Section 2. Medical science

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SLEEP DEPRIVATION OF INDONESIAN ADOLESCENTS: EFFECTS ON MENSTRUAL CYCLE DISORDERS

Abstract. The need for sleep for adolescents is ± 8 hours/day. Menstrual cycle varies in women and 90% of them have a cycle of 25–35 days and 10–15% have a cycle length of 28 days. The purpose of the study was to determine the relationship between sleep deprivation and its effect on adolescents' menstrual cycle disorders. This type of research is descriptive associative analytic. The sample included all young women in Dusun 'hamlet' III, Bakaran Batu Village. The results showed that abnormal sleep needs interfered with the menstrual cycle of 44 respondents (88%). The need for sleep on menstrual cycle disorders is obtained by the value-added ratio (OR) = 6.417.95% IC = =1.705–24.149 P value 0.007 < 0.05, which means that there is a significant relationship between sleep needs and menstrual cycle disorders.

Keywords: sleep needs, menstrual cycle disorders, adolescents, sleep deprivation Aa.

Introduction

Women has different menstrual cycles and almost 90% of women have cycles of 25–35 days and only 10–15% have cycles of 28 days, but some of them have irregular cycles and this is an indication of fertility problems. Length of menstrual period is marked from the first day of the period [1]. Sleep is a process to restore a person's condition to its original state. The delayed recovery process causes the body's organs to not work optimally; as a result, people who lack sleep will get tired quickly and experience a decrease in concentration [2]. The normal sleep process begins with the drowsy stage, which is a state when there is a connection between awareness and the surrounding environment [3].

Literature Review

There is a significant relationship and statistically low correlation of variables between sleep quality and menstrual cycle [4]. Veronika's research (2020) showed that out of 97 female students who met the inclusion criteria, 51(52.6%) of them had poor sleep quality, while 46(47.4%) had good sleep quality [5]. Physiologically, menstruation occurs when follicle stimulating hormone releasing hormone (LH-RH) stimulates the interior pituitary to secrete follicle stimulation hormone and luteinizing hormone which causes the production of estrogen and progesterone which will then provide feedback containing levels of gonadotropic hormones to the hypothalamus [6].

The average menstrual cycle lasts about 21– -35 days. Although this is generally accepted, but not all women have the same menstrual cycle. Sometimes menstrual cycles occur every 21 to 30 days. Generally, menstruation lasts for 5 days. However, sometimes menstruation can also occur around 2 to 7 days. The cycle varies from 18 to 40 days, and the average being 28 days [6]. At the end of menstruation, almost the entire wall sheds, mixed with blood and comes out and the menstrual cycle is divided into 4 phases, namely menstruation, proliferation, secretion or luteal and ischemic premenstrual [7].

Menstrual cycle disorders are: oligomenorrhea and amenorrhea (which includes primary amenorrhea, secondary amenorrhea, and polymenorrhea). Cycle abnormalities are characterized by the length of the menstrual cycle of less than 21 days. Bleeding is more or less the same as your normal period. Polymenorrhea can be caused by hormonal disorders that result in ovulation disorders, or a shortened luteal period, ovarian congestion due to inflammation, and endometriosis [1]. Menstrual cycle abnormalities are caused by the length of the follicular and luteal stages due to psychological influences and tuberculosis disease in oligomenora, by hormonal system disorders, other diseases, emotional instability, lack of nutrients that have more nutritional value in amenorrhoea, by hormonal disorders with age of the corpus luteum. shortened or short proliferative stage or short secretory stage or both in polymenorrhea. Menstrual cycle abnormalities can be treated with several things [8].

Sleep is part of the body's biological rhythm to restore stamina [9] or an unconscious condition in which individuals can be awakened by appropriate stimuli or sensors. Sleep has characteristics, namely minimal activity, varying awareness, changes in physiological processes, and decreased response to external stimuli. Sleep can be considered as a protection for the body to avoid adverse health effects due to lack of sleep [3]. There are 4 main variables that affect sleep, namely circadian rhythm, melatonin, activity level, and previous wakefulness [9]. Factors that affect the quality and quantity of sleep, including disease, environment, fatigue, lifestyle, emotional stress, stimulants and alcohol, diet, smoking, medication and motivation. The problems of sleep needs in adolescents are insomnia, hypersomnia, parasomnia, enuresis, narcolepsy, and apnea.

Materials and Methods

This research was conducted from May to September 2021. The design of this study was descriptive analytic with a cross sectional approach. The population and samples included 65 young women aged 10–19 in Dusun III, Bakaran Batu Village, Percut Sei Tuan Sub-district, Deli Serdang Regency; The sample was carried out using a purposive sampling technique [10]. Data analysis was univariate by calculating the frequency in the form of a percentage of the variables studied and bivariate with the formula $X2 = \Sigma$ () [11].

Result and Discussion

Based on univariate analysis [10], regarding menstrual cycle disorders, as many as 52 respondents (80.0%) experienced disturbances but as many as 13 respondents (20.0%) did not experience menstrual cycle disorders. Regarding sleep needs, 50 respondents (76.9%) had abnormal sleep needs and 15 respondents (23.1%) had normal sleep needs. From bivariate analysis [10], respondents whose menstrual cycle is less than 21 days or more than 35 days experience menstrual cycle disorders caused by stress, genetics, hormones, nutritional status, and sleep needs are met but disturbed sleep patterns caused by by the use of an android cellphone that they misused [5; 12]. As many as 50 respondents (76.9%) experienced abnormal sleep needs and 15 respondents (23.1%) received normal sleep needs. Bad sleep habits. due to excessive mobile phone playing and not attending school. Without them knowing the consequences of bad sleep result in disruption of the menstrual cycle [9; 5].

Of the 50 respondents, 44 respondents (88%) experienced menstrual cycle disorders and 6 respondents (12%) did not experience menstrual cycle disorders. Of the 15 respondents, 8 (53.3%) of them experienced menstrual cycle disorders and 7 respondents (46.7%) did not experience menstrual cycle disorders and had normal sleep needs. The results of the analysis of the relationship between sleep needs and menstrual cycle disorders show that the value of the statistical test results is the Odd Ratio (OR) = =6.417. 95% CI = 1.705–24.24.149 and P value 0.007 < 0.05, which means that there is a significant relationship between sleep needs and menstrual cycle disorders in adolescent girls (compare researches carried out by Deaneya et al. and Luthfi [4; 13].

Research by Deaneva et al. shows the value of X2 = 4.912 with a significant level of a = 0.05 so that p = 0.027 or smaller than a; while the result of the contingency coefficient test is 0.331. Thus, there is a significant relationship and statistically low correlation between variables between sleep quality and menstrual cycle in young doctors at RSUD Dr. Moewardi Surakarta [4]. Luthfi's research shows that 52.1% of female students experience poor sleep quality and 29.9% of them experience abnormal menstrual cycles [14]. Of the 117 research subjects, the p-value is 0.002 with an Odd Ratio value of 3.879. Analysis using Chisquare shows that sleep quality has a significant relationship with the menstrual cycle.

It is assumed that the research of Deaneva et al. and Luthfi [4; 13] is in accordance with the results of this study where the statistical test results obtained an Odd Ratio (OR) value of 6.417 (95%) and the CI value was 1.705-24.24,149 and P value 0.007 < 0.05, which means that there is a significant relationship between sleep needs and menstrual cycle disorders in adolescent girls. The results of this study indicate that there is an abnormal need for sleep and 6 (12%) respondents who do not experience menstrual cycle disorders; This is due to the fulfillment of nutritional factors (carbohydrate, protein, fat, mineral and water needs), and by normal sleep needs. Respondents who experienced menstrual cycle disorders were 8 (53.3%); This disorder is caused by stress factors, genetics, hormones, and poor nutritional status.

Conclusion

The study concluded that based on the sleep needs of 65 respondents, as many as 50 (76.9%) respondents experienced abnormal sleep needs. Based on the relationship between sleep needs and menstrual cycle disorders, 50 respondents with abnormal sleep needs experienced menstrual cycle disorders as many as 44 respondents (88%). Of the 15 respondents with normal sleep needs, 8 respondents (53.3%). From the statistical test results, the Odd Ratio (*OR*) value is 6.417 (95%) and the *CI* is 1.705–24,149 and *P* value is 0.007 < 0.05, which means that there is a significant relationship between sleep needs and menstrual cycle disorders in adolescents.

References:

- 1. Saryono Sejati Waluyo. Sindrom premenstruasi mengungkap tabir sensitifitas perasaan menjelang menstruasi.– Yogjakarta: Nuha Medika. 2018.
- Dya Nurul Maulid, Adiningsih Sri. "Hubungan Antara Status Gizi Dengan Siklus Menstruasi Pada Siswi MAN1 Lamongan". 2019. URL: https://e-journal.unair.ac.id/AMNT/article/download/15065/9147. Di Akses, 18 Januari, 2021.
- 3. Lanywati Endang. Insomnia Gangguan Sulit Tidur.Yogjakarta: Kanisius. 2001.
- 4. Deaneva Almira Muthia. Hubungan Antara Pola Tidur Terhadap Gangguan Siklus Menstruasi Pada Dokter Muda Di RSUD DR. MOEWARDI – Surakarta. 2014. URL: https://jurnal.fsk.uns.ac.id/index. php/Nexus-Kedokteran-Komunitas/article/download/623/505/ Di Akses, 15 Januari, 2021.
- Veronika Lidya. "Hubungan Kualitas Tidur Dengan Keteraturan Siklus Menstruasi Mahasiswi Fakultas Kedokteran Universitas Sumatera Utara. 2020. URL: http://repositori.usu.ac.id/bitstream/handle/123456789/30775/170100081.pdf?sequence=1&isAllowed=y Diakses tanggal 20 Agustus, 2021.
- 6. Waryana. Gizi reproduksi. Yogjakarta: Pustaka Rihama. 2010.

- 7. Proverawati Atika, Misaroh Siti. Menarche Menstruasi Pertama Penuh Makna. Yogjakarta: Nuha Medika. 2017.
- 8. Marmi. Gizi Dalam Kesehatan Reproduksi. Yogjakarta: Pustaka Pelajar. 2019.
- 9. Siregar Mukhlidah Hanum. Mengenal sebab-sebab, akibat-akibat, dan cara terapi imsomnia.– Jogkarta: Flash Books. 2019.
- 10. Notoatmojdjo Soekidjo. Metodologi Penelitian Kesehatan.– Jakarta: Rineka Cipta. 2010.
- 11. Sugiono. Metode Penelitian Kuantitatif dan Kualitatif dan R&D.- Bandung: Alfabeta. 2018.
- 12. Hidayat Aziz Alimul. Metode Penelitian Kebidanan & Teknin Analisis Data.– Jakarta: Salemba Medika. 2013.
- 13. Luthfi Muhammad Zaki. "Hubungan kualitas tidur dan siklus menstruasi pada mahasiswi tingkat akhir fakultas Kedokteran Universitas Sriwijaya" 2020. URL: http://repositori.usu.ac.id/bitstream/handle/123456789/30775/170100081.pdf?sequence=1&isAllowed=y/ Diakses tanggal 29 Juli 2021