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Increasing the Effectiveness of Stunting Prevention Programs in Adolescent Girls Through Collaboration of Health Workers, Pharmacists and Midwives in Pandeglang Regency

Peningkatan Efektivitas Program Pencegahan Stunting pada Remaja Putri Melalui Kolaborasi Tenaga Kesehatan Apoteker dan Bidan di Kabupaten Pandeglang

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Abstract
Adolescent girls with anemia face increased risks during pregnancy and childbirth and are more likely to give birth to stunted children, perpetuating the cycle of intergenerational malnutrition. This community service program involved 150 adolescent girls divided into two groups: 75 in the control group and 75 in the intervention group. Only the intervention group received education using the CBIA (Cara Belajar Insan Aktif) method. Evaluation included hemoglobin level measurements, knowledge assessments on anemia and stunting, and adherence to iron tablet (TTD) consumption. The intervention group showed significant improvements in knowledge, Hb levels, and compliance compared to the control group. Educational interventions using the CBIA method, supported by health worker collaboration, proved effective in improving awareness and TTD adherence among adolescent girls. This approach is promising as a preventive strategy for anemia and stunting.

Keywords: *Collaboration, Health Workers, Stunting, Prevention*

Abstrak
Remaja putri dengan anemia berisiko tinggi mengalami komplikasi kehamilan dan melahirkan, serta melahirkan bayi yang berisiko stunting. Upaya pencegahan diperlukan untuk memutus siklus malnutrisi antar generasi. Pengabdian masyarakat ini melibatkan 150 remaja putri yang dibagi dalam dua kelompok: 75 peserta kontrol dan 75 peserta intervensi. Kelompok intervensi mendapatkan edukasi menggunakan metode CBIA (Cara Belajar Insan Aktif), sedangkan kelompok kontrol tidak. Evaluasi dilakukan melalui pemeriksaan kadar Hb, pengetahuan tentang anemia dan stunting, serta kepatuhan konsumsi Tablet Tambah Darah (TTD). Hasil menunjukkan peningkatan signifikan pada kelompok intervensi dibandingkan kelompok kontrol. Metode edukasi CBIA yang didukung kolaborasi tenaga kesehatan terbukti efektif dalam meningkatkan kesadaran dan kepatuhan konsumsi TTD, sehingga berpotensi sebagai strategi pencegahan anemia dan stunting pada remaja putri.

Kata kunci: *Kolaborasi, Tenaga Kesehatan, Stunting, Pencegahan*

1. INTRODUCTION

Based on the perspective of human development, there are global problems that can hinder the improvement of human quality, namely stunting. Stunting is a problem that can cause various very bad impacts on children's health (Haq & Abbas, 2022). Stunting is indicated by the presence of growth retardation in children, so that children are shorter than their age and do not meet the established standards (Svefors et al., 2020). Growth is the main indicator that is related to the level of health of toddlers (Greenwood et al., 2022). Stunting can have a negative impact on

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a child's intelligence in the future by showing lower intelligence than normal children of the same age (Aurora et al., 2021).

The failure to resolve the stunting problem has a very serious impact because it can result in the failure to achieve national development targets, and the risk of a large burden that must be borne by the country due to the very low quality of human resources (HR) that are not competitive. Indonesia's target to take advantage of the demographic bonus projected in 2030 and the realization of Indonesia Unggul in 2045 will not be achieved if we fail to overcome the stunting problem (Priyono, 2020).

According to data from the 2020-2024 National Medium-Term Development Plan (RPJMN), stunting is a priority issue in health development (Fathonah et al., 2023). Indonesia has a high prevalence rate of stunting, which was 27.6% in 2019 (Marjan et al., 2023). In 2022, the prevalence rate of stunting decreased to 21.6% (Kementrian Kesehatan RI, 2021), Meanwhile, based on RPJMN data for 2020-2024, it has been targeted that by the end of 2024 the stunting prevalence rate will be 14% (Kementerian Bappenas RI, 2022). This requires increased efforts to reduce the prevalence of stunting in Indonesia.

Banten Province has a percentage of 20% according to the 2023 Indonesian Nutrition Study. Pandeglang Regency is the city/district with the highest prevalence of stunting in Banten Province (Kementrian Kesehatan RI, 2023). Stunting is a picture of a nutritional problem that is influenced by the health conditions of the mother/prospective mother (Lupiana & Sutrio, 2022).

The group of teenage girls can be stated as prospective mothers as a special group that is the main concern regarding the amount of daily nutrition that must be met with the aim of preventing stunting. The function of reproductive organs can be improved by fulfilling nutritional needs at adolescence (Saleh et al., 2021). Parents with nutritional problems have an 11.12 times greater risk of giving birth to stunted children, including anemia problems (Fitri et al., 2021). Anemia is one of the main factors that causes the potential for stunting (Rasdianah et al., 2023).

Preventive measures to prevent anemia can be taken by giving iron supplements (Dewi et al., 2020). Iron supplementation is carried out through the Weekly Iron-Folic Acid Supplementation program by providing iron supplements once a week (WIFS) (Roche et al., 2021). Poor compliance with iron supplement use in adolescents is a major obstacle to anemia prevention programs. This obstacle has been found in various countries for individual reasons, namely forgetting (Silitonga et al., 2023).

This stunting incident is considered serious, associated with high morbidity and mortality rates, decreased immunity so that it is easy to get sick, the risk of diabetes, obesity, heart and blood vessel disease, cancer, stroke, in old age and poor cognitive development and low income productivity levels. Therefore, prevention and control must be handled immediately (Rahmadhita, 2020).

High stunting rates will have negative impacts on children, such as high morbidity and mortality rates, poor child development and learning ability, increased risk of infection and non-communicable diseases in adulthood. High stunting rates can also result in reduced productivity resulting in low economic status (Beal et al., 2018). The occurrence of stunting in children under 5 years of age can also disrupt motor and mental development, as well as cognitive achievement because stunting can directly impact the child's brain development (Supriatin et al., 2020).

Indonesian teenagers currently have three nutritional problems, including overweight, malnutrition and micronutrient deficiencies with anemia. Adolescent girls are said to be anemic if the hemoglobin level in red blood cells is <12 gr/dl. Adolescent girls who experience anemia have many detrimental risks during pregnancy, childbirth, and postpartum. In addition, children who are born are likely to experience stunting so that they can continue the cycle of malnutrition (Rizkiana, 2022).

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Stunting prevention interventions are very necessary with a focus on priority groups as the key to successful nutritional improvement with priority target categories, namely pregnant women, breastfeeding mothers, and children aged 0-23 months. In addition, there are important target categories, namely children aged 24-59 months, Women of Childbearing Age and adolescent girls. In preventing stunting, providing iron supplement tablets is a specific nutritional provision that can be carried out as a priority effort for adolescent girls and women of childbearing age (Tobing et al., 2021).

The use of iron supplements as an effort to prevent stunting early cannot be done by just one person or several people, but requires the role of collaboration of health workers to significantly reduce stunting rates in Pandeglang Regency. Collaboration of health workers is a strategic approach in preventive interventions, especially in efforts to prevent anemia and stunting in adolescent girls. This model integrates the roles of various health professions (pharmacists and midwives) to provide continuous education, monitoring, and support. This collaboration not only improves the quality of services, but also strengthens the effectiveness of interventions through cross-disciplinary communication and a holistic approach to target individuals and communities. Research shows that coordinated health team-based interventions can improve adherence to healthy behaviors and clinical outcomes (Reeves et al., 2017; Word Health Organization, 2010).

2. METHOD

The implementation of this community service was carried out in 2 vocational schools located in Pandeglang Regency, namely Vocational School X and Vocational School Y. The implementation of this community service activity directly involved two professions in the health sector, namely Pharmacists and Midwives. This community service activity was carried out separately between the two schools. The targets or participants in this activity were female students from the two vocational schools. All participants were given Blood Supplement Tablets (TTD), and TTD Consumption Monitoring Cards. In addition, all participants were given treatment to check the levels of Hemoglobin (Hb) in their blood twice. Monitoring of TTD medication consumption in participants of this community service activity was carried out through two media, namely TTD Medication Monitoring Cards and WhattApps Group (WAG), which was directly carried out by Pharmacists and Midwives. Participants joined the WAG based on school, so that there were two WAGs, namely the Intervention Group WAG and the Control Group WAG.

The method of this community service activity uses the Community-Based Participatory Research (CBPR) approach which places the community as an active partner in every stage of the activity, from planning, implementation, to evaluation. This approach aims to build equal interaction between health workers (pharmacists and midwives) with the school community and young women as the main targets. The activity begins with problem mapping through focus group discussions (FGD) with teachers and local health workers to identify obstacles and needs related to TTD consumption and knowledge about stunting. Educational interventions are then designed collaboratively by involving pharmacists as drug information facilitators and midwives as reproductive health educators. Monitoring and evaluation are carried out in a participatory manner through measuring hemoglobin levels, knowledge surveys, and observing compliance with TTD consumption. This CBPR approach strengthens community involvement and increases program sustainability by prioritizing the principles of equality, empowerment, and local empowerment.

Participants in this community service activity were divided into two groups, including Vocational School X as the intervention group and Vocational School Y as the control group. The intervention group was given additional treatment, namely education with the Active Human Learning Method (CBIA) method. In addition, the intervention group was also given regular education through electronic poster media sent to WAG.

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Visits to vocational schools to carry out direct community service were carried out twice with a span of one month. This was done to measure the effectiveness of collaboration between health workers in preventing stunting since the prospective mother. The first visit was carried out in one day with the aim of providing Iron Supplement Tablets (TTD), Iron Supplement Monitoring Cards, checking Hb levels in the blood, and filling out a knowledge level questionnaire in both groups. However, the intervention group was given CBIA education with material on stunting and anemia in the intervention group which was directly delivered by the Pharmacist and Midwife. For one month, only the intervention group was given regular education through electronic poster media sent to their WAG. The second visit was carried out one month after the first visit. The second visit was carried out in one day with the aim of collecting Iron Supplement Monitoring Cards, checking Hb levels in the blood, and filling out a knowledge level questionnaire and filling out a Medication Adherence Rating Scale (MARS) questionnaire in both groups.

The assessment of the effectiveness or evaluation of this activity is carried out by filling out the Knowledge Questionnaire about Stunting, the MARS questionnaire and checking the Hb levels in the blood. Both questionnaires were filled out by all participants. The Knowledge Questionnaire about Stunting was used to determine the level of knowledge of participants about stunting. The MARS questionnaire was used to determine the level of compliance in taking TTD medication. The evaluation was carried out pre-test and post-test. The pre-test evaluation was carried out to determine the level of knowledge of participants before being given education and the results of the Hb level examination in the blood before monitoring the taking of TTD medication. The post-test evaluation was carried out to determine the level of knowledge of participants after being given education and the level of compliance in taking TTD medication as well as the results of the Hb level examination in the blood after monitoring the taking of TTD medication for one month which was carried out directly by Pharmacists and Midwives.

The results of all evaluations were statistically tested using the Independent Sample t-test or Mann Whitenay method to determine whether there was a significant difference or not in the number of participants who had good knowledge, were compliant in consuming TTD drugs and the stability of Hb levels in the blood between the control group and the intervention group. If the results show a significant difference, it is stated that collaboration between health workers can increase the effectiveness of the stunting prevention program (Ghozali, 2016). In addition, to strengthen the results of this community service activity, in the evaluation of the results of filling out the questionnaire on the level of knowledge and checking the level of Hb in the blood, a Wilcoxon or Wilcoxon test was carried out to determine whether there was a significant difference or not in the results of the pre-test and post-test evaluations, and to determine the number of participants who experienced an increase or decrease in the level of knowledge and Hb levels in the blood. If the results show a significant difference and the number of participants who experienced an increase in the level of knowledge and Hb levels in the blood, then it is stated that collaboration between health workers can increase the effectiveness of the stunting prevention program (Pallant, 2020).

3. RESULTS AND DISCUSSION

3.1 Implementation of Community Service

This community service activity went smoothly, both on the first visit, the monitoring process through WAG in the intervention group, and the second visit. All community service activities were attended by 150 female students who were divided into two, namely 75 female students in the intervention group and 75 female students in the control group. The presentation of the results and discussion were carried out based on evaluation variables, namely the results of the examination of Hb levels in the blood, the level of knowledge and the level of compliance in taking TTD medication.

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Figure 1. Implementation of Community Service Activities on the First Visit at Vocational School X as an Intervention Group

Figure 2. Implementation of Community Service Activities on the First Visit to Vocational School Y as the Control Group

Figure 3. Implementation of Community Service Activities on the Second Visit at Vocational School X as an Intervention Group

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Figure 4. Implementation of Community Service Activities on the Second Visit to Vocational School Y as the Control Group

Figure 5. Monitoring of TTD Medication Consumption via WAG and Provision of Education via Electronic Media in the Intervention Group

3.2 Hb Level Examination Results

The purpose of the blood Hb level examination is to review the condition of the participants of this community service activity during the use of TTD drugs. The blood Hb level examination was carried out twice in all groups with a time span of one month. The normal Hb level in adolescent girls is 12 gr/dL (Yulisetyaningrum et al., 2023). Anemia is one of the risk factors for stunting. Anemia in adolescent girls is one of the factors that has the potential to cause stunting in children in the future. Iron deficiency during adolescence can cause anemia, which has an impact on decreased endurance, fitness, and cognitive abilities. If adolescent girls with anemia then become pregnant without improving their nutritional status, the risk of giving birth to babies with low birth weight increases, which can then lead to stunting (Basri et al., 2021).

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Figure 6. Examination of Hb Levels in Blood at the First Visit at Vocational School X as the Intervention Group

Figure 7. Examination of Hb Levels in Blood at the First Visit at Vocational School Y as the Control Group

Figure 8. Examination of Hb Levels in Blood at the Second Visit at Vocational School X as the Intervention Group

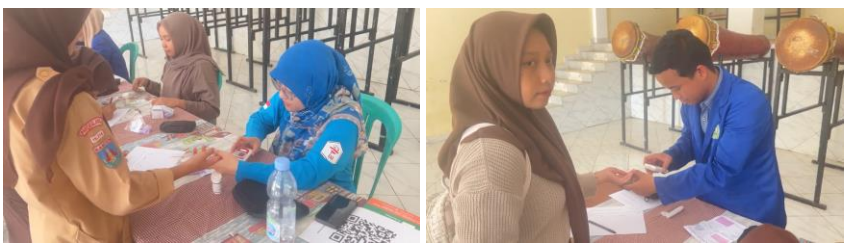

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Figure 9. Examination of Hb Levels in Blood at the Second Visit at Vocational School Y as the Control Group

Table 1. Average Hb Levels in Participants' Blood

Group	Average Hb Level		p-value[b]
	Pre-test	Post-test	
Intervensi	11.2 g/dl	12.5 g/dl	0.013
Kontrol	11.1 g/dl	11.8 g/dl	0.058
p-value[a]	0.266	0.028	

Table Description:
Pre-test : Average Initial Hb Level or before treatment
Post-test : Average Final Hb Level or after treatment
p-value[a] : Independent Sample t-test Results
p-value[b] : Wilcoxon Test Results

Based on the results of the evaluation of the examination of Hb levels in the blood of participants in both groups, it showed that all groups experienced an increase in the average Hb levels in the blood after one month of treatment. Table 1 shows that the intervention group experienced a higher increase in the average Hb levels in the blood compared to the control group. The difference in the average Hb levels in the blood of the intervention group between before and after the intervention was 1.3 g/dl, while in the control group the difference was 0.7 g/dl.

The results of the Independent Sample t-test statistical test in table 1 show that the average significance value of the initial Hb levels obtained was 0.266. This indicates that there is no significant difference in the average initial Hb levels between the intervention group and the control group. After one month of treatment in the intervention group, the significance value obtained became 0.028, so it can be stated that there is a significant difference in the average initial Hb levels between the intervention group and the control group.

The results of the Wilcoxon test showed that the significance value of the average Hb levels before and after treatment in the intervention group was 0.013 (<0.05), so it can be stated that there was a significant difference in the average Hb levels before and after treatment in the intervention group. The results of the statistical test in the control group with a significance value of 0.058 showed that there was no significant difference in the average Hb levels before and after treatment in the control group.

Based on the results of the statistical test above, it shows that the intervention group experienced a significant increase in the average blood Hb levels compared to the control group, so it can be stated that collaboration between health workers can play an important role in preventing stunting since adolescence based on the results of the evaluation of Hb levels in the blood of participants in this community service.

Table 2. Differences in Blood Hb Levels of Participants Before and After Intervention in the Intervention Group

		N	Mean Rank	Sum of Ranks
Final Hb Level – Initial Hb Level	Negative Ranks	8[a]	17.22	284.00
	Positive Ranks	62[b]	12.60	83.90
	Ties	5[c]		
	Total	75		

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The results of the Wilcoxon test above show the value of negative ranks at a mean rank of 17.22 and a sum of ranks of 284.00, where the negative ranks in the Wilcoxon test indicate a decrease in the value of Hb levels in the blood of participants in the intervention group of 8 participants (N). Furthermore, for the results of positive ranks at a mean rank of 12.60 and a sum of ranks of 83.90, where the positive ranks in the Wilcoxon test indicate that 62 participants (N) experienced an increase in the value of Hb levels in the blood of participants in the intervention group. The mean rank or average increase is 12.60 while the number of positive ranks or sum of ranks is 83.90. In addition, the results of the ties are 2, so it can be said that there are 5 participants with Hb levels in the blood in the intervention group that did not change.

Table 3. Differences in Blood Hb Levels of Participants Before and After Intervention in the Control Group

		N	Mean Rank	Sum of Ranks
Final Hb Level – Initial Hb Level	Negative Ranks	16[a]	11.88	203.61
	Positive Ranks	52[b]	10.79	38.30
	Ties	7[c]		
	Total	75		

The results of the Wilcoxon test in table 3 show the value of negative ranks at mean rank 11.88 and sum of ranks 203.61 where the negative ranks in the Wilcoxon test indicate a decrease in the value of Hb levels in the blood of participants in the control group of 16 participants (N). Furthermore, for the results of positive ranks at mean rank 10.79 and sum of ranks 38.30 where the positive ranks in the Wilcoxon test indicate that 52 participants (N) experienced an increase in the value of Hb levels in the blood of participants in the control group. The mean rank or average increase is 10.79 while the number of positive ranks or sum of ranks is 38.30. In addition, the results of the ties are 7, so it can be said that there are 7 participants with Hb levels in the blood in the control group that do not change.

A study states that hemoglobin levels can be influenced by several uncontrollable factors, such as age, gender and iron metabolism in the body (Jacobus et al., 2016). As a person gets older, they will experience a physiological decline in all organs of the body including a decline in the spinal cord that produces red blood cells. In adolescence, there is growth from childhood to adulthood. Physical, biological and psychological changes occur during adolescence. If there is an imbalance between the fulfillment of intake and nutritional needs including iron, it can cause anemia in adolescents. Unbalanced nutritional intake can cause nutritional problems, both malnutrition and excess nutrition (Nuradhiani et al., 2017).

3.3 Level of Knowledge About Anemia and Stunting

Tingkat pengetahuan pada siswi akan berpengaruh terhadap sikap dan perilaku dalam choosing food at school or at home determines how easy it is for someone to understand the benefits of Fe tablets. Knowledge about the benefits of good Fe tablets can influence good food consumption so as to achieve good nutritional status. Counseling about the benefits of Fe tablets is very important to increase students' knowledge so that education needs to be provided so that they can change their behavior in consuming Fe tablets (Apriliyanti et al., 2024).

Low absorption of iron in the intestines can be caused by high consumption of non-heme iron sources and other substances such as tannin in tea, phosphite in egg yolks, phytic acid in cereals and nuts, oxalic acid in spinach, as well as high levels of other minerals such as fiber, zinc, manganese, and calcium in food (Indriasari & Jafar, 2015). The tannin content in tea can inhibit iron absorption in the body, especially if tea is consumed at meal times, it will reduce iron absorption by up to 50%. This is because the stimulant contained in caffeine can leave a crust on

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the intestinal wall so that it can inhibit the enzyme production chain in digestion. In addition, there is a strong interaction between the physicochemical properties of polyphenols and iron in the intestines (Lewa, 2016). The low level of knowledge of adolescent girls regarding the importance of iron intake is one of the obstacles in compliance with taking TTD medication. Therefore, it is necessary to provide education to adolescent girls regarding the importance of preventing stunting.

Several educational methods that can be used to provide knowledge to young women about the use of iron tablets to avoid the dangers of anemia include counseling methods, education through schools, lectures or seminars, small group discussions or Focus Group Discussions (FGD), mass media, exhibitions, and Active Human Learning Methods.

There was a significant increase in knowledge about the use of drugs among Pindad employees' wives using the Active Human Learning Method education method of 68.66%. (Djuria, 2020). Therefore, in this community service activity, CBIA is the chosen method of education with the aim of increasing participants' knowledge about stunting.

Figure 10. Implementation of Education with the CBIA Method directly on the second visit to Vocational School X as an Intervention Group

Table 4. Level of Knowledge About Stunting of Participants

Group	Participant Knowledge Level				p-value[b]
	Pre-test		Post-test		
	Good	Not enough	Good	Not enough	
Intervention	38	37	58	17	0.001
Control	31	44	43	32	0.028
p-value[a]	0.293	0.083	0.001	0.001	

Table Description:
Pre-test : Initial Knowledge Level or before treatment is given
Post-test : Final Knowledge Level or after being given treatment
p-value[a] : Independent Sample t-test Results
p-value[b] : Wilcoxon Test Results in the Good Category

Based on the results of the evaluation of the level of knowledge of participants in both groups, it shows that all groups experienced an increase in the number of participants with a Good level of knowledge after one month of treatment. Table 4 shows that the intervention group experienced an increase in the number of participants with a Good level of knowledge compared to the control group. The difference in the number of participants with a Good level of knowledge in the intervention group before and after the intervention was 20 participants, while in the control group the difference was 12 participants.

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The results of the Independent Sample t-test statistical test in table 4 show that the significance value of the number of participants with a Good category of knowledge level at the first visit was obtained at 0.293. This indicates that there is no significant difference in the number of participants with a Good category of knowledge level between the intervention group and the control group. After one month of treatment in the intervention group, the significance value obtained was 0.001, so it can be stated that there is a significant difference in the number of participants with a Good category of knowledge level between the intervention group and the control group.

The results of the Wilcoxon test show that the significance value of the number of participants with a Good category of knowledge level before and after being given treatment in the intervention group is 0.001 (<0.05), so it can be stated that there is a significant difference in the number of participants with a Good category of knowledge level before and after being given treatment in the intervention group. The results of the statistical test in the control group with a significance value of 0.028 indicate that there is a significant difference in the number of participants with a Good category of knowledge level before and after being given treatment in the control group.

Based on the number of participants with a Good level of knowledge above, it shows that the intervention group experienced an increase in the number of participants with a Good level of knowledge compared to the control group, so it can be stated that collaboration between health workers using CBIA is effective in preventing stunting since adolescence based on the results of the evaluation of the level of knowledge of participants in this community service.

Table 5. Differences in participants' knowledge levels before and after intervention in the intervention group

		N	Mean Rank	Sum of Ranks
Final Knowledge Level – Initial Knowledge Level	Negative Ranks	8[a]	10.82	137.00
	Positive Ranks	57[b]	8.50	24.00
	Ties	10[c]		
	Total	75		

The results of the Wilcoxon test in table 5 show the value of negative ranks at mean rank 10.82 and sum of ranks 137.00 where the negative ranks in the Wilcoxon test indicate a decrease in the level of knowledge of participants in the intervention group of 8 participants (N). Furthermore, for the results of positive ranks at mean rank, namely 8.50 and sum of ranks 24.00 where the positive ranks in the Wilcoxon test indicate that 57 participants (N) experienced an increase in the level of knowledge in the intervention group. The mean rank or average increase is 8.50 while the number of positive ranks or sum of ranks is 24.00. In addition, for the results of ties, namely 10, so it can be said that there are 10 participants with knowledge scores in the intervention group that do not change.

Table 6. Differences in participants' knowledge levels before and after intervention in the Control Group

		N	Mean Rank	Sum of Ranks
Knowledge Level – Knowledge Level	Negative Ranks	19[a]	13.41	194.00
	Positive Ranks	48[b]	11.40	34.00
	Ties	8[c]		

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Total	75

The results of the Wilcoxon test in table 6 show the value of negative ranks at mean rank 13.41 and sum of ranks 194.00 where the negative ranks in the Wilcoxon test indicate a decrease in the level of knowledge of participants in the control group of 19 participants (N). Furthermore, for the results of positive ranks at mean rank, namely 11.40 and sum of ranks 34.00 where the positive ranks in the Wilcoxon test indicate that 48 participants (N) experienced an increase in the level of knowledge in the control group. The mean rank or average increase is 11.40 while the number of positive ranks or sum of ranks is 34.00. In addition, for the results of ties, namely 8, so it can be said that there are 8 participants with knowledge scores in the control group that do not change.

Adolescents, especially adolescent girls, are a group that is vulnerable to nutritional problems. Adolescence is a transition period from childhood to adulthood and during this period requires sufficient nutrients because they experience rapid growth and physiological and mental changes. Adolescent girls as prospective mothers need to be given education about stunting. Stunting education for adolescent girls is a step to prepare prospective mothers with good knowledge to carry out prevention through improving nutrition at the adolescent stage, reproductive age, pregnancy, after childbirth and parenting patterns.

Health education, especially about stunting, aimed at adolescent girls is carried out to prepare adolescent girls to enter the next stage of life, namely becoming a mother, so that the incidence of stunting can be prevented (Kinanti et al., 2022). Implementation of health education activities involves interaction and involves a two-way communication process with the aim of exchanging information between officers and target groups. The success of the nutrition education program can be achieved with planning accompanied by the use of appropriate methods and aids in activities in the form of props that are in accordance with the educational material (Setiani & Sriwiyati, 2022).Efforts to overcome stunting that can be done are to increase knowledge through education and also provide assistance to at-risk groups, especially pregnant women, breastfeeding mothers, and families identified as having stunted toddlers and teenage girls (Zaina et al., 2022).

Health education plays an important role that can influence behavioral changes that can be obtained from learning experiences (Gultom et al., 2022). Counseling is carried out with the aim of educating and providing understanding so that teenagers can become quality human resources (Simanjuntak et al., 2022). The results of research on health in high school adolescent girls showed that health education was carried out with the aim of providing information, knowledge and understanding about nutrition, anemia, PHBS and stunting, so that adolescent girls care about their health, so that stunting can be prevented early on (Kasjono & Suryani, 2020). Education is important to be given to school students, especially in the teenage age group. Education in the form of a healthy and clean lifestyle can be given to achieve a degree of health and be able to distinguish things that can affect their health. School students are learners who will become the nation's generation (Mardin et al., 2022).

3.4 Level of Compliance in Taking Blood Supplement Tablets

Each participant of this community service activity was given a TTD medication monitoring card which was filled in directly by the participant. However, the evaluation of the level of compliance in taking TTD medication was carried out by filling out the MARS questionnaire. The MARS questionnaire contains 5 questions related to participant compliance in taking TTD medication for one month.

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Figure 9. TTD Medication Monitoring Card

Table 7. Level of participant compliance in taking TTD medication

Group	Level of Medication Compliance	
	Obedient	Not obey
Intervensi	68	7
Kontrol	43	32
p-value[a]	0.005	0.001

Table Description :
p-value[a] : Independent Sample t-test Results

Based on the results of the evaluation of the level of compliance in taking TTD medication for participants in both groups, it shows that all groups are dominated by participants who are compliant in taking TTD medication. Table 7 shows that the intervention group has a greater number of compliant participants compared to the control group. The results of the Independent Sample t-test statistical test in table 7 show that the significance value obtained is 0.005. This shows that there is a significant difference in the number of compliant participants between the intervention group and the control group. Based on the number of participants who are compliant in taking TTD medication for one month, it shows that collaboration between health workers is effective in preventing stunting since adolescence based on the results of the evaluation of the level of participant compliance in this community service.

Health workers are a motivating factor for someone to behave healthily. One of the tasks of health workers is to disseminate health information. Support from health workers in this service includes providing education about TTD for young women, providing health media and supervising and monitoring TTD consumption. Another study conducted on adolescents in India stated that health education by health workers (health centers) is a factor related to compliance with TTD consumption. Health workers play a role in providing health education about the benefits of TTD for adolescents (Dhikale et al., 2015). In addition, research on adolescent girls in the Coastal Area of East Kabaena District stated that there was a significant relationship between the role of health workers and compliance with TTD consumption in adolescent girls. The better the role of health workers, the more obedient adolescent girls are in consuming TTD (Zamadi et al., 2022). Therefore, health workers are expected to be able to provide support in disseminating information about TTD, motivating adolescents to consume TTD, and monitoring weekly TTD programs for adolescent girls in schools.

Other research states that there is a relationship between the role played by health workers and the level of compliance of adolescent girls in consuming TTD (Zamadi et al., 2022). Health workers play a role in the compliance of pregnant women in consuming iron tablets in Sidomulyo Village, Sidokarto and Sidoluhur, Godean District, Sleman Regency, Yogyakarta

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(Handayani et al., 2013). Interaction and support of health workers with adolescent girls is also interpreted as the term health communication between adolescent girls and health workers where the communication leads to the process of communication or messages from health workers to adolescent girls which include health problems related to anemia. Support from people around them is very important including support from health workers, parents and teachers as strengthening factors for compliance in consuming iron folate tablets in adolescent girls (Tirthawati et al., 2020).

The implementation of this program shows that collaboration between pharmacists and midwives has great potential in increasing the effectiveness of education and monitoring of adolescent girls related to the prevention of anemia and stunting. Pharmacists play a role in providing correct and interesting information related to TTD consumption, while midwives assist in aspects of reproductive health and nutrition. The implication of this activity is the need for a cross-professional collaborative model in school-based or community-based prevention programs, which can be replicated in other areas with similar conditions.

Some of the challenges faced during the activity include low early awareness of adolescents about the importance of TTD consumption, negative perceptions of TTD side effects, limited time for implementation in schools, and uneven support for infrastructure and health workers in rural areas. In addition, cross-sector synergy such as between schools, health centers, and parents still needs to be improved so that the program runs more optimally and sustainably.

The level of participation in this activity is quite good. Young women showed high enthusiasm during the interactive education session, especially when the delivery method was adjusted to a visual and experience-based approach. The involvement of teachers and schools was also a major supporting factor for the success of the activity. However, parental participation is still limited and is one of the focuses of further program development, considering that the role of the family is very important in strengthening healthy habits at home.

4. CONCLUSION

Based on the results of the evaluation of the Hb blood level examination in the intervention group, there was an increase in the Hb blood level. The results of the evaluation of the level of knowledge about stunting showed that the intervention group experienced an increase in the number of participants with a higher level of knowledge in the Good category compared to the control group. In addition, the results of the evaluation of the level of compliance in taking TTD medication showed that the intervention group had a greater number of compliant participants compared to the control group. This shows that based on the results of this community service activity, collaboration between health workers is very important in preventing stunting. In addition, the role of collaboration between health workers can increase the effectiveness of the stunting prevention program by providing education using the CBIA method and monitoring the taking of TTD medication. This program is designed to have a long-term impact on preventing stunting. The sustainability of this program is guaranteed through several strategies, namely strengthening the capacity of local health workers, especially pharmacists and midwives, so that they can continue to provide effective education and interventions to adolescent girls on an ongoing basis. In addition, the program also builds strong partnerships with the local health office and community to support the implementation of activities routinely and integrated into public health services. Through a collaborative approach and empowerment of local resources, this program is expected to be able to create positive behavioral changes and reduce stunting rates sustainably in Pandeglang Regency.

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