**READINESS OF THE COMMUNITY-BASED ORGANIZATION IN IMPROVING FEMALE ADOLECESCENTS’ IRON FOLATE STATUS IN A RURAL AREA**

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# ABSTRACT

The iron deficiency anaemia status of female adolescents needs attention because of its increasing prevalence and impact on adolescent health today and in the future, as well as the country's socio-economic status.Efforts to reduce cases of anaemia in female adolescent need to involve multi-sectoral organizations including community-based organizations (CBO).Karang-taruna and Posyandu cadres as CBOs form in rural areas have the potential to be involved in collaborative programs to improve the anaemia status of female adolescents in rural areas.Using a cross sectional design with a mixed method approach, subjects of this study consisted of key resource persons consisting of a village head, 3 village officer, a head of karang taruna, a health-centre staff, 6 Karang taruna members and 10 Posyandu cadres.The results showed that the majority of CBO members had less knowledge related to female adolescents’ anaemia prevention programs (43.75%). But have a good attitude (56.25%) and self-efficacy (68.75%). Readiness of CBO at Sirnagalih village were at the first level, meaning that CBO members are not aware of the problem of anaemia in young women in rural areas. It is necessary to make intervention efforts to increase the readiness of CBOs before further collaborative efforts are carried out.

**Keywords**: Anaemia; Community based organization; Female adolescent; Readiness; WIFAS

# INTRODUCTION

The biggest contributor to micronutrient problems worldwide, particularly in a developing country is anaemia, which is mainly due to iron-folate deficiency. The prevalence of anaemia occurs in all age groups, but women of childbearing age, including adolescent girls, are the highest group of people with anaemia1.

Women of childbearing age and adolescent girls who suffer from anaemia can develop anaemia during pregnancy and are at risk for bleeding or giving birth to babies with low birth weight.2 Therefore, anaemia in adolescent girls and women of childbearing age must be prevented, one of which is the iron-folate supplementation program. In accordance with the World Health Organization program (2011), the Indonesian Ministry of Health launched a weekly iron folate supplementation program for female adolescents and women of childbearing age in 2014.3.

In developing countries, a school-based weekly program of iron and folic acid supplementation (WIFAS) for female adolescence is seen as a key intervention to prevent anaemia and improve folic acid status. This strategy is universally applicable to reduce the risk of “forgetting to take iron”.4 School readiness in implementing the school- based Wifas program is very necessary for the effectiveness of the anemia prevention and control program in adolescent girls.5,6

 Unfortunately, the WIFAS program has been hampered since the COVID-19 pandemic hit, when schools were closed, and students were studying from home. Schools cannot hold IFAS drinking together, motivate and monitor student compliance to consume IFAS. however, some regions have adapted by collaborating with adolescent Posyandu cadres to make home visits once a week to distribute IFAS. Along with the rapid use of the internet, efforts have been made to optimize the use of social media and the WhatsApp application as a communication channel between health workers, cadres and the wider community.7

Not all regions have a Primary Health Care/Puskesmas or Posyandu particularly for adolescents which are fostered by the local health office. Therefore, it is necessary to make a breakthrough by cooperating with Community Based Organizations (CBO) that already exist in the community so that the WIFAS program can continue to run during the pandemic.

Based on the 2018 Riskesdas data, the prevalence of anaemia in young women in rural areas is higher than in urban areas, which is 25%.8 Therefore, it is necessary to do more intensive prevention and control of anaemia in young women in rural areas.

There are several CBOs in the village that have the potential to be involved in health programs, including youth organizations and Posyandu. Collaboration with the CBO can increase the active participation of the community so that it can increase the potential for program sustainability and can produce significant changes. Before collaborating with CBOs, it is necessary to analyses the readiness of CBOs. Plested et al. (2006) describes community readiness as a level where a community is willing and ready to act on a problem. 9 The development of this model of community preparedness arose from the need to better understand the awareness of individual community members of a problem and its relation to prevention programmes. The developer of this model defines community readiness as “the relative acceptance of a program, action, or other form of local-based decision-making activity.10

Studies that examine the readiness of CBO in anaemia prevention and control programs in adolescent girls are still lack because previous studies did not analyse the context and actors of the implementation of the intervention. The discussion carried out is often only emphasized on the form of intervention alone.11 Thus far, nutrition programs in Indonesia are more of a "program in" than a "program for" or a "joint program" for the community.12 One of the causes of the ineffectiveness of an intervention not only depends on the form of the intervention but also depends on the context in which and who the target is and what support systems are available in a community.13 Therefore, this study aims to identify the readiness of CBO in the prevention and control of anaemia in adolescent girls in Sirnagalih village, Bogor, West Java. This CBO readiness analysis can be used as the basis for mapping the intervention and collaboration efforts that will be carried out later.

# MATERIAL AND METHODS

# Research design, sample, location and time.

# The study design is a survey study with a cross-sectional design using semi quantitative and qualitative approached. The research unit is CBO selected by using purposive sampling technique. The sample selected as respondents met the inclusion and exclusion criteria. The inclusion criteria for the sample are respondents are key informants. Key resource persons consisted of a village head, 3 village officers, a chairperson and 6 Karang taruna (Katar) members, 10 Posyandu cadres and a nutrition manager at the Balekambang Public Health Center who supervised community health in Sirnagalih village, Bogor, West Java. This research was conducted in Sirnagalih village, Jonggol district, Bogor district, West Java province in January 2022.

# Research variable

# The research variables consisted of Social Demographic Characteristics of CBO members (gender, age, education level, occupation, marital status, type of CBO followed, length of work and motivation to become a CBO administrator/member). This study also measures the level of knowledge, attitudes and self-efficacy of the program as well as the level of readiness of the management and CBO members in the program.

# The knowledge variable was measured by questions related to the definition of anemia, symptoms of anemia, the main causes of anemia, how to prevent anemia, the definition of iron folate tablets and their contents, types of foods that can reduce Hb levels in the blood, side effects of iron folate tablets, foods that are sources of iron. The attitude variable was measured on a Likert scale which measured the respondent's attitude towards 7 statement items consisting of; 1) taking iron tablets improves learning achievement, 2) if you suffer from anemia you will feel tired/tired easily, 3) an increased risk of developing anemia during menstruation, 4) taking iron folate tablets once a week can prevent anemia, 5) needing iron tablets to meet the needs nutrition, 6) increased risk of developing anemia if suffering from malaria/worms, and 7) habit of avoiding drinking coffee/tea while eating. The Efficacy variable was measured by 4 statement items consisting of: 1)Katar and cadres can motivate young women to consume foods that are a source of iron, nutritionally balanced. 2)Katar and cadres can educate young women about anemia prevention and control. 3)Katar and cadres are able to organize female adolescent to take WIFAS together.4)Katar and cadres are able to monitor the compliance of young women drinking IFAS

# Types and methods of data collection

# The data collected in this study consisted of 2 types of data: quantitative data and qualitative data. Quantitative data, namely socio-demographic data, level of knowledge, attitudes, self-efficacy, and readiness of CBO members were collected by conducting face-to-face interviews and inputted into the google form template. Qualitative data such as supporting data were obtained by conducting interviews and integrated group discussions using an interview guide to the village head, head of Katar, and nutrition management staff at Balekambang Health Center.

# The measurement of the level of community readiness was carried out by interviewing key informants using a community readiness instrument which was adapted and modified from the community readiness model instrument developed by researchers at the Tri-ethnic Center for prevention research in 1995 and the school readiness instrument in the school based WIFAS program developed by Apriningsih. et, al.2020. Community readiness was measured using 5 dimensions of readiness, namely: the CBO effort dimension consisting of 3 question items, the leadership dimension consisting of 7 question items, the resource dimension consisting of 2 question items, the CBO understanding awareness dimension related to anemia consisting of 5 question items, and the dimension of community climate which consists of 2 question items. The measurement of the score of each question item was carried out by a research team consisting of 3 primary researchers.

# Processing and analysis of data

# Qualitative data obtained from in-depth interviews and integrated group discussions were processed using qualitative data processing principles. Qualitative data analysis consists of preparing and organizing data for analysis. Furthermore, the data is reduced into themes through the process of coding and condensing the codes which are then presented according to the rules of qualitative research, namely in the form of quotations and presentation of secondary data.

# The collected quantitative data was edited, coded, and inputted and analyzed using IBM SPSS software version 23. Data on socio-demographic characteristics, level of knowledge, attitudes and self-efficacy were analyzed descriptively, presented in the form of a table by presenting the frequency, number, and percentage. Readiness data was analyzed by adding up the scores for each question item in each readiness dimension. Then calculated the average score of all dimensions of readiness.

# Research ethics

# This research has received ethical approval from the Health Research Ethics Committee, Universitas Pembangunan Nasional Veterans Jakarta Number. 499/XII/2021/KEPK.

# RESULT

Community-based organizations in rural areas such as youth organizations and community health center cadres have the potential to be involved in development activities, including prevention and control programs for iron deficiency anemia in adolescent girls. The same thing was conveyed from interviews with the village head, the nutrition management staff of the Balekambang Health Center who developed the Sirnagalih village and the head of the Sirnagalih village youth organization below.

"As for the health problems of female adolescent, if it's here in Sirnagalih, it tends to be minimal, yes, if it's the health problems of female adolescent, it's the most basic things... the usual diseases are fever, typhoid fever. As mentioned earlier, anemia in adolescent girls may be present but not detected yet” (head of Sirnagalih village, Bogor)

“Usually, iron folate supplementation program for young girls is carried out at the target schools. Since the pandemic everything has been hampered, all health programs including PMT-AS, giving iron folate for young women and pregnant women. If you want to involve youth organizations and posyandu cadres, that's great. Because if I have to go down to the village myself, I can't afford it.” (Nutrition staff at Balekambang Health Center, Bogor).

“So far, there has been no youth organization involved for special health programs, most often Posyandu cadres. If we want to be involved now, we are very happy to be able to participate. Even though we still have to be accompanied by Posyandu cadres,Puskesmas or health workers. Because many of the administrators and members of Katar work outside the village on weekdays and can only be active on weekends in the village” (Chairman of Katar in Sirnagalih Village, Bogor)

Efforts to involve members and or administrators of youth organizations and Posyandu cadres in the program to improve the anemia status of adolescent girls are increasingly needed during the COVID-19 pandemic. When the school-based program of giving iron and folate to young girls cannot be implemented due to the implementation of distance learning. So that the school, especially the teacher in charge of the school based health post program, cannot hold an event to drink iron folate together, monitor and document the compliance of students taking iron folate at school.

"Teenagers are often disobedient in taking iron folate supplements, so they need to be supervised, if there are teachers at school and there is a compliance report sheet. If it's in the village, it's also good if someone can monitor the drinking of the iron and use the monitoring sheet too” (Nutrition staff at Balekambang Health Center, Bogor)

The community based organization (CBO) consisting of youth organizations (karang taruna or Katar in Bahasa) and posyandu cadres involved in this study has the characteristics as described in table 1. The majority of respondents are female, married, have junior high school education, with a balanced proportion of age between the age groups 20-29 and 50- 59 years old, and acts as a social group administrator in Sirnagalih village, Jonggol, West Java. The length of time they take part in katar and cadres, half of them say it's less than 2 years, the other half say it's more than 2 years.

Karang Taruna members and posyandu cadres have a balanced proportion of motivation to become CBO members between their own desires and being invited by village officials, in this case most of them claim to be invited by Bu Lurah. Bu Lurah also chose them because she saw the people who were invited to be active in the community. The following is a statement from one respondent about the reasons for being a board member and a member of the CBO:

"I was invited by the village head because I was already active in religious activities so I often met a lot of people ... so I was elected"

(“A” a Posyandu Cadre)

“My own desire because I like to organize and socialize, meet many people. (“S” a Karang taruna member)

T**able 1. Socio-Demographic Characteristics of Community Based Organization (CBO) members of**

**Desa Sirnagalih**

|  |  |  |
| --- | --- | --- |
| **Socio Demographic Characteristics** | **Frequency** | **%** |
| Gender* Male
* Female
 | 313 | 25.075.0 |
| Age* <20
* 20-29
* 30-39
* 40-49
* 50-59
 | 23223 | 16.725.016.716,725.0 |
| Education Level* Primary School
* Junior High School
* Senior High School
* University
 | 3661 | 19.038.038.06.0 |
| Marriage Statue* Unmarried
* Married
 | 511 | 31.069.0 |
| Occupational statue* Unemployment
* Employment
 | 97 | 56.343.7 |
| CBO type involved* Health Community Post
* Youth group
 | 106 | 62.537.5 |
| Length of experience working in CBO* < 2 years
* ≥ 2 years
 | 88 | 50.050.0 |
| Motivation to actively involved in community based organization:* Self-willed because he/she likes to organize
* Invited by village officials
 | 88 | 50.050.0 |

Table 2 describes the level of knowledge, attitudes and self-efficacy of Karang taruna members towards the anemia prevention program and iron-folate supplementation in young women in Sirnagalih village, Bogor, West Java. Most (43.75%) respondents have less knowledge about anemia and giving iron tablets to young girls. The majority of respondents have good attitudes and self-efficacy towards efforts that involve katar and cadres in the prevention and control of anemia in adolescent girls in the village. The support provided by both the health office/Puskesmas and the village office was assessed by the respondents as balanced, 50% considered it adequate, the other 50% considered it inadequate.

**Tabel 2 Knowledge, Attitude and Self Efficacy CBO members towards Female Adolescents’Anemia Prevention program at desa Sirnagalih, Bogor**

|  |  |  |
| --- | --- | --- |
| **Knowledge, Attitude and Self Efficacy CBO members towards Female Adolescents’Anemia Prevention program** | **F** | **%** |
| Knowledge of CBO members towards Female Adolescents’Anemia Prevention program * Good ( >80)
* Enough (60-79)
* Less adequate (<60)
 | 547 | 31.250.2543.75 |
| Attitude of CBO members towards Female Adolescents’Anemia Prevention program * Positive
* Negative
 | 97 | 56.2543.75 |
| Self Efficacy CBO members towards Female Adolescents’Anemia Prevention program * High Self Efficacy
* Low Self Efficacy
 | 115 | 68.7531.25 |
| Support from Village Officials and Health Authority* Adequate
* Less Adequate
 | 88 | 50.0050.00 |

# As shown at Table 3. Overall, the readiness of CBOs to improve the iron nutritional anaemia status of adolescent girls in Sirnagalih village is in the first level. At the first level of readiness, the community, in this case the CBO, which consists of cadres and karang taruna, does not recognize the issue of anaemia in adolescent girls and iron-folate supplementation as problems that arise and must be addressed in Sirnagalih village. This is reinforced by the results of interviews with village heads, youth organizations and posyandu cadres. All of the key informants stated that so far the health problems in adolescents that have arisen are only diseases such as dizziness, fever, and typhoid. So far, the iron-folate supplementation program has only focused on pregnant women, never on young women.

**Table 3. Readiness Stage of CBO in Female Adolescents’Anemia Prevention program at desa Sirnagalih, Bogor Jawa Barat**

|  |  |
| --- | --- |
| **Dimension of Readiness** | **Stage** |
| CBO Effort | 1.2 |
| Leadership | 1.5 |
| Resources | 1.3 |
| Awareness of CBO towards Female Adolescents’Anemia  | 1.4 |
| Community climate  | 1.4 |
| Mean of CBO readiness stage towards female adolescents’anemia program | 1.4 |

# DISCUSSION

# Efforts to improve the nutritional status of iron folate in adolescent girls through the school-based WIFAS program have been launched by WHO since 2011 to reduce the prevalence of anemia in adolescent girls.4 The WIFAS program is one of the specific programs to reduce stunting cases.14 since the pandemic, the school based WIFAS program has been hampered. Therefore, it is necessary to innovate new breakthroughs so that the program can run well.

# Based on 2018 Riskesdas data, the prevalence of anemia in adolescent girls is 25% greater in rural areas than in urban areas.8 Sirnagalih Jonggol Village, Bogor, one of the villages in the province of West Java. The IFAS acquisition rate for adolescent girls in the province of West Java is only 16.4%, still below the national figure (22.9%).8 This is still far from the target of the Ministry of Health RI which targets as many as 30% of young women to get IFAS.15 Therefore, collaborative efforts with CBOs in rural areas can be a breakthrough for alternative school-based WIFAS programs and could be the one effort to achieve those target.

# Information from the head of the youth organization and nutrition management staff of the Balekambang Public Health Center, thus far no effort has been made to involve youth organizations to collaborate in health programs, including the WIFAS program. However, they agree and welcome this innovation. Many of members of the Sirnagalih Village’s karang taruna work in cities outside the Sirnagalih Village such as in Jakarta, Bandung and its surroundings. This causes Katar members to not be able to optimally carry out the planned program. Therefore, it is necessary to involve posyandu cadres who can act as partners of educators and motivators for young women together with Katar. These two social groups are classified as CBO types because they have a formal organizational structure under the village office.16 This CBO involvement effort is in accordance with the statement of Malhotra et. Al (2015), Roche et.al (2018) which states that community involvement efforts are a form of multi-sectoral collaboration so that the program to reduce anemia cases in adolescent girls is successful and in line with the socio-ecological model.17,18

# Because CBO members have never been involved in an anemia prevention program, it is not surprising that CBO members have less knowledge about anemia. This is in accordance with the studies conducted by Puspikawati and Megatsari (2018) and Simanungkalit and Wahyuningtyas (2020) which stated that the level of knowledge of youth members and cadres about reproductive health, including anemia in adolescent girls, was still low.19,20

# Although knowledge is still low, most CBO members have positive attitudes and self-efficacy towards CBO collaboration efforts in the anemia prevention program in adolescent girls. Although knowledge is still low, most CBO members have positive attitudes and self-efficacy towards CBO collaboration efforts in the anemia prevention program in adolescent girls. This is the basic capital and potential that must be developed for collaborative efforts in the anemia prevention program for adolescent girls in rural areas. This effort is in line with several previous studies in several areas such as in Banyuwangi east Java, Bantul Yogyakarta and the others area.19,21

# Readiness is the degree to which a community is prepared to take action on an issue.22 By assessing the level of community based organization (CBO) readiness, it can produce prevention efforts that are in line with the ability and capacity of the community to change and, therefore, become more effective and sustainable.23 The readiness of the Sirnagalih Village CBO members is at the first level, which means that there is no awareness from the Sirnagalih Village CBO and stakeholders about the problem of anemia in adolescent girls and the need for a WIFAS program in the village.

# Dimensions of CBO efforts in the prevention and control of anemia in adolescent girls are in the first level, this reflects that so far in Sirnagalih village there have been no efforts involving CBOs in the prevention and control of anemia in adolescent girls. This is reinforced by statements from village heads, youth leaders and members of Posyandu cadres obtained from interviews and focus group discussions.

# The leadership dimensions assessed using 8 question items reflect the level of support from the appointed leadership for the anemia prevention and control program in young women in Sirnagalih village.

# the results of the assessment of the leadership dimension in this study have the largest score even though they are still in the first readiness stage. The readiness score of this readiness dimension is reflected in the willingness of the village head, the leader of family welfare development (PKK), the head of the youth organization and the nutrition staff of the Balekambang Public Health Center. the results of the assessment of the leadership dimension in this study have the largest score even though they are still in the first readiness stage. The readiness score of this readiness dimension is reflected in the willingness of the village head, the leader of the family welfare development (PKK), the head of the youth organization and the nutrition staff of the Balekambang Health Center. Kostadinov (2016) in his study wrote that leadership can have an impact on every intervention effort that will be carried out in a community. Community leaders, both formal and informal, can help facilitate program implementation. A highly mobilized community with full leadership support can respond to interventions better than communities with few resources and where leadership does not consider the problem a priority. Involving local leaders in program planning and implementation is a basic principle of health promotion as it encourages local program ownership.24

# The resource dimension has the second smallest score after the effort dimension (1.3). The dimensions of resources in rural CBOs reflect the readiness of human resources, time, funds, and infrastructure for the implementation of anemia prevention and control programs in adolescent girls. This is in line with Apriningsih et al (2020) study which found the resource dimension as the dimension with the lowest score in institutional readiness to run the WIFAS program.5 This is because the institution/organization does not yet have educational media, special staff and a special budget for the implementation of the WIFAS program.

# Adequate attitudes and self-efficacy of Katar and Posyandu members to collaborate in anemia prevention and control programs in adolescent girls indicate a potential that needs to be supported by the level of knowledge and readiness of CBOs. Therefore, it is highly recommended that prior to undertaking collaborative efforts, it is necessary to provide training to enhance their knowledge and capacity and provide resource support to CBOs in the village.

# CONCLUSION

Readiness level of Community based organization in Sirnagalih Village is at first level. However, Sirnagalih Village CBO has the potential to be involved in collaborative efforts with the health sector and academia. This can be seen from the majority of CBO members have a positive attitude and have adequate efficacy to collaborate in efforts to prevent and overcome an**a**emia in adolescent girls.It is necessary to make intervention efforts to increase the readiness of CBOs before further collaborative efforts are carried out.

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