

ISLAMIC COMMUNITY EMPOWERMENT THROUGH THE DA'WAH MOVEMENT TO IMPROVE ADOLESCENT GIRLS' COMPLIANCE WITH IRON SUPPLEMENTS FOR STUNTING PREVENTION IN MADRASAHs AND PUBLIC SCHOOLS

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ABSTRACT

Anemia in adolescent girls is a serious public health problem in Indonesia, contributing to the high prevalence of stunting. Despite widespread distribution of iron supplements, adolescent girls' compliance with iron supplements remains low. This study aims to explore how community empowerment based on Islamic values can improve adolescent girls' adherence to iron supplements as a measure to prevent stunting in madrasahs and public schools of Pringsewu Regency, Lampung, Indonesia. Data were analyzed using Miles and Huberman's interactive model and interpreted in light of Julian Rappaport's empowerment theory, which encompasses the components of trust, norms, and social networks. The study involved adolescent girls from 62 junior high schools under the authority of the Pringsewu District Education and Culture Office, as well as 43 Islamic junior and senior high schools (madrasahs). The results indicate that Islamic values play a significant role in shaping health behavior. Trust in religious leaders, internalization of Islamic health norms, and support from religious community-based social networks positively contribute to increased adherence to iron supplements. The integration of spiritual responsibility and health practices has been shown to promote higher motivation and compliance. Religion-based empowerment provides a contextual and meaningful framework for improving adolescent girls' compliance with iron supplements. These findings contribute to the notion that health education that prioritizes a contextual spiritual approach can be a relevant and sustainable strategy for preventing stunting, particularly within Islamic educational institutions.

Keywords: Adolescent girls, Iron Supplementation, Islamic Empowerment, and Stunting

INTRODUCTION

Anemia among adolescent girls is currently a public health issue in Indonesia. This condition is characterized by hemoglobin levels below 12 g/dl, a decrease in hemoglobin, hematocrit, and erythrocyte levels (Turner et al., 2025; Wiciński et al., 2020). Adolescent girls with anemia tend to experience chronic fatigue, menstrual cycle disorders, and ongoing nutritional imbalances. According to the data provided by Dinas Kesehatan Kota published in 2023, in Lampung Province, the prevalence of anemia among adolescent girls reaches 24.6%, with the highest rate found in Pringsewu District at 46.2%. Factors contributing to high rates of anemia among adolescents include low iron intake (Sholicha & Muniroh, 2019; Nasruddin et al., 2021; Permatasari et al., 2023) and menstruation (Indrawatiningsih et al., 2021; Sholicha & Muniroh, 2019). This situation raises serious public health concerns, considering that adolescent girls are the future generation of mothers. Compliance with iron supplementation (*Tablet Tambah Darah/TTD*) is crucial, as iron deficiency anemia is a significant risk factor for stunting in adolescent girls. Anemia not only impairs concentration in learning and physical fitness but also has the potential to cause complications during later pregnancy, impacting the baby's health and increasing the risk of stunting.

Stunting affects children's cognitive development, leading to learning difficulties and a weakened immune system, which makes them more susceptible to metabolic diseases in the long term. Even as adults, they will have short stature and low productivity (Upadhyay & Upadhyay, 2017; Wahyuni & Zulaikha, 2024). The Global Nutrition Report states that the prevalence of stunting in Indonesia fell from 30.8% in 2018 to 27.7% in 2019. It then fell again to 24.4% in 2021. The Indonesian government aims to reduce the prevalence of stunting to 14% by 2024 (Global Nutrition Report, 2024). In Lampung Province, the prevalence of stunting in 2023 was recorded at 14.9% (Betania et al., 2024). Based on the results of the Lampung Province Nutrition Status Monitoring (PSG), the prevalence of stunting in Pringsewu Regency increased from 21.15% in 2015 to 25.78% in 2017. Following that, the prevalence of stunting began to decrease significantly, from 20.19% in 2018 to 15.8% in 2023 (Yulianto et al., 2023). Data from the Indonesian Nutrition Status Survey (SSGI) shows that the prevalence of stunting in Lampung Province has declined from 26.26% in 2019 to 15.2% in 2022, and then further declined to 14.9% in 2023. With a national target of 14% by 2024, Lampung only needs to reduce the rate by 0.9% to achieve this goal.

The decline indicates efforts to address stunting in Pringsewu District. Although the prevalence of stunting in Pringsewu District has declined, the figure remains above the national target, necessitating more collaborative and sustainable strategies and methods to accelerate the decline in stunting. One of the national strategies that has been implemented is the routine provision of iron tablets to adolescent girls through schools (Dewi et al., 2023). Administering iron tablets as a nutritional supplement is the best solution (Kustriyani et al., 2023). Blood-boosting tablets containing 60 mg of iron and 0.4 mg of folic acid have been proven effective in reducing anemia and preventing its long-term effects, including stunting (Sulistiyowati et al., 2023; McLoughlin, 2020). Iron tablets are given to adolescents once a week and once a day during menstruation, in accordance with Indonesian Ministry of Health Regulation No. 88 of 2014 concerning Standards for Iron Tablets for Women of Childbearing Age and Pregnant Women. In line with research on adolescents in Indonesia by Nurjanah & Azinar (2023), weekly iron supplements can reduce anemia in adolescents from 20% to 5.7% in 12 weeks, so iron supplements are considered effective in preventing and reducing anemia. Shah et al.'s (2016) study on adolescent girls in Gujarat found that weekly iron tablets reduced the prevalence of anemia from 79.5% to 58%. In line with research among female students in Ghana, West Africa, a weekly iron supplement program can reduce the prevalence of anemia among adolescent girls (Gosdin et al., 2021).

The Indonesian government, through the Ministry of Health, launched a national program several years ago to provide iron tablets to adolescent girls. This program was initiated by the Ministry of Health in 2014 (Knijff et al., 2021; Oddo et al., 2019). The distribution of iron tablets to adolescent girls aged 12–18 years is carried out through school health units (in educational institutions, junior high schools, and senior high schools) (Helmyati et al., 2023). Although the distribution of iron tablets has reached most adolescents in Pringsewu, compliance rates remain low. Pre-research findings indicate that most female students only take iron tablets once or twice a month, with more than 20% not taking them at all.

This low compliance is influenced by factors such as understanding, side effects, and the social stigma associated with taking iron tablets. This situation indicates the need for alternative approaches that can address the dimensions of values, beliefs, and personal awareness among adolescents (Metzner et al., 2022). In predominantly Muslim communities, such as Pringsewu Regency, a values-based approach to religion offers strategic potential in strengthening intrinsic motivation and expanding the reach of health interventions. Islamic teachings that emphasize the importance of caring for the body as a trust from God can serve

as a normative foundation for building collective awareness of the importance of nutrition (Khorasgani & Beikzadeh, 2023), particularly in the context of preventing anemia and stunting.

Several previous studies have demonstrated the effectiveness of faith-based approaches in promoting healthy behaviors within communities. For instance, Faizi & Saputra (2025) found that Islamic-based health education improved public understanding and awareness of health issues, while Munir et al. (2025) showed that Islamic religious counseling enhanced community participation in health programs. Similarly, Kruk & Aboul-Enein (2024) reviewed 11 studies that reported the positive impact of religiosity, spirituality, and faith-based interventions on health outcomes, confirming that religiosity is positively correlated with better health. Studies by Abu-Ras et al. (2024) and Milstein et al. (2020) also highlighted that religion-based health promotion strategies are effective in fostering healthy behaviors.

Despite these insights, previous research has primarily focused on general health awareness, participation, or spiritual well-being, with limited attention to adolescent nutrition, particularly compliance with iron supplementation as a strategy to prevent stunting. To date, no study has specifically investigated how Islamic community empowerment, grounded in values of trust, norms, and networks as conceptualized by Julian Rappaport's empowerment theory, can be mobilized to address iron supplement compliance among adolescent girls in Indonesia. This study, therefore, introduces a novel perspective by linking Islamic da'wah-based empowerment with adolescent nutrition interventions in the context of madrasahs and public schools in Pringsewu Regency, Lampung. The findings contribute conceptually by extending empowerment theory into the domain of Islamic health promotion and practically by offering a contextual, participatory, and value-oriented model for stunting prevention programs.

METHOD

This study uses a qualitative approach with a phenomenological study design (Berg, 2001; Riadi et al., 2024; Lowi & Olson, 1970) to explore Islamic-based empowerment practices in improving compliance with iron tablet consumption as a preventive measure against stunting among adolescent girls in madrasahs and public schools in Pringsewu District, Lampung Province. The sampling strategy employed purposive and snowball sampling (Tulus et al., 2024), taking into account the diversity of geographical contexts, stunting levels, and types of educational institutions. Data were collected through in-depth interviews, participatory observation, and documentation. Interviews were conducted with 60 female students receiving *TTD* at the junior high school/MTS and senior high school/SMK/MA levels, 12 program coordinator teachers, and 11 expert informants from relevant agencies, including the Health Office, Ministry of Religion, and Community Health Center. A total of 83 informants were involved, spread across 12 schools/madrasahs in three representative sub-districts (Pringsewu, Pagelaran, Ambarawa) selected based on variations in stunting rates and regional classification (urban, semi-rural, and rural).

Data were analyzed using an interactive analysis model (Miles et al., 2014), which includes data reduction, data presentation, and conclusion/verification stages. To ensure the credibility of the findings, triangulation of sources (students, teachers, policymakers), methods (interviews, observations, documentation), and theories was conducted. The conceptual framework used in this study refers to Julian Rappaport's empowerment theory, which emphasizes three main components in the empowerment process: trust in authoritative figures (teachers and religious leaders), norms as Islamic values that underpin health practices, and networks in the form of collective support from madrasah and school communities (Rappaport, 1981). These three components serve as analytical lenses to categorize field findings, identify interaction patterns, and explain the mechanisms of Islam-based empowerment that influence

the health behaviors of adolescent girls. The integration of theory into the analysis is done thematically, by linking field data to the dimensions of trust, norms, and networks.

RESULTS AND DISCUSSION

The findings presented in the pie chart highlight the low level of compliance among adolescent girls in taking iron supplements, necessitating an in-depth analysis of the factors that influence their low awareness of the importance of taking iron supplements. Figure 1 shows the number of times iron is taken per month.

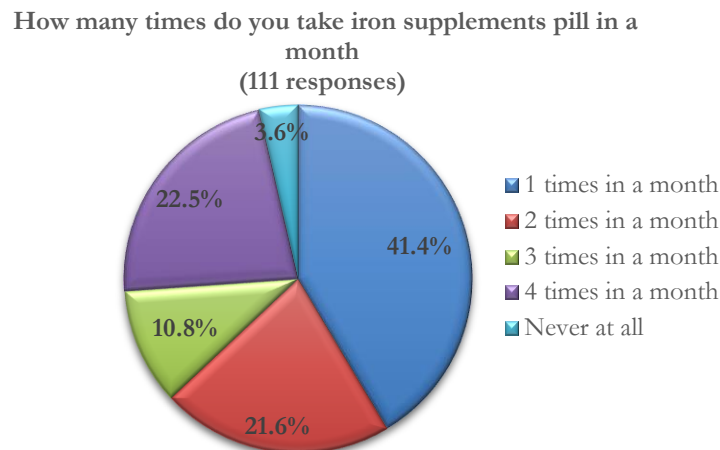


Figure 1. Frequency of taking iron tablets

Figure 1 illustrates the results of a survey conducted at the high school level throughout Pringsewu Regency. Out of 111 female students, it was found that the majority of female students (41.4%) only took iron tablets once a month, while a small proportion of female students (3.6%) did not take iron tablets at all during the month. This data provides an overview of the varying levels of compliance among female students regarding iron supplement consumption, with the majority only taking minimal amounts. Figure 2 shows the frequency of taking iron tablets per month at the MTS level in Pringsewu Regency.

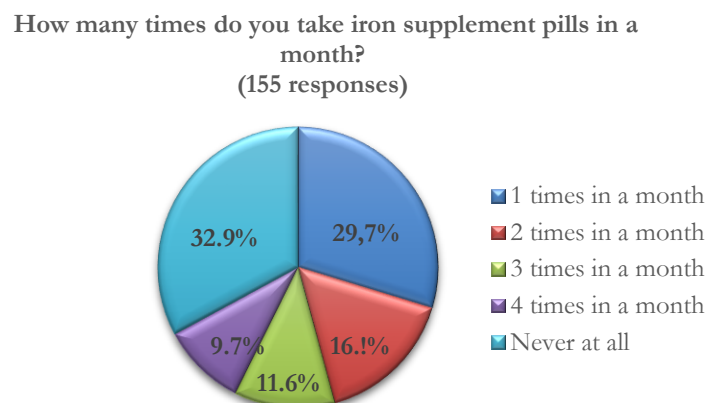


Figure 2. Frequency of taking iron tablets per month at the MTS level in Pringsewu Regency

Figure 2 explains the results of a survey conducted at the junior high school level in Pringsewu Regency, which found that of the 155 female students involved, the majority (32.9%) admitted to never having taken iron tablets. This indicates that nearly one-third of junior high school students in Pringsewu Regency have not been exposed to the iron tablet distribution program. On the other hand, 29.7% of the students stated that they took iron tablets once a month. This reflects initial efforts by schools to introduce iron tablets, although the rate remains relatively low. From this data, it is evident that awareness of iron tablets is not yet widespread among MTS students, with the majority of them not yet fully adopting this practice. Figure 3 shows the frequency of iron tablet consumption per month among junior high school students in Pringsewu Regency.

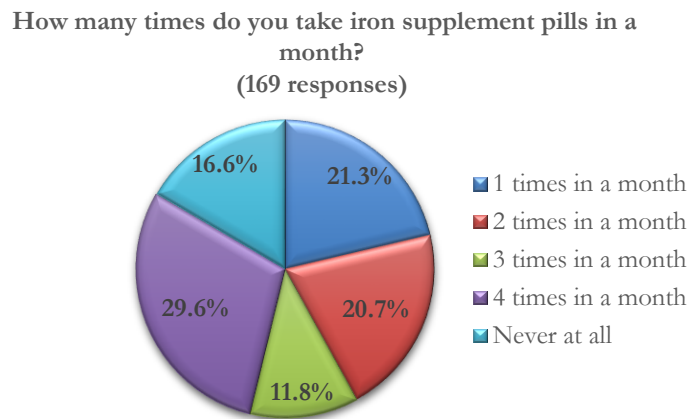


Figure 3. Frequency of taking iron tablets per month among junior high school students in Pringsewu Regency

The results of a survey of 169 junior high school students in Pringsewu Regency showed that 29.6% of students regularly consumed iron tablets every week, while 16.6% did not consume iron tablets. This finding, as illustrated in Figure 3, highlights the importance of awareness of the importance of consuming iron tablets among junior high school students. Meanwhile, Figure 4 explains the frequency of taking iron supplement pills in high school/vocational school students in Pringsewu Regency.

How many times do you take iron supplement pills in a month?
(217 responses)

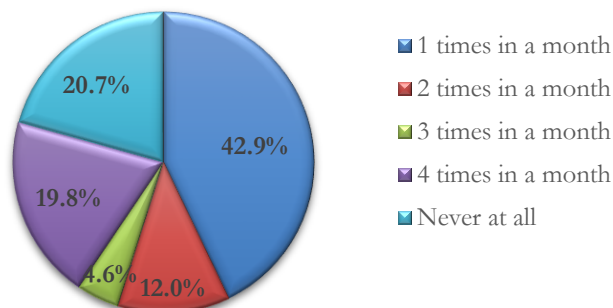


Figure 4. Frequency of taking iron tablets per month among high school/vocational school students in Pringsewu Regency

Survey results from 217 female high school/vocational school students in Pringsewu Regency regarding the frequency of their consumption of iron supplements per month. A total of 42.9% of students consume iron supplements once a month, while 20.7% of students stated that they never consume iron supplements. This finding, as illustrated in Figure 4, indicates that although iron tablet distribution programs have reached this group, compliance levels remain low, underscoring the need for more structured health education and faith-based empowerment initiatives to strengthen adherence.

Based on data from junior high schools and senior high schools, as well as Islamic junior high schools and senior high schools/vocational high schools, it is still predominantly female students who only consume iron tablets once a month. This is due to a lack of access, ignorance, or discomfort in consuming iron tablets. Figure 5 explains the reasons for iron supplementation in schools.

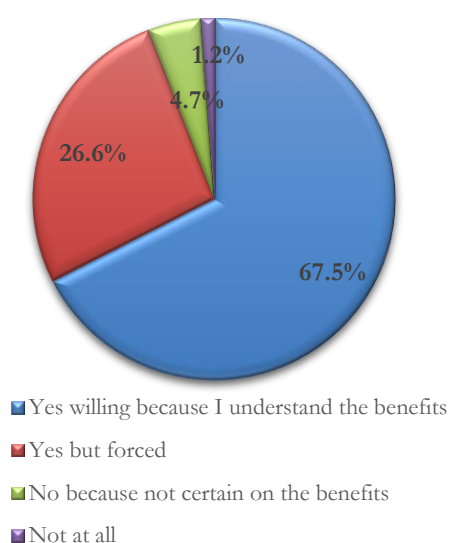


Figure 5. Survey on the reasons for taking iron supplements among junior high school/MTS/MA/high school/vocational high school students in Pringsewu Regency

Figure 5 showed that the results of a survey on the reasons for taking iron tablets among junior high school/MTS/ MA/high school/vocational high school students in Pringsewu Regency indicated that 67.5% of female students were willing to take iron tablets voluntarily because they understood the benefits for their health. This indicates that the majority of female students have a good understanding of the importance of iron tablets in preventing anemia and supporting their overall health.

Trust: Empowering community health by fostering trust

Trust plays a crucial role in enhancing community health empowerment. Trust enables openness, honest communication, and solid cooperation. Trust consists of three main components, namely competence, integrity, and benevolence (Rappaport, 1981). Competence is the belief that those empowering health have the ability and skills to carry out tasks such as agency experts and school health units. Competence in trust will foster students' confidence in teachers or school officials regarding health empowerment programs that aim to prevent stunting through iron tablet consumption, thereby encouraging students to voluntarily take iron tablets. Efforts to achieve the competency component are through health education, curriculum integration, and persuasive communication styles. Health education serves as the primary means

of providing students with the information they need about the importance of taking iron tablets. When health education is implemented effectively, it has a significant impact on knowledge, attitudes, and behavior, particularly among adolescent girls. This program aims to enhance students' understanding of anemia and the prevention of stunting. At MAN 1 Pringsewu, health education is provided regularly through visual media and active discussions, encouraging student participation and understanding.

“Every week, I am invited to discuss various health topics. My teacher always makes sure that I understand the importance of taking iron tablets to prevent anemia, which can lead to stunting” (Personal Communication, August 2024).

At MTS YPPTQMH Ambarawa, health empowerment is linked to religious values to maintain health as part of religious obligations. Female students are regularly reminded of the importance of maintaining health as part of their spiritual responsibilities. This integration increases participation in iron tablet intake programs.

“I am often reminded that maintaining good health is part of worship. My teacher often quotes verses from the Qur'an that talk about the importance of taking care of our bodies as a trust from Allah” (Personal Communication, August 2024).

The second effort to build trust is through curriculum integration. By integrating health programs into the curriculum, it can increase students' trust, encouraging them to take their iron tablets. Students' trust in taking iron tablets can be built through a comprehensive understanding of the scientific reasons behind the recommendation. If health issues related to anemia and the importance of iron tablets are integrated into various subjects such as biology, physical education, character education, and religious education, students will more easily see the relevance of this knowledge. For example, in biology lessons, students are taught about the role of iron in the human body and the effects of iron deficiency. At SMPN 4 Pringsewu and SMK Muhammadiyah 1 Pringsewu, health issues have been integrated into biology lessons by adding material on anemia, which can affect overall health, thereby emphasizing the importance of taking iron supplements.

“Every time I study biology, the teacher always relates the material to health issues that are relevant to me” (Personal Communication, August 2024).

The third effort to build trust is persuasive communication. Persuasive communication works to convince students in a practical way, so they understand the importance of taking iron tablets regularly. Through clear communication, students become more confident about the benefits of iron tablets and more compliant in taking them. At MTS YPPTQMH Ambarawa, SMAN 1 Ambarawa, UPT SMP Negeri 1 Ambarawa, and UPT SMPN 2 Pagelaran, the application of persuasive communication in the socialization of iron tablets has become the primary approach to increasing students' trust and encouraging their compliance in taking iron tablets. At MAN 1 Pringsewu, the communication style used tends to be more spiritual. Teachers often link the importance of health with religious teachings, using quotations from the Qur'an and Hadith to explain the importance of maintaining good health, including the consumption of iron tablets. This approach has been effective in increasing students' motivation to consume iron tablets.

“My teacher often says that maintaining good health is part of worship” (Personal Communication, August 2024).

“I feel more confident that this is something that must be done, not only for health reasons, but also as a form of religious obedience” (Personal Communication, August 2024).

Trust is also built through integrity by implementing health programs that align with the values and principles we hold dear. Efforts to foster integrity are made by enhancing empathy and personal identification. At MAN 1 Pringsewu, SMAN 1 Ambarawa, MTS TPPTQMH Ambarawa, and MTS Nurul Huda Pringsewu, empathy is a key factor in building trust. These schools use an empathetic approach to understand the conditions and challenges faced by their female students. MTS YPPTQMH Ambarawa integrates this approach into regular religious studies by linking health with religious values. This activity fosters spiritual motivation in female students to prioritize their health.

“They feel more motivated when we link health with religious obligations” (Personal Communication, August 2024).

SMA IT Alhidayah implements an empathetic approach by linking the importance of iron tablets to the daily activities of female students, thereby creating a sense of closeness between teachers and students. Observations show that this approach enables female students to understand how iron tablets can support their daily routines. Female students become motivated to take iron tablets on a regular basis.

Efforts to increase students' confidence in taking iron tablets with integrity are also realized through personal identification. Personal identification is a process whereby individuals feel emotionally and cognitively connected to specific values, beliefs, or practices. Personal identification involves the internalization of values and beliefs associated with specific actions. Engaging female students in the learning process about health and the benefits of iron supplements can strengthen personal identification. Through open discussions, question-and-answer sessions, or participation in practical activities, female students can feel that they have an active role in maintaining their health. At SMA IT Al-Hidayah, personal identification is a key strategy in enhancing students' compliance with taking iron tablets. This program is implemented by linking the benefits of iron tablets to students' daily activities, such as fatigue and lack of focus, so that students can better understand the relevance of iron tablets to their physical well-being and increase their awareness of the importance of maintaining good health.

“My teacher often explains how iron supplements can make me more productive and energetic, and that makes me aware of the importance of my health” (Personal Communication, August 2024)

SMK Muhammadiyah 1 Pringsewu utilizes personal identification through the “Healthy Saturday” activity. This program encourages female students to share their experiences related to health issues such as anemia and fatigue during menstruation, enabling them to identify solutions provided through the consumption of iron supplements. Linking health programs and iron supplement consumption with personal identification in schools in Pringsewu has proven effective in increasing female students' compliance with iron supplement consumption.

The final aspect of building trust is kindness. Kindness fosters confidence in students that others have good intentions and will not hurt or harm them. Kindness is achieved through emotional involvement, mutual respect, and the simultaneous action of taking iron tablets. Emotional involvement refers to an individual's feelings and emotional responses to a situation,

person, or activity. The students' emotional involvement in the iron tablet program will influence their trust and motivation to participate in the program. Emotional involvement can be fostered through various strategies, such as creating positive experiences, cultivating strong relationships with educators and healthcare workers, and aligning the benefits of iron tablets with the interests and needs of female students. When female students understand that taking iron tablets has a positive impact on their health, they will be motivated to participate in the program.

SMAN 1 Ambarawa and SMK Muhammadiyah 1 Pringsewu use appreciation as a form of emotional engagement. Female students who are active in health activities receive awards through competitions or recognition in front of their peers. This provides strong psychological encouragement for female students to maintain their health. Thus, fostering emotional engagement creates a supportive environment and enhances students' confidence in taking iron supplements. As a tangible manifestation of emotional involvement, a simultaneous movement to take iron tablets has been implemented in Pringsewu schools to foster trust among female students through a kindness-based approach. The Pringsewu Public Junior High School (SMPN) and Muhammadiyah 1 Pringsewu Vocational High School (SMK) hold a simultaneous movement to take iron tablets every month in the school hall. This program is also supported by providing information about the benefits of iron tablets (UPT SMPN Pringsewu) and awarding prizes to female students who regularly take iron tablets (SMK Muhammadiyah 1 Pringsewu), thereby encouraging and motivating female students to participate in this initiative.

Norms: Empowering community health by establishing norms for stunting prevention based on assistance in taking iron tablets

Norms play a crucial role in enhancing community health empowerment (Cislaghi & Berkowitz, 2021; Gopalakrishnan et al., 2024), particularly in preventing stunting among adolescents. Norms are rules or guidelines that a community agrees upon to regulate individual and group behavior, thereby fostering social order (Anomaly & Brennan, 2014). According to Rappaport (2005), social norms function as guidelines that help regulate social interactions and ensure that collective actions align with shared goals (González, 2024; Nelson et al., 2014; Rappaport, 1981). The application of norms in stunting prevention can encourage female students to comply with and adhere to the discipline of taking iron supplements. The formation of these norms does not occur spontaneously; efforts are required to integrate norms into daily school life, such as establishing rules, values, and behavioral standards as guidelines for students (Yang, 2023). Rules are established through mutual agreement and enforced with penalties, values are instilled through the principles of honesty and fairness for all female students, and behavioral standards are established through the enforcement of discipline among female students.

Schools act as facilitators in shaping social norms related to health empowerment by implementing policies that promote the regular consumption of iron tablets (Kustriyani et al., 2023; Sari et al., 2023). Schools in Pringsewu have established norms for the routine consumption of iron tablets, such as weekly consumption (MAN 1 Pringsewu, MTS Nurul Huda, and SMK Muhammadiyah 1 Pringsewu), monthly consumption (MTS YPPTQMH Ambarawa), and regular checks during iron tablet consumption (SMA Pagelaran). Meanwhile, MTS Nurul Huda Pringsewu and UPT SMP N 4 Pringsewu are still in the preparation phase. To promote the success of this program, schools in Pringsewu also provide additional education emphasizing the importance of iron tablet consumption to prevent anemia. Emphasizing the importance of taking iron tablets through in-depth education will make students compliant in taking iron tablets (teacher at SMP N 4 Pringsewu), understand and appreciate the importance

of the established rules (teacher at SMK Muhammadiyah 1 Pringsewu), and be motivated to follow the iron tablet intake program with discipline (teacher at MTS YPPTQMH Ambarawa).

Norms are also formed from values, such as honesty and fairness, to reinforce agreed-upon rules. These values serve as moral guidelines to create an honest and fair environment. Instilling the principle of honesty in the iron tablet intake program is important for building trust among students. The principle of honesty begins with open communication between the school, teachers, and students. MAN 1 Pringsewu and UPT SMPN 4 Pringsewu emphasize the importance of honestly conveying information about the risks of stunting and the benefits of iron tablets. This reflects the value of honesty in the school, as honest communication includes clear explanations about the purpose of the iron tablet program, its health benefits, and potential risks. Instilling the principle of honesty in the iron tablet program will have a positive impact on the health of female students, enabling the iron tablet program to achieve its goal of preventing stunting. The value of honesty must also be supported by the value of fairness. The value of fairness is crucial in increasing students' trust in the Iron Tablet program. MTS Nurul Huda emphasizes the importance of disseminating the benefits of iron tablets equally to all students. This transparency of information can strengthen the value of honesty, thereby increasing the students' trust in consuming iron tablets. All female students receive the same socialization without discrimination, reflecting the value of fairness and equality. Instilling the value of fairness in the Iron Tablet program not only increases female students' trust in the program but also fosters an inclusive and supportive environment. When students feel they are treated fairly, they are more likely to be motivated to participate in the program and maintain their health.

Behavioral standards must also support the program of taking iron tablets by establishing norms. Behavioral standards serve as guidelines to ensure that individual behavior is in line with the values embraced by a particular community or group. Behavioral standards are expected to improve the compliance/discipline of students in taking iron tablets in accordance with the rules. Efforts to establish behavioral standards involve instilling discipline in female students. Instilling discipline through clear behavioral standards in the iron supplement tablet intake program is crucial for enhancing students' trust. Behavioral standards encompass a series of rules that students must follow in implementing the program, including adhering to the tablet intake schedule, understanding and applying the provided instructions, and participating in educational activities about iron tablets. MAN 1 Pringsewu integrates discipline into discussions about iron tablets.

“Regular participation in this program can instill a habit of discipline among students, where they are taught to actively participate and maintain their health.” (Personal Communication, August 2024)

SMK Muhammadiyah 1 Pringsewu emphasizes discipline in maintaining health among its female students. The school regularly conducts socialization activities on iron supplements to establish habits that prioritize individual responsibility for personal health. At MTS YPPTQMH Ambarawa, emphasis is placed on personal discipline in maintaining health and understanding the risks of stunting, thereby encouraging female students to take responsibility for their own health.

Network: Empowering community health by building a social network for stunting prevention based on assistance in taking iron tablets

Community health empowerment through social networking occurs when individuals, social groups, organizations, and information dissemination interact to support stunting prevention programs based on iron tablet supplementation involving peer counselors, parental

involvement in health education, and the use of technology as a medium for information dissemination and communication (Conrad et al., 2020).

Community health empowerment in stunting prevention involves individuals through interpersonal networks, facilitated by peer counselors and parents, enabling information to be conveyed in a more personal and contextual manner, thereby enhancing understanding and acceptance of the information (Ridho et al., 2024). At MAN 1 Pringsewu, trust among peers is the primary focus for the success of the iron tablet intake program. Teachers believe that peer counselors are crucial for building communication among students, enabling them to share experiences and health-maintenance practices, including reminding each other to take iron tablets regularly. SMAN 1 Pagelaran highlights the importance of peer counselors in encouraging student compliance with iron tablet intake. The school implements the "Healthy Friends" program, aimed at mutually reminding each other of the iron tablet intake schedule.

"Every week, I check with my friends to see if they have taken their iron tablets. This makes me more aware and encourages us to support each other in staying healthy," (Personal Communication, August 2024).

In addition to peer counselors, involving parents in iron tablet intake programs plays a crucial role in increasing students' trust and compliance with consuming iron tablets (Apriningsih et al., 2019). MA YPPTGMH Al-Kuriah involved parents in health seminars to discuss adolescent health challenges related to the importance of iron tablet consumption. Direct parental participation in these activities enables them to understand the objectives of the iron tablet intake program, thereby allowing them to provide support to their children. Research by Dwiyanita et al. (2024) indicates that parents influence adolescents' compliance in taking iron tablets.

The success of community health empowerment programs to prevent stunting is also supported by the role of organizations (Aprilia et al., 2023). The Department of Women's Empowerment, Child Protection, Population Control, and Family Planning (*Pemberdayaan Perempuan, Perlindungan Anak, Pengendalian Penduduk dan Keluarga Berencana/P3AP2KB*) collaborates with the health department, education department, and community organizations to conduct outreach to the community, schools, and parents regarding the importance of iron tablets in preventing anemia. The *P3AP2KB* department also initiated programs such as the Youth Information and Counseling Center and the Generation Planning Ambassadors (*Duta Genre*) as part of its health empowerment efforts. These programs serve as platforms for adolescents to access information and counseling services related to reproductive health. These programs are also supported by the use of technology to disseminate information through digital platforms, such as websites or social media.

The digital age has made social media an effective tool for disseminating health information (Herrera-Peco & Torre-Montero, 2020). Through platforms such as WhatsApp, Facebook, or Instagram, information about *TTD* and stunting prevention can be disseminated quickly. MAN 1 Pringsewu, MTS Nurul Huda Pringsewu, UPT SMPN 4 Pringsewu, SMK Muhammadiyah 1 Pringsewu, MTS YPPTQMH Ambarawa, SMA N 1 Ambarawa, UPT SMPN 1 Ambarawa, MA YPPTQMH Ambarawa, UPT SMPN 2 Pagelaran, MTS N Pringsewu Lokas Pamenang, SMAN 1 Pagelaran, and SMA MI-Hidayah, as schools in Pringsewu, demonstrate their commitment to utilizing technology as a medium for information dissemination and communication. These schools rely on WhatsApp as the primary platform for disseminating information related to the stunting prevention program, which involves the consumption of iron tablets. Through WhatsApp groups, teachers, health workers from the community health center, school committees, and school health unit cadres can share important information, such as schedules for taking iron-rich tablets, articles about stunting, and steps to maintain health.

WhatsApp was chosen as the platform because nearly all students and parents have access to the application. WhatsApp groups enable the rapid and comprehensive dissemination of information.

The findings of this study suggest that adolescent girls' trust in authority figures, such as religious teachers, female religious teachers, and health workers, is a key factor in increasing compliance with iron tablet consumption. This aligns with empowerment theory by Rappaport (2005), which emphasizes that trust is a fundamental component in fostering active community participation. Trust in religious figures strengthens the legitimacy of health messages because they are grounded in moral and spiritual values. Research by Sallis et al. (2008) indicates that interventions involving figures trusted by the community (such as teachers or religious leaders) are more successful in promoting healthy behaviors, particularly among adolescents. This is supported by Nichter (2008), who shows that trust in the message deliverer significantly influences the effectiveness of nutrition campaigns in India. In the study by Elfattah (2025), it is explained that a religion-based approach enhances the audience's perception of authenticity and emotional connection.

Religious norms play a significant role in the internalization of iron supplement consumption as part of worship and spiritual responsibility. Adolescent girls exposed to religious narratives tend to show higher intrinsic motivation to maintain their health. This aligns with the Theory of Planned Behavior by Ajzen (1991), which emphasizes that subjective norms influence an individual's intentions and behavior. A study by Elfattah (2025) shows that Islamic norms, which view the body as a trust from God, become a strong moral motivation for Muslim communities to maintain their health. Wang & Liao (2023) also prove that injunctive norms, which are what is considered "should" be done by this social group, are effective in shaping compliance, especially when reinforced by collective beliefs.

Teenage girls do not live in a vacuum; they are influenced by the social networks in which they exist, including family, peers, school environments, and religious communities. Research findings indicate that when iron supplements are promoted through religious communities and supportive peer groups, compliance rates increase significantly. This aligns with the findings by Israel et al. (1998), who stated that the effectiveness of health interventions increases when information is disseminated through trusted social networks. The study by Zhang et al. (2024) also highlights that peer influence plays a significant role in adolescent health behaviors. Research in Bangladesh by Widnall et al. (2024) shows that gender- and religion-based peer educators have a significant influence in shaping adolescents' attitudes and practices related to reproductive health.

The contribution of this research lies in enriching Julian Rappaport's empowerment theory through the integration of contextual religious dimensions with the culture of the Muslim majority community. The findings suggest that the components of trust, norms, and networks can be strengthened through the moral authority of religious teachers and community leaders, the internalization of Islamic values in the curriculum, and cross-institutional collaboration among schools, madrasahs, health centers, and religious organizations. This approach expands the theoretical understanding that religious values not only serve as moral reinforcers but can also act as effective cultural leverage in promoting behavioral changes in adolescent health. Practically, this research presents a school- and community-based intervention model that the Health Department and the Ministry of Religion can adopt. This model involves integrating nutrition education into religious lessons, involving religious leaders in health education, utilizing religious activities as an educational medium, and implementing a participatory monitoring system through peer educators. However, this study also has limitations that need to be taken into consideration. Since it was conducted in a limited geographical area, namely Pringsewu Regency, the generalization of the findings to other regions with different social,

cultural, and religious characteristics cannot be done extensively yet. Additionally, the use of a descriptive qualitative approach does not allow for the quantitative measurement of intervention impacts, so the effectiveness of integrating religious values into compliance with iron tablet consumption has not been statistically measured. Another limitation lies in the use of self-reported data, which may be influenced by social bias or respondent memory errors.

CONCLUSION

This study shows that empowerment based on Islamic values plays a significant role in increasing compliance with Iron Supplement Tablet consumption among adolescent girls in Pringsewu District. Through the approach of trust, norms, and social networks as outlined in Julian Rappaport's theory, it was found that religious and community involvement can foster collective awareness and cultivate spiritual responsibility toward health. These three dimensions mutually reinforce each other in strengthening adolescents' intrinsic motivation to consistently follow the habit of regularly consuming iron supplements. Despite challenges such as side effects and social stigma, the Islamic approach provides a strong narrative framework in framing health as part of worship and moral responsibility. Schools/madrasahs can adopt this approach by organizing teacher training on building mutual trust, integrating health education with Islamic values, establishing shared norms that involve female students, and optimizing parental involvement and the use of digital platforms to reinforce health messages outside of school hours. Local governments, particularly Pringsewu Regency, can support this through the issuance of inter-agency regulations on *TTD* drinking supervision in schools, providing adequate internet access, and ensuring the availability of sustainable logistics. Meanwhile, further research is recommended to develop and test quantitative and mixed-methods models of health empowerment based on Islamic values, as well as conduct cross-regional studies to identify replication potential in areas with different socio-cultural characteristics. Some of these strategies have been implemented at the research site and shown positive results, making them worthy of systematic replication and institutionalization in youth health programs at both the local and national levels.

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