MONITORING EVALUATION AND MANAGEMENT OF NUTRITIOUS ACTION ACTIVITIES ON THE INCIDENCE OF ANEMIA IN JUNIOR HIGH SCHOOL ADOLESCENT GIRLS

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ABSTRACT

The aim of the Systematic Literature Review was to identify the evaluation and management of nutritious action activities on the incidence of anemia. Design of the study was a literature review. This review was conducted according to the Cochrane guidelines for systematic review research and complies with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis. We found five articles from electronic databases such as Science Direct, SpringerLinkPubMed, ProQuest and Google scholar from 2019 to 2024. Two researchers independently conducted study sections, extracted data, and assessed the data evaluation. Five studies were included. We examined the studies that provided deep analysis and explanation of monitoring and evaluation and management of nutritious action activities. All of the studies reported that anemia can be prevented by education and monitoring consuming of Fe supplements as well as improving knowledge regarding anemia.

Keywords: Hemoglobine, anemia, adolesecent girls, nutritional status.

INTRODUCTION

Data from the World Health Organization (WHO) shows that the prevalence of anemia in adolescents in developing countries is still high with the cause of iron deficiency anemia. According to WHO, the prevalence of adolescents who need iron supplements is 40% of the total iron requirement. The results of the Indonesian health survey, adolescent girls suffer from anemia as much as 32% with a nutritional status of thin as much as 6.8% short 18.5% fat 11.2% (Kemenkes, 2024). Anemia in adolescent girls at the Serang District Health Office were 24.11% from screening adolescent girls in grade 7 out of 70%, screening achievement of adolescent girls taking blood supplement tablets was 46.47% from the target of 70% (Tim Penyusun SKI 2023, 2023).

Nutritious action is one of the government programs that aims to improve the nutritional status of the community, especially among adolescents as an intervention effort to reduce the risk of anemia incidence which will have an impact on the risk of bleeding and LBW cases and the impact of stunting. Therefore, to maintain service quality, monitoring and evaluation of the implementation of nutritious action is needed so that the impact can be felt optimally by the community. Monitoring and Evaluation is monitoring that is carried out in accordance with existing plans so that resources are used efficiently and effectively and have the ability to identify problems or obstacles that will arise from collective and corrective actions for program sustainability. Evaluation is intended to minimize the impact of indicators that are not achieved resulting in increased undernutrition status in adolescent girls, changes in behavior, unhealthy eating patterns and there is a socio-economic impact on families so that from this evaluation decision making for program sustainability can take place properly (Anggreiniboti, 2022).

Based on the explanation above, the researchers conducted a preliminary research study based on data from screening results in grade 7 at Junior High School 1 Ciruas with the number of children screened 300 people in 2023 found 76 cases of anemia (25.3%). From the above problems, it is necessary to monitor the evaluation of the implementation of nutritious action at Junior High School 1 Ciruas with a mixed method study, to answer the description, effectiveness of the nutritious action program, achievements and management of the nutritious action program as well as the impact and role of stakeholders in the nutritious action program.

RESEARCH METHODOLOGY

Design

A literature review

Eligibility criteria

The review question was specified by using the PICO framework:

P (population) : seventh grade junior high school student

I (intervention) : Nutrition education, administration of blood supplement tablets, breakfast together

C (comparison) : The control group received no intervention or only basic information from the school

O (outcome) : level of knowledge, nutritional status and Hb levels.

S (study type) : Quantitative research design, such as an experimental or quasi-experimental study, with a pre-test-post-test

The following inclusion criteria were met by quasi-experimental studies and randomized controlled trials (RCTs): intervention studies combining breakfast and nutritional education. We did not choose the studies based on their results. Research articles that solely discussed pharmaceutical treatment were eliminated, as were reviews, conference papers, chapters, editorials, dissertations, and other forms of publication.

Search strategy

Articles from January 2019 to April 2024 that were located in electronic databases like PubMed, Science Direct, ProQuest, and Google Scholar served as the data sources. We also carried out a manual search. The exclusion of gray literature was attributed to insufficient data. The following databases: Science Direct, PubMed, and ProQuest were searched by two independent researchers. The search strategy was based on the PICO guidelines (Schardt et al., 2007) using Medical Subject Heading (MeSH) terms related to monitoring evaluation management of nutrition actions ”AND” anemia in adolescent girls “AND” knowledge “AND” nutritional status “AND” Hb levels.

Study selection inc. PRISMA flow diagram

Two researchers reviewed the titles, abstracts, and full texts of the articles to determine their eligibility for the first stage. The complete content was obtained from abstracts containing any of the aforementioned keywords. The second phase was looking for more relevant articles in the references of the chosen articles. The authors used the pertinent inclusion and exclusion criteria in this stage. Examining the articles' complete texts for eligibility was the next step. We used the Preferred Reporting Items for Systematic Reviews and Meta-analyses Statement (PRISMA) (Moher et al., 2009) as presented in the Figure 1.

Evaluation of quality articles

For quality assessment, the articles were divided into two groups, namely, the quasi-experimental group, and randomized controlled trial (RCT). Research using quasi-experiment was analyzed using the JBI critical appraisal checklist for quasi-experimental studies (Tufanaru et al., 2017).

Data extraction
Characteristics of the included primary studies are presented in Table 1. The element of the studies was author, the year of publication, country, interventions, methods, outcome measure, subject, tools, and results.

RESULT

Characteristic of studies
Tables 1 shows that there were three studies using experimental study (Megasari et al., 2024; Saputri, 2023; Wahyudi et al., 2023). One study used a literature review (Anggreiniboti, 2022) and another study used a mixed-method study (Wilujeng et al., 2022). All the studies conducted in various cities of Indonesia. All studies reported that respondents were adolescent girls both in junior high school and senior high school. Regarding the sampling methods, all articles explained about a purposive sampling.

Results of the studies
All of studies revealed that there were significantly effect of nutritional education on decreasing Hb levels and knowledge of adolescent girls related to anemia. Education was given in one month (Wahyudi et al., 2023), less than one month (Anggreiniboti, 2022; Megasari et al., 2024; Saputri, 2023). Education also has effected on preventing anemia in adolescent girls (Megasari et al., 2024). Some studies involving family while conducted education to adolescent girls (Anggreiniboti, 2022; Wilujeng et al., 2022). Regarding instruments that used in the previous studies. A questionnaire related to knowledge of anemia (Wahyudi et al., 2023), a questionnaire of behaviour to prevent anemia (Wilujeng et al., 2022), and Hb meter to investigate the level of Hb in adolescent girls (Anggreiniboti, 2022; Megasari et al., 2024; Saputri, 2023).

DISCUSSION

Anemia, particularly iron-deficiency anemia, is a significant public health issue affecting adolescent girls worldwide. Education plays a crucial role in understanding the causes, prevention, and management of anemia. This discussion explores how educational initiatives can improve knowledge about anemia, contribute to better dietary practices, and ultimately influence hemoglobin (Hb) levels in this vulnerable demographic (Sari et al., 2022). Anemia is characterized by low levels of hemoglobin, which can lead to fatigue, weakness, and impaired cognitive function. In adolescent girls, it can affect academic performance and overall health. The causes of anemia are multifaceted, including poor dietary intake of iron and other essential nutrients, menstrual blood loss, and underlying health conditions (Ahmad et al., 2023).

The role of education is to increase the awareness and knowledge in adolescent girls by Understanding the symptoms of anemia can lead to earlier diagnosis and treatment as well as increasing Knowledge about the impact of menstruation on iron levels can encourage proactive dietary changes. Education can foster healthy lifestyle choices, such as regular check-ups, appropriate use of supplements, and awareness of signs of anemia and Encouraging participation in physical activities can improve overall health and well-being, which can positively influence hemoglobin levels. Educational initiatives must be culturally relevant to resonate with adolescents. Tailoring messages to align with cultural practices can enhance engagement and retention of information. Education also should involves families in educational programs can ensure that knowledge is reinforced at home. Studies show that

education can lead to improved dietary habits, resulting in higher iron intake and improved Hb levels (Anggreiniboti, 2022; Saputri, 2023; Sari et al., 2022).

While the primary goal in managing anemia in adolescent girls is to increase hemoglobin (Hb) levels, it's important to recognize situations where a reduction in Hb levels may be necessary due to conditions like polycythemia or related disorders. However, it's essential to clarify that the focus typically remains on understanding how to effectively manage and treat anemia. In the context of educating adolescent girls about anemia, the emphasis should generally be on prevention and treatment rather than on actively decreasing Hb levels. Here, we can discuss how education can be used to manage health conditions appropriately, address misconceptions, and promote overall well-being (Jumiyati et al., 2023; WHO, 2018). Anemia, particularly iron-deficiency anemia, is common among adolescent girls due to dietary insufficiencies, menstrual blood loss, and increased nutritional needs during puberty. Understanding the causes and symptoms is vital in managing the condition effectively.

CONCLUSION

This literature review revealed that, Education is a powerful tool in the fight against anemia in adolescent girls. By enhancing knowledge about nutrition, promoting healthy behaviors, and fostering community engagement, educational initiatives can lead to significant improvements in hemoglobin levels and overall health outcomes. Collaborative efforts between schools, healthcare providers, and families are essential to create a supportive environment for adolescent girls to thrive.

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Conflict of Interest

The authors declare that they have no competing interests.

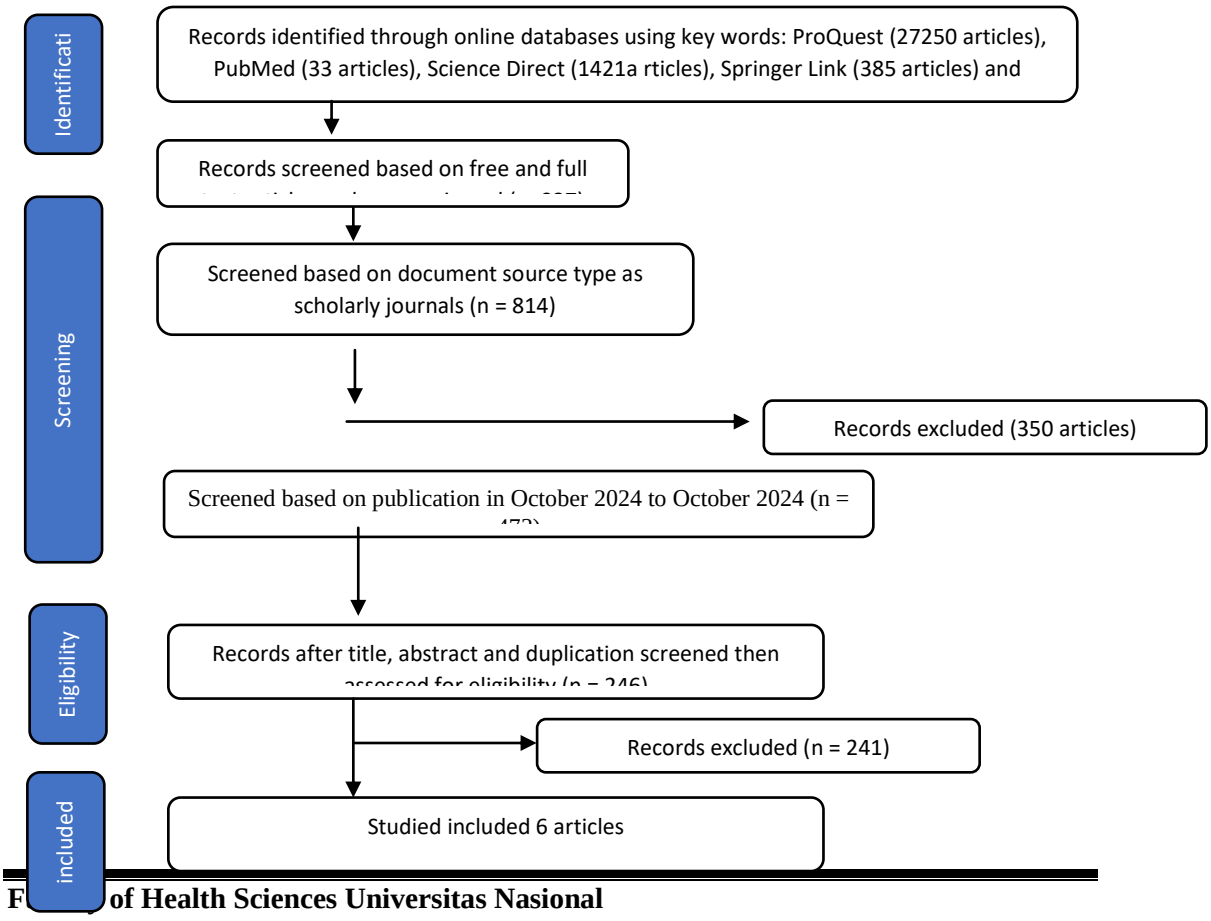
Table 1 (characteristic of studies)

No	Author(s)/ Year	Article	Location	Research Methods	Sampling	Number of Samples	Data Source	Quality Assessment (0-12 point)
1	(Wahyudi et al., 2023)	Adolescent Nutrition Action in the Era of Health Transformation	Poltekkes Kemenkes Gorontalo	Eksperimental	Purposive sampling	Sampling used in this community service activity is by involving 115 adolescents aged 10-24 years	Primary data obtained directly from respondents totaling 115 people, using a questionnaire instrumen	11 (High Quality)

No	Author(s)/ Year	Article	Location	Research Methods	Sampling	Number of Samples	Data Source	Quality Assessment (0-12 point)
						who live in Gorontalo city as target participants.	t that contains data and knowledge of participants from the pre-test and post-test results.	
2	(Anggreiniboti, 2022)	Adolescent Nutrition Program Nutritious Action to Address Anemia in Adolescent Girls in Indonesia	West Sumatera	literature review.	Purposive sampling	15 articles	on the coverage of blood supplementation tablets (TTD) in Indonesia and West Sumatra in 2019. Anemia survey report and nutritional status of adolescent girls in Bukittinggi City in 2017. Data from the Bukittinggi City Health Office on the risk of anemia. A program promoted by UNICEF and the Coordinating Ministry	11 (High Quality)

No	Author(s)/ Year	Article	Location	Research Methods	Sampling	Number of Samples	Data Source	Quality Assessment (0-12 point)
							for Human Development and Culture of Indonesia.	
3	(Wilujeng et al., 2022)	Changes in Adolescents' Healthy Lifestyle Behavior through Nutritious Action Activities at Nutrition Partner Schools	Junior high school in Malang City	mixed methods	Purposive sampling	156 Brawijaya Smart School (BSS) junior high school students involved in healthy living behavior education and monitoring activities.	results of youth behavior monitoring, pre-test and post-test, and Focus Group Discussion (FGD) with teachers and parents.	10 (High Quality)
4	(Saputri, 2023)	The Effect of Completeness of Blood Addition Tablet Consumption on the Incidence of Anemia in Adolescent Girls at SMK 01 Tanjung Palas	SMK 01 Tanjung Palas	pre-experimental design	purposive sampling	43 out of a population of 75 adolescent girls	Primary and secondary data. Primary data is the result of peripheral blood examination in the form of hemoglobin levels, while secondary data is evidence of records of adolescent female	10 (High Quality)

No	Author(s)/ Year	Article	Location	Research Methods	Sampling	Number of Samples	Data Source	Quality Assessment (0-12 point)
							students in consuming blood supplement tablets.	
5	(Megasari et al., 2024)	Education on the Importance of Nutritional Fulfillment for Adolescents to Prevent Anemia at SMP Negeri 13 Surakarta	Junior highs school of 13 Surakarta	ntitative	purposive sampling	53 8th grade students of SMP Negeri 13 Surakarta	The source of data in this study came from 8th grade students of SMP Negeri 13 Surakarta, with a total of 53 students.	10 (High Quality)



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