

THE RELATIONSHIP OF SLEEP QUANTITY AND QUALITY WITH DEMENTIA IN TANKER SHIP SAILERS

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Abstract

Introduction : Sleep is an important aspect that plays a role in health and thinking processes. Seafaring is a job with a high level of mobilization and uncertain working hours causing less sleep time and having fatal consequences for health as such dementia. As less as reduction in 1% of deep sleep per year for people who had ages over 60 years reflected as 27% improving the risk of dementia. **Aims :** This study aimed to help determining the influence of the quantity and quality of sleep and the level of dementia in tanker sailors PT. X Jakarta. **Method :** This research is a mixed qualitative and quantitative research with a cross-sectional approach with a total of 43 respondents selected by using random sampling techniques. The dependent variable used is the sailor's dementia level and the independent one is the sailor's sleep quality. It was found that 30 respondents had poor sleep quality, Based on the MMSE questionnaire's results, there are 15 respondents had moderate levels of dementia and 5 respondents had severe levels of dementia. **Result :** The results of statistical tests using Pearson with SPSS software obtained a Sig value. (2-tailed) between the sleep quality variable and dementia is $0.000 < 0.05$, so it is meant that there is a significant correlation of sleep quality toward dementia. **Conclusion :** This study concluded that there was a correlation of sleep quality and dementia in PT. X Jakarta.

Keywords: Sailors, Sleep Quantity and Quality, Dementia

Introduction

Sleep is one of the important aspects that play a role in the health process and thought process. Lack of sleep that usually occurs can be caused by many factors, one of the factors that tends to interfere with sleep activities can be caused by work factors. Jobs with a high level of mobilization and with erratic working hours lead to poor sleep and are fatal to health. One of the health problems that can be caused due to lack of sleep is dementia.

Seafarers are one of the jobs with a high level of mobility with erratic working hours compared to employees who work in other fields due to stressors, workloads, work environments, and work shifts that are different at work in general, it causes the sleep time of sailors to be disrupted (Worley, 2018).

According to Lanywati (2001), the need to have enough sleep time and quality is examined apart from the number of hours of sleep (the quantity of sleep) and the depth (the quality of sleep). Sleep quality can be known as feeling satisfaction that a person feels with their sleep, the sleep helps them not to reduce feeling tired, lethargic and also apathetic, aroused or restless, red conjunctiva, swollen eyelids, distracted attention, blackness of eyes, sore eyes, headaches and even frequent yawning or feeling sleepy Hidayat (2006).

The function of sleep remains unclear (Hodgson, 1991 in Potter & Perry, 2005). This is one bodily impact which occurs during sleep which is can maintaining heart function as seen in a decrease

in rate of heart between 10 to 20 times every minute. Additionally, during sleep, the body produces hormone of growth in order to help repairing and also renewing the specialized and epithelial cells as like cells of brain. The brain will filter the information that has been recorded during the day and the brain gets optimal oxygen intake and cerebral blood flow so that during sleep memory storage and cognitive recovery occur. Another function that is felt when an individual sleeps is muscle reaction so that the basal metabolic rate will decrease. This can make the body store more energy during sleep. If an individual has no time to sleep or has no sufficient sleep for a certain time, it is able to be found many changes inside their function of body, including motor skills, memory and balance (Engle-Friedman, 2014).

Quoted from research by the (National Institute of Health, 2021) shows that patterns of sleep early in life can affect the risk of dementia later in life. Sleep deprivation and sleeping longer than its time average already connected into a greater likelihood of emerging dementia.

A research led by Dr. Séverine Sabia of Inserm and also *University College London* examined how sleep patterns early in life might affect the potential of dementia in the future. The research was inline with NIH's *National Institute on Aging* (NIA). His result could be found in *Nature Communications* on April 20, 2021. It analyzed the data from nearly 8,000 people lived in the UK and having ages around 50. The participants were examined through variety of measures, as like they were asked for six times during the year of 1985 and 2016 on how many hours they spent to have a sleep at night. To assess the accuracy of this self-reporting, some of them have accelerometers to be used in order to objectively help them measuring the time of their sleep. During the research, 521 participants were indicated having dementia, around ages of 77. The data analysis indicated that people who had passed the year of 50s and 60s who slept for normally six hours or less had a greater risk of emerging the dementia later in life than those who had a normal bedtime (claimed as 7 hours), people with less time of rest in every night were 30% likely to be indicated suffering dementia (Health, 2021).

Quoted from (Apriani, 2023) *Kompos.com article*, according to research published in the journal *Nature Communication* in 2021, lack of sleep can cause dementia. The results showed that 521 participants out of 8,000 participants with an average age of 77 were diagnosed with dementia. The study was conducted over 31 years, from 1985 to 2016, and involved many aspects, including how long to sleep at night. Participants diagnosed with dementia slept for less than 6 hours each night on average.

According to the Sleep Foundation, some research suggests that sleep deprivation can increase levels of beta-amyloid plaques in the brain. This plaque buildup will damage brain cells and could be the cause of Alzheimer's, which is one of the most common types of dementia. In addition, lack of sleep will also reduce cognitive abilities and memory (Harrison Wein, 2018).

From the explanation above, researchers are intended to conduct further research regarding the relationship between sleep quantity and dementia rates among one of the population groups most at risk of reduced sleep quality and quantity and therefore a group potentially at risk of dementia, tanker sailors.

Factors That Influence Sleep Quality

Age

Many factors that influence sleep will be explained. starting from physical, psychological, lifestyle and environmental factors. Age can become the major risk factor for dementia in old age. This relationship is very directly proportional, namely if the age increases, the higher the risk of dementia. The elderly (elderly) is the final stage in human life. Humans who enter this stage are characterized by a decrease in the body's working ability due to changes or decreases in the function of body organs, the older the more vulnerable they will be to disease (Aisyah, 2016).

Adolescent sleep patterns need to be considered more because they are related to school implementation. Over the past 20 years, other scientists have seen a contrast in the changing theme of rest in young people. This development is the organic clock of youth or called circadian rhythm. Towards the beginning of puberty, the resting stage turns out to be late. To fall asleep later around evening time and wake up later towards the start of the day. Also teenagers are more alert around night time and have more difficulty sleeping. Meanwhile, in the elderly, elderly people wake up more regularly around night time and need more time to fall asleep again. The tendency to rest during the day of course becomes more alert at night (Putri, 2016).

Environment

In this research, data collection was carried out on the tankers MT Hanyu Glory and MT New Stella, where the resting place for the sailors was on the tanker ship with various disturbances on the ship which sometimes caused the sailors' sleep to be disturbed.

The physical environment in which an individual falls asleep fundamentally influences the capacity to initiate and remain unconscious. Good ventilation is essential for a good night's rest. The size, comfort and position of the bed affect the nature of rest. If someone usually lies down with other people, sleeping alone will wake up regularly (Putri, 2016).

Lifestyle

The changes in sleep schedules experienced by sailors to the erratic working hours applied on ships affect the sailors' sleep patterns. A person's routine can affect sleep patterns. An individual who works totally (for example 2 weeks during the day followed by 1 week at night) often has difficulty adjusting to changes in sleep schedule. For example, the body's internal clock is above 11 pm, but the work schedule forces you to go to 9 o'clock. Individuals can only sleep 3 or 4 hours because the body feels that time to wake up and be active. Difficulty maintaining alertness during work time results in decreased and even dangerous performance (Putri, 2016).

Typical Sleep Patterns

In the past century the amount of nightly rest required by the US population has decreased by more than 20%, indicating that many Americans are sleepless and experience extreme daytime lethargy. Individuals who experience temporary sleep deprivation or dynamic nighttime activities or long plans to complete work will usually feel lethargic the next day. However, they can conquer this feeling even though they experience problems in completing work and remain careful (Putri, 2016).

Emotional Stress

Emotional stress makes individuals tense and often causes dissatisfaction when they are unable to rest. This is particularly true on working ships, where crew are engaged in both physically and mentally demanding work, at times in dangerous situations and having to fulfill work rosters that are tight and demanding for all on board. Stress also makes a person try hard to rest, or rest too long. Relentless pressure, leading to poor rest tendencies. Elderly people and people who experience depressive mood problems experience delayed sleep time, early stages of REM rest, alertness, extended rest maintenance time, unfavorable rest sentiment, and early renewal (Putri, 2016).

Method

The study population were tanker sailors on PT.X Jakarta. From the total of PT. X sailors onboard 43 were randomly sampled and invited to participate in the research study. The type and design of this research used is a mixed study by combining qualitative and quantitative research types with a *cross-sectional* approach, a total of 43 respondents were chosen *random sampling techniques*. Using the *Pittsburgh Sleep Quality Index* (PSQI) questionnaire sheet (Kupfer Buysse Reynolds, 1989) to determine sleep quality and using MMSE questionnaire (Ridha and Rossor, 2005) to determine the level of dementia of seafarers and interview techniques aimed at obtaining an objective or subjective picture or information about the relationship between the quantity and quality of sleep with dementia in PT.X tanker sailors.

This research was done in January 2024. The location was taken place on the tanker PT. X that is tanker ship MT New Stella and tanker ship Hanyu Glory. How to collect data for this study is with questionnaire and interview, for sleep quantity and quality the researcher use the PSQI to measure sleep quantity and quality. This PSQI Pittsburgh Sleep Quality Index (PSQI) questionnaire is copyrighted by Daniel J.Buysse, M.D consists of 19 questions and there are 7 scores that are used as assessment parameters and usually this questionnaire is filled out to assess the quantity of sleep in one month. Parameters that are usually assessed are duration of sleep duration (quantity), sleep quality, sleep latency, efficiency of sleep habits, sleep disorders, use of sleeping pills and disturbances in body function during the day. In scoring the PSQI, seven component scores are derived, each scored 0 (no difficulty) to 3 (severe difficulty). The component scores are summed to produce a global score (range 0 to 21). Higher scores indicate worse sleep quality.

For the way to collect data for Dementia is by using MMSE (Mini Mental State Examination) questionnaire which includes 30 simple questions to estimate the main cognition in older people. This examination was created by Folstein et al in 1975. The MMSE includes 30 simple questions to estimate primary cognition in older people. False positive results can be obtained in elderly patients with depression. However, depression can be excluded using the Giatric Depression Scale. MMSE scores range from 0 to 30 for elderly people, normal shows a score of 24 - 30. Depression with cognitive impairment has a score of 9 - 27, meanwhile senile mental decline has a score of < 23 and senile dementia has a score of < 17.

Patients with a score of 24 or less actually show cognitive impairment. Meanwhile, the MMSE is not sensitive for the onset of dementia, so a normal score does not necessarily exclude the possibility of dementia. Because this research uses mixed qualitative and quantitative methods, the data processing method is carried out using a convergent design, simultaneously collecting quantitative and also qualitative data, integrating the data, comparing the results, and explaining all descriptions in the results.

The data obtained will be processed using *Pearson statistical tests* with SPSS software so that researchers will know the strength of the relationship between variables. This research has affirmed the ethical approval came from the Health Research Ethics Commission (KEPK), Faculty of Public Health Airlangga University No : 78/EA/KEPK/2024.

Result

Individual Characteristic Factors of Workers on Tankers PT. X

Age

Table 1. Age Frequency Distribution of Workers on the MT New Stella and Hanyu Glory Tankers

No	Age	Number (People)	Percentage
1	>50	5	11.6 %
2	< 50	38	88.4%
Total		43	100 %

Working Time

Table 2. Frequency Distribution of Working Periods on MT New Stella and Hanyu Glory Tankers

No	Working Time (Hours)	Number (People)	Percentage
1	>8	12	28 %
2	<8	31	72 %
Total		43	100 %

Quality of Sleep of Individual Tankers PT. X

Table 3. Sleep Quality Frequency Distribution of Workers on the MT New Stella and Hanyu Glory Tankers Ship

No	Sleep Quality	Number (People)	Percentage
1	Good	13	30.2 %
2	Bad	30	69.8 %
Total		43	100 %

Individual Dementia Rate of MT New Stella and Hanyu Glory Tankers Ship Worker.

Table 4. Distribution of Dementia Rates of Workers on the MT New Stella and Hanyu Glory Tanker

No	Dementia	Number (People)	Percentage
1	Normal	20	46.5 %
2	Mild	18	41.9 %
3	Moderate	5	11.6 %
4	Heavy	0	0 %
Total		43	100 %

The following are the results of sleep quality frequency distribution of workers on MT New Stella and Mt Hanyu Glory Tankers Ship.

Analysis of the Relationship between Sleep Quality and Dementia Rates of Individual Tankers PT. X

Table 5. Distribution of the Association of Sleep Quality with Dementia Rates in PT.X Tankers

No	Kualitas Tidur	Tingkat Demensia							
		Normal		Ringan		Sedang		Berat	
		N	%	N	%	N	%	N	%
1	Baik	10	23.3 %	3	6.9 %	0	0 %	0	0 %
2	Buruk	10	23.3 %	15	34.8 %	5	11.6 %	0	0 %
Total		20	46.6 %	18	41.7 %	5	11.6 %	0	0 %

Relationship between Sleep Quality and Dementia Levels in Individuals on MT New Stella and MT Hanyu Glory

Table 6. Distribution of Analysis of the Relationship between Sleep Quality and Dementia

Correlations		Sleep quality	Dementia
Sleep quality	Pearson Correlation	1	.614**
	Sig. (2-tailed)		.000
	N	43	43
Dementia	Pearson Correlation	.614**	1
	Sig. (2-tailed)	.000	
	N	43	43

Discussion

Sleep

Definition of Sleep

Sleep Function

The function of sleep remains unclear (Hodgson, 1991 in Potter & Perry, 2005). However, sleep can function in maintaining heart function as seen in decrease in heart rate of 10 to 20 times every minute.

Sleep Function

The function of sleep remains unclear (Hodgson, 1991 in Potter & Perry, 2005). However, sleep can function in maintaining heart function as seen in a decrease in heart rate of 10 to 20 times every minute. Additionally, during sleep, the body produced hormone of growth in order to help renewing and repairing the specialized and epithelial cells as like the cells of brain. The brain will filter the information that has been recorded during the day and the brain gets optimal oxygen intake and cerebral blood flow so that during sleep memory storage and cognitive recovery occur. Another function that is felt when an individual sleeps is muscle reaction so that the basal metabolic rate will decrease. This can help the body store more energy during sleep. If an individual loses their sleep for some time it will be found any changes inside their function of body, including motor skills, memory and balance. So, sleep can help the development of individual behavior because individuals who experience problems in the REM stage will feel confused and suspicious (Wulandari, 2012).

Sleep Type

Every night a person experiences two different and alternating types of sleep, namely: sleep (Rapid-Eye Movement) and also non-REM (Non Rapid-Eye Movement) (Rafknowledge, 2004: 2-3).

REM Sleep

REM (rapid eye movement) sleep occurs when we dream, it is characterized by high mental and physical activity. The characteristics include; heart rate, blood pressure, and breathing are the same as those experienced when we wake up. The REM sleep period is approximately twenty minutes and occurs four to five times a day.

Non-REM Sleep

Non-REM sleep has four levels. As long as the deepest levels persist (3 and 4), the person will be quite difficult to wake up. As the night progresses, the non-REM sleep status becomes lighter. At

level 4, sleep feels refreshing/strengthening. During this period, the body repairs itself by using a hormone called somastostatin. Scientists define that the best sleep is sleep that has the right mix of REM and non-REM.

Dementia

Definition of Dementia

Dementia is a disorder of intellectual and cognitive functions, especially memory disorders, which is followed by disorders of other higher functions such as abstract thinking, judgment, personality, language, praxis and visuospatial, thereby significantly affecting work and social activities.

Dementia can known as a syndrome coming from the disease of brain, commonly of a chronic-progressive state, where there are multiple higher-cortical functions disorders, as like: memory, ability of learning, numeracy, orientation, thinking, comprehension, language and also value (Harahap , 2018).

Dementia is a kind of diseases claimed by the loss of short-term memory, other cognitive capabilities and also doing everyday things. It can be happened by multiple disorders or situations which brings to damage the cells of brain or linking between its cells (Alzheimer's, 2016).

Factors That Influence Dementia

Age

Age is the impactful factor of risk for the incidence of dementia in the elderly. This relationship is directly proportional, that is, the higher the age, the higher the risk of developing dementia. Elderly (elderly) is the final stage in human life. Humans who enter this stage are characterized by a decrease in the body's ability to work due to changes or decreased function of the body's organs. As people get older, they become more susceptible to disease (Aisyah, 2016).

Gender

Women experience more dementia, even when the female population is smaller than men, the incidence of dementia in women is greater than in men. However, there is no significant difference between genders in the incidence of dementia, this shows that men and women have the same chance of developing dementia (Alzheimers's disease, 2011).

Genetic

The genes that appear to be most significant in dementia-causing diseases are those associated with protein aggregation, which causes neuronal death. Some dementia patients have genetic dementia from hereditary factors. However, in some people who have the dementia gene, only a few of the genes develop into dementia. Alzheimer's disease (AD) can be defined as a genetically different disease; associated with one susceptibility (risk) gene and also three determinative (disease) genes. The known susceptibility (risk) gene is the apolipoprotein EC4 (APOE E4) allele on chromosome 19 at q13. This must be examined in detail to find out whether this factor occurs in the elderly (Alzheimers's, 2011).

History of illness

Infectious and metabolic diseases that are not treated and ignored can trigger dementia such as brain tumors, cardiovascular diseases (such as hypertension and atherosclerosis), kidney failure, liver disease, goiter. Diseases that cause dementia are divided into 3 groups including idiopathic dementia, vascular dementia and secondary dementia. For example, idiopathic dementia for example AD, Hungtinton's disease, Pick's disease which occurs in the frontal lobe, etc. Vascular dementia, for

example multi-infarct dementia, non-traumatic brain hemorrhage with dementia and secondary dementia occurs due to infection, nutritional disorders, auto-immune disorders, trauma and stress (Aisyah, 2016).

Nutritional status

Diet and nutrition are known to be able in affecting the sleep quality, various foods and also drinks can help people to be easy of falling asleep or otherwise hard to get some sleep. Good nutritional status means a person can have a healthy body and keep the body's systems working well. In the elderly, there is a decline in body function caused by age, disease and one of them is nutritional status. Intake of less nutritious food for the elderly results in a decline in the body's systems. Macronutrients are known to be associated with the incidence of dementia in the elderly, especially vitamin B complex. Deficiency of vitamin B complex in the elderly can make more the risk of dementia to come up. This indicates that poor nutritional status can indirectly result in the risk of dementia in the elderly (Pratiwi, 2014).

Measurement

Sleep Measurement

Although there is no specific tool for measuring sleep quantity, you can use the PSQI to measure sleep quantity. This questionnaire consists of 19 questions and there are 7 scores that are used as assessment parameters and usually this questionnaire is filled out to assess the quantity of sleep in one month. Parameters that are usually assessed are: sleep duration, sleep latency, sleep quality, efficiency of sleep habits, sleep disorders, use of sleeping pills and disturbances in body function during the day.

The Pittsburgh Sleep Quality Index (PSQI) was developed with several objectives :

Provides a standard measure that applies to analyzing sleep, to distinguish between someone who has a good sleep and a bad one, provides an index that is easy for clinicians and researchers to use to interpret sleep, provides a brief, useful clinical assessment of the various sleep disorders that can affect sleep.

Dementia Measurement

The dementia diagnosis is made according to a thorough assessment, taking into the access of patient's age, family history, onset and also development of symptoms and the presence of other diseases. Memory Check, in this examination, patients are asked to record, store, remember and recognize new information. The patient is given question in order to help them repeating the words (registration), remember the information after getting rest for certain minutes (recall retention,) and also recognize the words from various lists (recognition). The ability to remember the information was measured by introducing 3 objects names to them, who were supposed to immediately repeat the names. If patients are not able to do it, it commonly due to the attention problem, not the memory. If they are able to remember it, short-term memory is getting tested: After 5 minutes, the patient is supposed to remember 3 names.

Patients that had dementia commonly forget easy or simple information for 1 to 5 minutes. Asking the objects name to the in term of categories (e.g., pieces of furniture animals, art articles, clothing,) is a part of helpful test. Patients that suffered dementia would feel difficult to name some things and those without dementia are able to easily name them. The Functional Activities Questionnaire, are coming from the Association of Alzheimers, is made in order to help evaluating whether impairment theory-affects the ability of a patient to do other hard or complex activities.

Examination of language skills, in this examination the patient is asked to name objects in the room or parts of the body, follow commands or cues or repeat phrases. Checking abstraction power,

abstraction power can be checked in various ways, for example asking the patient to count to ten, saying the entire alphabet, counting in multiples of seven, etc.¹ MMSE in this examination was created by Folstein et al in 1975. The MMSE includes 30 simple questions to estimate primary cognition in older people. False positive results can be obtained in elderly patients with depression. However, depression can be excluded using the Geriatric Depression Scale. MMSE scores range from 0 to 30 for elderly people, normal shows a score of 24 - 30. Depression with cognitive impairment has a score of 9 - 27, meanwhile senile mental decline has a score of < 23 and senile dementia has a score of < 17. Patients with a score of 24 or less actually show cognitive impairment. Meanwhile, the MMSE is not sensitive for the onset of dementia, so a normal score does not necessarily exclude the possibility of dementia. These are the 4 measuring tools most often used to assess a person's level of dementia.

Sleep Quantity And Quality And Dementia

Quality sleep represents the individual's fulfillment with rest so that the individual does not show sensations of lethargy, effectively excited and fussy, laziness and emotionless, darkness in the area of eyes, sore eyes, red conjunctiva, enlarged eyelids, fragmented attention, headaches and continuous. Yawn or then return to lethargy (Maria Silvana, 2018). The need for sufficient sleep is impacted in addition to the factor of the number of hours of sleep (quantity of sleep), plus depth (quality of sleep) (Aji Serko, 2015).

Sleep has a refreshing homeostatic function and appears to be important for normal thermoregulation as well as energy storage. If there is a prolonged period of sleep deprivation, it sometimes causes effects such as ego chaos, hallucinations, and delusions (Artica, 2018). Quoted from the article *Ciputra Hospital* (Muhammad, 2023) sleep plays an important role in learning and thinking. Lack of sleep interferes that has cognitive ways in many things. First, the sense of attention, alertness, reasoning, concentration, and also problem-solving will become impaired. It made difficult for those who had deprivation of sleep to learn in efficient ways. Second, at night, various cycles of sleep takes a role in "consolidating" memories inside a person's mind. If people had no enough sleep, they will feel difficult and not able to remember things they learnt or went through at the day.

Relationship of Sleep Quantity and Quality with Dementia

Quality sleep is feeling refreshed and ready to face another life after waking up. This idea combines several attributes, for example, the time it needs to start falling asleep, and also the depth of rest and tranquility (Adrianti, 2017). A person experiences two different types of sleep that alternate with each other, namely: sleep (Rapid-Eye Movement) and also non-REM (Rafkknowledge, 2004). Non-REM sleep has four levels. During the deepest stages (3 and 4), during this period, the body repairs itself using a hormone called somatostatin. Somamastin hormone or *hormone-inhibiting hormone, somatotropin release-inhibiting factor, GHIH, and SRIF* are peptide hormones that control endocrine system and affects the transmission of nerve signals and the development of.

In the previous century, the amount of nightly rest required by the U.S. population had been reduced by more than 20%, suggesting that many Americans could not sleep and experienced extreme daytime lethargy. Individuals who experience temporary sleep deprivation due to dynamic evening activities or long plans to complete work will usually feel lethargic the next day. However, they can conquer these feelings despite having problems completing work and remain cautious (Putri, 2016).

Sleep function remains unclear (Perry, 2005) However, sleep can function in the maintenance of visible heart function at a rate that drops 10 to 20 times every minute. In addition, during sleep, the body produces hormones of growth in order to help repairing and renewing specialized and also epithelial cells for example the brain. The brain will filter the information that has been recorded for a day and the brain gets oxygen intake and cerebral blood flow optimally so that during sleep memory storage and cognitive recovery occur.

Quoted from the *Harvard Pilgrim Health Care* article. In 2023, in a long-term study, Harvard Medical School looked at 2,800 people aged 65 and also older. The result stated that people who slept less than five hours at night were twice to increase the potential of dementia than those who slept around six to eight hours at every night. Another research of almost for 8,000 participants stated that a 30% potential risk of dementia was connected to people who slept for six hours or less at the ages around 50, 60, and also 70, than a normal duration of sleep of seven hours long.

Experts are intended to learn why deprivation of sleep can support increasing the potential risk of dementia; Somehow, one theory takes a protein in the brains named as beta amyloid. It is known as a plaque-forming protein in those people's brains that had impaired function of brain and also Alzheimer's, a neurodegenerative disorder. At the day goes on, our brains produce these proteins normally. At night while getting some sleep, our brain gets rid of these proteins. The thought is that sleep deprivation will limit the ability of brain to determine the beta-amyloid and other components, making their buildup to lead to dementia.

Excerpted from the *Nature Communication* article. The 2021 *Association of Sleep Duration in Middle and Old Age with Incidence of Dementia* in it is tested the correlation of sleep duration and also dementia incidence (521 indicated cases) having a 25-year follow-up. It is revealed that six hours or less sleep duration of those in the ages 50 and 60 years was making it at higher to have potential of dementia than those who had normal duration of sleep (7 hours). Persistent short duration of sleep of people at ages of 50, 60, and also 70 was linked with a 30% potential risk of dementia than persistent normal duration of sleep as well those result said that short duration of sleep in midlife people is linked them to have potential having risk of dementia with a slow period.

Conclusion

Lack of sleep is able to give such a negative effect on physical and also mental health, one of which is senility (dementia). From the results of research conducted by researchers on the tanker MT PT. X Jakarta shows that most individuals complain that they often have trouble sleeping, erratic rest hours, and difficulty starting sleep, this is all due to the responsibilities of the work they do. It can be seen in Table 1 about the state of quantity and quality of sleep in sailors working on PT tankers. X Jakarta.

In the cross-tabulation results using questionnaires and interviews, 30 (69.8%) respondents had poor quality of sleep and from the results of Table 2 on dementia, 23 respondents had mild to moderate dementia, of which 15 respondents who had poor sleep quality had mild dementia, while 5 of them had moderate dementia.

The results of data analysis with Pearson *statistical tests* on SPSS software devices contained in the Table show the value of Sig. (2-tailed) between variables of sleep quality with dementia is $0.000 < 0.05$, it can be meant that there is found a significant correlation of sleep quality variables and dementia, with the understanding that there is a relationship between the quantity and quality of sleep with dementia in PT.X tanker sailors.

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