



The Role of Red Spinach In Increasing Iron Levels In Adolescent With Anemia: Literature Review

Annie Cristyana Purba¹

¹Poltekkes Kemenkes Semarang

*Correspondence: anniepurba123@gmail.com

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ABSTRACT

Introduction: Anemia is a health problem throughout the world, especially in developing countries, where it is estimated that 30% of the world's population suffers from anemia. Anemia occurs frequently in society, especially in adolescent girls, women of childbearing age, pregnant women and children . For overcome the occurrence of anemia can done with method nonpharmacological . Methods non-pharmacological is a safe alternative, namely with consume spinach Red . Red spinach is known as one of the most important sources of iron. Red spinach has various health benefits such as increasing hemoglobin levels or preventing anemia, maintaining blood sugar levels, increasing endurance, and as a source of vegetable protein .Method : Review sourced library from 11 articles research published in 2019-2024 and taken from Google Scholar and taylor&francis. Results: Based on Results 11 articles researched and analyzed journals author, found that there is influence spinach red to teenager daughter with anemia.Conclusion: Evaluation spinach red required For add knowledge in prevent the occurrence of anemia in adolescents daughter .Related factors with evaluation spinach red in prevent the occurrence of anemia, namely : giving knowledge, giving obedient attitude in consuming Fe tablets, consuming food nutritious, behavior life Healthy .

Keyword : Red Spinach, Anemia, Adolescent

Introduction

According to WHO, adolescents is individuals aged 10–19 years . Adolescence is the golden age with optimal growth and development . At this time, teenagers own need very physical and psychological important . Besides that, if happen lack nutrition, one of the problem is anemia (Sari et al., 2022) . Anemia is

a condition Where Hemoglobin (Hb) levels in blood more low from normal levels for group of people based on age and type sex, in adolescent women Normal Hb levels are 12 - 15 gr/dL and in teenagers man of 13 - 17 gr/dL (Aulya et al., 2022) .

Anemia is one of the problem health throughout the world, especially in developing



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countries, where it is estimated that 30% of the world's population suffers from anemia. Anemia is a common problem happens in society especially in teenagers princess, woman age fertile, mother pregnant and children . Anemia in adolescents daughter until moment This Still Enough high, according to WHO, the global prevalence of anemia ranges from 40-88%. The number resident age teenagers (10-19 years) in Indonesia amount to 26.2% consisting of from 50.9% male and 49.1 % female(Faridi et al., 2022) .

Anemia can caused by several factors . There are two factor that is factor direct and indirect factors direct . Factor direct that is like adequacy Increase tablet consumption blood, distance pregnancy, parity, nutritional status as well as disease infection . Causes the main cause of anemia is lack of intake substance iron in food or additional tablets blood(Choirunissa et al., 2022) . Factors that are not direct like menstruation, where Teenager daughter own risk ten times more big For suffer from anemia compared to with teenager son . This is because of teenager daughter experience menstruation every the month and is in its infancy, so need more Lots intake nutrition . Besides that, imbalance in consume substance iron is also causes of anemia in adolescents . Adolescents daughter normal very notice form body, so that many are limiting consumption food, as well as many become the taboo, so that in consumption food No stable, and fulfillment nutrition not enough (Patimah et al., 2022) .

Impact from anemia Alone rated as very serious problem Serious to health society . Problems health related communities with incidence of anemia in adolescents is pale, weak, tired, dizzy, besides That can the decline ability and concentration learning, inhibiting growth physical and developmental intelligence brain, improve risk suffer disease infection Because Power stand body decreased . The impact of anemia on women can lower Power stand body so that easy sick and lose weight productive

work, hemoglobin levels with productivity Work show existence positive correlation, thing This means the more low Hb levels, then productivity Work the more decrease (Kumalasari et al., 2019) .

Effort prevention of anemia can given with therapy pharmacological and nonpharmacological, Therapy pharmacological is giving useful Fe tablets For increase hemoglobin levels in adolescents, however drug the own effect side like stomach feel No yummy, nausea, constipation, and stool colored black . Therefore That given therapy non-pharmacological like spinach red (Aryunita & Doriani Harahap, 2022) .

Spinach red (*Amaranthus tricolor*) is plant food colored red that can consumed the leaves as vegetables . Plants This can cultivated in the area climate hot and also cold . Spinach red known as one of the source substance very iron important . Spinach red have various benefit For health like increase hemoglobin levels or prevent anemia, maintain level sugar blood, increase Power stand body, and sources of vegetable protein(Hapsari & Mayra Permata Madani, 2023) .

Spinach red own content substance impressive iron, far more tall than spinach common (*Spinacia oleracea*). In addition content substance iron, spinach red also contains Lots nutrition important others, including vitamin C, folate, and vitamin B12. Vitamin C plays a role role important in increase absorption substance iron, making spinach red as important mineral sources that can absorbed in a way biological . Folate and vitamin B12 are very required For erythropoiesis, the process of production cell blood red . With thus, spinach red appear as source very rich in nutrients potential For overcome various aspect lack substance iron and anemia (Endang Sari, Mekar Zenni Redhia, 2024) .

A number of research also shows that consume spinach red influential to improvement Hb levels in adolescents daughter who has



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anemia. Spinach red also not only made into as vegetables, but made into juice, drinks, cookies . Proven that research conducted by (Fadhli et al., 2024) about spinach red which can be made into pudding influential to hemoglobin levels and can overcoming anemia in adolescents daughter

Based on a number of study previous has prove influence spinach red For Overcoming anemia and increasing hemoglobin in adolescents Princess . Needed evaluation from a number of study the use enhance and strengthen information as well as maximize implementation in consume spinach red that can overcome anemia and improve hemoglobin levels in adolescents daughter .

Method

Design study or methods applied in writing This use literature review method, namely A good literature search from international or abroad and national or domestic . Literature review study is style used For collect related data and sources with A subject or theme certain that is obtained from various type source that is from journals, internet, books and libraries others . In study This is the secondary data used is originate from results researches from researcher previously . Data that has been obtained quick explained in a way easy written digested by the reader later .

Place search article study done with using internet media, namely search done via Google Scholar and taylor&francis. At this stage beginning search article research on Google Scholar and taylor&francisusing the keyword Spinach red against anemia, anemia, teenagers princess, spinach red against anemia in adolescents daughter 19,120 articles obtained from 2019 to 2024, will but the one that comes in in criteria inclusion only 15 articles relevant research, then The critical appraisal process resulted in 11 articles being obtained study.

Data analysis is digging and collecting systematic data For upgrade understanding research that is researched and reviewed as

other people's findings . This literature review For analyze it use method literature that is with method sort and classify the data obtained from results obtained in accordance criteria inclusion, and then explained One one by one and give conclusion For every the source related what is written in it . Article study will answer objective research and then entered related theories with article study as well as assumption from researchers were also included .

Result and Discussion

Based on results search literature with use system searches that are on Google Scholar and Taylor & Franciswith using keywords Spinach red against anemia, anemia, teenagers princess, spinach red against anemia in adolescents daughter there is 19,120 articles study then screened based on criteria inclusion that is range time 6 years journal last (2019-2024), type original journal in form fulltext . Journal speak Indonesian and English English, and journals themed spinach red against anemia, adolescent anemia, spinach red against anemia in adolescents Princess . From the results filtering the so article research findings from Google Scholar there are 8 and from taylor&francisThere are 3 articles, so the total obtained is through filtering is 11 articles.

Anemia is a condition Where Hemoglobin (Hb) levels in blood more low from normal levels for group of people based on age and type sex, in adolescent women Normal Hb levels are 12-15 gr/dl and in teenagers man of 13-17 gr/dL (Aulya et al., 2022) . Adolescents daughter is one of vulnerable groups suffering from anemia, because at that time they also experienced menstruation and more they knowledgeable not enough against anemia. At the time teenager daughter experience the first menstruation, requires more Lots substance iron For replace lost blood consequence menstruation the(Rahmawati & Retnaningrum, 2021) . Based on results article research collected and analyzed in accordance with



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criteria inclusion There are 11 articles research taken originate from in and also abroad . All article study discuss Influence spinach red to substance iron in adolescents daughter anemia. There is method For overcome anemia and increase hemoglobin, namely with method giving Fe tablets and giving spinach juice red.

Tablet add blood own composition 60 mg of substance elemental iron (ferrous sulfate, ferrous fumarate preparations) or ferrous gluconate) and 0.4 mg of acid folate . Teenagers daughter recommended drink more tablets blood / Fe only 1 tablet / week and 1 tablet / day during time Menstruation . Giving Fe tablets to teenagers daughter effective in reduce and prevent occurrence of anemia Knowledge about anemia in adolescents very required as method habituation consume Fe tablets with awareness Alone (Ulfah & Aulia, 2023) . However Still There is teenager the princess who is not obedient drink iron tablets with reason only drunk when menstruation, there is effect side after drink feel nausea, and some have not finished the time, and existence assumption feel No drink because of the taste and smell No nice(Hamrani et al., 2020) . One of the source substance iron besides from Fe tablets is Can from source vegetable . This is because of a number of facilitating and inhibiting factors absorption substance iron in body . Administration of tablets of substances iron together with substance nutrition micro other more effective in improve substance status iron compared to only give supplementation substance iron in form dose single . Therefore That For increase absorption substance iron in body need given combination substance nutrition micro vitamin C such as that derived from from spinach red(Mariati et al., 2023) .

Spinach red is one of plant local that has known public as plant multipurpose, compact nutritious and efficacious For formation of hemoglobin (Dondi & Putri, 2019) . Spinach red (Amaranthus tricolor L) including good plants For body Because contains vitamins A, B, and C,

potassium, fat, carbohydrates, protein, and substances iron, amarantine, routine, and purines . Spinach red (Amaranthus tricolor L) compared with other plants content substance iron spinach red more tall so that Can utilized For overcome anemia, reduce level sour veins, arthritis and inflammation in the veins digestion(Rahmawati & Retnaningrum, 2021) . Substance active contained in spinach red and beetroot which can increasing Hb is Fe. In 100 g of spinach red contains 7.0 mg Fe and 62 mg Vitamin C. The role of Vitamin C is help absorption of non-heme Fe (Purba et al., 2021) . In addition That Spinach red own benefit For to launch circulation oxygen in blood . Besides That is, the content of vitamin A and vitamin C in spinach red functioning as antioxidants that protect body and brain from toxins and pollution . Vitamin C also helps the absorption process substance iron and speed up system immune body . Besides That's a combination of vitamin B12 and acid folate in spinach red also plays a role important in formation cell blood red, so that can increase hemoglobin levels in blood(Cahyanto & Farida, 2023) .

According to assumption from researcher Alone that results review articles study the For overcome the occurrence of anemia in adolescents daughter is with therapy pharmacology namely Fe tablets and non - pharmacological therapy that is spinach red . The Fe tablets contain substance iron, will but fe tablets the give effectside that makes teenager so lazy to consume it . Therefore That given spinach red, where spinach red the can made into juice, drinks and pudding prevent the occurrence of anemia in adolescents Princess . Inside spinach red there is also content Vit.c and substances iron that if both of them given together so will facilitating and inhibiting absorption substance iron in body .

Factors that can prevent The occurrence of anemia is : Condition economy family decides amount available food in family so that participate determine nutritional status For



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family, factors knowledge and factors attitude in which teenager daughter must more diligent For consuming Fe tablets (Elisa Safitri & Rahmika, 2022) . According to assumption from researcher Alone that results review article study This is anemia that occurs in adolescents Anemia in daughters is influenced by the condition economics, knowledge and attitudes in adolescents daughter That Alone .

Type benefit spinach red in to overcome anemia used in 11 articles research that has been reviewed differently among others: 2 pieces studies explain understanding of anemia that occurs in adolescents that originates from from study Aulya et al., 2022 and Rahmawati & Retnaningrum, 2021; 3 research studies explaining the content of iron tablets and the reasons why teenagers do not consume red spinach from research by Ulfah & Aulia, 2023, Hamrani et al., 2020 and Mariati et al., 2023; 4 research studies on red spinach and its content from research by Dondi & Putri, 2019, Rahmawati & Retnaningrum, 2021, Purba et al., 2021 and Cahyanto & Farida, 2023, and 1 research study on factors that cause anemia from research by Elisa Safitri & Rahmika, 2022.

From 11 articles study there is some instruments that have been used For measuring hemoglobin levels which indicates that teenager anemia is in the literature that has been reviewed, including namely Hematology Analyzer and sheet observation . From 11 articles research that has been reviewed in the results, there are influence Spinach red as many as 11 articles, but there is 1 study that shows that consume spinach too much red Lots can result in effect side like allergenic (allergy) which can be disturbing health.

From several article research collected can withdrawn conclusion and evaluation that Part big has show existence significant influence from spinach red in prevent the occurrence of anemia in adolescents the princess who was caused Because after Respondent get

knowledge, food nutritious, and pattern healthy life can prevent the occurrence of anemia.

Conclusion

Based on results review of 11 articles study can concluded and results the evaluation is besides administration of blood tablets, non - pharmacological therapy like Spinach red can prevent the occurrence of anemia in adolescents daughter .

Conflict Of Interest

I declare that I No own conflict interest For expressed .

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Article journal This written by Annie Cristyana Ancient and Polytechnic of Health Ministry of Health Semarang, based on results study Role spinach red in increase level substance iron in adolescents anemia sufferers . Fill in completely become not quite enough answer writer .

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