The Relationship between Beverage Consumption Habits Caffeinated (Coffee) with Quality Sleep of Undergraduate Nursing Students

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Abstract

Caffeine is an addictive drug colorless and odorless which is found in many foods and beverages we consume. also found in several drugs as a cardiac stimulant and also as a mild diuretic to increase urine production. Food and beverages such as coffee, tea, chocolate and cola all contain caffeine which can cause sleep quality and sleep deprivation while the impact caused by the quality of sleep. This study aims to investigate the relationship between habitual consumption of caffeinated beverages (coffee) with the quality of sleep in undergraduate nursing students. This study uses analytic method with cross sectional approach. This research was conducted in June-July 2020. The samples were obtained as many as 100. This study using purposive sampling techniques and tools used to obtain data was questionnaire. This study uses-Square Test with a significance value $\alpha = 0.05$. The results of this study showed no association between habitual consumption of caffeinated beverages (coffee) with the sleep quality of students with P $= 0.000 < \alpha = 0.05$. It was concluded that there are between habitual consumption of caffeinated beverages (coffee) with the quality of undergraduate nursing students. It is recommended that students set up a habit to consume caffeinated beverages so as to minimize the impact of these habits one disturbance in sleep quality.

Keywords: Drink; Caffeine; Sleep quality; Students

Background

Coffee is a drink that is loved by many people, both men and women. No one in the world doesn't know coffee. Coffee is not something familiar, the drink is very easy and often found in everyday life. Coffee is a kind of beverage derived from the process of processing and extracting coffee plant beans. The word coffee itself comes from the Arabic word 'qahwah' which means strength, because at first coffee is used as a high-energy drink.

Caffeine or more popularity of caffeine, is a crystalline and bitter-taste xantina alkaloid compound that works as a psychoactive stimulant and mild diuretic drug. Caffeine was discovered by a German chemist, Friedrich Ferdinand Runge, in 1819. He created the term "caffeine" to refer to the chemical compounds in coffee. Caffeine is also called guanine when found in guarana, mateina when found on mate, and teina when found in tea. All of these terms both refer to the same chemical compounds.

Caffeine is a colorless and tasteless addictive drug found in many of the foods and drinks we consume. Also found in a number of drugs as a heart stimulant and also as a mild diuretic to increase urine production. Foods and drinks such as coffee, tea, chocolate, and cola all contain caffeine which can be a cause of sleep quality and lack of sleep as well as the impact caused by sleep quality.

As an addictive drug, caffeine stimulates the brain in much the same way as amphetamines, cocaine, and heroin. Although the overall effects of caffeine are milder than other drugs, it still manipulates the same brain channels that make caffeine addictive. If you are one of those people who feels like you can't function without coffee or other stimulants that contain caffeine.

Caffeine consumption has been associated with sleep disorders, due to its physiological effects. Sleep quality is a person's satisfaction with sleep, so that a person does not show feelings of tiredness, arousal and restlessness, lethargy and apathy, blackness around the eyes, swollen eyelids, red conjunctiva, sore eyes, fragmented attention, headaches and frequent yawning or drowsiness (Hidayat, 2006).

Caffeine is found naturally in foodstuffs such as coffee beans, tea leaves, kola, guarana, and mat**é**., In plants, it acts as a natural pesticide that paralyzes and shutsdown certain insects that feed on the plant. It is generally consumed by humans by extracting it from coffee beans and tea leaves.

Caffeine is a stimulant drug of the nervous system in humans and can repel drowsiness on a temporary day. Caffeine-containing beverages, such as coffee, tea, and soft drinks, are very popular. Caffeine is the most consumed psychoactive substance in the world. Unlike other psychoactive substances, caffeine is legal and not regulated by law in almost all jurisdictions of the world. In North America, 90% of adults consume caffeine daily.

Sleep is a relative state of unconsciousness that is not a state of calm without activity is a sequence of repetitive cycles. The level of consciousness fluctuates during various stages of sleep. Sleep physiology = Sleep is a siklus physiological process that alternates with longer periods of guarding.

Sleep patterns vary clearly in the general standard society 8 hours each night there is no specific formula. It is important that everyone follows a certain resting pattern to maintain physical health/freshness. Need hours of sleep per age: Infants (13-16 hours), Children (8-12 hours), Adults (6-9 hours), Advanced (5-8 hours).

Impact on Sleep Quality British researchers found how sleep patterns affected the mortality rates of more than 10,000 British civil servants over two decades. According to the results of another study published in 2007, people who sleep less than 5-7 hours a day increase their risk of death due to various factors. Even lack of sleep cans doubles the risk of death from cardiovascular disease.

According to a Royal Society for Public Health (RSPH) survey, the average UK adult sleeps less than an hour, and does not sleep at night. The poll involving 2,000 adults, published by the Royal Society for Public Health found the average bedtime was 6.8 hours, compared with 7.7 hours.

The report showed the number of sleep ages 18-64 should be seven to nine hours a day. As for the age of 1-2 years as much as 11-14 hours a day, and age 65 years and above as much as 7-8 hours a day. Good sleep quality is more important than the amount of sleep you get and it helps to keep you feeling healthy.

Based on research by the National Sleep Foundation in America (International) in 2006, more than 36% of young adults aged 18-29 years are reported to have difficulty getting up early compared

to 20% at the age of 30-64 years and 9% over the age of 64 years. In addition, almost a quarter of young adults (22%) often late for class or work due to difficulty waking up compared to 11% in workers aged 30-64 years and 5% over the age of 64 and 4% of young adults complaining of drowsiness when doing activities at least 2 days a week or more. In addition, in 2011, also conducted research involving 1,508 respondents with the results of 51% of respondents who have sleep disorders are respondents aged 19-29 years.

In addition, complaints of difficulty sleeping are more commonly reported than other sleep-related complaints. Estimates of its prevalence in adults vary from 15% to 40% and are increasing in the elderly. While in children aged 3 years as much as 14% have difficulty sleeping and 50-80% of children have learning disorders due to poor sleep quality (Laking & Puri, 2011).

According to potter and Perry (2006) inadequate sleep and poor sleep quality can cause impaired physiological and psychological balance in a person. Sleep disorders are common in children and adolescents, neurological developmental disorders and psychiatric development. Sleep quality can also be influenced by various things in the environment around sensory stimuli from the environment such as sound, light and movement can affect initiation and sleep quality. The quantity and quality of sleep that is lacking in adolescents can lead to excessive sleepiness during the day and decreased levels of attention during the day and decreased levels of attention during the day disturbances in the form of excessive sleep patterns can have negative effects on performance in school, cognitive function and mood and interfere with adolescent academics.

Research on sleep quality by Nashori (2004) titled "The relationship between sleep quality and student self-control" in 126 psychology students at the Islamic University of Indonesia showed the contribution of sleep quality to self-control was 30.8%. The high quality of this self is influenced by the high quality of student sleep (55.5%) and medium (43.7%). A person who sleeps adequately with adequate quality of sleep will become a person with a positive heart, alertness, and correct perception of various stimuli, so as not to get caught up in negative and destructive behavior.

According to WHO (World Health Organization) data in 1993, approximately 18% of the world's population has experienced sleep difficulties. This sleepless disorder is called Sleep Quality (Baso, A, 2014).

According to the National Sleep Foundation in Indonesia the prevalence of sleep quality sufferers reaches 70%, at least once a week in 30 million people have difficulty sleeping every night (Subandi, 2010).

Based on data about a quarter of the adult population has experienced sleep problems and 6% to 10% are estimated to have sleep quality disorders (National Sleep Foundation, 2012 in Mutiari 2013). The prevalence of insomnia in Indonesia is about 10%. This

means that approximately 28 million out of a total of 238 million Indonesians suffer from sleep quality (Anonymous, 2003. Factors that cause insomnia include: stress or anxiety, fatigue, depression, disease, side effects of treatment, poor diet, alcoholic beverages and caffeine.

Accurate data on sleep quality in south Sulawesi does not yet exist, as sleep quality data for the whole country is based only on estimates, about 10-11.7% of the population. (Dinkes Sul-Sel, 2014). Based on preliminary data obtained from the research site namely STIkes Mega Rezky Makassar population number of Undergraduate Nursing Program class of 2012 as many as 81 people consisting of 28 men and 53 women, the class of 2013 as many as 85 people consisting of 15 men and 70 women, the class of 2014 as many as 113 people consisting of 28 men and 85 women , the class of 2015 as many as 113 people consisting of 29 men and 84 women, so the overall number of population in the undergraduate nursing program as many as 392 people [1-4].

The students I interviewed from the 2012-2015 class consumed 20 copies from each generation.

i.   The class of 2012 that I interviewed 5 people who consumed coffee in one day sometimes 2 glasses to 3 glasses,

ii. Class of 2013 that I interviewed 5 people who consumed coffee in one day sometimes 2 glasses to 3 glasses sometimes cannot be spent,

iii. The class of 2014 that I interviewed 5 people who consumed coffee in one day sometimes 1 glass was not able to spend, and

iv. The class of 2015 that I interviewed 5 people who consumed coffee in one day sometimes 2 glasses per day.

Statement of the Problem

Based on the background description above, it can be drawn the formulation of the problem as follows: "Is there a relationship between the habit of consumption of caffeinated beverages (Coffee) and the quality of sleep of Nursing Students?

Method of Research

A type of observational research was with an analytical approach. The design used is the cross sectional study. Cross Sectional Study is a research design that studies the dynamics of correlations and the relationship between independent variables and dependent variables at the same time. This research is planned to be conducted in June 2020 at STIKes Mega Rezky Makassar.

The size of the sample depends on the number of respondents available at the time of the study and meets inclusion and exclusion requirements. To meet the requirements of the representative, the numbers of respondents were as many as 100 people with total sampling. The sample withdrawal technique used in this study is Purposive Sampling which is sampling based on certain criteria or certain considerations by researchers [5-9].

Research Instruments

Data collection tools are designed by researchers according to the concept framework that has been created. The instrument used is a questionnaire sheet. The drinking habit questionnaire uses a closed question form. The amount of 1 item question Instrument research on sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI) taken from Bussye et al. (1989, in Smyth 2003). This questionnaire consists of 18 questions divided into 7 components of sleep quality, sleep disorders, sleep latency, sleep duration, defeasance of sleep habits.

Data collection was done after obtaining permission from the Chairman of STIKes Mega Rezky Makassar, researchers held an approach with students to get approval from students as research respondents. The data was collected using a self-contained questionnaire in accordance with the ability of students. As the subjects of research were students of STIKes Mega Rezky Makassar who were consumed caffeine (coffee).

Data Processing

Data is processed through stages.

A.   Editing that is after the data is collected, the examination of data completeness, sustainability and uniformity of data,

B.   Coding is carried out to facilitate the processing of data that provides symbols of each respondent's answer, and

C.   Tabulation that is Grouping data in the form of table that is the relationship between independent variables and dependents.

Research Ethics

In this study, researchers emphasized the ethical problems that may be addressed;

A.   Informed consent is a form of consent between researchers and research respondents by giving a consent sheet. Informed consent was given before the research was conducted by giving a consent sheet to become a respondent. The purpose of informed consent is so that the subject understands the purpose and purpose of the research, knowing the impact. If the subject is willing, then they must sign the meeting sheet. If the respondent is not willing, then the researcher must respect the patient's rights (Hidayat, 2012),

B.   Anominity to maintain confidentiality, the researcher will not include the respondent's full name but will only list the respondent's information, and

C.   The researcher guarantees the confidentiality of identity and information obtained from the respondent. All files that list the subject when it is no longer in use will be destroyed.

Result

This research is a type of analytical research with a Cross Sectional approach that aims to find out the Relationship Between

Beverage Consumption Habits (Coffee) and Sleep Quality of Students of STIKes Mega Rezky Makassar Medical Study Program. The results of the research that has been done are as follows:

Characteristics of Respondents

Age: Source: Primary Data 2020. Based on the distribution of Table 1 showed that out of 100 students of the highest age group was 20 years old as many as 33 percent (33%) and the lowest age > 23 years as many as 8 people (8.0%).

Table 1: Characteristics of respondents by age. Nursing undergraduate study program students STIKes Mega Rezky Makassar.

S.No	Age	n	%
1	< 19	19	19,0
2	20	33	33,0
3	21	27	27,0
4	22	13	13,0
5	>23	8	8,0
Total		100	100

Religion: Primary Data Source, 2020. Based on the distribution Table 2 characteristics of the most religious respondents are Islam 94 people (94.0%), Christians 6 people (6.0%).

Table 2: Characteristics of respondents by religion. Nursing undergraduate study program students STIKes Mega Rezky Makassar.

S.No	Religion	n	%
1	Islam	94	94,0
2	Christianity	6	6,0
Total		100	100

Tribes: Source: Primary Data 2020. Based on the distribution of Table 3 showed that of the 100 highest tribal people were Bugisness tribe as many as 35 people (35.0%) and the lowest are Flores tribe of 7 people (7.0%).

Table 3: Characteristics of respondents by tribe. Nursing undergraduate study program students STIKes Mega Rezky Makassar.

S.No	Tribes	n	%
1	Bugisness	35	35,0
2	Makassarness	34	34,0
3 Maluku		24	24,0
4	Flores	7	7,0
Total		100	100

Force: Primary Data Source, 2020. Based on the distribution Table 4 characteristics of respondents of the class of 2015 as many as 35 people (35.0%), the class of 24 people (24.0%), the class of 2013 as many as 17 people (17.0), and the class of 24 people (24.0%).

Table 4: Characteristics of respondents based on student class of nursing undergraduate study program STIKes Mega Rezky Makassar.

S.No	Force	n	%
1	2015	35	35,0
2	2014	24	24,0
3	2013	17	17,0
4	2012	24	24,0
Total		100	100

Bedtime: Source: Primary Data 2020. Based on the distribution of Table 5 showed that out of 100 students of the group the highest sleep hours were 6-7 hours of sleep as much as 51 students (51.0%) and the lowest bedtime of 10-11 Hours as many as 5 people (5.0%).

Table 5: Characteristics of respondents by bedtime nursing undergraduate study program students STIKes Mega Rezky Makassar.

S.No	Bedtime	N	%
1	4-5 Hours	17	17,0
2	6-7 Hours	51	51,0
3	8-9 Hours	27	27,0
4	10-11 Hours	5	5,0
Total		100	100

Univariate Analysis

Consumption Habits of Caffeinated Beverages (Coffee): Source: Primary Data 2020

Based on the distribution of Table 6 showed that out of 100 people who consumed caffeinated beverages there were 64 people (64.0%) who consumed enough and 36 people (36.0%) who consume excess caffeinated beverages.

Table 6: Distribution of respondents based on caffeinated beverage consumption habits (coffee) S1 study program nursing STIKes Mega Rezky Makassar.

S.No	Caffeinated Consumption Ability	n	%
1	Enough 1-3 Glasses	64	64,0
2	Excess > 3 Glasses	36	36,0
Total		100	100

Sleep Quality: Source: Primary Data 2020. Based on the distribution of Table 7 showed that out of 100 people who have good sleep quality there are 57 people (57.0%) and 43 people (43.0%) which has poor sleep quality.

Table 7: Distribution of respondents based on sleep quality study program S1 nursing STIKes Mega Rezky Makassar.

S.No	Sleep Quality	n	%
1	Good	57	57,0
2	Bad	43	43,0
	Total	100	100

Bivariate Analysis

Source: Primary Data 2016. Based on the distribution of Table 8 showed a relationship between caffeinated beverage consumption habits and student sleep quality, after chi square statistical test obtained P value = 0.000, so there is a meaningful relationship between caffeinated beverage consumption habits and sleep quality.

Table 8: Relationship between caffeinated beverage consumption habits (coffee) with sleep quality students S1 nursing study program STIKes Mega Rezky Makassar.

Caffeinated Consumption Habits	Sleep Quality						P value
	Good		Bad		Total		
	n	%	n	%	n	%	
Enough 50		87,7	14	32,6	64	100	0,000
Excess	7	12,3	29	67,4	36	100	
Total	57	57,0	43	43,0	100	100	

Discussion

Habits of Consumption of Caffeinated Beverages (Coffee)

Enough, the habit of consuming caffeinated beverages (coffee) is natural and common in the general public, especially men: This habit is very easy for us to find among parents, teenagers, and children. But we need to know, that in consuming caffeinated beverages (coffee) should be regulated and restricted. People should consume caffeinated beverages (coffee) in a measure that is regulated adequately in a day.

Excess: Consuming caffeinated beverages is one of the lifestyles that are closely attached to most Indonesian society, this is even some people make a routine and obligations in the morning, even during the day and night. But there are important things that are then overlooked by the public about the effects of consuming coffee in irregular or excessive measure can cause negative effects for health, either directly or indirectly.

Sleep Quality

Good: The quality of sleep among young kaula is very difficult to achieve. This is caused by various factors, including one of them is due to the habit of consuming caffeinated beverages (coffee). But good quality sleep can still be achieved by young people if they are able to regulate the habit patterns of consuming caffeinated beverages, such as consuming enough coffee. Thus the quality of good sleep can still be achieved.

Bad: Poor sleep quality is caused by a variety of factors, including the effects of caffeinated beverages (coffee). The habit of consuming coffee is indeed one of the factors of poor sleep quality, either directly or indirectly. But in this study also found other factors that cause poor sleep quality, namely the majority of students who become respondents while the process of preparing the final task is thesis, so this is also what makes students stressed so as to cause poor sleep quality.

The Relationship between Habitual Consumption of Caffeinated Beverages with Sleep Quality

Based on the research that has been done, shows that caffeinated consumption habits greatly affect the quality of sleep of students, where students who have a habit of consuming caffeinated beverages as many as 64 people, there are 50 people (87.7%) have good sleep quality. While students who have a habit of consuming excess caffeinated beverages as many as 36 people, there are 7 people who have good quality sleep. Based on the results of the study using statistical tests Chi Square obtained the results of P value = 0.000, so there is a meaningful relationship between caffeinated beverage consumption habits and sleep quality. Researchers assume that when a person consumes caffeinated beverages (coffee) more than three glasses, it will greatly affect the quality of sleep. In the results of interviews conducted by some respondents said that consuming coffee is very influential at night when respondents are doing tasks, they say they desperately need coffee so as not to get sleepy while doing work at night.

Based on the results of the study found that students who consume caffeinated beverages (coffee) More than 3 glasses experience quality sleep at night when they change sleep during the day, Caffeine content in coffee is able to stimulate the nervous makeup of the human center is often used to fight the attacking drowsiness and increase stamina to work at night.

Caffeine is a stimulant of the central nervous system and metabolism is used well for treatment in reducing physical fatigue and can also increase the level of alertness so that sleepiness can be suppressed. Caffeine also stimulates the central nervous system by raising the level of alertness, so that the mind is clearer and focused and the body's co-ordination is better (Ware, 2011). Furthermore, Caffeine is a chemical compound found naturally in foods such as coffee beans, tea, coconut seeds, guarana colanitide, and mate.

Tea is another source of caffeine and contains half of the caffeine that coffee contains. Some types of tea that are black tea contain more caffeine than other types of tea. Tea contains a small amount of Theo bromine and is slightly higher theophylline than coffee. Caffeine is also an ingredient used for non-alcoholic beverages such as cola, which was originally made from kola beans. Soft drinks in particular consist of 10-50 milligrams of caffeine. Chocolate made from cocoa contains little caffeine-like. The weak stimulant effect of 36 of chocolate can be a combination of Theo bromine and theophylline as caffeine (Casal et al. 2012).

A Canadian researcher revealed that while drinking coffee at night is not a good habit, coffee drinking habits will cause the quality of sleep to be disrupted as the age of sleep disorders caused by caffeine will get worse, the statement has proven through research published by the Journal Sleep Medicine. Therefore, everyone who is young should start reducing the amount of coffee they consume, especially for those who have to work at night. Reducing coffee intake is the best way to improve sleep quality in people aged 19-23 years so that the quality of sleep for 8 hours / day is one of the steps to live a healthy life.

This habit became a controversy with many pros and cons discussed about sleep quality. According to the results of an American Academy of sleep medicine study announced in June at the LEEP Annual Meeting of the Associated Professional Sleep Societies, caffeine negatively affects school students' sleep patterns and academic achievement. The study was conducted to test the impact of caffeine especially among students who often consume caffeine (coffee) aims to increase alertness and reduce fatigue to study in students at night, According to Glade (2010) in Purdiani (2014) caffeine consumption has also been shown to have a negative impact on consumer sleep patterns as well as resulting in drowsiness.

Indeed, the quality of sleep among young kaula is very difficult to achieve. This is caused by various factors, including one of them is due to the habit of consuming caffeinated beverages (coffee). According to researchers if consuming more than 2 to three glasses of coffee will interfere with the sleep quality of students. But good quality sleep can still be achieved by young people if they are able to regulate the habit patterns of consuming caffeinated beverages, such as consuming enough coffee. Thus, the quality of good sleep can still be achieved [9-12].

Research Limitation

As for the limitations of this study, researchers do not approach with a more in-depth interview method so that the information obtained is still limited. A more appropriate research method is used in this research which is a combination of interview methods and questionnaires so that more information is obtained.

Summary

From the results of research that has been done. It can be concluded that:

A. Habits of consumption of caffeinated beverages students of the Nursing Students of Stikes Mega Rezky Makassar most found with a sufficient category of 1-3 cups / day,

B. The sleep quality of undergraduate nursing students of Stikes Mega Rezky Makassar most found is not good quality and,

C. There is a relationship between the habit of consumption of caffeinated beverages (coffee) and the quality of sleep of undergraduate nursing students of STIKes Mega Rezky Makassar with chi square statistic test obtained results P = 0.000.

Recommendation

Research Recommendations were.

A. For Institutions, it is expected that the results of this study provide inputs related to the relationship between the habit of consumption of caffeinated beverages (coffee) and the quality of students sleep,

B. For the Science of Nursing, it is expected that the results of this study can be an input for the development of science and can be used as a reading material document, scientific reference for nursing, especially related to the relationship between the habit of consumption of caffeinated beverages (coffee) with the quality of sleep Students, and

For further researchers in order to be able to conduct further research on the relationship between the habit of consumption of caffeinated beverages (coffee) and the quality of sleep of nursing students with other research methods and longer time and through continuous observation.

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