

STRATEGY OF EMPOWERING ISLAMIC COMMUNITY HEALTH IN PREVENTING STUNTING THROUGH BLOOD ENHANCEMENT TABLET PROVISION TO ADOLESCENT FEMALES IN PRINGSEWU

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ABSTRACT. *This study aims to analyze the strategy of empowering Islamic public health in preventing stunting through mentoring of Iron Supplement Tablets (TTD) in adolescent girls in Pringsewu Regency. The research method used is qualitative with a phenomenological approach. The subjects of the study were students, teachers, and health institutions (health centers and health offices). Data collection techniques used interviews, observations, and documentation. The data analysis technique used a case study according to Yin, which includes data processing such as editing, organizing, and analysis. In this study, using method triangulation. The results showed that the TTD education and mentoring program was effective in increasing awareness and knowledge of adolescent girls about the importance of nutritional intake, especially iron, to prevent anemia and stunting. Research also demonstrates that integrating religious activities with health education enhances students' motivation to apply the acquired knowledge. This study recommends the development of sustainable programmers involving various stakeholders and exploration of more diverse teaching methods, as well as long-term evaluation to assess the impact of interventions on public health.*

Keywords: Stunting, Iron Supplements, Adolescent Girls.

I. INTRODUCTION

Healthy according to WHO (World Health Organisation) is free from all types of diseases, whether physical, psychological (soul) or emotional, intellectual and social [1]. WHO says that health is a resource for everyday life that is very important to support the role of individuals in society [2]. Health is a state of physical, mental, spiritual and social health where everyone can live productively, socially and economically [3]. Good health makes society function optimally, increases productivity, and strengthens social interaction, thus creating a more harmonious and prosperous environment for all its members. The level of public health is also influenced by many factors. Factors that influence the level of public health do not only come from the health sector, including health services and the availability of health facilities and infrastructure, but are also influenced by various factors such as economic factors, education factors, social environmental factors, hereditary factors and other factors [4]. In efforts to improve health in the community, young women have a very important role. They are not only individuals who need to maintain their own health but also agents of change in the surrounding environment. By living a healthy lifestyle, such as consuming nutritious food, exercising regularly, and maintaining mental health, young women can be an example for their peers. It is very important for young women to understand nutritious eating patterns and healthy lifestyles in order to prepare themselves to become healthy mothers and provide good nutrition for their children. In addition, by educating young women about health and nutrition, it can help create a healthier generation and reduce stunting rates in society [5]. Stunting is a problem of child growth and development caused by chronic malnutrition and repeated infections [6, 7, 8, 9]. Malnutrition can occur since the baby is in the womb and in the early period after the baby is born. However, stunting conditions can be detected after the baby is 2 years old [10]. There are several risk factors for stunting in toddlers. The first factor includes poor nutrition before pregnancy, child-age pregnancy, maternal mental health, premature birth, *Intra Uterine Growth*

Restriction (IUGR), short birth spacing and hypertension. The second factor causing stunting is not providing early initiation of breastfeeding (IMD), non-exclusive breastfeeding, and weaning too early [11].

The prevalence of stunting in Indonesia based on WHO data in 2018 ranks third highest in the Southeast Asia region. During the period 2005-2017, the average prevalence of stunting in toddlers in Indonesia was 36.4% [12, 13]. The Basic Health Research Report in 2010, 2013 and 2018 showed that the prevalence of stunting was still high, tending to be stunting and not decreasing to reach the WHO threshold. Lampung Province, in 2023, the prevalence of stunting was at 14.9%, while in Pringsewu Regency, the prevalence of stunting was recorded at 15.8% [14]. This figure shows that more than one in seven children in Pringsewu experience stunting, which has the potential to inhibit their physical growth and cognitive development. The high stunting conditions in the region can have a direct impact on future generations, such as adolescent girls. If adolescent girls do not get good nutrition and knowledge about health, they are at risk of giving birth to children who also experience stunting. Adolescence is a transition period marked by physical, emotional and psychological changes. These changes make adolescents a group that is vulnerable to various problems [15]. One of these problems is iron deficiency anemia. The 2013 Riskesdas report showed a 26.4% prevalence of anemia at the age of 5-14 years, and then increased to 48.9% in 2018. [16] Adolescent girls during puberty are at high risk of experiencing iron deficiency anemia. This is due to the large amount of iron lost during menstruation [17, 18]. In addition, it is exacerbated by a lack of iron intake, while in adolescent girls there is an increase in the need for iron, which is needed by the body to accelerate growth and development. Many young women do not get enough iron, while their iron needs increase to support optimal growth and development. Assistance in the use of iron supplements is very important. This assistance does not only include the provision of tablets but also education about healthy eating patterns rich in iron, as well as how to

overcome symptoms of anemia. Iron Supplements (TTD) are nutritional supplements containing iron and folic acid, which are designed to help overcome iron deficiency [19].

In accordance with the Circular of the Director General of Public Health of the Ministry of Health Number HK.03.03/V/0595/2016 concerning the Provision of Iron Supplements for Adolescent Girls and Women of Childbearing Age by choosing the day when the TTD must be consumed at the same time [20]. The provision of TTD to adolescent girls aged 12-18 years is carried out through the UKS/M in educational institutions (SLTP and SLTA). Provision of TTD with the right dose can prevent anemia and increase iron reserves in the body. Preventive dose by giving one TTD every week for 52 (fifty-two) weeks [21]. In 2023, the coverage of TTD provision to adolescent girls in Indonesia in 2023 was 78.9% [22]. The highest coverage of TTD provision to adolescent girls was achieved by Bali Province (97.5%), while the lowest percentage was by Papua Pegunungan Province (0.5%) [23]. Then the coverage of TTD provision to adolescent girls in Lampung Province in 2023 was 69.4%. Assistance in swallowing iron tablets (TTD) for adolescent girls is the process of providing assistance and support to adolescent girls in swallowing iron tablets (TTD) regularly. This process is very important because many adolescent girls are reluctant or forget to take TTD, even though TTD is very much needed to prevent anemia, especially during puberty. Based on the report of the Lampung Provincial Health Office in 2021, the number of adolescent girls in Lampung Province was 485,561 people. The number of adolescent girls who received TTD was 234,794 people (39.69%), while the number of adolescent girls who took TTD was (37.8%). Then the number of adolescent girls in Pringsewu Regency was 27,244 people. The number of adolescent girls who received TTD was 20,024 people (73.5%), while the number of adolescent girls who took TTD was 17,028 people (62.5%). Based on the data above, the level of compliance in swallowing TTD in adolescent girls is still low. The results of the pre-research found that at the Madrasah Aliyah level, a sample of 111 female students were asked how often they swallowed TTD in a month. The results showed that 41.4% of respondents stated that they swallowed TTD once a month. Then 21.6% of respondents consumed TTD twice a month. Furthermore, 22.5% of respondents swallowed TTD 4 times a month. Then 10.8% of respondents consumed TTD 3 times a month. And 3.6% of respondents stated that they had never swallowed TTD at all. Not stopping at the MA level, the researcher also conducted a survey involving 155 female students from MTs throughout Pringsewu Regency. Based on the results of the survey conducted at the MTs level throughout Pringsewu Regency regarding how often they swallowed TTD in a month. Of the 155 respondents, the results showed quite interesting variations related to the habit of consuming this tablet. Most of the female students, precisely 32.9%, admitted that they had never swallowed TTD at all. This suggests that almost one-third of female students at the MTs level in Pringsewu Regency may not understand the importance of iron supplementation or they have not been exposed to this tablet-giving program. On the other hand, as many as 29.7%

of students stated that they took tablets once a month. This may reflect an initial effort by the school or health workers to introduce TTD to students, although the frequency is still relatively low. Furthermore, 16.1% of female students took tablets twice a month, followed by 11.6% who took them three times a month, and 9.7% of students who took them four times a month. This last group showed higher compliance with the recommendation for TTD consumption which is generally suggested to be given routinely every week.

Next, the survey results of 169 female junior high school students throughout Pringsewu Regency regarding their frequency of consuming TTD in a month. As many as 29.6% of female students reported that they consume TTD regularly every week, with a total of four times a month. Furthermore, 21.3% of female students chose to consume pills only once a month. As many as 20.7% of respondents took TTD twice a month. 16.6% of female students reported that they never consumed iron tablets. Almost one in six female students did not take preventive measures against anemia or may not have felt the need to do so. At 11.8%, female students reported that they consumed TTD three times a month, which was the smallest number among the group that consumed pills. Then the last survey results of 217 female high school/vocational high school students throughout Pringsewu Regency regarding their frequency of consuming TTD in a month. The following are the details of the data; as many as 42.9% of respondents reported that they consumed TTD once a month. This is the largest group, indicating that almost half of the female students chose the minimum frequency to consume this supplement. Of the 20.7% of female students stated that they had never consumed TTD. This indicates that about one in five female students have not been involved in the habit of consuming this supplement, which could be a concern for efforts to increase health awareness. Then 19.8% of respondents consumed TTD regularly every week, with a total of four times a month. This group shows a strong commitment to maintaining their blood health with more consistent consumption. As many as 12% of female students reported that they consumed TTD twice a month, indicating health awareness, although with less frequency. 4.6% of female students consumed TTD three times a month, which is the smallest group. This shows that only a small portion of female students choose this frequency. From the data presented by the researcher, both MTs and SMP levels, as well as MA and SMA/SMK, there are still predominantly female students who only consume TTD once a month. These data indicate the low level of compliance of adolescent girls in taking TTD. There is a similar study related to this study, namely in the study [24], it was stated that the level of knowledge before being given counseling on preventing anemia was mostly in the moderate category of 20 people (50%), and after being given counseling, most were in the good category of 30 people (80%). The attitude of adolescents in preventing anemia before being given counseling was mostly in the lesser category of 10 people (25%), and after being given counseling, most were in the lesser category of 5 people (10%).

Then the study [25] explained that the socialization programmed for providing iron tablets was carried out offline, with the method used being to provide counseling to students of SMA Negeri 1 Waringinkurung, continued by providing iron tablets to female students. In order for the understanding that has been obtained by adolescents to have a more positive impact, a continuous education programme is needed as well as assistance with the roles that adolescents can play in society. Furthermore [26], the study found that the educational activity of iron tablets as an effort to prevent stunting at SMPN 2 Ciledug had a significant impact in increasing the awareness of young women of childbearing age to prevent childhood stunting. This education included explaining the material, filling in the iron tablet drinking schedule calendar, drinking iron tablets together, and playing "Funny Snakes and Ladders." The results of the activity showed a significant increase in the knowledge domain, but there were no significant changes in the attitudes and behavior of female students. This shows that changes in attitudes and behavior require more time and ongoing environmental support. This activity can be integrated with the routine iron tablet provision programme by the Ciledug Health Centre to ensure long-term impacts.

The study [27] stated that education about anaemia and the provision of iron tablets (TTD) to adolescent girls had an effect on increasing knowledge of stunting prevention in the Moncobalang Health Centre area, Gowa Regency. From several studies that have been studied, TTD assistance for adolescent girls to prevent stunting has been implemented but only for high school and junior high school students, not yet comprehensively to various schools in one city/district such as MTs, MA, SMK, even in private and public schools. Based on this, previous research with this study has a gap, namely not explaining in depth how the educational approach used can influence long-term changes in attitudes and behaviour; lack of post-intervention follow-up shows that behavioural change is not sustainable; focus on knowledge without behavioural change; methods that are not diverse enough; and limitations of social and cultural contexts. Based on the explanation above, the purpose of this article is to analyse the strategy of empowering Islamic public health in preventing stunting through assistance with iron tablets for adolescents. Girls in Pringsewu Regency, Lampung Province.

2. RESEARCH METHODS

This study uses a qualitative method using a phenomenological approach. The qualitative method was chosen because the research process is based on a methodology that investigates a social phenomenon and social problems [28]. The location of this research is in Pringsewu Regency, Lampung Province. This research was conducted over a period of 8 months, namely February 2024 to October 2024. The researcher chose the research location for four academic reasons, *first* because the level of anemia and stunting in Pringsewu Regency is one of the areas in Lampung Province that still faces challenges in terms of health, in 2023, the prevalence rate of stunting in Pringsewu was recorded at 15.8%, showing an insignificant decrease

compared to previous years. Anemia in adolescent girls, which reached a prevalence of 46.2%. *Second*, because Pringsewu Regency has an active Blood Supplement Tablet (TTD) program in schools and Madrasahs. *Third*, because the Pringsewu regional government has shown a commitment to health programs, including stunting prevention. This support facilitates collaboration with related agencies, schools, and health centers. *Fourth*, Pringsewu Regency is an area inhabited by various tribes, such as Javanese, Lampung, Sundanese, and other tribes. This diversity creates a multicultural society with various views, values, and practices in terms of health.

The subjects of the study were students, teachers, health institutions (health centers and health services). To determine the data source, the researcher used a *purposive sampling technique*, the population was all female high school, vocational high school, and junior high school students in Pringsewu Regency. The schools that the researcher chose as samples for this study were 12 schools out of a total of 162 schools in Pringsewu Regency. The researcher chose 12 schools using the *Simple Random Sampling technique*. To determine the schools/madrasahs that were used as samples from the three sub-districts, the researcher used the *Random Number Generator technique*. Data collection techniques used interviews, observations, and documentation. Data analysis techniques used case studies according to Yin, which include data processing such as *editing*, organizing, and *analysis* [29]. After data collection and data processing, the data was analyzed to produce a conclusion. Data analysis techniques in case study research are *first*, pattern matching. This technique compares patterns based on data that researchers have obtained in the field with hypotheses or patterns that have been predicted, of course this uses pattern matching logic. *Second*, making an explanation (*Explanation Building*). This technique creates an explanation of the case related to the purpose of analyzing data from existing case studies which can later become a continuation of this research. In order for the data to be accurate, a data validity check is carried out to validate the data using triangulation. In this study, the researcher used method triangulation. Method triangulation is done by comparing information or data in different ways.

3. RESULTS AND DISCUSSION

The current stunting prevention programme does not only target infants/toddlers or pregnant women but starts from adolescence. Adolescents are very susceptible to anaemia. During adolescence, the need for iron increases significantly along with rapid physical growth and cognitive development, especially in adolescent girls who begin to menstruate. Anaemia that is not treated properly can have an impact on decreased concentration, academic achievement, productivity, and overall quality of life. In addition, anaemia in adolescents can also be a risk factor for future pregnancies, so preventing anaemia from adolescence is very important [30]. One of the causes of stunting is the quality of health in adolescents who do not get a balanced nutritional intake as well as adolescent girls who experience anaemia due to iron deficiency. This was confirmed by one of the health workers

in Pringsewu, namely: "Stunting is a condition in which a child does not grow properly due to malnutrition. So it can affect height and brain development." Stunting is a condition where a child experiences stunted growth due to malnutrition, especially in the first 1,000 days of life, which includes pregnancy to age two [31, 32]. This condition not only affects a child's height but can also have a negative impact on their cognitive development and learning abilities later in life. Children who experience stunting are at higher risk of experiencing health problems in the future, including chronic diseases [33]. Prevention of nutritional problems in adolescents can be done by maintaining a healthy lifestyle and eating balanced nutritious foods. This can be achieved by carrying out specific and sensitive nutritional interventions by all relevant parties so that adolescents who will later become parents can produce a superior and healthy generation. The Health Office said that anaemia among adolescent girls can have a negative impact on their learning productivity and quality of life in the future. The health of adolescent girls is one of the main focuses in efforts to prevent stunting in Indonesia, especially in Pringsewu Regency. One of the strategic steps taken is through an empowerment programme that emphasises the importance of consuming iron tablets regularly. This empowerment activity not only focuses on medical aspects but also includes social, educational, and religious approaches to ensure that female students understand the importance of this action and carry it out voluntarily. The first strategy is to carry out socialisation activities; the Health Office collaborates with schools and madrasahs in Pringsewu to provide education about the importance of TTD, especially in preventing anaemia that often occurs in adolescent female students. The Pringsewu District Health Office routinely conducts socialisation regarding the importance of iron supplement tablets (TTDs) in various schools in collaboration with local health centres. This socialisation is part of a health education program. This programme is designed to improve students' understanding of preventing anaemia and stunting, which are serious health problems among adolescents. This is in line with the health norms that apply in various schools in Pringsewu, which emphasize the importance of maintaining health as part of academic success. Each health centre in the Pringsewu area has an important role in ensuring that the distribution of iron supplements runs smoothly and on target. One of the health centres that participated in the socialisation activities was the Ambarawa Health Centre. The Ambarawa Health Centre stated that they often visit schools and madrasahs to provide information regarding iron supplements and how to consume them.

"We often visit schools to provide information about TTD and how to consume it. We try to make this program interactive and educational."

Socialization and distribution of TTD is an important part of efforts to prevent anemia among adolescent girls. This program does not only focus on distributing tablets, but also on ongoing education about the importance of health. This is in line with Rappaport's theory of empowerment, where trust and social norms play an important role in the success of health programs [34].

The provision of iron supplements is one of the efforts made to prevent and overcome iron deficiency anaemia in adolescent girls and women of childbearing age (WUS) by prioritising the provision of TTD through school institutions. The provision of iron supplements aims to improve the nutritional status of adolescent girls so that it can break the chain of stunting and increase iron reserves in the body as provisions in preparing a healthy, quality and productive generation [35]. The iron supplementation programme for adolescent girls is expected to contribute to breaking the cycle of intergenerational malnutrition [36]. Since 1997, the Indonesian government has been implementing a programme to prevent and overcome iron deficiency anaemia in women of childbearing age (WUS) by intervening in WUS even earlier, namely from adolescence [16, 37]. This programme aims to support efforts to reduce maternal mortality by reducing the risk of bleeding due to anaemia in adolescents girls.

The second strategy is by giving TTD to female students 1 tablet every week throughout the year. This was confirmed by S, a student from SMA N 1 Pagelaran, namely:

"Every Monday, I have to come to the UKS to take iron tablets. This has become part of my weekly routine."

This program has become part of the students' weekly routine. The statement of student S from SMA N 1 Pagelaran reflects that every Monday, he comes to the UKS to pick up the tablets, indicating good acceptance of the TTD mentoring program. Determining a specific day to pick up the tablets creates a structure that makes it easier for students to remember and carry out the programme, thus increasing their compliance [38]. In addition, by coming to the UKS, students are trained to be responsible for their own health, which can increase awareness of the importance of nutrition. This strategy is expected to increase haemoglobin levels among students who often experience anaemia, providing a positive impact on their health and energy in the learning process. The active involvement of students in this programme is also an indicator of success, showing good potential in building positive habits and increasing awareness of the importance of health.

The third strategy, so that the TTD mentoring program runs well, the school created a program by implementing a healthy Saturday program for TTD to prevent stunting. As stated by a teacher from SMK Muhammadiyah 1 Pringsewu, Mrs. A, that:

"We at school have a monthly program to organize the "Healthy Saturday" program to increase student involvement in health. By emphasizing the importance of making health a part of the students' routine to create regular habits that help students build a healthy lifestyle."

The school has implemented a "Healthy Saturday" program to increase student involvement in health. According to Mrs. A, a teacher at the school, this monthly program is designed to make health a part of students' routine, so that it can create regular habits that support a healthy lifestyle. This program does not only focus on providing tablets, but also on educating and raising awareness among students about the importance of health, especially in preventing stunting [39, 40]. By building better awareness among students about the

importance of maintaining health and balanced nutrition, which in turn can contribute to improving their overall quality of life.

Furthermore, **the fourth strategy** is to conduct active discussions related to stunting prevention with TTD assistance through lecture methods or media such as videos and posters. As expressed by C, a student from MAN 1 Pringsewu, namely:

“More than just lectures, teachers use various media such as videos and posters to explain health concepts in an interesting way. In addition, students are also given the opportunity to talk about their own experiences, which helps strengthen the message. Every student in the school is encouraged to take responsibility for their own health. For example, teachers often assign students to do a simple Sayaan on the effects of iron tablets and present the results to their friends by presenting them in front of the class.”

Student C explained that the teacher did not only give lectures, but also utilized media such as videos and posters to explain health concepts in a more interesting and interactive way. This approach not only made the material easier to understand, but also encouraged students to share their personal experiences, which could strengthen the health messages conveyed. In addition, by assigning students to do presentations on the effects of iron tablets, the teacher encouraged students to take responsibility for their own health. This strategy is in line with research[41,42,43,44]which shows that active learning methods and the use of visual media can improve students' understanding and engagement in health topics.

In addition, the methods and media used can motivate students to consume TTD. This is in line with what was said by student A, namely:

“Through discussions about health, I feel more motivated to take TTD.”

Through the discussion, the students felt more motivated to consume TTD. This approach creates a supportive environment where students can share information and experiences, thus increasing their understanding of the importance of adequate nutritional intake. Interactive discussions and involving active student participation can reinforce health messages and encourage students to take responsibility for their own health. Research[45, 46]showed that active involvement in learning, such as group discussions, can increase motivation and health-related behavior change among adolescents. The use of appropriate methods in health education can contribute to increasing student compliance in consuming TTD and maintaining student health.

The fifth strategy in health empowerment to prevent stunting with TTD assistance is to integrate into the learning curriculum and link it to religious values. As expressed by Teacher Y at SMP N 4 Pringsewu that:

“Schools integrate health issues into subjects such as biology. Through the subject, it can explain anemia in affecting health.”

This is also in line with the response of student A at MuhammadiyahPringsewu Vocational School that:

“Every time I study biology, the teacher always relates the material to health issues that are relevant to the topic.”

The school has integrated health issues into biology lessons, so that students can understand the impact of diseases such as anemia on their health. This is in line with the statement of student A at SMK MuhammadiyahPringsewu, who stated that when studying biology, teachers always relate the material to relevant health issues. This integration can increase students' awareness of the importance of maintaining health and encourage them to take preventive measures, such as consuming TTD. Research[47, 48, 49]showed that integrating health education into the curriculum can improve knowledge and healthy behavior among students. Students who receive regular health education at school have a better understanding of health topics and show an increase in healthy living behavior compared to students who do not receive similar education. Health education at school is considered effective in encouraging students to maintain personal hygiene, improve healthy eating habits, and participate in physical activity.

By linking to the subject, it not only provides students with an understanding of health, but also makes learning more meaningful by connecting science with religious values that emphasize the importance of maintaining health as part of moral responsibility. In every health activity, teachers always link it to religious teachings. As stated by student N at MA YPPTQMH Ambarawa, namely:

“The school often holds religious activities accompanied by health checks. For example, in routine religious studies activities, education is provided about the importance of consuming iron tablets and other ways to maintain health. This activity really helps me to better understand that health and religion go hand in hand.”

Integration of religious activities with health check-ups at school plays an important role in improving students' understanding of health. In the statement, students expressed that routine religious study activities accompanied by education about the importance of consuming iron tablets (TTD) and other ways to maintain health helped them understand the relationship between health and religion. Religious activities integrated with health education can increase students' motivation to apply the knowledge they have gained. Research[50, 51, 52]shows that when health education is delivered in a relevant and meaningful context, such as in religious activities, students are more likely to internalize the information and change their behavior. With the integration of religious values, extraordinary characters can be developed in students. Students with good morals can expand their capacity well and should no longer deviate from Islamic spiritual principles and can maintain a healthy lifestyle as best as possible in accordance with the values contained in Islam [53].

Religious education can be an effective tool in improving adolescent health, including in the context of preventing stunting and assisting in consuming iron tablets (TTD). Through religious education, students can develop healthier reactions to stimuli, which contributes to the internalization of morality that encourages them to maintain physical health as part of their spiritual responsibility. Given that stunting is

often triggered by a lack of nutrition, including iron intake that can be obtained from TTD [54, 55]. When students feel supported by their religious community, they are more open to receiving information about the importance of consuming TTD and maintaining overall health. Increased awareness of religious beliefs and practices can also strengthen their motivation to take preventive actions towards health, such as encouraging TTD consumption to prevent anemia, which is one of the factors causing stunting.

4. CONCLUSION AND SUGGESTIONS

Community health empowerment, especially through education and mentoring of Iron Supplement Tablets (TTD), plays an important role in preventing stunting in adolescent girls in Pringsewu Regency. Stunting, which is caused by malnutrition, can be prevented by increasing awareness and knowledge of adolescent girls about the importance of

nutrition, especially iron intake. Integration of religious activities and health education, as well as the application of interactive learning methods, has proven effective in increasing understanding and compliance of adolescent girls with Iron Supplement Tablet (TTD) consumption. This shows that a holistic approach involving medical, social, and spiritual aspects can create positive changes in adolescent health behavior. For further research, it is recommended that educational programs on stunting prevention and Iron Supplement Tablet (TTD) consumption be developed to be more sustainable and integrated, involving various stakeholders, including families, communities, and government institutions. Given the cultural diversity in Pringsewu Regency, further research can also explore the influence of local cultural and religious values on health behavior and acceptance of the Iron Supplement program.

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