

Social Support for Compliance in Consuming Iron Supplements in Adolescent Girls in Mamuju Regency, West Sulawesi, Indonesia

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ABSTRACT

Background: Compliance with iron-folic acid (IFA) tablet consumption among adolescent girls remains low despite the widespread distribution program. A lack of social support is one of the key factors influencing consumption behavior.

Objective: To analyze the role of social support in shaping compliance with IFA tablet consumption among adolescent girls in Mamuju Regency, West Sulawesi.

Methods: This study used a qualitative approach with a phenomenological design. Data were collected through in-depth interviews and focus group discussions (FGDs) with students, teachers, parents, and healthcare workers. Data analysis followed the Miles and Huberman approach.

Results: Compliance among adolescent girls was influenced by perception, motivation, and types of social support. Teachers and healthcare workers provided informational, instrumental, and emotional support, while parents and peers offered mainly emotional support. Barriers included forgetfulness, unpleasant taste, parental restrictions, and side effects.

Conclusion: Social support from various parties is crucial in increasing IFA tablet consumption compliance. Parental support is a key factor in the success of this intervention.

Keywords: Iron-Folic Acid Tablets, Compliance, Social Support, Adolescent Girls

1. INTRODUCTION

Anemia is one of the major nutritional problems of global concern, especially among adolescent girls. This condition is characterized by low levels of hemoglobin in the blood which can reduce physical and cognitive capacity. The World Health Organization (WHO) stated that in 2021 around 31.2% of women aged 15–49 years experienced anemia, with the highest proportion found in developing countries, including Indonesia [1].

In Indonesia, the prevalence of anemia in adolescent girls based on Riskesdas 2018 reached 32% [2]. Adolescent girls are a group that is vulnerable to anemia because they start menstruating, have increased iron needs, and have a lifestyle that does not pay attention to balanced nutritional intake. Anemia in adolescents contributes to various negative impacts such as decreased academic achievement, impaired growth, and the risk of complications during pregnancy and childbirth in the future [3,4].

To overcome this problem, the Indonesian government through the Ministry of Health launched a supplementation program for Iron Tablets (TTD) which is given one tablet per week for 52 weeks in a year. However, the effectiveness of this program is very dependent on the level of compliance with TTD consumption. Unfortunately, various studies have shown that compliance of adolescent girls with TTD consumption is still very low, indicating the need for a more comprehensive approach [5].

One important approach that can improve the success of the TTD program is through strengthening social support from the environment around adolescents, such as parents, teachers, peers, and health workers. Social support has been shown to increase individual awareness and motivation in implementing healthy living behaviors, including compliance with TTD consumption. Therefore, this study aims to analyze in depth the role of social support in influencing compliance with TTD consumption in adolescent girls in Mamuju Regency, West Sulawesi [6–9].

Adolescent girls are at high risk due to iron loss during menstruation. Anemia in adolescents affects quality of life, reduces academic achievement, and is at risk of complications in future pregnancies [3,4]. One of the government's strategies is to provide one Iron Supplement Tablet (TTD) per week for 52 weeks. However, the level of compliance with TTD consumption is still very low [5].

Data from the Mamuju Regency Health Office in 2023 showed that only 64.3% of adolescent girls received TTD, and most did not consume it regularly [6]. Preliminary studies revealed that lack of teacher supervision and lack of support from parents and peers were the main obstacles [7]. Therefore, the role of social support is important in shaping TTD consumption compliance behavior [8,9].

2. METHOD

This study uses a qualitative approach with a phenomenological design to explore in depth the experiences, perceptions, and meanings of social support for compliance with the consumption of Iron Supplement Tablets (TTD) in adolescent girls. This approach was chosen because it was considered the most appropriate for understanding social phenomena and personal contexts from the informant's perspective.

Location and Time of Research

The study was conducted at MTsN 1 Mamuju Regency, West Sulawesi, as one of the schools running the TTD supplementation program. Data collection was conducted during January to March 2024.

Informant Selection:

The informants in this study were selected purposively with certain inclusion criteria relevant to the focus of the study. The informants consisted of six female students who received TTD, two teachers involved in the TTD program at school, three parents of female students, and two health workers from the Community Health Center who were responsible for the adolescent program. The selection of informants was based on their ability to provide rich and in-depth information on the topic being studied.

Data collection technique:

Primary data were collected through in-depth interviews and focus group discussions (FGDs). Interviews were conducted individually using a semi-structured interview guide that was compiled based on indicators of social support, namely emotional, informational, instrumental, and appreciation support. FGDs were conducted with groups of female students to understand social interactions and peer influence. In addition, non-participatory observations were conducted during the TTD provision process at school to strengthen triangulation data.

Data Validity:

The validity of the data was tested through triangulation of sources and methods, discussions between researchers (peer debriefing), and member checks with several informants to ensure the accuracy of the information. All interviews were recorded (with the informant's permission), transcribed verbatim, and analyzed thematically.

Data Analysis Techniques:

Data analysis was conducted using the interactive approach of the Miles and Huberman model, which includes three main stages: data reduction, data presentation, and drawing conclusions/verification. Data reduction was carried out by sorting important information based on themes. Data presentation used a thematic category matrix. Drawing conclusions was carried out in stages and iteratively, adjusted to the patterns and relationships between themes found [10].

Results3.1. Characteristics of Informants

| Informant | Amount | Age (average) | Gender |
|----------------|--------|---------------|--------|
| Student | 6 | 14 years | Woman |
| Teacher | 2 | 35 years | Woman |
| Parent | 3 | 42 years old | Woman |
| Health workers | 2 | 38 years old | Woman |

Informants in this study were selected purposively to obtain in-depth and representative information. On average, informants were women because the focus of the study was on adolescent girls and their supporters in the school and household environments.

3.2. Main Theme and Sub Theme

| Theme | Sub Themes |
|-----------------------------|--|
| Perception | Fear of side effects, unpleasant taste, ignorance of benefits |
| Motivation | Personal motivation, teacher influence |
| Teacher support | Education, direct supervision, reminders |
| Parental support | Emotional support, habituation at home |
| Health worker support | Early education, TTD distribution |
| Peer support | Group motivation, peer influence on consumption |
| Barriers to TTD consumption | Forgot, don't like the taste, parents forbid, side effects, out of stock |

Based on the results of interviews and FGDs, female adolescents showed non-compliance caused by negative perceptions of TTD, including fear of side effects and unpleasant taste. Some female students also admitted to not understanding the long-term benefits of TTD consumption.

Teenagers' motivation to consume TTD comes from personal encouragement and teacher influence. Teachers play a role as reminders and motivators through education and direct supervision at school. However, outside the school environment, parental support is very important.

Social support from parents is emotional, such as providing encouragement and attention, but is not optimal in instrumental aspects such as providing or reminding to take TTD at home.

Health workers provided education and distributed TTD at the beginning of the program, but follow-up was lacking. The role of peers was also found to influence female students' behavior, both positively and negatively, through social reinforcement within the group.

Some of the main obstacles found include: forgetting to drink, not liking the taste of TTD, not having stock at home, to prohibitions from parents due to misunderstandings regarding the effects of TTD. Negative experiences after consuming TTD, such as nausea or dizziness, also make teenagers reluctant to repeat consumption regularly.

3. DISCUSSION

The findings of this study indicate that the behavior of consuming Iron Supplement Tablets (TTD) in adolescent girls is greatly influenced by various factors, both internal and external. Internally, negative perceptions of TTD such as unpleasant taste, fear of side effects, and ignorance of long-term benefits contribute to low compliance. The dominant external factor is the form of social support from the surrounding environment, such as parents, teachers, health workers, and peers. This finding is in line with Bandura's Social Cognitive theory which emphasizes that a person's behavior is the result of interactions between personal, behavioral, and environmental factors [11].

Teacher support at school acts as a reinforcing factor that can increase students' motivation to consume TTD regularly. Teachers not only provide education about the benefits of TTD, but also carry out direct supervision during consumption at school. This shows that the role of teachers is very important in intervening in adolescent health behavior through an informative and supportive approach. An informant stated, "Usually when I drink at school I don't forget, because the teacher always reminds me and accompanies me" (Student, 14 years old). Teachers as role models also provide a positive influence in forming healthy habits in the school environment [12].

Health workers have a major role in the distribution and initial education regarding TTD. However, the results of this study revealed that after the initial education process, follow-up by health workers was less intensive. In fact, ongoing supervision and counseling are needed to ensure the effectiveness of the program. A study by Aryanti et al. (2023) also showed that the active involvement of health workers in adolescent supplementation programs is directly proportional to increased compliance [8]. One health worker said, "We usually provide initial counseling during the new school year, but we haven't routinely monitored schools." Therefore, there needs to be a routine monitoring and evaluation mechanism from health facilities to strengthen the sustainability of the intervention.

Parents have a key role as the first socialization agent in the family. However, this study found that the form of support given by parents tends to be emotional only, such as providing encouragement, without being accompanied by instrumental actions such as providing TTD at home or reminding them of the time of consumption. Low parental involvement can be caused by a lack of understanding or belief in the importance of TTD supplementation, and there are even cases of prohibition by parents due to misunderstanding of side effects. One mother said, "I thought the tablets made my child nauseous all the time, so I didn't give him any more to drink." This finding reinforces the importance of education targeting parents so that they

have a positive perception and are able to support their children optimally [7,14].

Peer support also influences compliance. In some cases, peers are able to provide motivation and form social norms that support routine TTD consumption. One student said, "If my friends drink, I join too, so I'm not embarrassed." However, in other conditions, peers can also be an obstacle if they have negative perceptions that are then spread in the group. Therefore, group-based interventions or peer educator approaches can be effective strategies in encouraging compliance with TTD consumption through positive influence between friends [9,13].

Barriers that arise such as forgetting, not liking the taste of the TTD, and mild side effects such as nausea or dizziness need to be addressed with an educational and adaptive approach. The use of technology such as digital reminders or health applications can help overcome the problem of forgetting to consume. In addition, providing TTD with more acceptable flavor variants for adolescents is also worth considering. Technology-based behavioral interventions and flavor innovations have been shown to be effective in increasing compliance in various previous studies [15,16].

It is also important for schools and health centers to collaborate in developing a clear consumption calendar and reporting system. In addition, involving student organizations in TTD awareness campaigns can increase active student involvement. Other studies have also shown that an integrated approach between schools, homes, and health services provides better results in the sustainability of micronutrient supplement consumption behavior [17,18].

Overall, the results of this study reinforce the idea that increasing compliance with TTD consumption cannot only rely on one-way medical or educational interventions. A comprehensive approach is needed involving all parties who interact with adolescents, including families, schools, health facilities, and the wider social environment. Systemic, consistent, and sustainable social support is the main foundation for the success of TTD supplementation programs among adolescent girls [19,20].

4. CONCLUSION

Compliance with TTD consumption is still low in adolescent girls. Negative perception, low motivation, and lack of social support are the main factors. Support from teachers, parents, and health workers is needed to improve compliance with TTD consumption.

REFERENCES

- [1] World Health Organization. Global Anemia Estimates 2023. Geneva: WHO; 2023.
- [2] Ministry of Health of the Republic of Indonesia. Riskesdas 2018. Jakarta: Balitbangkes; 2018.
- [3] Handayani S, Sugiarsih. The Impact of Anemia on Adolescents. *Indonesian Nutrition*. 2021;45(2):55–63.
- [4] Rai A, et al. Menstrual Blood Loss and Anemia. *Int J Adolesc Health*. 2023;12(1):11–7.
- [5] Yanti F, Anwar F. Effectiveness of Iron Supplementation. *J Clin Nutrition*. 2022;18(3):123–30.
- [6] Mamuju Health Office. Report on the 2023 Youth TTD Program. Mamuju: Health Office; 2023.
- [7] Masfufah N, et al. Social Support and Compliance with TTD Consumption. *Health Media*. 2022;10(2):80–7.
- [8] Aryanti E, et al. The Role of Social Support in Adolescent Health. *J Public Health*. 2023;19(1):45–51.
- [9] Nilawati S. Peer Relationship and Interest in Consuming Iron Supplement Tablets. *J Adolescent Nutrition*. 2024;5(1):60–7.
- [10] Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd ed. California: SAGE; 1994.
- [11] Bandura A. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs: Prentice-Hall; 1986.
- [12] Saroson BR. *Social Support: Theory, Research and Applications*. Springer; 2005.
- [13] Asriningrum N. The Concept of Social Support. *J Social Psychology*. 2019;8(1):10–8.
- [14] Utomo B, et al. Social Factors of TTD Consumption. *Journal of Reproductive Health*. 2020;11(2):27–34.
- [15] Rasyid A, et al. Evaluation of the Level of Compliance of Adolescents in Consuming TTD. *Nutrition and Health*. 2022;14(2):109–14.
- [16] Wardani I, Prameswari N. The Effect of Flavor Innovation on Adolescent Compliance in Consuming TTD. *J Food Technology and Nutrition*. 2021;12(2):95–101.
- [17] Andriani M, Sari N. Collaboration between Schools and Health Centers in Nutrition Programs. *J Community Health*. 2023;9(1):30–6.
- [18] Hidayat R, Kusumawardani N. School-Based Intervention for Anemia Prevention. *Journal of Health Promotion*.

2022;10(3):145–53.

- [19] Sari D, Yusuf M. Effective Education Strategies for Adolescent Girls. *Indonesian Nutrition Media*. 2021;40(1):22–7.
- [20] Prasetyo H, Diah R. The Role of Family in Nutritional Supplementation of Adolescents. *Journal of Maternal and Child Health*. 2023;8(2):78–85.
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