unilaterally without deliberation.
4. The need for a sense of belonging. The need for a sense of belonging is important because each individual is essentially a part of the workplace environment. In other

words no matter how small the position and responsibility, every individual is a component of the whole system at work.

5. The need for a sense of appreciation. This need often cannot be fulfilled because in the working environment happen as follow: the no clear reward and punishment, lack of appreciation for achievement, attitude, always rejects new ideas, feudalism.
6. The needs for Self-actualization. The need for freedom of self-development is often unfulfilled because of insufficient or inadequate job opportunities, work environments that do not provide opportunities for growth, lack or absence of planning for individuals.

A study conducted by Huckabay and Jagla (Hudak et *al., 1990)* found 16 potential sources of work stress faced by nurses working in ICU (Intensive Care Unit), namely; 1) being physically exhausted because of working for a long time; 2) a death of a patient; 3) communication between nurses; 4) communication between nurses and doctors; 5) meeting with a patient's family; 6) equipment and work errors; 7) noise; 8) physical environment; 9) speed of decision-making; 10) knowledge of working in an intensive room; 11) physical accident experienced by the nurses; 12) a meeting to give psychological support and knowledge to a patient; 13) communication with staffs from other units or divisions; and 14) cardiac arrest of a patient. Job stress or work stress affects job performance. Job stress is a situation in which work-related factors interact with an employee to alter psychological or physiological conditions in such a way that the employee deviates from normal functioning. Nurses as employees will also experience stress, which at some level, brings out a tendency to work with the highest level of efficiency and achievement.

The low level of work stress may cause nurses become inactive, lazy, and bored. However, an excessive amount of work stress will result in loss of efficiency, the occurrence of work accidents, impaired physical health, drug abuse, illness, and other unfavourable physical effects. According to the basic model of Robbin (Setyawati, 2001), the final result of an individual's work stress will affect the individual's productivity, absenteeism, turnover, and job satisfaction. Regarding the shift work system, there are positive and negative responses of the nurses. Negative responses occur because of particular expectations that the nurses cannot meet due to the work conditions. For example, a work shift often makes the nurses always work in the evening and at night in a particular period of time, so they have no time to be involved in social activities within the community. In addition, the married nurses also face difficulty managing quality time for their family. This problem might then result in job dissatisfaction, low motivation, and bad performance.

Work shift affects the safety and health of an employee. Poor work performance results in decreased productivity, especially of those working night shifts. Shift work results in poor quantity and quality of sleep. Smith et.al., 1982 (cited in Setyawati, 2000) states that the quantity and quality of sleep of those working night shifts are usually poor. Tepas et.al., 1985 (cited in Setyawati, 2000) suggests that lack of sleep is a typical problem faced by the employees working night shifts, while those working afternoon shifts usually have the longest time to sleep and those working morning shifts are in the between. Some problems found include loss of appetite and indigestion, psychosocial disorders, such as loss of spare time, disrupted family activity, disrupted social activity and work performance.

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Nurses are exposed to various factors that might negatively affect their health while carrying out their daily social services, such as the healthcare environment and their work shift. Besides the health problems, there are problems interfering with the level of preparedness and affecting productivity that are commonly encountered by nurses with the night shift (Mc.Cormick and Ligen 2008). This condition makes nurses become unproductive and non-qualified in working. The latest phenomenon associated with night shift in the nursing field is drowsiness, a condition in which lack of sleep makes someone experience an irregular sleep-wake rhythm. Perkins (2001), suggests that the effect of sleep deprivation, in relation with circadian rhythms, is complaining of discomfort. For example, a nurse who has worked a night shift will feel uneasy to work another night shift. It is reasonable that an employee frequently makes mistakes on the night shift. The period during the day is called the ergotropic phase, in which the body favours the organism's capacity to expend energy and give the best performance, while the night-time is called the trophotropic phase, which promotes rest and reconstitution of energy stores (Grandjean 1995, in Setyawati 2000).

Work stress is a dynamic condition in which a nurse is confronted with an event or circumstance assumed as an unpleasant threat to his/her physical, psychological, and social welfare. The human capital is shaped by social equity hence the well being of individual and the community (local or global) increases institutional-individual relationship (Ahamat, 2017). Reflecting on the various literatures on the effects and causes of stress, it is vital for this study to explore further the relationship between work shift with work stress and nurses' absenteeism. Schematically, the theoretical foundation is arranged in a framework to describe the causes and effects of nurses' work stress in Figure 1.4.

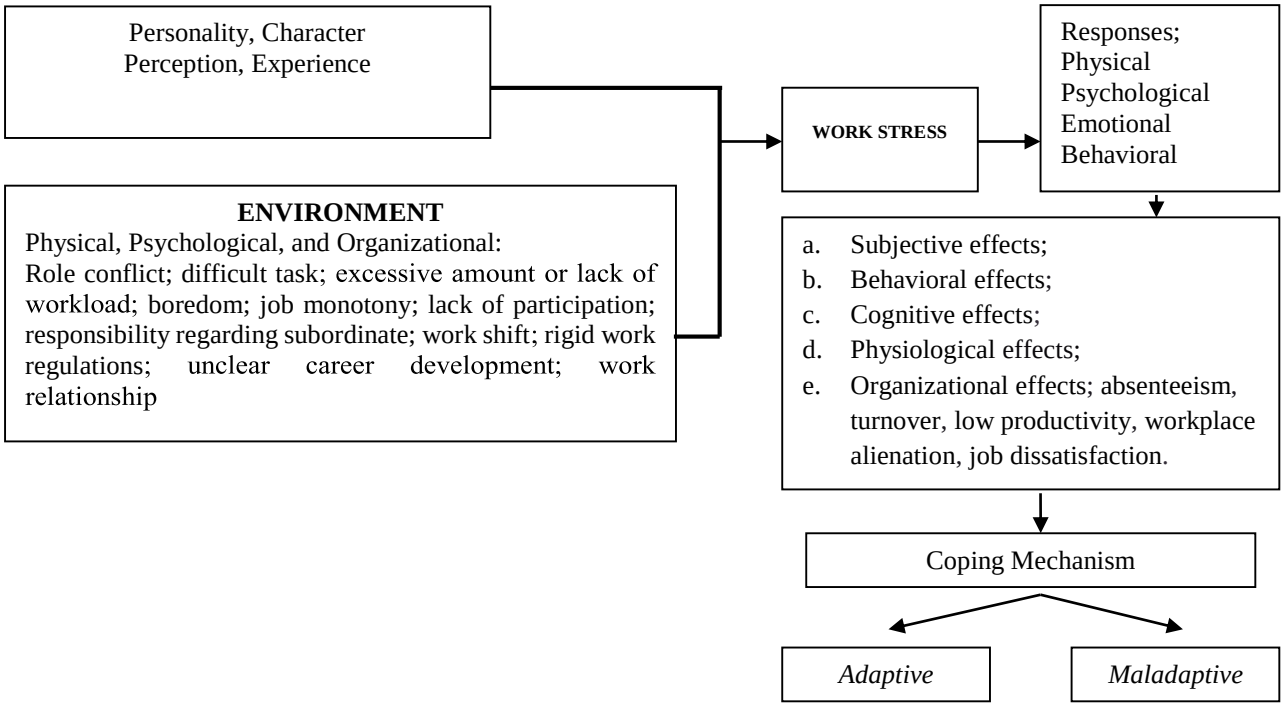

Figure 1.4 Theoretical Framework Modified by Cox (1982), Setyawati (1994), and Gandjean (1995)

2.0 METHODOLOGY

This research employs a non-experimental research with cross-sectional study design and points time approach. Pratiknya (2003), posits that this design is opted on its easy to use. Moreover, using this method reduces time and the result can be analysed shortly. The subject of research was Dr. Zainoel Abidin Hospital of Aceh, located in Jalan Tgk. Daud Beureueh of Banda Aceh Municipality and in Tgk. Chik Ditiro Sigli Hospital, Jalan Prof. A. Majid Ibrahim, Tijue, Sigli, Pidie Regency, Aceh Province, Indonesia. This study covers a period from 2012 to 2016.

2.1 Research Subject

In operationalizing this research, 185 nurses working in 24 inpatient rooms were selected as the research subjects by employing total sampling technique. It is argued that a small number of samples might increase the error rates while a great number of the sample might minimize the error rates in a research (Kertinger, 1974). The research locations include inpatient rooms of Dr. Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital. While, the inpatient rooms of Dr. Zainoel Abidin Banda Hospital entails Jeumpa Room 1, Jeumpa Room 2, Jeumpa Room 3 Jeumpa Room 4, Geulima Room 1, Geulima Room 2, Seureune Room 1, Seureune Room 2, Seureune Room 3, Mamplam Room 1, Mamplam Room 2, and Mamplam Room 3.

The inpatient rooms of Tgk. Chik Ditiro of Sigli consists of Female Internal Disease Room, Male Internal Disease Room, Eye and ENT (Ear, Nose, and Throat) Care Room, Neurological Care Room, First Class Room, Haemodialysis Room, Delivery Room, Perinatology Room, Pediatric Care Room, Male Operation Room, and Female Operation Room. Generally, there were 329 nurses occupying all of those rooms, 191 nurses occupying Dr. Zainoel Abidin Banda Aceh Hospital, and other 138 nurses working in Tgk. Chik Ditiro Sigli Hospital. In order to uphold the uniformity and to regulate the irrelevant variables, there were insertion standards of the samples. Among them this includes but not limited to the willingness to be a research sample, having an academic profile of the associate degree from nursing academy / college and a civil servant, honorary staff, or contract worker. In Dr. Zainoel Abidin Banda Aceh Hospital, the subjects were selected with insertion norms were 121 nurses working in inpatient rooms. Hence, 55 nurses were working morning shifts, 34 nurses were working afternoon shifts, and 32 nurses were working night shifts. In Tgk. Chik Ditiro Sigli Hospital, 64 nurses were identified with the inclusion measure. From the lists, 20 nurses were occupying morning shifts, 18 nurses were occupying afternoon shifts, and 26 nurses were working night shifts.

2.2 Data Analysis

The data were analyzed by using descriptive and statistical analyses with SPSS.18 software. The hypotheses were tested by employing:

1. descriptive analysis to overview the variables,
2. variance analysis with chi-square test to test the following hypotheses:

H_0: There is no difference between the work stress levels faced by the nurses working the morning shift, afternoon shift, and night shift.

Ha: There is at least a difference between the work stress levels faced by the nurses working the morning shift, afternoon shift, and night shift.

3. Kruskall-Wallis one-way analysis of variance to test the following hypotheses:

H_0: There is no difference between the absenteeisms of the nurses working the in the morning shift, afternoon shift, and night shift.
Ha: There is at least a difference between the absenteeisms faced by the nurses in working in the morning shift, afternoon shift, and night shift.

4. variance analysis with Mann Whitney testing the following hypotheses:

H_0: There is no difference between the absenteeisms of the nurses working in Dr. Zainoel Abidin Banda Aceh Hospital and those working in Tgk. Chik Ditiro Sigli Hospital.
H_a: There is at least a difference between the absenteeisms of the nurses working in Dr. Zainoel Abidin Banda Aceh Hospital and those working in Tgk. Chik Ditiro Sigli Hospital.

The criteria for hypothesis testing are provided below.

If $p \leq 0{,}01$; there is at least a significant difference (H_0 is rejected)
If $p < 0{,}05$; there is at least a significant difference (H_0 is rejected)
If $p > 0{,}05$; there is no significant difference (H_0 is accepted)

5. Correlational analysis to test the following hypotheses:

H_0: There is no correlation between work stress levels and absenteeisms of the nurses working morning, afternoon, and night shifts. H_a: There is a correlation between work stress levels and absenteeisms of the nurses working morning, afternoon, and night shifts.The criteria for the hypothesis testing are:

If $p \leq 0{,}01$; there is a significant correlation (H_0 is rejected)
If $p < 0{,}05$; there is a significant correlation (H_0 is rejected)
If $p > 0{,}05$; there is no significant correlation (H_0 is accepted)

An assumption test of the data acquired was to meet the requirements variance analysis that incorporate testing the normality of the data distribution and examining the uniformity with Cronbach-Alpha test as well as the linearity of the correlation. These tests assume that the distribution of the variables being tested was in line with a particular theoretical distribution. There are some criteria for describing the results of the tests. For the normality test, if the p-value is greater than 0.05, the data distribution is considered normal. For homogeneity test, if the p-value is greater than 0.05, the data distribution is considered homogeneous. So, in linearity test, if the value of F count is greater than that of F table, the relationship is considered linear. Hence, to examine the difference between the nurses' absenteeisms in each shift, the hypotheses were examined by employing non-parametric analysis, the KruskallWallis analysis of variance.

3.0 RESULTS AND DISCUSSIONS

3.1 Comparison of Work Stress Level of Each Work Shift in Dr Zainoel Abidin Banda Aceh Hospital and Tgk Chik Ditiro Sigli Hospital

The result of the analysis of variance of the work stress level of the nurses and their work shift revealed that there was no significant difference in the nurses' work stress level in relation to each shift ($p > 0.05$) both in Dr Zainoel Abidin Banda Aceh Hospital and Tgk Chik Ditiro Sigli Hospital. This means that working night shift did not result in different levels of work stress compared to working afternoon and morning shifts. Likewise, working afternoon shift did not result in different levels of stress compared to working morning shift. Based on this fact, it can be stated that the hypothesis proposed in this research was refuted.

This is possible because of the process undergone by the nurses in order to adapt to the work shift system at their workplace which decreased their work stress level to a very low degree and resulted in an increased work performance. The long period of employment will enable the nurses to adapt to their work environment and condition. The analysis result showed that 23.1% of the nurses with honorary status and 19.6% with civil servant status who worked night shift were the ones who had been working for 0 to 24 months. Their average time of working in inpatient care was 24 months (21.7%). A research by Wahyu (2000) supported this study by stating that there is a relationship between the length of employment and work stress in the workforce; the longer the period of employment the lower the stress level because the staff are already able to adapt to their work condition. Based on the interview with the nursing departments, it was discovered that Dr Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital performed a rolling systemor a work rotation every six months at the earliest. This interval gave an opportunity for the inpatient care nurses to adapt to the condition of the inpatient wards and their work shift in performing their duty. The work shift system utilized by Dr Zainoel Abidin Banda Aceh Hospital was 2-2-3 which meant that every nurse had a chance to work on three different shifts; morning, afternoon, and night. They would not be stuck with just one shift for an extended period of time. The nurses' chance to be assigned to three different work shifts within a week enabled them to experience different dynamics and to avoid monotony in their work.

The night shift with the length of 12 hours (8 pm- 8 am), which differed from the other shifts also showed no significant difference. This might be because the night shift did not last permanently; usually 2 to 3 nights in a row followed by a break of up to 3 days or off-duty for 1 day. This rotation is almost similar to the 2-2-2 and 2-2-3 shift system which is a short rotation system implemented in England, where one of the shifts runs for 3 days and for every 2 shifts 2-day break is given. This cycle is rotated periodically for each shift. At the end of the night shift, a rest of at least 24 hours is required. This rotation system is recommended (Grandjean, 1980; Pulat, 1992). A more varied work will make the nurses feel more challenged in performing their work and help them avoid monotony. This indicated that with a short period of work shift in Dr Zainoel Abidin Banda Aceh Hospital and Tgk Chik Ditiro Sigli Hospital, there was no significant difference in terms of the stress level on a particular shift. The researcher argues that if the period of work shift rotation is long, for instance, every 1 month, it is highly probable to obtain a different result and this requires further research.

The nurses with civil servant status were relatively more secured compared to those with honorary status, and this security can inhibit the stress-generating factors in their workplace. Moreover, considering the status of both RSUD Dr.Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital as government-funded hospitals, the nurses with civil servant status are more secured and are entitled to more benefits compared to those with honorary status. Civil servant employees receive wages above the Provincial Minimum Wage and in addition to that, they are entitled to a functional allowance, Work Performance Allowance *(Tunjangan Prestasi Kerja)* from the local government as well as medical service. This condition boosts bigger commitment from the employees or nurses to their work thus reducing psychological burden at the workplace. The research found 25.6% of the nurses were civil servants and 74.4% were on the honorary term (Table 4.5) in Dr Zainoel Abidin Banda Aceh Hospital. In Tgk. Chik Ditiro Sigli Hospital, 57.8% of the nurses were civil servants and 42.2% were of honorary status (Table 4.1). However, the work performance allowance in Tgk. Chik Ditiro Sigli Hospital was lower and as the result, the honorary nurses were more inclined to perform night shift to earn additional income from night shift incentive.

Other forms of consideration from Dr Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital for the nurses working night shift was the additional incentive and provision of snacks. The night shift incentive and snacks were the rewards for the nurses which can boost their work motivation as well as reduce their work stress level. Kolb et.al(1984) stated, "Staff will improve their work performance when they feel that their work is valued and rightly recompensed". The night shift nurses in Dr Zainoel Abidin Banda Aceh Hospital were composed of 28.1% individuals from the ages of 20 to 39, whereas in Tgk. Chik Ditiro Sigli Hospital 33.4%. This showed that the night shift nurses were in their relatively young ages and in good physical condition to work the night shift. Female nurses predominated the morning shift. The hospitals' conducive environment compared to the other parts of the Aceh Province played a role in creating a comfortable work condition for the employees, even on the night shift. A further assessment on the night shift nurses disclosed that the stress level in the single male employees was lower than that in the female employees who were already married.

Bachroni and Asnawi (1999) stated, "There are two sources of work stress namely organizational source and the source related to the life outside the organization such as the conditions outside the workplace as well as a family". Night shift work will be more appropriate for unmarried nurses whose level of stress will not differ considerably from that of the married female nurses working afternoon and morning shifts proportionally. Robbins (1998), Sheridan and Ractmacher (1992) stated, "There are three categories of potential work stress sources; a) environment factor such as economic, political, and technology uncertainties; b) organizational factor such as the demands of task and role, interpersonal demands, organizational structure, and organizational leadership; c) individual factor such as economic and family issues. The average work stress level of the inpatient ward nurses in Dr Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital did not differ between each shift, which meant that the nurses already had a good perception of work shift system.

The above assessment of work stress levels illustrated that in general, the work shift system in both hospitals had been applied properly, and it was very likely due to a fast work rotation i.e. every 2 to 3 days. It is in line with the self-perception theory from Daryl Bem (Hawari, 1995) that asserts that a person's affection for a job depends

greatly on the way he perceives his job. This means that if a nurse has a good perception of his profession, he will perform his shift work well. On the contrary, the poor perception will create a burden in performing the arranged shift work thus leading to working stress. According to Robbins (1998), stress is a psychological condition developed by an individual because he is faced with a burdening situation that is beyond his capacity to handle. Setyawati (1994) and Grandjean (1980) described the conditions that can cause stress in workplace environment such as physical and psychological environment problems as well as factors outside work.There was no substantial difference between Dr Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital in terms of the physical work environment (Table 4.1, 4.2, 4.3, 4.4, and 4.7, 4.8, 4.9, 4.10).Overall, there was no significant difference between stress and each work shift. However, since work stress comprises a number of dimensions or factors namely the physical, psychosocial, emotional, and behavioural dimensions, the writer intended to examine the comparison of each factor on each work shift.

3.1.1 Physical Work Stress (Physical Dimension)

The analysis using *Chi-Square* revealed a p-value of 0.001 (< 0.05), which meant that there was a significant relationship between work shift and the physical dimension of work stress in Dr Zainoel Abidin Banda Aceh Hospital. This is possible because physiologically speaking; the work hours are not so different between morning and afternoon shifts as well as between the afternoon and night shifts. The physiological functions that increase during the day and decrease at night include body temperature, heart rate, blood pressure, mental capacity, physical capacity and adrenaline production. During the day the physiological functions increase and at night they slow down for recovery and renewal (Pulat, 1882; Grandjean, 1980). Physical work stress is closely related to a person's circadian rhythm. This circadian rhythm differs between day and night. Grandjean (1980), William (2010) stated that the level of work performance for a certain type of activities tends to vary during a period of 24 hours. A person's work performance is optimal in the morning and will decline at night time. This coincides with the condition of nurses working in the inpatient ward in Dr Zainoel Abidin Banda Aceh Hospital. The stress level of the night shift nurses was higher than that of the morning shift nurses, and the stress level of the afternoon shift nurses was higher than that of the morning shift.

However, a different result was obtained from Tgk. Chik Ditiro Sigli Hospital. The analysis using *Chi-Square*revealed a p-value of 0.961 (> 0.05), which meant that there was no significant relationship between work shift and the physical dimension of stress in Tgk. Chik Ditiro Sigli Hospital. This was due to different compositions of gender in the hospital namely 46.9% male and 53.1% female. The gender proportion in Dr Zainoel Abidin Banda Aceh Hospital was 6.6% male and 93.4% female. This difference in the gender composition was affected by the physical and customary factors present in the region where men tend to be hard workers and are more resilient against challenges including work stress when working outside normal hours. Another factor was the values held by the rural communities in the district of Pidie (Sigli town) who still consider that the breadwinning responsibility lies in the hand of the males. In Tgk. Chik Ditiro Sigli Hospital, the employment consisted of more nurses with civil servant status (57.8%) compared to those of honorary status (42.2%), whereas in Dr Zainoel Abidin Banda Aceh Hospital, the civil servant nurses made up 25.6% of the nursing workforce and the honorary nurses 74.4%. This indicated that Tgk. Chik Ditiro Sigli

Hospital had more civil servant nurses with more secured income compared to the honorary nurses. Civil servants are entitled to a number of benefits in terms of income; therefore, the compensation will increase the work motivation, lower the work stress level, and will not cause differences in work stress level on each shift.

3.1.2 Psychosocial Dimension

The analysis using *Chi-Square* revealed a p-value of 0.397 (> 0.05), which meant that there was no significant relationship between work shift and the psychological dimension of work stress in Dr Zainoel Abidin Banda Aceh Hospital. The same can be concluded for Tgk. Chik Ditiro Sigli Hospital where the *Chi-Square*analysis revealed a p-value of 0.253 (> 0.05), which meant that there was no significant relationship between work shift and psychosocial dimension of the stress. The above results regarding the psychosocial dimension indicated that there was no substantial difference on each work shift. This is due to the adaptation process undergone by the nurses towards the work shift system. Moreover, work stress is psychosocially caused more by other factors such as workload, task demands associated with the ward or hospital management, as well as work environment and conditions. In addition, the nurses are psychologically aware of their professional responsibility as stated in their oath. According to Kolb *et.al.* (1984), a good, trusting, and the helpful relationship among staff will improve their performance and prevent conflicts and disputes which can cause stress at workplace. Therefore, the nurses felt that each shift had almost the same impacts on the stress level when working in the inpatient wards of RSUD Dr.Zainoel Abidin Banda Aceh and Tgk. Chik Ditiro Sigli Hospital.

3.1.3 Emotional Dimension

The analysis using *Chi-Square* revealed ap-value of 0.397 (> 0.05), which meant that there was no significant relationship between work shift and the emotional dimension of work stress in Dr Zainoel Abidin Banda Aceh Hospital. The similar conclusion was drawn for Tgk. Chik Ditiro Sigli Hospital where the *Chi-Square* analysis revealed a p-value of 0.734 (> 0.05), which meant that there was no significant relationship between work shift and the emotional dimension of stress in the hospital. The *Chi-Square* test conducted at both hospitals indicated that there was no average difference in terms of the emotional dimension on each shift. This was due to the work condition which is relatively the same across all work shifts. In addition, the emotional dimension will have an impact when preceded by a change in the physical and psychosocial dimensions. Shift work labours often complain of stomach problems and fatigue as well as emotionally impacted due to a disruption of the circadian rhythmof the wake cycle, temperature pattern, and adrenalin production (Munandar, 2001). Therefore, the emotional disorder is usually preceded by physical or psychosocial problems and is affected by the emotional maturity of an individual.

A person's emotional maturity usually goes hand in hand with his age and background including his education. In Dr Zainoel Abidin Banda Aceh Hospital, out of 121 nurses, 80 (66.1%) were above 30 years old. In Tgk. Chik Ditiro Sigli Hospital out of 64 nurses, 44 (68.8%) were above 30 years old. In terms of their educational background, in Dr Zainoel Abidin Banda Aceh Hospital, all 121 nurses (100%) graduated from nursing academies with a bachelor degree in nursing. Meanwhile, in Tgk. Chik Ditiro Sigli Hospital, 61 nurses (95.3%) have a nursing degree. These age and educational

background facts of the nurses indicated a better emotional maturity level in both hospitals.

3.1.4 Behavioural Dimension

The analysis using *chi-square*revealed a p-value of 0.430 (> 0.05), which meant that there was no significant relationship between work shift and the behavioural dimension of work stress in Dr Zainoel Abidin Banda Aceh Hospital. This was not so different from the analysis in Tgk. Chik Ditiro Sigli Hospital where the *chi-square* result was ap-value of 0.109 (> 0.05), which meant that there was no significant relationship between work shift and the behavioural dimension of work stress in this hospital. There was no significant difference in the average behavioural dimension between morning, afternoon, and night shift. The nurses had been familiarized with the work conditions at their workplace ever since their nursing training. Being nurses, they also have to deal directly with people when providing their service; therefore, their professional ethics play a very important role in controlling their behaviours in every shift despite their being physical, psychologically and emotionally under pressure.

3.1.5 Differences in Absenteeism between Each Work Shift

The analysis using *Kruskal Wallis* test revealed a p-value of 0.271 (> 0.05) which meant that there was statistically no significant difference between work shift and absenteeism in the nurses in RSUD Dr. Zainoel Abidin Banda Aceh Hospital. The average absenteeism on morning shift was 64.74, afternoon shift 53.24 and night shift 62.83. This was the case because the life pattern of the working nurses suits their current work shift arrangement so that they were more appealed to attend work and thus reduced absenteeism. This finding was supported by the respondents 'questionnaire result on the most favourable work shift. The nurses who were satisfied with their current work shift had lower absenteeism as well as higher professional accountability. A good management system and monitoring function at the inpatient ward particularly during the morning shift will encourage a high work commitment. The nurses will feel responsible for their tasks of taking care of patients. This condition will motivate the nurses to maintain their work attendance, thus the absenteeism can be lowered.

The analysis using *Kruskall Wallis* test in Tgk. Chik Ditiro Sigli Hospital revealed a p-value of 0.00 (< 0.05) which meant that there was a statistically significant relationship between work shifts and absenteeism in the nurses. The analysis result showed that the average absenteeism of the morning shift nurses was higher than that of afternoon shift nurses and the average absenteeism of the afternoon shift nurses was higher than that of the night shift nurses (Table 4.30). The analysis of variance test revealed the mean number of 53.95 for the morning shift, 23.63 for the afternoon shift, and 21.47 for the night shift. It was clearly shown that the morning shift differed significantly compared to the afternoon and night shifts. Based on the researcher's observation, the number of nurses working morning shift was even twice greater than the number of nurses working afternoon and night shifts. This situation provided the nurses with a loophole; they could be inclined to not attend work for such reasons as illnesses. Some of the nurses even skipped work for no clear reasons.

3.1.6 The Correlation between Work Stress and Absenteeism in Nurses

The analysis of the nurses using *Mann-Whitney Test*in RSUD Dr.Zainoel Abidin Banda Aceh Hospitalrevealed a p-value of 0.00 (< 0.05), and in RSUD Tgk.Chik Ditiro Sigli Hospital with a p-value of 0.00 (< 0.05). This meant that there was a significant relationship between total work stress and absenteeism in nurses in both hospitals. The positive correlation between work stress and nurses' absenteeism meant that the higher total work stress level the greater absenteeism in nurses. Robbins (1998), Sheridan and Ractmacher (1992) mentioned three categories of potential work stress sources: a) environment factor such as economic uncertainty, political, and technology uncertainties; b) organizational factor such as the demands of duty and role, interpersonal demands, organizational structure, and organizational leadership; c) individual factor such as economic and family issues. An individual's level of stress will have a negative impact on such as skipping work when the stress level goes beyond the maximum limit. Stress experienced by a nurse does not solely come from his hospital work environment but also from his family and other social environments.

Amongst a number of work stress dimensions, the analysis in Dr Zainoel Abidin Banda Aceh Hospital revealed that the physical dimension had a p-value of 0.000 (<0.05) meaning there was a significant relationship, the psychosocial dimension had a p-value of 0.000 (<0.05) meaning there was a very significant relationship, the emotional dimension had a p-value of 0.000 (<0.05) meaning there was a significant relationship, and the behavioral dimension had a p-value of 0.000 (<0.05) meaning there was a relationship with the absenteeism of the nurses. In Tgk. Chik Ditiro Sigli Hospital, the analysis showed that the physical dimension had a p-value of 0.044 (< 0.05) meaning there was a significant relationship, the psychosocial dimension had a p-value of 0.000 (< 0.05) meaning there was a very significant relationship, the emotional dimension had a p-value of 0.034 (< 0.05) and the behavioural dimension had a p-value of 0.522 (< 0.05) meaning there was a significant relationship with the absenteeism of the nurses. This indicates that if a person experiences work stress in physical, psychosocial, emotional, or behavioural dimension, he will manifest the stress in the form of nonattendance at the workplace.

According to Gibson *et.al.,* (Hawari, 1999), when stress is non-existent so are work challenges, thus work accomplishment tends to decline. Psychosocial stress is caused by a variety of factors from outside the workplace such as marriage, parental issues, interpersonal relationship, living environment, finance, law, family, and health. The above explanation confirms that stress can be caused by disharmonious interpersonal relationships in the inpatient ward among co-workers, supervisors and health teams. The psychosocial and emotional dimensions are closely linked to workplace environment including co-workers. Good or poor interpersonal relationship between co-workers will have direct impacts on a person's psychosocial and emotional states at the workplace. The behavioural dimension in Tgk. Chik Ditiro Sigli Hospital was not significantly related to work stress with a value p>0.050. This was due to a less significant reward provided in this hospital compared to Dr Zainoel Abidin Banda Aceh Hospital which resulted in increased absenteeism.

3.2 Comparison of Work Shift, Work Stress, and Absenteeism between RSUD Dr. Zainoel Abidin Banda Aceh and Tgk. Chik Ditiro Sigli Hospital

3.2.1 Work Shift

The analysis using *Mann-Whitney Test* revealed a p-value of 0.176 (> 0.05), which meant that there was no significant difference between the work shift in Dr Zainoel Abidin Banda Aceh Hospital and Tgk. Chik Ditiro Sigli Hospital. Both hospitals employed the same work shift concept that is the short work shift pattern of 3-2-2, meaning a nurse works 3 days on morning shift followed by 2 days on afternoon shift and 2 days on night shift and then goes off-duty for 3 nights. This 3-2-2 system is also a short rotation system in which one of the shifts is carried out for 3 days and for every 22 shifts a 2-day break is given. This cycle is rotated for every shift. At the end of every night shift, a rest of at least 24 hours is required. This rotation system is recommended (Grandjean, 1980 and Pulat, 1992).

3.2.2Work Stress Comparison

The analysis using Mann-Whitney test revealed a value of0.686 (> 0.05), which meant that there was no significant difference between the work stress of the nurses in Dr Zainoel Abidin Banda Aceh Hospital and that in Tgk. Chik Ditiro Sigli Hospital. This showed that the work stress pattern or stress level experienced by the nurses in both hospitals did not differ. The nurses who provided services to patients were exposed to almost similar stress due to almost similar sources of stress. Work-related stress comes up in the form of daily hassles more often than big traumatic life events. These hassles, despite their small scale, can cause stress due to their relatively constant pattern such as increased workload, disputes, and conflicts (Smet, 1994). Stress can last for a short period of time but it can also be prolonged. If it remains a short-term, stress is usually not a big problem and will dissolve after sufficient rest. If the stress continues and becomes uncontrollable, the body and soul do not have a chance to rest and as a result, they will be subject to harmful conditions such as depression, heart problem, and shortness of breath, stomach pain, and so forth.

Beehrand Newman (Luthans, 1985) stated that work stress is a condition derived from a human interaction with work which is characterized by a change within an individual which compels a deviation from his normal functions. Work stress is also related to events around workplace environment which constitute dangers or threats (Fraser, 1992). Therefore, work stress can be understood as an unpleasant work situation caused by work conditions that affect an individual to a degree that it causes tension in the individual and as well as a deflection from work or task accomplishment. Another factor contributing to the different levels of work stress related to the fact that Dr Zainoel Abidin Banda Aceh Hospital had implemented its workplace health and safety function for the benefits of its employees. Meanwhile, in Tgk. Chik Ditiro Sigli Hospital, this system was only in its developmental phase in order to fulfil the requirement of hospital accreditation. With all changes and the growing demand for higher quality modern products and services, many traditional institutions over the world face closure or difficulties upgrading (Ahamat et. al., 2017). Hence, hospital in this context is not excluded from similar challenges.

4.0 CONCLUSIONS

It is concluded in this study that the level of stress of the nurses working night shift was lower than that of the nurses working afternoon shift. The stress level of afternoon shift nurses was lower than that of morning shift nurses. The work stress level on each shift was not different in both hospitals. However, in Dr Zainoel Abidin Banda Aceh Hospital, the work stress levels of the nurses differed between each shift.nIn Dr Zainoel Abidin Banda Aceh Hospital there was no difference in the absenteeism between each shift whereas in Tgk. Chik Ditiro Sigli Hospital there was a significant difference. Nevertheless, both hospitals showed a relationship between the nurses' work stress and their absenteeism, whereas in Tgk. Chik Ditiro Sigli Hospital the behavioural dimension of work stress showed no significant relationship to the absenteeism of the nurses.

Hence, thus study suggests researchers to investigate other factors such as exploring the nurses' optimum tolerance level of stress which may or may not have an impact on their level of stress and absence when working on shifts in hospitals. Furthermore, the study should reflect the condition of the nurses in Aceh. In this context, the nurses are part of an Acehnese community who had experienced a long period of conflict and a disaster/recovery period post-earthquake and tsunami. While management researches and physical sciences are different in various aspects, there are still ways that management research could learn from physical sciences, hence the issues of the real world in organizations can be approached via systems thinking (Ahamat, 2014). As a suggestion for further research it is useful for this study to employ qualitative research by embedding systems thinking to deepen the personal perspective of the nurses during the post disaster/recovery period. While, further research should also investigate deeper the rooting factors or reasons for nurses' absenteeism such as organizational factors since there was no significant relationship between total stress and nurses' absenteeism. The future study may consider qualitative approach by using interviews and personal observation. Employing structured interviews and personal observation led to the discovery of several key emerging themes, which may not have been uncovered as explicitly if only non-qualitative approaches had been applied (Ahamat, 2019).

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