

SOCIAL MARKETING IN PROMOTING IRON-FOLIC SUPPLEMENTATION FOR ADOLESCENT GIRLS IN INDONESIA: DOCUMENT STUDY AND LITERATURE REVIEW

*Pemasaran Sosial dalam Promosi Tablet Tambah Darah bagi Remaja Putri di
Indonesia: Studi Dokumen dan Literature Review*

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ABSTRAK

Suplementasi Tablet Tambah Darah untuk menanggulangi anemia pada remaja putri di Indonesia telah dimulai tahun 1990-an. Namun hingga saat ini, kepatuhan konsumsi masih rendah dan prevalensi anemia masih tinggi. Pemerintah Indonesia telah gencar mempromosikan pentingnya konsumsi Tablet Tambah Darah. Penguatan pemasaran sosial dalam pelaksanaan suplementasi ini sangat diperlukan untuk meningkatkan kepatuhan remaja putri dalam mengonsumsi Tablet Tambah Darah. Tujuan penelitian ini untuk menganalisis penerapan pemasaran sosial dalam promosi Tablet Tambah Darah bagi remaja putri di Indonesia. Metode studi dokumen dan literature review digunakan dalam penelitian ini. Dokumen berupa kebijakan, laporan, serta berbagai media terkait suplementasi Tablet Tambah Darah pada remaja putri. Untuk literature review, pencarian artikel dilakukan dalam Scopus, ScienceDirect, Pubmed, dan Google Scholar dengan kata kunci promotion, iron-folic supplementation, dan adolescent girls, dengan kriteria inklusi berupa artikel hasil penelitian primer di Indonesia terkait pemasaran atau promosi Tablet Tambah Darah bagi remaja putri, dalam Bahasa Inggris atau Indonesia, full text, open access, dan diterbitkan Januari 2019-Agustus 2023 pada jurnal terindeks Scopus atau Sinta. Kriteria eksklusi berupa literature/systematic review, prosiding, atau artikel yang tidak dipublikasikan. Pemberian Tablet Tambah Darah saat ini dilakukan melalui kegiatan Aksi Bergizi di sekolah. Dari 19 artikel yang dikaji menunjukkan faktor yang memengaruhi kepatuhan konsumsi, metode dan media promosi, serta monitoring dan evaluasi pemberian Tablet Tambah Darah. Aspek pemasaran sosial telah diterapkan dalam perencanaan, implementasi, monitoring dan evaluasi pada pemberian Tablet Tambah Darah bagi remaja putri di Indonesia. Namun, masih diperlukan perbaikan terkait spesifikasi produk, pesan, metode, keterlibatan orang tua dan masyarakat, serta pendampingan dan pembinaan.

Kata Kunci: *pemasaran sosial, promosi, remaja putri, tablet tambah darah*

ABSTRACT

Iron-folic supplementation to treat anemia in adolescent girls in Indonesia began in the 1990s. However, compliance remains low and the prevalence of anemia remains high. The Indonesian government intensively promoted the importance of consuming iron-folic supplements. Strengthening social marketing in the implementation of this supplementation was necessary to increase adolescent girls' compliance. This research aimed to analyze the implementation of social marketing in promoting iron-folic supplementation for adolescent girls in Indonesia. This study employed document study and literature review methods. Documents were the policies, reports, and various media related to iron-folic supplementation for adolescent girls. For the literature review, articles were searched in Scopus, ScienceDirect, Pubmed, and Google Scholar with the keywords promotion, iron-folic supplementation, and adolescent girls, with inclusion criteria were articles about primary research in Indonesia related to marketing or

promotion of iron-folic supplements for adolescent girls, in English or Indonesian, full text, open access, and published January 2019–August 2023 in Scopus or Sinta indexed journals. Exclusion criteria were literature/systematic reviews, proceedings, or unpublished articles. Currently, the provision of iron-folic supplements is carried out through the *Aksi Bergizi* in schools. The 19 articles under review highlight the factors influencing compliance to consumption, methods, and media used for promotion, and strategies employed for monitoring and evaluating. Aspects of social marketing have been applied in the planning, implementation, monitoring, and evaluation of providing iron-folic supplements for adolescent girls in Indonesia. However, improvements are still needed regarding product specifications, messages, methods, involvement of parents and community, also mentoring and coaching.

Keywords: adolescent girls, iron-folic supplementation, promotion, social marketing

INTRODUCTION

Adolescents are particularly susceptible to anemia due to their rapid growth and development, which increases their body's need for iron. Teenage girls also experience iron loss during their menstrual cycle [1]. Anemia in adolescent girls adversely affects their physiology, physical performance, reproductive capacity, and adult productivity. Anemia during teenage pregnancy is associated with a higher risk of premature births, low birth weight babies, stunting, as well as maternal and neonatal deaths [2]. Presently, the prevalence of anemia is significantly high in Indonesia. The 2023 Indonesian Health Survey findings revealed that the prevalence of anemia among individuals aged 5-14 and 15-24 was 16.3% and 15.5%, respectively. The prevalence of anemia in women is 18%, higher than in men at 14.4%. Meanwhile, the prevalence of anemia in pregnant women aged 15-24 was 14.6% [3].

In the 1990s, Indonesia implemented anemia prevention and management programs targeting adolescent girls, women of reproductive age, and aspiring brides. These programs involved the individual supplementation of iron-folic, known as *Tablet Tambah Darah (TTD)*, with limited coverage [2]. However, a significant proportion of adolescents in Indonesia still suffer from anemia, a condition associated with inadequate intake of iron-folic supplementation. According to the 2023 Indonesian Health Survey, 73.5% of adolescent girls aged 10 to 19 received iron-folic supplementation in the last 12 months, sourced from schools (89.6%), health facilities (10.1%), and their initiative (3.2%). Nevertheless, only 4.2% of these girls consumed iron-folic supplementation as recommended (≥ 52 tablets in one year) from healthcare facilities, while only 3.0% from schools, and a somewhat higher percentage of 4.3% obtained it on their initiative [3].

Adolescent girls have various reasons for not regularly consuming iron-folic supplementation, including forgetfulness, taking the tablets only during menstruation periods, finding the smell and taste unpleasant, encountering adverse effects, and perceiving it as unnecessary [3], [4]. Failure to comply with iron-folic supplement consumption can increase the risk of developing anemia. A systematic review conducted by Savitri, et al. demonstrates a substantial correlation between compliance to consume iron-folic supplement consumption and the occurrence of anemia in adolescent girls in Indonesia [5]. The compliance of iron-folic supplement consumption among adolescent girls is influenced by various factors, including sociodemographic, intrapersonal, interpersonal, and institutional factors [6].

One specific measure aimed at accelerating the reduction of stunting in Indonesia is the provision of iron-folic supplementation to adolescent girls [7]. The government has vigorously advocated for the significance of iron-folic supplement consumption among adolescent girls through diverse media platforms, engaging all relevant stakeholders. It is necessary for a promotion to educate all targets of iron-folic supplementation provision for adolescent girls. The research conducted in India by Singh, et al. [8] showed

that providing iron and folate supplementation, along with sufficient education and motivation, can effectively increase compliance among adolescent girls [8].

Health promotion uses social marketing strategies aimed at communicating health-related information intended to prevent disease and promote healthy lifestyles [9]. Smith (2000) in Longest, 2015 [10] has defined social marketing as a process for influencing human behavior on a large scale, using (commercial) marketing principles for societal benefit rather than commercial profit [10]. A systematic review conducted by Almestahiri, et al. [11] reviews the application of social marketing principles in tobacco cessation programs and classifies them into streams. This study suggested that social marketing interventions targeting tobacco use cessation can be successful [11].

It is important to take into account the incorporation of social marketing strategies in iron-folic supplementation promotional activities. Social marketing, which is useful in many health programs, is an implementation of commercial marketing techniques to plan, implement, and evaluate services aimed at influencing the voluntary behavior of the target audience to improve personal and community health. The Social Marketing Assessment and Response Tool by Thackeray and Neiger 2003 in Longest, 2015 [10] is one of the most extensively used systematic frameworks for social marketing in health programs. It includes the interactive phases of activities, such as preliminary planning for social marketing intervention; patient/customer analysis (people); social marketing strategy, including establishing plans for the 4Ps (product/service, price, place, and promotion); develop interventions; implement social marketing strategy; also evaluate social marketing strategy. The Centers for Disease Control and Prevention's (2014) Social Marketing for Nutrition and Physical Activity online course provides another framework for using social marketing in health programs. Using this framework, programmers designing social marketing activities are primarily concerned with four components of the plan: the problem/health issue, the target audience, the behavior to be modified, and approaches for bringing about the change [10]. In their study, Berger et al. [12] found that community mobilization and social marketing play crucial roles in the effectiveness of iron and folate supplementation in Vietnam [12]. However, it is still challenging to discover social marketing analysis in Indonesia about the promotion of iron-folic supplementation for adolescent girls. The results of the analysis are needed as input for the implementation of iron-folic supplementation for adolescent girls in Indonesia. The aim of this study is therefore to examine the implementation of social marketing in promoting iron-folic supplementation in Indonesia to enhance compliance to iron-folic supplement consumption among adolescent girls.

METHODS

This was a qualitative research that employed document study and literature review. The utilized documents comprise policy documents (including rules, regulations, guidelines, and technical instructions), reports, as well as communication, information, and education media in Indonesia related to iron-folic supplementation for adolescent girls. These documents, in both print and electronic formats, have been published by reputable agencies, ministries, government agencies, and other credible sources. Document analysis involves the careful selection of relevant documents, comprehensive reading of these papers, extraction, and analysis of the data, and the subsequent derivation of information and conclusions aligned with the research objectives. This study was combined with a literature review to enrich the social marketing analysis related to promoting iron-folic supplementation for adolescent girls in Indonesia.

The researchers conducted a literature review by searching the Scopus, ScienceDirect, Pubmed, and Google Scholar databases for research publications using the keywords "promotion", "iron-folic supplementation", and "adolescent girls". The use of "promotion" as a keyword was intended to get more insight into the article which can

be analyzed further regarding social marketing aspects. The inclusion criteria include primary research articles in Indonesia that analyze the marketing or promotion of iron-folic supplementation specifically targeting adolescent girls. These publications must be written in either English or Indonesian, be available in full text, be openly accessible, and have been published between January 2019 and August 2023. Furthermore, they must be indexed in Scopus or Sinta journals. The exclusion criteria consist of literature reviews/systematic reviews, proceedings, or articles that have not been published in journals (such as thesis or dissertation). Figure 1 illustrates the process of article identification and selection.

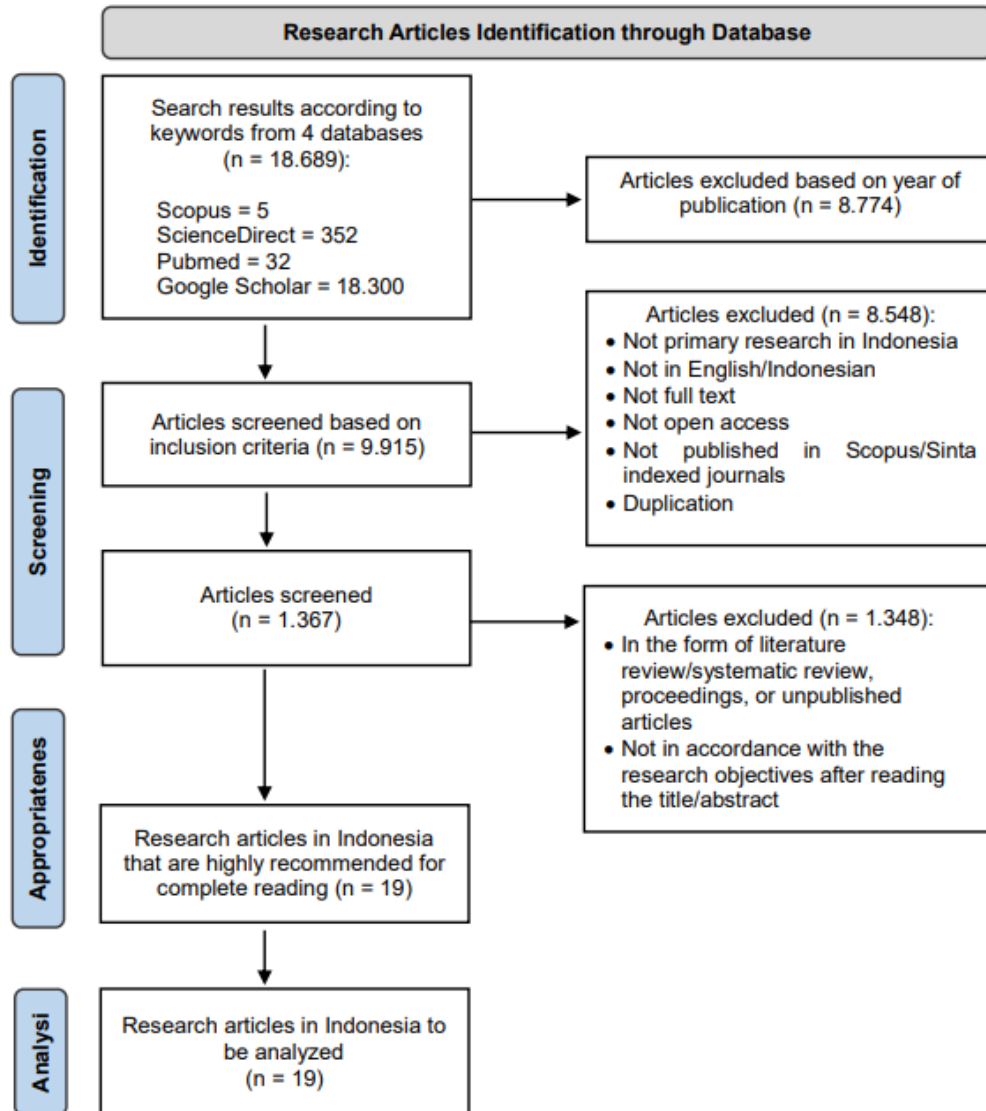


Figure 1. Article Identification and Selection Flow (Prisma 2020 Modification)

The definition of social marketing is the application of commercial marketing techniques to plan, implement, and evaluate services aimed at influencing the behavior of a person or society [10]. Next, the various aspects of marketing will be discussed in each stage of planning, implementation, monitoring, and evaluation.

RESULTS

The iron-folic supplementation for the prevention and treatment of anemia in women of reproductive age in Indonesia commenced in the 1990s, primarily targeting female workers through the Healthy and Productive Women Workers Movement. World Health Organization recommended iron and folate supplements to adolescent girls and women in their reproductive age in 2011 [13], then Indonesia implemented a Minister of Health Regulation that governs changes to iron-folic supplementation specifications in 2014 [14]. This supplementation was initiated as a nationwide program in 2015, following the guidelines outlined in the Ministry of Health's Strategic Plan for 2015-2019 and the Director General of Public Health's Circular Letter 2016 [15], [16]. This circular prioritizes the provision of iron-folic supplements to adolescent girls who are enrolled in junior high school, high school, or equivalent educational programs. Additionally, there has been a modification in the frequency at which iron-folic supplementation is provided [16].

At first, multiple regions independently implemented development programs targeting adolescent girls and prospective brides [2], but nowadays all of the regions implemented this program for adolescent girls, especially in school. The Ministry of Health initiated Aksi Bergizi in October 2022, to improve female students' habits of iron-folic supplements consumption, promote a balanced nutritional diet, and encourage regular physical exercise. This initiative involves collaboration between several sectors at both the central and regional levels [17]. Figure 2 illustrates the development of the iron-folic supplementation program for adolescent girls in Indonesia.

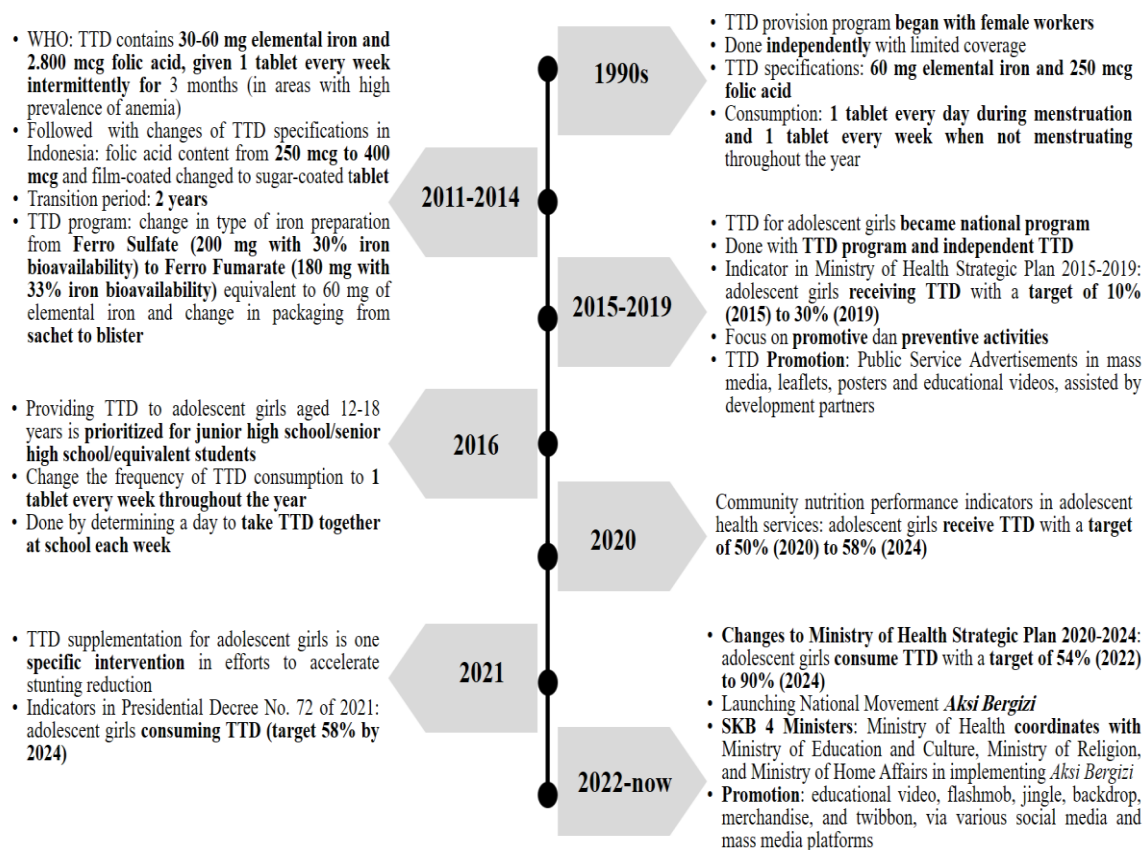


Figure 2. Development of the Iron-Folic Supplementation Program for Adolescent Girls in Indonesia [2], [7], [13], [14], [15], [16], [17], [18], [19], [20], [21]

The initial search in four databases yielded 18,689 articles, then screened based on specific inclusion and exclusion criteria, resulting in 19 articles and grouped according to the planning, implementation, monitoring, and evaluation stages for further analysis. Table 1 below shows the identification results of the articles that have been reviewed.

Table 1. Literature Review Matrix

No.	Title (Author, Year)	Objective	Method	Place	Results
1.	Anemia prevention behavior in female adolescents and related factors based on Theory of Planned Behavior: A cross-sectional study (Puspitasari HZG, et al., 2022) [22]	To analyze the determinant related to anemia prevention behavior in adolescent girls based on the Theory of Planned Behavior	Cross-sectional; n=105 adolescent girls selected by purposive sampling	Madiun, East Java	The behavior of adolescent girls in preventing anemia is influenced by their attitudes, subjective norms, behavioral control, and intentions.
2.	The acceptability of weekly iron-folic acid supplementation and its influencing factors among adolescent school girls in Yogyakarta city: A mix-methods study (Ansari MR et al., 2021) [23]	To evaluate the acceptability of weekly iron-folic acid supplementation program and its determinants	Cross-Sectional and In-Depth Interview; n=211 adolescent girls were randomly selected.	Yogyakarta, Yogyakarta a Special Region (DIY)	Nearly 90% of respondents received iron-folic supplementation, but only 62% reported their consumption. Respondents were more likely to take iron-folic supplementation if it tasted good, but were less likely to do so if they perceived that the tablet smelled bad, forgot, lacked peer support, or suffered negative effects.
3.	Awareness about anaemia and Weekly Iron-Folic Acid Supplementation (WIFAS) among school-going adolescent girls and parents in East Java and East Nusa Tenggara, Indonesia (Seminar AU, et al., 2020) [24]	To investigate the awareness and understanding of school-going adolescent girls and their parents about anaemia and WIFAS	Focus Group Discussion: n=174 adolescent girls, n=66 parents; and In-Depth Interview: n=20 adolescent girls, n=10 parents; cluster sampling	East Java and East Nusa Tenggara	Adolescent girls and their parents have high levels of misinformation about anemia and healthy nutritional practices. Parents' opinions influence adolescent girls' compliance with iron-folic supplement consumption.
4.	The role of social support and interpersonal trust to improve compliance of iron supplementation	To explore the compliance and its related variables of iron-folic acid supplementation	In-Depth Interview; n=13 adolescent girls were recruited using a snowball	Sidoarjo, East Java	Factors such as peers, teachers, parents, lack of awareness about the risks and benefits of iron-folic supplementation intake,

No.	Title (Author, Year)	Objective	Method	Place	Results
	amongst adolescent girls: A qualitative approach (Silitonga HH, et al., 2023) [25]	and the part of social support and interpersonal trust as a source of information and reminder amongst adolescent girls	sampling technique		and forgetfulness, all contribute to the majority of adolescent girls' noncompliance with iron-folic supplement consumption.
5.	School readiness in weekly iron-folic acid supplementation program in the urban area, West Java, Indonesia (Apriningsih A, et al., 2020) [26]	To investigate program guidelines, stakeholders' points of view, and school readiness to actualize the program, which will help evaluate and improve WIFAS adherence	In-Depth Interview: n=18 school principals or vice school principals; and Qualitative: n=115 respondents of school principals and teachers, with purposive sampling technique	Depok, West Java	Most schools have received socialization on anemia prevention programs: 38.9% of schools conduct weekly iron-folic supplement consumption; 27.8% have documented their female students' consumption compliance. The following factors had the strongest link with iron-folic supplement implementation: school readiness, socialization, school knowledge of this supplement, and support from the local Health Service and Education Office.
6.	Readiness of the community-based organization in improving female adolescents' iron folate status in a rural area (Apriningsih A, et al., 2022) [27]	To recognize community-based organization (CBO's) readiness to prevent and control anemia in adolescent girls	Cross-Sectional; n= 3 village officers, a chairperson, 6 Karang taruna members, 10 Posyandu cadres, and a nutrition manager; CBO selected with purposive sampling technique.	Bogor Regency, West Java	As many as 43.75% of community-based organization members are unaware of anemia prevention initiatives for adolescent girls but have positive attitudes and self-efficacy.
Implementation					
7.	Evidence-based nutrition interventions improved adolescents' knowledge and behaviors in Indonesia (Oddo	To assess the changes in knowledge, attitudes, and behaviors among adolescent girls after intervention	Pre-Post Design; n=514 participants were randomly selected	Klaten Regency, Central Java; West Lombok Regency, West	Following the gender-responsive intervention package, there was an improvement in nutrition knowledge, food diversity, fruit and vegetable consumption, daily physical activity, and compliance with

No.	Title (Author, Year)	Objective	Method	Place	Results
	VM, et al., 2022) [28]			Nusa Tenggara	iron-folic supplement consumption.
8.	Effect of education through video and packaging modifications of iron tablets on female adolescent behavior in the iron supplementation intake in SMPN 2 and SMPN 1 Parigi (Madestria NPO, et al., 2021) [29]	To identify the impact of giving education by video and modification of iron tablet packaging on adolescent girls' behavior in the iron supplementation intake	Quasi-Experimental, n=124 respondents with stratified random sampling	Parigi Moutong Regency, Central Sulawesi	The development of educational media for iron-folic supplement consumption through videos and modifications to its packaging significantly affects adolescent girls' knowledge, attitudes, and intentions to consume iron-folic supplementation.
9.	Fundamental aspects of the development of a model of an integrated health care system for the prevention of iron deficiency anemia among adolescent girls: A qualitative study (Sari P, et al., 2022) [30]	To analyze the critical aspects of an integrated health care system model for anticipating iron deficiency anemia in adolescent girls in a rural area of Indonesia	In-Depth Interview; n=41 participants with purposive sampling technique	A village in Soreang Sub-District, Indonesia	The integrated health service system model for preventing anemia in adolescent girls includes several important aspects, including policymakers' commitment, governance, and quality; teenage lifestyle; adolescent self factors; access to health services; and support from parents, teachers, and the community.
10.	Effect of local culture-based nutrition education on compliance with iron and folic acid supplementation in female adolescents (Rahmiwati A, et al., 2023) [31]	To analyze the impact of nutrition education using the local culture-based approach on the level of knowledge and attitudes regarding awareness, interest, evaluation, trial, and adoption dimensions, as well as compliance with consuming iron and folic acid supplementation	Quasi-Experimental; n= 68 and 58 girls in the control and intervention groups; the schools and samples were selected using cluster and simple random sampling	Ogan Komering Ilir (OKI) Regency, South Sumatera	When compared to the control group (iron-folic supplementation and leaflets), the intervention group (iron-folic supplementation and local culture-based nutrition education) had an increase in knowledge and attitudes.
11.	<i>Pengaruh promosi kesehatan terhadap pengetahuan pentingnya</i>	To determine the effect of health promotion on increasing	Quasi-Experimental; n=30	East Lombok Regency, West	There was an increase in knowledge following health promotion using a lecture approach

No.	Title (Author, Year)	Objective	Method	Place	Results
	<i>konsumsi Tablet Tambah Darah (Fe) bagi remaja putri MA Al-Ma'arif Riyadul Falah</i> (Junaedi M, et al., 2023) [32]	knowledge of the importance of consuming iron-folic supplementation for adolescent girls to reduce the risk of anemia	participants with total sampling	Nusa Tenggara	about the dangers of anemia and the importance of iron-folic supplementation.
12.	Animated educational video using health belief model on the knowledge of anemia prevention among female adolescents: An intervention study (Aisah S, et al., 2022) [33]	To evaluate the effects of animated educational videos on the knowledge of anaemia prevention among adolescent girls using the Health Belief Model	Quasi-Experimental; n=161 respondents were recruited through multistage random sampling	Semarang, Central Java	Animation-based educational videos can significantly increase knowledge about anemia prevention, including significant changes to the 9 indicators of the Health Belief Model.
13.	Differences in teenage girls' knowledge and attitude before and after being exposed in public service announcement media of "iron supplementation" (Lasamahu YN, and Widati S, 2022) [34]	To evaluate the difference in the knowledge and attitudes of adolescent girls before and after exposure to public service announcement media of "Iron Supplementation"	Pseudo-Experimental; n=60 students at SMP Negeri 10 Surabaya	Surabaya, East Java	Community Service Advertisement Group in the form of real-life videos: there are differences in knowledge and attitudes. Community Service Advertisement Group in the form of animated videos: only differences in knowledge.
14.	Effect of nutrition education using the podcast method on adolescent girls' knowledge and attitudes on anemia in Central Jakarta (Adlu R and Fayasari A, 2023) [35]	To evaluate the effect of education with audio podcast media about anemia on knowledge and attitudes	Quasi-Experimental; n=68 students with stratified random sampling	Central Jakarta, DKI Jakarta	The group that was given education via audio podcast: there was an increase in knowledge and attitude scores. Flyer group: only significant increase in knowledge scores.
Monitoring and Evaluation					
15.	Direct supervision of daily consumption of blood supplement tablets during menstruation can increase adolescent hemoglobin levels. (Dewi DS, et al., 2023) [36]	To evaluate the impact of direct supervision of iron-folic supplement consumption on the hemoglobin level of adolescent girls	Quasi-Experimental; n=56 participants with systematic random sampling	Bengkulu City, Bengkulu	Directly monitoring iron-folic supplement consumption during menstruation is more effective in increasing hemoglobin levels, compared to providing education on iron-folic supplement consumption without monitoring.

No.	Title (Author, Year)	Objective	Method	Place	Results
16.	Directly observed treatment for iron tablet supplements consumption among female senior high school students (Meilani N, and Setiyawati N, 2023) [37]	To assess the effectiveness of the implementation of directly observed treatment for iron-folic supplementation	Quasi-Experimental; n=70 respondents	Sleman and Bantul Regency, Yogyakarta a Special Region	The implementation of teachers' directly observed treatment in iron-folic supplement consumption shows that non-compliance with iron-folic supplement consumption is lower than that of peers.
17.	The TeenFit application intervention to increase knowledge of hemoglobin results of female students (Rohani T, et al., 2021) [38]	To determine the effect of the TeenFit application on increasing adolescent girls' knowledge about anemia	Quasi-Experimental; n=239 respondents	Bantul Regency, Yogyakarta a Special Region	There was an increase in female students' knowledge and hemoglobin levels before and after the intervention using the TeenFit application.
18.	<i>Evaluasi program Tablet Tambah Darah pada remaja putri</i> (Fitriana F and Pramardika DD, 2019) [39]	To evaluate the Blood Adding Tablet program for adolescent girls	In-Depth Interview: 2 adolescent girls, 1 teacher, and 1 nutritionist; Cross-Sectional: 45 respondents with purposive sampling	Bengkuring Public Health Center, Samarinda, East Kalimantan	There are discrepancies in program implementation at the input, process, and output stages. At the results stage, there is a change in the knowledge of adolescent girls. However, there are still adolescent girls who are anemic.
19.	Evaluation of Getar Thala innovation program (Gerakan Tanggulangi Anemia Remaja dan Thalassemia) during the Covid-19 pandemic (Wahdah R, et al., 2023) [40]	To determine the implementation of the Getar Thala innovation program during the Covid-19 Pandemic	Qualitative; n=19 respondents with purposive sampling	Sleman Regency, Yogyakarta a Special Region	There have been changes to the targets and distribution procedures for iron-folic supplementation during the Covid-19 pandemic. Evaluation shows an increase in the distribution coverage of iron-folic supplementation for adolescent girls.

Table 1 showed various factors that influence compliance with iron-folic supplement consumption, promotion methods, and media, as well as monitoring and evaluation in providing iron-folic supplementation to adolescent girls in Indonesia. To plan social marketing strategies in promoting iron-folic supplements, need to be concerned with four components: the problem/health issue, the target audience, the behavior to be modified, and approaches for bringing about the change [10]. Analysis related to targets and their behavior can be done by understanding the behavior of the target audience, including an analysis of the environmental circumstances that play a role, and what makes the audience's existing behavior easy or difficult to modify and adopt new behavior. Several factors that influence compliance with iron-folic supplement consumption, such as adolescent girls' attitudes, subjective norms, perceived behavioral control, intents [22],

motivation [23], parents' opinions [24], and the social environment [25], [26], [27] need to be analyzed further, so that consumption can increase.

On the other hand, formative research is needed when implementing social marketing in promoting health programs [42], [28]. Next, the choice of promotional methods or approaches [30], [32], [35] and media [29], [31], [33], [34] are crucial in increasing the awareness of adolescent girls to consume iron-folic supplements. The application of these basic elements of social marketing needs to be complemented by several approaches of monitoring [36], [37], [38] and evaluation [39], [40] to assess the success of the promotions that have been carried out.

DISCUSSION

Several countries' health programs have used social marketing, which entails using commercial marketing strategies to plan, implement, and evaluate services targeted at influencing the voluntary behavior of the target population to promote personal and community health [10]. Social marketing in the promotion of iron-folic supplementation for adolescent girls in Indonesia based on the results above can be analyzed from planning, implementation, monitoring, and evaluation.

Planning

Planning a health program requires a systematic approach to successfully achieve the expected goals. The planning of social marketing initiatives focuses on four elements: health problems, the target audience, desired behavior change, and strategies for implementing change [10]. All evaluated papers addressed the persistent and significant prevalence of anemia. Adolescent girls are targeted because of their potential to become pregnant and contribute to the nation's future generation. Insufficient compliance with iron-folic supplement consumption is a key factor in the ineffectiveness of anemia preventive measures. The behavior of adolescent girls' non-compliance in consuming iron-folic supplementation needs to change. To determine the promotional strategy, it is important to investigate the factors that either support or hinder the consumption of iron-folic supplementation among adolescent girls, who are the target audience [22].

Supporting and inhibiting factors

The consumption of iron-folic supplementation in adolescent girls is influenced by various factors, such as attitudes, subjective norms, perceived behavioral control, intents [22], motivation [23], parents' opinions [24], and the social environment such as peers, teachers, parents, and health workers [25]. The readiness of schools and community-based organizations, such as youth organizations or Posyandu cadres, is essential for the effective implementation of anemia preventive measures among adolescent girls [26], [27].

Strategy determination

The iron-folic supplementation for adolescent girls through *Aksi Bergizi* has taken into account the factors that influence the level of compliance with iron-folic supplement consumption. *Aksi Bergizi* employs a comprehensive social and behavior change communication strategy to empower students in enhancing their eating habits and physical exercise, with the support of their family, friends, and the community. Behavioral and social change communication strategies are formulated based on evidence and detailed accounts of inclusive and sustainable initiatives that engage adolescents, families, community leaders, teachers, and local health workers [41]. Unfortunately, there is a scarcity of activities specifically geared to engage parents in providing iron-folic supplementation to adolescent girls.

Implementation

Before widespread implementation, the promotion of a health program through social marketing necessitates conducting formative research [42]. The *Aksi Bergizi* is an

extension of initiatives conducted in Klaten Regency and West Lombok Regency between 2019 and 2020. Implementing a gender-responsive intervention package, consisting of breakfast and weekly iron-folic supplementation, school-based nutrition education programs, and behavioral and social change communication strategies, has been proven to increase nutrition knowledge, increase the variety of food consumed, promote fruit and vegetable consumption, encourage daily physical activity, and improve compliance of iron-folic supplement consumption [28]. Based on these commendable standards, *Aksi Bergizi's* activities are presently being implemented on a nationwide scale in Indonesia [17].

In any setting, successful marketing plans have these five basic characteristics, known as the 5Ps of commercial marketing also known as marketing mix. The first four parts of a commercial marketing strategy (product or service, price, place, and promotion) must be made concurrently and interactively to achieve desired exchanges with the fifth element of the plan (people in target markets) [10]. To effectively implement social marketing, it is crucial to take into account many elements of the social marketing mix, including product, price, place, and promotion. Product or service, price, place, and promotion all influence the desirability of a program's services. The way these four parts are bundled in an overall marketing plan has a direct impact on the possibility of individuals in the program's target markets engaging in the desired exchanges with the program [10]. Additionally, consideration should be given to funding sources and the allocation of responsibilities among all relevant stakeholders [10], [42].

Product

In the field of social marketing, a product refers to something that is received by consumers or targets, which might take the shape of goods, behaviors, or ideas [43]. In Indonesia, iron-folic supplements have not been made different between products for pregnant women and adolescent girls, in terms of both packaging and tablets [14]. This can lead to adolescent girls being reluctant to consume iron-folic supplementation which has been provided by the government. In contrast to India, the iron-folic supplementation for adolescent girls is blue, while for pregnant and breastfeeding women is red [44]. In addition, product packaging has the potential to appeal to the intended audience. Modifications in packaging can impact the knowledge, attitudes, and intentions of adolescent girls towards consuming it [29].

Regarding social marketing products in the form of behavior, giving iron-folic supplementation to adolescent girls is currently carried out by consuming it together with female students at school through the *Aksi Bergizi* activity. The series of *Aksi Bergizi* activities are combined with exercise and breakfast together as well as increasing health literacy in the form of video, games, etc., involving the entire school community [17]. The involvement of the entire school community can support an integrated health service system model in preventing anemia in adolescent girls [30].

Price and place

Price and place are another of the 5Ps of social marketing strategy. Even if a program's services meet the needs and desires of individuals/society, successful interactions with them may be influenced by the price of the services. The most evident feature of healthcare pricing is the money amount that individuals/society are required to pay in exchange for them. Also, the physical place of a program might help or impede its overall performance. Accessibility refers to more than just physical location, it covers days and hours of operation. Beyond that, consideration must be given to several other factors of how patients/customers are handled and made to feel [10].

The objective of providing iron-folic supplementation to adolescent girls encompasses the entire young female population of Indonesia. Nevertheless, the program currently maintains a priority for adolescent girls in junior high school, high

school, or equivalent educational levels across all cities and districts in Indonesia. This program for young schoolgirls is offered at no cost. Adolescent girls who are not in school can independently acquire iron-folic supplements from pharmacies or drugstores [2].

Promotion

Another of the 5Ps of a social marketing strategy is promotion. A programmer uses promotion to develop and maintain the program's reputation or image, as well as to inform individuals/society and their intermediaries about the sorts and quality of services provided and how to access them. Health programs typically seek to establish familiarity and positive images with target markets through promotional activities [10]. Effective nutrition promotion and education should be disseminated through suitable media channels to captivate attention and generate interest, hence facilitating the reception of imparted information by the intended audience [31]. Utilizing technology, information, and communication to promote nutrition among teenagers is a highly successful method for modifying behavior [45].

The promotion of providing iron-folic supplementation to adolescent girls in Indonesia has traditionally utilized many mediums such as posters, leaflets, and public service advertisements [2]. After being packaged as an *Aksi Bergizi* activity, promotions are conducted by distributing educational videos (both real and animated), iron-folic supplementation jingles and dances, logos, posters, twibbon, merchandise, and other materials through popular social media and mass media platforms that are frequently accessed by teenagers. Additionally, adolescent health cadres at schools are involved in the promotion efforts, as they can encourage female students to consistently consume these supplements [17]. Promotional initiatives should also consider the local wisdom of the specific target environment [31]. Nevertheless, certain places in Indonesia have not yet created iron-folic supplementation promotional media that aligns with their local culture.

Promotional media utilizing local wisdom has been implemented in Cambodia. The term "*Kolap Krahorm*", meaning "red rose," was selected by adolescent girls (after conducting preliminary studies) as a reference to iron-folic supplements. This choice was made since iron-folic supplement offers health and beauty benefits that are specifically targeted towards adolescent girls [46]. In Indonesia, the term "*Tablet Tambah Darah*" is commonly understood to refer to a medication that raises blood pressure. Consequently, many adolescent girls remain reluctant to take it. Apart from that, iron-folic supplement advertising in Cambodia employs packaging designs, posters, and stickers that feature images of renowned singers [46]. In Indonesia, well-known figures are also engaged in promoting iron-folic supplementation. During the official launch of *Aksi Bergizi*, there were also record-breaking, meetings and dialogues with the Minister of Health [17]. To improve acceptance among the target audience, iron-folic supplement promotional activities should involve a wide variety of influential figures who have close associations with adolescent girls.

Funding sources

When implementing social marketing in health promotion, it is important to take into account the sources of funding available [42]. The funding for logistics provision and iron-folic supplementation provision activities in Indonesia can be sourced from the state or regional budget, and other budget sources following existing regulations [17].

Role allocation

The allocation of roles is important in any activity. The logistics for iron-folic supplementation in Indonesia are managed by either the central or regional government by considering the product specifications and achievement targets that have been established. The private sector's role in iron-folic supplementation logistics is primarily that of a producer. Unlike the Philippines, the government has actively partnered with

iron-folic supplementation manufacturers to offer training, promotion, and community mobilization aimed at providing iron-folic supplementation to adolescent girls [47].

During the *Aksi Bergizi* activities, all relevant ministries/institutions, provincial/district/city health services, public health centers, schools, and other partners collaborate and fulfill their designated responsibilities [17]. The current mobilization strategy has initiated the empowerment of the community through the establishment of agents of change ("*Bestie Aksi Bergizi*"), whose purpose is to deliver education, serve as role models, monitor the implementation of *Aksi Bergizi*, and collaborate in disseminating information. The members of "*Bestie Aksi Bergizi*" in schools consist of individuals who are representatives of student organizations and members of the general public who have a genuine interest and willingness to join [48]. Although parents of students are some of the intended targets of *Aksi Bergizi* programs, there is limited involvement of parents in the actual implementation of these activities.

Monitoring and Evaluation

To ensure the success of a program's promotion through social marketing, it is crucial to monitor and evaluate the progress. This allows for adjustments to be made to the intervention based on the results of continuous evaluation [10]. Supplementing adolescent girls with iron-folic supplementation is a targeted nutritional intervention aimed at reducing stunting. This intervention is regularly monitored and evaluated by measuring the percentage of adolescent girls who consume iron-folic supplements [7], [19].

Monitoring

The iron-folic supplement consumption in schools is monitored by Usaha Kesehatan Sekolah (UKS) teachers and public health center workers during iron-folic supplement consumption days [49]. Monitoring and assisting iron-folic supplement consumption is a means of providing support from the surrounding environment. Direct supervision of iron-folic supplement consumption [36], as well as direct supervision by teachers [37], is recognized as a more effective approach to increase compliance with iron-folic supplement consumption which in turn can increase hemoglobin levels [36], [37]. Parents must also assist since parental support has an impact on the extent to which adolescent girls comply with iron-folic supplement consumption [24].

Technological advancements also facilitate compliance with iron-folic supplement consumption among adolescent girls. The Ministry of Health developed a CERIA application as a tool for adolescent girls to independently record and report their iron-folic supplement intake. This application also provides information on anemia and the advantages of iron-folic supplementation, along with a built-in reminder to consume iron-folic supplements [49]. The application's utilization aligns with the findings of Rohani et al. [38], which demonstrated a significant improvement in female students' knowledge and hemoglobin levels following the implementation of the TeenFit application [38]. However, the use of this application needs to be reconsidered regarding its affordability for all adolescent girls in Indonesia.

Evaluation

Evaluation is a measurement and final report about what happened during the execution of a program [42]. In addition to independent records by the girls, UKS teachers also regularly record and report to the public health center. Healthcare workers then make a report to the district/city and provincial health services as well as the Ministry of Health via the Integrated Nutrition Information System or Sistem Informasi Gizi (Sigizi) Terpadu [49].

Evaluations of the reports are regularly and periodically conducted to identify any obstacles and issues, enabling joint follow-up actions [49]. The current challenges are around the availability of logistics and compliance with iron-folic supplement

consumption. These concerns are supported by the findings of the 2018 Riskesdas survey, which indicates that not all adolescent girls have received iron-folic supplementation and its consumption rates remain significantly low [4]. Previously, the indicator that was monitored and evaluated was whether adolescent girls have received iron-folic supplementation. In 2022, 45.35% of adolescent girls consumed iron-folic supplements from a target of 54%. The failure to achieve this goal was also associated with inadequate records and reporting [50].

This evaluation aligns with the findings of the evaluation conducted on the iron-folic supplementation program for adolescent girls in Samarinda City. The review identified discrepancies in the distribution, monitoring, recording, reporting, and targeting processes [39]. The evaluation of innovative programs in offering iron-folic supplementation for adolescent girls in Sleman Regency, DIY during the Covid-19 pandemic yielded contrasting results. The results indicate a rise in the coverage of iron-folic supplement distribution following strategic modifications, such as shifting the target audience from adolescent girls in schools to adolescent girls in villages, implementing drive-thru distribution of iron-folic supplementation, and utilizing village cadres for iron-folic supplement distribution [40].

The implementation of iron-folic supplementation for adolescent girls in Indonesia needs to be adapted to the specific conditions in each region. It is necessary to have innovation from each region to formulate messages and determine appropriate media and strategies that align with the interests of adolescent girls by considering local wisdom. This research has not undergone a thorough analysis of the specific conditions of each region in Indonesia. In addition, this research has not examined the availability of iron-folic supplement logistics, which also impacts the consumption of iron-folic supplementation among adolescent girls.

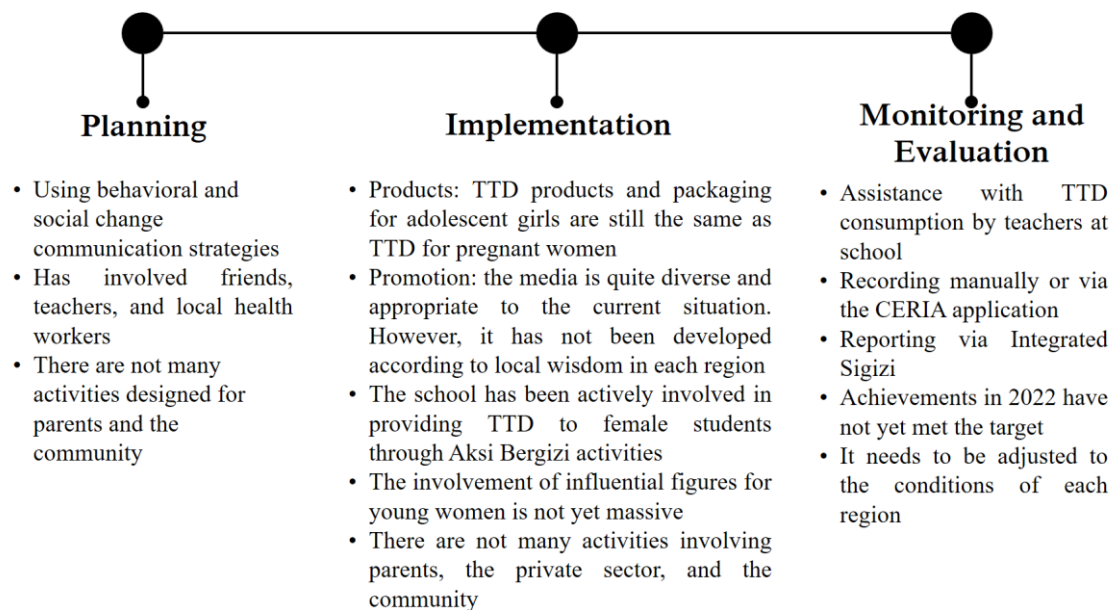


Figure 4. Social Marketing in the Promotion of Iron-Folic Supplementation among Adolescent Girls in Indonesia

CONCLUSION

This study indicates that the promotion of providing iron-folic supplements for adolescent girls in Indonesia has incorporated social marketing aspects throughout the stages of planning, implementation, monitoring, and evaluation. Nevertheless, further

enhancements are still required. Promotional strategies for providing iron-folic supplementation have engaged schools through the *Aksi Bergizi* program but have not involved parents, the community, and the private sector. In addition, the messages and methods employed to promote iron-folic supplementation remain national and have not been tailored to suit regional contexts. Furthermore, there is a lack of mentoring and coaching initiatives for the target audience. It is imperative to have participation from many sectors and all relevant parties throughout the entire process, from initial planning to the evaluation of activities. During the implementation process, it is necessary to conduct promotional activities by adjusting to the specific local conditions and considering local wisdom. In terms of product, there should be a modification in the iron-folic supplement specifications for adolescent girls to distinguish them from the product for pregnant women. There is a need to enhance the participation of influential people and parents, as well as optimize the role of the private sector. To enhance the effectiveness of monitoring and evaluation, it is imperative to establish iron-folic supplement consumption companions through community empowerment, as well as provide intense and regular support and direction to the public health center and health service. Further research is required on region-specific social marketing in Indonesia, along with an analysis of the availability of iron-folic supplement logistics.

ACKNOWLEDGMENTS

The author would like to thank all of the friends in the Ministry of Health who have been willing to help in the process of collecting the necessary documents. There were no conflicts of interest in the preparation of this manuscript.

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