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Prevention of Anemia with Iron in Adolescent Girls

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Abstract. This study looked at whether iron supplementation has a role in keeping teenage girls from becoming anemic. *Anemia* is characterized by a reduction in hemoglobin levels, erythrocyte count, and hematocrit, which impairs the ability of circulating hemoglobin levels and erythrocytes to supply oxygen to bodily tissues. Anemia affects 50–80% of people worldwide. Anemia is more common in teenage girls (15–19 years old) than it is in fertile women (26.9%). Adolescent females are highly susceptible to anemia, which a number of reasons, such as inadequate iron intake, menstruation, and food, can cause. The body needs iron, a micronutrient, to produce hemoglobin. The literature review research technique starts with topic selection and moves on to keyword analysis, with the two keywords being iron and anemia. From 2017 to 2021, articles can be found using Indonesian through the following e-resource databases: Perpusnas, PMC, Ebsco, ProQuest, Mendelay, and Google Scholar. Thirty-four journals were excluded, leaving 111 journals for assessment. The results indicated that iron tablets were utilized in five articles, while additional guava fruit juice, vitamin C, folic acid, and protein were used in two articles. One study indicated that tempeh could raise adolescent girls' hemoglobin levels before and after the intervention, helping prevent anemia. The efficacious delivery of iron can effectively avert anemia. One way to lower the prevalence of anemia is to prevent it by eating foods high in iron and administering blood-added tablets (TTD).

Keywords: Anemia, Adolescent Girls, Iron

INTRODUCTION

According to estimates, about 1.5 billion people worldwide, or 30% of the population, suffer from anemia; most reside in tropical countries (Ni'matush Sholihah, 2019). Anemia affects 50–80% of people worldwide. According to the Ministry of Health RI (2015), the prevalence of anemia is 26.5% in teenage girls (ages 15 to 19) and 26.9% in fertile women. According to the Ministry of Health R.I. (2015), the prevalence of anemia in Indonesia is 21.7%, with patients aged 5–14 accounting for 26.4% of cases and those aged 15–24 for 18.4%. Indonesia has a 21.7% prevalence of anemia, with a percentage of 20.6% in urban regions and 22.8% in rural areas, according to Riskesdas statistics from 2013. (Rista Andaruni, 2018).

In 2014, the Ministry of Health reported that around 51% of adolescents and young adults of productive age worldwide suffer from anemia, with 17–18% of those cases occurring globally (Lestari et al., 2018). Adolescent females experience a high prevalence of anemia, which can be

attributed to a number of causes, such as inadequate iron intake, which is supported by limited absorption, bleeding, malaria, worm infections, and other illnesses. In addition, teenage girls experience menstruation every month. Since many adolescent girls believe that being slim makes one attractive, adhering to a rigorous diet is one option. However, this may result in consuming less variety of food, damaging the body's ability to absorb essential nutrients, such as iron (Ni'matush Sholihah, 2019). This study looked at whether iron supplementation has a role in keeping teenage girls from becoming anemic.

METHOD

A literature review method was applied to this investigation. The keywords "Anemia" and "Iron" were used to search journal articles on the e-resources database sources Perpusnas, PMC, Ebsco, ProQuest, and Google Scholar. Sixty-one papers were excluded from consideration because they did not fulfill the criteria, out of the 111 articles obtained through a literature search. Eight articles that were studied were found from the feasibility assessment of 19 articles, as displayed below.

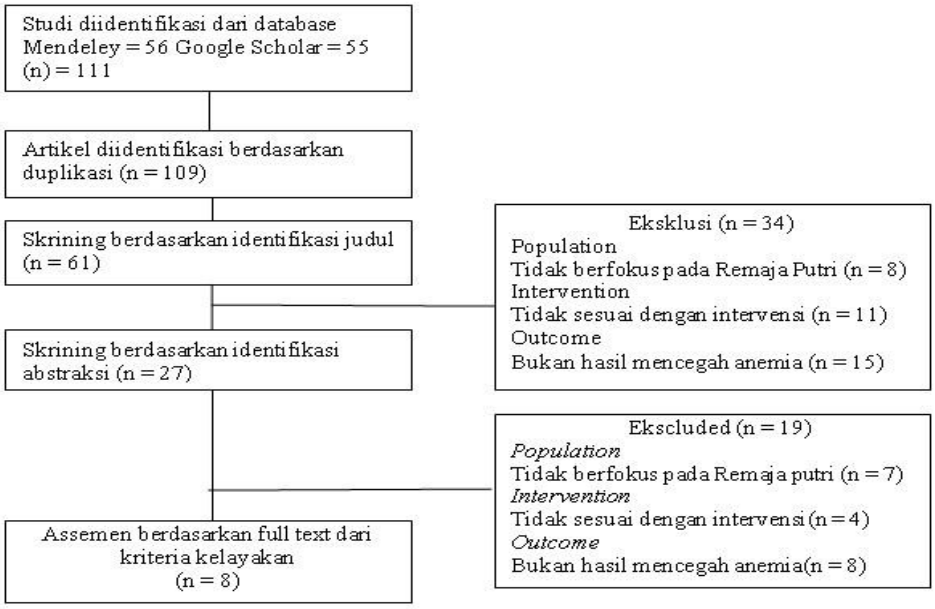

Image Flow Review

DISCUSSION

Characteristic

No	Kategori	f	%
A.	**Anemia pada remaja putri**		
1	Ringan	1	12,5
2	Sedang	1	12,5
3	Berat	1	12,5
B.	**Jenis Pencegahan Anemia**		
1	Pemberian Tablet Tambah Darah	5	62,5
	Jumlah	**8**	**100**

Research Analysis Table

No	Variabel yang diteliti	Analisis Literatur	Sumber Empiris
1	Zat Besi Anemia Remaja Putri	Pada penelitian menunjukkan bahwa intervensi program suplemen zat besi selama 4 bulan dapat meningkatkan kadar hemoglobin pada remaja putri untuk mencegah terjadinya anemia.	(Iyas Permatasari et al, 2018)
2	Tablet besi (Fe), vitamin C, jus jambu biji dan Peningkatan kadar hemoglobin remaja putri	Hasil penelitian menunjukkan bahwa setelah intervensi pemberian tablet besi (Fe), Vitamin C, dan Jus buah jambu biji selama 8 minggu diperoleh adanya peningkatan kadar Hb tertinggi pada kelompok tablet Fe+jus jambu biji sebesar 2,13 gr/dL, kelompok tablet Fe+vitamin C sebesar 1,23 gr/dL, dan kelompok tablet Fe sebesar0,83 gr/dL.	(Rita Andarini, 2018)
3	Tablet besi dan Peningkatan kadar Hemoglobin Remaja	Hasil penelitian menunjukkan setelah intervensi pemberian tablet besi didapatkan bahwa ada perbedaan kadar hemoglobin sebelum dan setelah pemberian tablet besi.	(Eka Haryanti et al, 2020)
4	Potensi tempe dan Peningkatan kadar hemoglobin	Hasil Penelitian menunjukkan bahwa tempe mengandung zat besi sehingga tempe berpotensi untuk meningkatkan kadar hemoglobin dan mencegah anemia.	(Ladyamaya Pinastiet al, 2020)
5	Tablet Tambah Darah dan Remaja Putri	Hasil Penelitian menunjukkan bahwa intervensi pemberian TTD selama 1 tahun dengan galang mia dapat meningkatkan kadar hemoglobin pada remaja putri dan dapat mencegah kejadian anemia.	(Wahyu Nuraisya et al, 2019)
6	Zat besi dan Kejadiananemia	Hasil penelitian menunjukkan tidak ada hubungan yang signifikan antara konsumsi zat besi dengan kejadian anemia, artinya semakin tinggi konsumsi zat besi semakin tinggi kadar hemoglobinnya.	(Istiya Putri Lestariet al, 2017)
7	Tablet Fe dan KadarHemoglobin Remaja	Hasil penelitian menunjukkan bahwa pemberian intervensi tablet Fe pada remaja putri dapat meningkatkan kadar hemoglobin artinya ada pengaruh yang signifikan pemberian tablet Fe terhadap kenaikan kadar Hbremaja putri yang mengalami anemia.	(Yochi Yuanni et al, 2020)
8	Konsumsi protein, vitamin c, zat besi, asam folat dan anemia pada remaja putri	hasil penelitian terdapat hubunganyang signifikan antara tingkat konsumsi protein, zat besi dan asam folat mencegah anemia, dan tidak terdapat hubungan yang signifikan antara tingkat konsumsi vitamin c untuk mencegah anemia.	(Ni matush Sholihah, et al,2019)

The body requires iron (Fe), one of the micronutrients. When it comes to iron absorption, iron obtained from non-heme vegetable food sources like nuts and vegetables usually has a lower percentage than iron obtained from heme animal food sources like meat, eggs, and fish. The World Health Organization (WHO) lists ten of the most severe health issues as iron deficiency (Istiya et al., 2017).

Blood-added pills (Fe) are supplements used to treat iron deficiency anemia. Folic acid and ferrous sulfate are components of the dosed blood-added tablets (Fe). Additionally, ferrous fumarate is another component. According to Harayanti et al. (2021), the advantages of blood-added tablets (Fe) for teenage girls are to prepare them for becoming future mothers and to avoid anemia in juvenile females from an early age.

Fruit guava, or Psidium guajava in Latin, has a high vitamin C concentration. Guava fruit has a higher vitamin C content than other fruits. In 100 grams of guava fruit, 87 milligrams of vitamin C. Vitamin A and vitamin B2, which aid in iron absorption, are among the other nutrients included in guava fruit in addition to vitamin C (Rista et al., 2018).

Tempeh is a cheap, healthy dish popular as a vegetable protein source. By employing Rhizopus oligosporus fungi throughout the fermentation process, the nutritional benefits of tempeh can be preserved and increased, and the raw materials' texture can be softer to make them more palatable. With all the nutrients required to conquer, tempeh is a preferred functional food ingredient (Pinasti et al., 2020). Iron supplements, such as Blood Added Tablets (TTD) containing iron (60 mg FeSO4) and folic acid (0.25 mg), are one way to avoid anemia in teenagers (Tyas Permatasari, 2018).

Adolescent girls should get Blood Added Tablets (TTD) in compliance with guidelines to prevent anemia (Nuraisya et al., 2019). It's necessary to address comorbidities and improve adolescent nutrition through targeted nutritional treatments such as education, supplementation, and fortification. The aim is to enhance teenagers' nutritional status. Fe supplementation addresses the anemia issue (Yuanti et al., 2020).

The government additionally provides environmental assistance for the use of blood-added pills. To promote community nutrition improvement, the Indonesian Ministry of Health released policies in the Healthy Indonesia Development Program and the National Medium-Term Development Plan (RPJMN). One of these policies is distributing Blood-Added Tablets (TTD) to adolescent girls, with a target of 30% by 2019 (Haryanti et al., 2021).

The author believes that by taking Fe tablets as needed and by the dose prescribed, one tablet once a day, adolescent girls can avoid anemia by having Blood Added Tablets (TTD). Because

tempeh includes readily absorbed iron, short peptide compounds, free amino acids, fatty acids, and carbs, eating it can also help prevent anemia. On the other hand, Fe pills and guava juice have faster and greater hemoglobin levels. Adolescents with anemia could take Fe pills with guava juice to speed up the process of returning their hemoglobin levels to normal.

CONCLUSION

It is possible to avoid anemia by effectively administering iron, according to the literature review findings, which included eight research publications and talks. Hemoglobin levels rise in proportion to the amount of iron we consume, which can be prevented by administering blood-added tablets (TTD) and increasing our iron intake. Therefore, anemia does not afflict teenage girls, nor is the frequency of anemia in teenage girls excessively high. Adolescent females are anticipated to be able to prevent anemia by increasing their iron intake and learning more about the condition and how to prevent it.

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