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Overview of Nutritional Status and Menstrual Cycle Disorders in Adolescent Girls in Tumpaan Village

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ABSTRACT

This study aims to determine the nutritional status and menstrual cycle disorders in adolescent girls in Tumpaan Village. This study used a quantitative approach with a descriptive cross-sectional design. The study sample consisted of 76 respondents selected using a purposive sampling technique. The data collected included respondent characteristics, nutritional status, and menstrual cycle patterns, then analyzed univariately to obtain the frequency distribution of each variable studied. The results showed that most adolescent girls had normal nutritional status (44 respondents (57.89%), followed by overweight (16 respondents (21.05%), obesity (10 respondents (13.16%), and malnutrition (6 respondents (7.89%). In addition, it was found that 41 respondents (53.95%) experienced menstrual cycle disorders, while 35 respondents (46.05%) had normal menstrual cycles. In general, the results of this study provide an overview that the nutritional condition of adolescent girls in Tumpaan Village tends to be in the good category, although there are still cases of malnutrition, overweight, and obesity. The presence of adolescents experiencing menstrual cycle disorders also indicates the need for attention to diet, physical activity, and reproductive health education to support the physical and hormonal well-being of adolescent girls.

INTRODUCTION

Adolescence according to the National Institutes of Medicine (NIH) is an important period in the life cycle because at this stage there is an acceleration of physical, emotional, and mature growth of reproductive functions characterized by puberty (NIH, 2023). The nutritional needs in this phase are higher than other ages, considering the increase in the need for energy and nutrients to support the growth process and the rapid development of organs and tissues of the body. In addition, the physiological changes that occur also affect the pattern of needs, absorption, and utilization of nutrients in the adolescent body. An imbalance in nutritional intake in this period can result in various health problems, this is important to pay attention to because health is one of the staples in life to be able to become a human being who thinks healthy and lives with enthusiasm both physically and mentally, physically and spiritually (Suyoko et al., 2025).

According to the World Health Organization (WHO), the age range for adolescents is 12-19 years, while according to the Indonesian Ministry of Health (Kemenkes), the age range for adolescents is 10-19 years old and unmarried (Baddulu, 2023). Puberty for adolescent girls will be marked by the onset of menstruation or Menarche. Menstruation is a process of decay on the endometrial wall in the form of a collection of tissues and blood in the uterus that comes out through the vagina due to the absence of egg fertilization by sperm (Aryana & Yapri, 2025). This process is part of the natural reproductive cycle experienced by every woman who has entered puberty.

Based on data from WHO (2023), the world's adolescent population is around 1.3 billion, or 16% of the world's population. The results of the 2023 Indonesian Health Survey (SKI) show that the prevalence of adolescent girls in Indonesia who have experienced menstruation reaches 71.6%, while in North Sulawesi Province the figure is slightly lower, at 69.9% (SKI, 2023). This data shows that the majority of adolescent girls in Indonesia, including in North Sulawesi, have entered the puberty phase with the main sign in the form of menstruation. SKI (2023) also noted that the average age of menstruation for the first time in adolescent girls in Indonesia is 12.91 years. This age is included in the category of normal puberty, but it is undeniable

that the experience of the first menstrual period and the pattern of each adolescent's menstrual cycle can vary, depending on body conditions, nutritional status, and environmental factors. According to Meriati et al., (2025), the menstrual cycle is a period of time calculated from the first day of menstruation to the first day of the next menstruation. This cycle generally takes place regularly, but in some conditions it can be disrupted.

Indonesia currently has several health problems in adolescents, one of which is menstrual health problems (Suyoko et al., 2025). Menstrual cycle disruption is a condition in which a woman's menstrual pattern experiences irregularities from her normal cycle, both in terms of the time gap between menstruation, the amount of blood that comes out, and the duration of menstruation itself (Martini et al., 2021). Disorders in the menstrual cycle can be in the form of polymenorrhea, which is a menstrual cycle that is shorter than normal or less than 20 days, oligomenorrhea, which is a cycle that is longer than 35 days, and amenorrhea, which is a condition where menstruation does not occur for more than 3 months (Sitoayu, Pertiwi & Mulyani, 2021).

Menstrual cycle disruptions experienced by adolescent girls are actually a natural thing to happen, especially at puberty when the body is still adapting to various hormonal changes. However, if the menstrual pattern becomes too fast, too long, or even stops in a certain time, this needs more attention because it can be a sign of an imbalance in the body (Anggoro 2022). This condition can certainly have an impact not only on physical health, but also on the comfort and daily life of adolescents, ranging from disruptions to learning activities, decreased concentration, to emotional disturbances. One of the important factors that is directly or indirectly related to menstrual patterns is the nutritional status of adolescent girls.

Nutritional status is one of the important aspects that need to be considered in maintaining health, especially for young women who are in the physical and hormonal development phase. Good nutritional status not only affects height and weight growth, but is also an important provision for adolescent girls in preparing themselves for the adult phase, including their role as future mothers. Optimal nutritional status in adolescence is important to support the health of adolescent girls, especially in their preparation as healthy mothers-to-be in the future (Nabila, et al. 2024).

Nutritional status itself can be categorized into several groups, namely good or normal nutritional status, over, undernourished status, and malnutrition. This category is determined based on the balance between the food consumed and the utilization and use of these nutrients in the body. If food intake is not in accordance with the body's needs, whether it is excessive or deficient, it will have an impact on physical conditions and various body functions, one of which is the menstrual cycle. The menstrual cycle can be influenced by nutritional status, where many cases of underweight and overweight among adolescent women have been proven to cause menstrual cycle irregularities. Therefore, maintaining nutritional status in normal conditions is very important so that biological processes, including the menstrual cycle, can run regularly. Mamahit (2023) stated that improving the nutritional status of the community is one of the bases for the formation of quality human resources.

Tumpaan Village is one of the villages in the Tumpaan District, South Minahasa Regency, North Sulawesi. Most of the residents in this village work as farmers, traders, and other informal workers, with a lifestyle of the community that is still thick with traditional customs, including in terms of diet and daily lifestyle.

Based on the results of a preliminary survey conducted in Tumpaan Village on 10 adolescent girls, it was found that there were several problems related to nutritional status. From the results of interviews and measurements of weight and height, it was found that as many as 4 adolescents were malnourished or had a sub-normal weight, while 3 others were overweight or over-nutritional. Conditions in the field show that the problem of unbalanced nutritional status, both in the form of deficiency and overweight, has the potential to disrupt the hormonal balance in the body of adolescent girls. This hormonal imbalance is often one of the causes of disturbances in the menstrual cycle, such as menstruation coming too early, too slowly, or even irregularly in a few months.

In addition, adolescent girls in Tumpaan village also showed problems in the menstrual cycle. As many as 6 out of 10 adolescent girls surveyed admitted to experiencing irregular menstrual cycles, either in the form of menstruation that came earlier than 21 days or later than 35 days. This condition shows that there are still adolescents in Tumpaan Village who do not have optimal nutritional status and menstrual cycles, both due to unbalanced food intake and irregular diets. These initial findings are in line with the research of Sebayang and Sidabutar (2021) which states that there is a relationship between nutritional status and the menstrual cycle

RESEARCH METHODOLOGY

The research design used in this study is quantitative descriptive with a cross-sectional approach, which is a method that is carried out by observing populations or phenomena at a certain time. Through this approach, data is collected simultaneously from respondents to see an overview of the conditions that are happening at that time. This design is often chosen because it is considered more practical and efficient, especially for descriptive research that wants to determine the prevalence or distribution of a condition in society.

This research was conducted in Tumpaan Village, South Minahasa District, North Sulawesi Province. This research will be carried out in April 2025 until completion.

The determination of respondents in this study uses the purposive sampling technique, which is a method of determining samples with considerations or criteria that have been set by the researcher. The number of samples in this study amounted to 76 people. This technique was chosen so that all populations have characteristics that are in accordance with the research objectives so that the data obtained is really relevant to the research focus on the picture of nutritional status and menstrual cycle disorders.

In this study, data collection was carried out using a questionnaire designed to measure several variables, namely nutritional status and menstrual cycle disorders in adolescent girls in Tumpaan Village.

Data on nutritional status were collected by calculating BMI/U, which is the ratio of body weight measured by a scale to height measured by Microtoise. The criteria for measuring nutritional status were Malnutrition (thinness) -3 elementary to ≤ -2 elementary school, good nutrition (normal) -2 elementary school to +1 elementary school, overweight (overweight) +1 elementary school to +2 elementary school, 4) Obesity (obese) > +2 elementary school. The questionnaire also included questions using a gutman scale to measure the menstrual cycle of adolescent girls in Tumpaan village. The criterion for measuring the menstrual cycle is that if the score is 6-10, then the menstrual cycle is said to be normal, but if the score is 0-5, then there is a disturbance in the menstrual cycle.

In this study, univariate analysis was used to determine the description of respondent characteristics, such as age, as well as an overview of nutritional status and menstrual cycle disorders in adolescent girls in Tumpaan Village. The results of this analysis will be presented in the form of frequency and percentage distribution tables.

RESULTS

Table 1. Nutritional Status of Adolescent Girls in Tumpaan Village

Nutritional Status	N	%
Malnutrition	6	**7.89%**
Normal Nutrition	44	**57.89%**
More Nutrition	16	**21.05%**
Obesity	10	**13.16%**
Total	76	**100.00%**

Based on the data in the table above, it is known that the majority of adolescent girls in Tumpaan Village have a normal nutritional status, namely 44 people (57.89%). Furthermore, as many as 16 respondents (21.05%) are in the overnutrition category, and 10 people (13.16%) are classified as obese. Meanwhile, there are 6 respondents who experience undernutrition (7.89%). These results show that most of the young women in the region are in normal nutritional status.

To find out the picture of menstrual cycle disorders in adolescent girls in Tumpaan Village, measurements and classifications were carried out based on normal categories and disorders. The results of the distribution of menstrual cycle disorders of adolescent girls in Tumpaan Village are shown in the following table.

Table 2. Menstrual Cycle Disorders of Adolescent Girls in Tumpaan Village

Conditions	N	%
Normal	35	**46.05%**
There is a Disruption	41	**53.95%**
Total	**76**	**100.00%**

Based on the table above, it is known that out of the 76 respondents, most of the adolescent girls in Tumpaan Village experienced menstrual cycle disorders, which were 41 people (53.95%), while the normal menstrual cycle was 35 people (46.05%). The percentage of this disorder is quite significant and shows that more than half of the total adolescent girls studied experienced disturbances in the menstrual cycle. This can be caused by various factors such as stress, hormonal imbalances, nutritional intake, or other lifestyle factors.

DISCUSSION

This research was conducted in Tumpaan Village, which is one of the areas in South Minahasa Regency. This study generally aims to provide an overview of the nutritional status and menstrual cycle disorders in adolescent girls in the area. The method used in this study is a quantitative method with an analytical descriptive approach. The determination of respondents in this study uses purposive sampling techniques with the help of the Slovin formula with a significance level of 5% (0.05). From the calculation, a sample of 76 adolescent girls in Tumpaan village was obtained. Data were collected through questionnaires and anthropometric measurements, which were then analyzed using appropriate statistical tests to determine the picture of the aspects studied.

Nutritional Status of Adolescent Girls in Tumpaan Village

Based on the results of the study, the majority of adolescent girls in Tumpaan Village have a normal nutritional status, namely 44 people (57.89%). This condition shows that more than half of the respondents have met their nutritional needs in a balanced manner so that they can support their growth, development, and reproductive health optimally. However, there are still variations in nutritional status among adolescent girls, where as many as 16 people (21.05%) are in the overnutrition category, 10 people (13.16%) are classified as obese, and 6 people (7.89%) are undernourished. These findings illustrate that there is still an imbalance in consumption and lifestyle patterns in some adolescents, which can have an impact on long-term health conditions, including the risk of hormonal and reproductive disorders.

This variation in nutritional status is also in line with research by Purnasari and Illiyya (2023) which shows that adolescent girls generally have good nutritional status but still find cases of undernutrition and overnutrition. The results of this study emphasize the importance of continuous nutrition education, improving healthy eating habits, adequate physical activity, and regular monitoring of nutritional status so that adolescent girls can maintain optimal nutritional conditions and support overall health quality.

Menstrual Disorders of Adolescent Girls in Tumpaan Village

Based on the results of the study, it is known that most adolescent girls in Tumpaan Village experience menstrual cycle disorders, namely 41 people (53.95%), while 35 people (46.05%) have normal menstrual cycles. This condition shows that more than half of the respondents face irregularities in their menstrual cycles, indicating that there are reproductive health problems that need more serious attention. These findings are in line with the research of Putri et al. (2024) which reported that only 37.5% of adolescent girls have normal menstrual cycles, while the majority of adolescent girls experience menstrual cycle disorders.

This fairly high percentage of menstrual disorders indicates that cyclical irregularities in adolescent girls are still an issue that needs attention. Factors such as stress, irregular diet, excessive physical activity, lack of rest, and hormonal changes in adolescence can contribute to the high rate of menstrual disorders. This condition also shows that some adolescents may not have implemented an optimal healthy lifestyle, thus having an impact on their reproductive health. Menstrual disorders can be an indicator of physiological and psychological problems that require further monitoring and education from families and health workers.

Based on the researcher's point of view, the high percentage of menstrual disorders in adolescent girls in Tumpaan Village needs to be a serious concern because adolescence is an important phase in the maturation of the reproductive system. Cycle irregularities in this phase, if allowed to drag on, can affect hormonal balance and have the potential to cause reproductive health disorders in adulthood. Therefore, more intensive efforts are needed through reproductive health education, increased understanding of nutritious diets, stress management, and the formation of sustainable healthy living habits. Early intervention is expected to help adolescent girls maintain menstrual cycle regularity and improve the quality of reproductive health in the future.

CONCLUSION

The majority of adolescent girls in Tumpaan Village were in the category of late adolescents (17–19 years) as many as 41 people (53.95%), followed by middle adolescents (14–16 years old) as many as 24 people (31.58%), and early adolescents (10-13 years) as many as 11 people (14.47%). Most of the respondents had a high to upper level of education, namely college as many as 25 people (32.89%) and high school as many as 25 people (32.89%). The characteristics of adolescent girls based on the age of menarche show that the majority of adolescent girls experience their first menstruation at the age of 10–13 years (61.84%), which is classified as the normal age range of puberty.

Most of the young women in Tumpaan Village have a normal nutritional status of 44 people (57.89%). In addition, there are 16 people (21.05%) who are included in the overnutrition category, 10 people (13.16%) are classified as obese, and 6 people (7.89%) are undernourished.

The majority of adolescent girls in Tumpaan Village experienced menstrual cycle disorders, namely 41 people (53.95%), while 35 people (46.05%) had normal menstrual cycles.

SUGGESTIONS

It is expected to provide more intensive education related to reproductive health, especially regarding the importance of maintaining nutritional status and its impact on the menstrual cycle. This education can be carried out through counseling activities, seminars, and the integration of reproductive health materials into the relevant curriculum, so that adolescent girls have a better understanding from an early age.

The community, especially parents, is expected to pay more attention to the diet and nutritional intake of their adolescents. Family support is very important in forming a healthy lifestyle, including the provision of balanced nutritious food, supervision of physical activity, and maintaining the psychological condition of adolescents so that they are stable so that the menstrual cycle can run normally.

It is necessary to increase the role in providing promotive and preventive services, such as reproductive health counseling and routine check-ups related to the nutritional status and health of adolescent girls. Health workers are also expected to be able to carry out early detection of nutritional problems and menstrual cycle disorders, so that treatment can be carried out as early as possible.

This study is expected to serve as a basis and reference for further research on the nutritional status and reproductive health of adolescents. Subsequent studies are recommended to use a larger sample size, add other variables such as psychological factors, physical activity, or socio-cultural aspects, and use a more in-depth research design so that the results can provide a more comprehensive picture.

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