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The Relationship Between Level of Education, Knowledge, and Family Support With Compliance in Consuming Multi-Micronutrient Supplements (MMS) Among Pregnant Women in the Working Area of Basarang Public Health Center

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Abstract *Introduction: To address micronutrient deficiencies in pregnant women, the WHO, in updating its 2020 Antenatal Care (ANC) guidelines, recommends the provision of Multi-Micronutrient Supplements (MMS) to replace Iron Tablets (TTD). However, compliance with MMS consumption in pregnant women is still low. The level of education, knowledge, and family support are factors that influence the compliance of pregnant women in consuming MMS. Objective: To determine the relationship between the level of education, knowledge, and family support with compliance with MMS consumption in pregnant women in the Basarang Community Health Center working area. Materials and Methods: This study is an analytical observational study using a cross-sectional design. The sample was obtained using a total sampling technique of 96 pregnant women. The research instrument used a questionnaire on compliance, knowledge, and family support. Data analysis used the chi-square test. Results: Based on the results of the study, the majority of pregnant women were highly educated (62.5%) and had good knowledge (67.7%), lacked family support for pregnant women (68.8%), and were not compliant in consuming MMS (58.3%). After statistical tests were conducted, the results showed a significant relationship between education level and compliance with MMS consumption (p-value = 0.000), knowledge with compliance with MMS consumption (p-value = 0.009), and family support with compliance with MMS consumption (p-value = 0.004). Conclusion: Compliance of pregnant women in consuming MMS is still relatively low, and there is a relationship between education level, knowledge, and family support with compliance with MMS consumption in pregnant women in the Basarang Community Health Center work area. Therefore, to increase compliance with MMS consumption, it is recommended for families to remind pregnant women to consume MMS by collaborating with health workers to get education regarding the importance of MMS.*

Keywords*: Compliance; Education Level; Family Support; Knowledge; Multi-Micronutrient Supplement.*

1. INTRODUCTION

Nutritional issues among pregnant women are currently a global trend and issue, especially in developing countries, including Indonesia. According to the World Health Organization (WHO) in 2020, the global maternal mortality rate is very high, with approximately 287,000 women dying during and after pregnancy and childbirth. In Indonesia, according to data from the 2023 Maternal Perinatal Death Notification (MPDN), the maternal mortality recording system maintained by the Ministry of Health, the number of maternal deaths reached 4,129, while infant deaths reached 29,945. In South Sulawesi, according to the 2020 South Sulawesi Provincial Health Office Profile Data, there were 133 maternal deaths and 754 infant deaths.

The health of pregnant women and their fetuses is crucial in efforts to reduce maternal and infant mortality. This is because mothers experience physiological changes during pregnancy, requiring increased nutritional intake for the growth and development of their fetuses, including both macronutrients and micronutrients.

Micronutrients play a crucial role in supporting the body's metabolism and enzymatic function. Therefore, micronutrient deficiencies in mothers during pregnancy will negatively

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impact both the mother and her fetus. Micronutrient deficiencies, such as iron, folic acid, and vitamin B12, in pregnant women can lead to anemia, characterized by symptoms of paleness, fatigue, weakness, and lethargy. This can also lead to bleeding during delivery and can lead to impaired fetal growth and development, increasing the risk of premature birth and low birth weight (LBW), neural tube defects, and stunting.

To address micronutrient deficiencies in pregnant women, the WHO, in its 2020 update to its Antenatal Care (ANC) guidelines, recommended the administration of Multi-Micronutrient Supplements (MMS) as a replacement for Iron Tablets (TTD) during pregnancy. This program has become an initial initiative in developing countries, particularly Indonesia. MMS is a tablet containing 15 types of vitamins and minerals, including: Vitamin A, Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B6, Vitamin B12, Vitamin C, Vitamin D, Vitamin E, folic acid, Iron, zinc, copper, selenium, and iodine, all of which offer various benefits for pregnant women and support optimal fetal growth.

MMS has been shown to improve maternal health and pregnancy outcomes. MMS provides more comprehensive benefits because it is enriched with a variety of vitamins and minerals that can help meet a mother's nutritional needs during pregnancy. Compared to TTD, which only contains two micronutrients that play a role in preventing anemia and increasing hemoglobin levels, TTD consumption often experiences side effects such as nausea, vomiting, constipation, and diarrhea due to its high iron content. However, side effects from MMS consumption are rare and milder than those of TTD, but are still less familiar and not widely available in Indonesia.

Based on the 2020 WHO recommendations for introducing MMS, Hasanuddin University, Airlangga University, and the University of Indonesia, in collaboration with the Johns Hopkins Bloomberg School of Public Health and Vitamin Angels, conducted Implementation Research (IR) in 25 districts across Indonesia. However, several studies still reported relatively low average MMS consumption rates, at <30 tablets. This aligns with research conducted by Wijianto et al. (2022) in Banggai Regency, which showed that 37 pregnant women (66.1%) consumed an average of <30 tablets, while only 19 pregnant women (36.9%) consumed ≥30 tablets.

The level of MMS consumption can be assessed by pregnant women's compliance with MMS consumption. High compliance with MMS consumption is defined as the number of MMS consumed compared to the number of MMS received. The level of maternal compliance with MMS consumption is the behavior of pregnant women in following all instructions recommended by health workers regarding MMS consumption. This level of compliance is

measured by counting the number of tablets remaining. Factors influencing pregnant women's adherence to MMS include education level, knowledge, motivation, family support, and community culture.

Maternal education is one factor that can influence knowledge and adherence to MMS consumption. Pregnant women with higher levels of education tend to be more compliant with MMS consumption because they have better knowledge of its importance. A 2019 study conducted by Liu et al. in Northwest China found that higher education levels were associated with higher maternal adherence to MMS consumption. 1.6% of mothers with a junior high school education were compliant with MMS consumption, 2.8% of mothers with a high school education were compliant with MMS consumption, and 6.2% of mothers with a college education were compliant with MMS consumption. A 2024 study by Abidah & Sumarmi at the Mulyorejo Community Health Center in Surabaya found that individuals with good knowledge had a five-fold higher adherence rate than those with less knowledge.

Positive family support can also motivate and increase pregnant women's adherence to MMS. Research conducted by Abidah & Sumarmi in 2024 at the Mulyorejo Community Health Center in Surabaya showed that the MMS group had a higher average level of family support, 34.9 times higher than the TTD group, which was only 32.2 times higher. Family support can take the form of caring attitudes, such as providing support, reminding mothers to take supplements, and assisting mothers when they experience side effects from MMS consumption. Non-compliance with MMS consumption by pregnant women can have both short-term and long-term impacts. Long-term impacts of non-compliance with MMS consumption include the risk of stunting in children, impaired cognitive development, and the risk of non-communicable diseases (NCDs). Short-term impacts include an increased risk of anemia in the mother, increased risk of infant mortality, low birth weight (LBW), and premature birth. Based on initial observations, Basarang Community Health Center was chosen as the research location because the MMS supplementation program there is relatively new and ongoing, unlike community health centers in other areas that have discontinued it. This allows researchers to obtain more accurate and up-to-date data on the program. Furthermore, by monitoring pregnant women's compliance, researchers can identify factors influencing their participation in the supplementation program.

Based on the background description, the lack of understanding among pregnant women regarding MMS tablet consumption and minimal family support significantly impacts maternal compliance, even though MMS is crucial for improving pregnancy outcomes, such as stunting, low birth weight (LBW), and maternal mortality. Furthermore, research on factors

influencing MMS tablet consumption is still lacking in Indonesia. Therefore, this study aims to analyze the relationship between education level, knowledge, and family support with adherence to multi-micronutrient supplement (MMS) consumption among pregnant women in the Basarang Community Health Center work area.

2. RESEARCH METHOD

This quantitative study, using a descriptive observational design and a cross-sectional approach, aims to determine the relationship between education level, knowledge, and family support and adherence to MMS consumption among pregnant women in the Basarang Community Health Center (Puskesmas). The Basarang Community Health Center was chosen as the research location because the MMS supplementation program there is relatively new and ongoing, unlike other community health centers that have discontinued it. This enabled the researchers to obtain more accurate and up-to-date data on the program. This study was conducted in June 2024 in the Basarang Community Health Center's work area.

The population of this study was all 96 pregnant women who had received MMS tablets in the Basarang Community Health Center's work area. The sampling technique used in this study was total sampling, resulting in the entire population, consisting of 96 respondents. The instruments used in this study were a questionnaire on MMS tablet consumption, a questionnaire on pregnant women's knowledge, and a questionnaire on family support to assess maternal adherence to MMS tablet consumption.

Compliance of pregnant women in this study is the behavior of pregnant women in following the recommendations of health workers in consuming MMS by looking at the number of MMS consumed compared to the number of MMS received, which is measured using a questionnaire and MMS distribution data. Samples are said to be compliant in consuming MMS if they consume MMS tablets ≥80% of the total tablets received. Education level consists of no schooling, graduated from elementary school, junior high school/equivalent, senior high school/equivalent, and an academy/university obtained from interviews and proven by identity cards. Samples are said to be highly educated if they have completed at least high school/equivalent education, and are categorized as low education if they have completed at least junior high school/equivalent education. The knowledge variable is measured using a questionnaire with a total of 10 questions and uses a Guttman scale with a score of 1 for "correct" answers and a score of 0 for "incorrect" answers. Samples are said to have good knowledge if the correct answers are >50%. The family support variable represents the extent of support from family members living with pregnant women. It was measured using

a questionnaire with eight items and a Likert scale with four response options: "always" (scored 4), "often" (scored 3), "sometimes" (scored 2), and "never" (scored 1). The total score was then classified as "sufficient" if the score was >50% and "insufficient" if the score was <50%.

Primary data collection was conducted through interviews with respondents, measuring their education level, knowledge, family support, and adherence to MMS consumption using a questionnaire. Secondary data collection included the number and list of pregnant women and MMS distribution data in the Basarang Community Health Center work area, obtained from the registration staff of the MCH ward at Basarang Community Health Center. The collected research data were processed and analyzed using SPSS. Univariate analysis was used to analyze the frequency distribution of respondents' general description of each dependent and independent variable. Bivariate analysis was used to determine the relationship between the two independent variables and the dependent variable. Data analysis was performed using the chi-square test. This study has received approval from the Research Ethics Committee of the Faculty of Public Health, Hasanuddin University, with ethical approval recommendation number 2122/UN4.14.1/TP.01.02/2024.

3. RESULTS AND DISCUSSION

Table 1. Distribution of Characteristics of Pregnant Women Consuming MMS in the Basarang Community Health Center Work Area in 2024.

Characteristics	n (96)	%
Age (Years)		
<20	7	7,3
20 – 35	79	82,3
>35	10	10,4
Gestational Age		
Trimester 1	4	6,3
Trimester 2	22	20,8
Trimester 3	70	72,9
Respondent's Last Education		
Elementary School Graduate	26	27,1
Junior High School Graduate/Equivalent	10	10,4
High School Graduate/Equivalent	39	40,6
College/College Graduate	21	21,9
Respondent's Occupation		
Not Working/Housewife	66	68,8
Civil Servant/Military/Police Member	8	8,3
Private Employee	12	12,5

Self-Employed	1	1
Farmer/Farm Laborer	5	5,2
Other (Trader)	4	4,2
Husband's Last Education		
No Schooling	2	2,1
Elementary School Graduated	8	8,3
Junior High School Graduated	18	18,8
High School Graduated	46	47,9
College/College Graduated	22	22,9
Husband's Occupation		
Civil Servant/Military/Police Member	13	13,5
Private Employee	9	9,4
Self-Employed	28	29,2
Farmer/Farm Laborer	15	15,6
Fisherman	8	8,3
Laborer/Driver/Motorcycle Taxi Driver	20	20,8
Other (Trader)	3	3,1
Family Members Living in the Same House*		
Husband	92	95,8
Child	58	60,4
Biological Mother	31	32,3
Biological Father	26	27,1
Mother-in-Law	27	28,1
Father-in-Law	27	28,1
Siblings	28	29,2

Source: Primary Data, 2024.

Note: * multiple response data

Table 1 shows that, based on age category, the highest number of pregnant women was 25-30 years old, at 78 (82.3%). For gestational age, the highest number of pregnant women was in their third trimester, at 70 (72.9%). For the address category, the highest number of pregnant women were in Basarang and Mangallekana sub-districts, at 26 (27.1%). For the respondents' highest education category, the highest number of pregnant women had graduated from high school (39) (40.6%). For the occupation category, the highest number of pregnant women were unemployed or housewives (66). For the husbands' highest education category, the highest number of husbands had graduated from high school (46) (47.9%). For the husbands' occupation category, the highest number of husbands were self-employed (28) (29.2%). For the category of families living with the respondents, the average respondent lived with their husband, amounting to 92 people (95.9%).

Description of Education Levels among Pregnant Women

Table 2. Distribution of Education Levels among Pregnant Women in the Basarang Community Health Center Work Area, 2024.

Level of education	n	%
High (High School and College)	60	62,5
Low (Elementary and Middle School)	36	37,5
Total	**96**	**100**

Source: Primary Data, 2024.

Based on Table 2, it can be seen that of the 96 pregnant women, more pregnant women had a higher level of education (high school graduate or college graduate), namely 60 women (62.5%).

Distribution of Knowledge Among Pregnant Women

Table 3. Distribution of Knowledge Among Pregnant Women in the Basarang Community Health Center Work Area, 2024.

Knowledge	n	%
Good	65	67,7
Poor	31	32,3
Total	**96**	**100**

Source: Primary Data, 2024.

Based on Table 3, it can be seen that of the 96 pregnant women, 65 (67.7%) had good knowledge.

Description of Family Support for Pregnant Women.

Table 4. Distribution of MMS Consumption Reminders.

MMS Consumption Reminders*	n (96)	%
Husband	32	33,3
Child	1	1
Biological Mother	9	9,4
Biological Father	3	3,1
Mother-in-Law	4	4,2
Health Center Officer/Health Worker	73	76
Posyandu Cadre	65	67,7

Source: Primary Data, 2024.

Note: * multiple response data

Based on Table 4, of the 96 pregnant women, more pregnant women were reminded by community health center staff/health workers than by their families, namely 73 (76%).

Table 5. Distribution of Family Support for Pregnant Women in the Basarang Community Health Center Work Area, 2024.

Family Support	n	%
Enough	30	31,3
Not Enough	66	68,8
Total	**96**	**100**

Source: Primary Data, 2024.

Based on Table 5, it can be seen that of the 96 pregnant women, more pregnant women received insufficient family support, namely 66 (68.8%) regarding informational support and appreciation support.

Description of Multi-Micronutrient Supplement (MMS) Consumption Compliance among Pregnant Women

Table 6. Distribution of Multi-Micronutrient Supplement (MMS) Consumption among Pregnant Women in the Basarang Community Health Center Work Area, 2024.

Variables	n (96)	100%
Pregnancy Age When to Start Taking MMS		
Trimester 1	19	19,8
Trimester 2	45	46,9
Trimester 3	32	33,3
MMS Packaging Types		
Bottles	0	0
Plastic Drug Packaging	96	100
Others	0	0
Frequency of MMS Consumption Since Receipt		
Every Day	13	13,5
Often (4-6 days/week)	26	27,1
Sometimes (2-3 days/week)	38	39,6
Rarely (1 day/week)	15	15,6
Never	4	4,2

Source: Primary Data, 2024.

Based on Table 6, it can be seen that based on gestational age category at the time of MMS receipt, the most pregnant women received MMS in the second trimester, with 45 women (46.9%). Regarding the type of MMS packaging received, all pregnant women (100%) answered that it came in plastic medicine packaging. Regarding the frequency of MMS consumption since receipt, the most pregnant women consumed MMS occasionally, with 38 women (39.6%).

Table 7. Distribution of Multi-Micronutrient Supplement (MMS) Consumption Compliance among Pregnant Women in the Basarang Community Health Center Work Area, 2024.

Compliance Variable	n (96)	%
MMS Compliance		
Compliant	40	41,7
Non-Compliant	56	58,3
Reasons for Not Taking MMS*		
Forgot	70	72,9
Disliked	40	41,7
Nausea	43	44,8
Bored	28	29,2
Unpleasant Taste	10	10,4
Not Yet Due	44	45,8
Side Effects (Constipation, Black Stools, etc.)	2	2,1
MMS Changes Color	20	20,8
Taking Other Supplements	3	3,1
Other (Smell and Fear)	6	6,3

Source: Primary Data, 2024.

Note: * multiple response data

Based on Table 7, it can be seen that of the 96 pregnant women, 56 (58.3%) were non-compliant with taking MMS since receiving it. The most common reason cited by mothers for not taking MMS was forgetfulness, with 70 (72.9%), while the least common reason cited by respondents was side effects, with 2 (2.1%).

The Relationship Between Education Level and Multi-Micronutrient Supplement (MMS) Consumption Adherence in Pregnant Women

The results of the analysis of the relationship between education level and MMS consumption adherence in pregnant women in the Basarang Community Health Center (Puskesmas) work area in 2024 are shown in Table 8 below. This study used bivariate analysis using the Chi-Square Test with a significance value of $\alpha < 0.05$.

Table 8. Relationship Between Education Level and Multi-Micronutrient Supplement (MMS) Consumption Adherence in Pregnant Women in the Basarang Community Health Center (Puskesmas) Work Area in 2024.

Education Level	Compliance				Total		p-value
	Compliant		**Disobedient**				
	n	%	n	%	n	%	0,000
High	34	56,7	26	43,3	60	100	
Low	6	16,7	30	83,3	36	100	

Total	40	41,7	56	58,3	96	100

Source: Primary Data, 2024.

Based on Table 8, it can be seen that of the 60 pregnant women with a high level of education, 56.7% were compliant with MMS consumption, while 43.3% were non-compliant. Conversely, of the 36 pregnant women with a low level of education, only 16.7% were compliant with MMS consumption, while the majority, 83.3%, were non-compliant.

The chi-square test results in Table 8 show a p-value of 0.000 ($p<0.05$), thus Ha is accepted and H0 is rejected. This indicates a relationship between education level and compliance with Multi-Micronutrient Supplement (MMS) consumption in the Basarang Community Health Center (Puskesmas) work area in 2024.

Relationship Between Knowledge and Compliance with Multi-Micronutrient Supplement (MMS) Consumption in Pregnant Women

The results of the analysis of the relationship between knowledge and compliance with MMS consumption among pregnant women in the Basarang Community Health Center (Puskesmas) work area in 2024 are shown in Table 9 below. This study used bivariate analysis using the Chi-Square Test with a significance value of $\alpha < (0.05)$.

Table 9. Relationship between Knowledge and Multi-Micronutrient Supplement (MMS) Consumption Compliance among Pregnant Women in the Basarang Community Health Center Work Area in 2024.

Knowledge	Compliance				Total		p-value
	Compliant		**Disobedient**				
	n	%	n	%	n	%	0,009
Good	33	50,8	32	49,2	65	100	
Poor	7	22,6	24	77,4	31	100	
Total	40	41,7	56	58,3	96	100	

Source: Primary Data, 2024.

Based on Table 9, it can be seen that of the 65 pregnant women with good knowledge, 50.8% were compliant with MMS consumption, while 49.2% were non-compliant. Conversely, of the 31 pregnant women with poor knowledge, only 22.6% were compliant with MMS consumption, while the majority, 77.4%, were non-compliant.

The chi-square test results in Table 9 show a p-value of 0.009 ($p<0.05$), thus Ha is accepted and H0 is rejected. This indicates a relationship between knowledge and compliance with Multi-Micronutrient Supplement (MMS) consumption in the Basarang Community Health Center (Puskesmas) work area in 2024.

Relationship Between Family Support and Multi-Micronutrient Supplement (MMS) Consumption Compliance in Pregnant Women

The results of the analysis of the relationship between family support and MMS compliance among pregnant women in the Basarang Community Health Center (Puskesmas) work area in 2024 are shown in Table 10 below. This study used bivariate analysis using the Chi-Square Test with a significance value of $\alpha < (0.05)$.

Table 10. Relationship between Family Support and Multi-Micronutrient Supplement (MMS) Consumption Compliance among Pregnant Women in the Basarang Community Health Center Work Area in 2024.

Family Support	Compliance				Total		p-value
	Compliant		**Disobedient**				
	n	%	n	%	n	%	0,004
Good	19	63,3	11	36,7	30	100	
Poor	21	31,8	45	68,2	66	100	
Total	40	41,7	56	58,3	96	100	

Source: Primary Data, 2024.

Based on Table 9, it can be seen that of the 30 pregnant women with adequate family support, 63.3% were compliant with MMS consumption, while 36.7% were non-compliant. Conversely, of the 66 pregnant women with insufficient family support, 31.8% were compliant with MMS consumption, while the majority (68.2%) were non-compliant.

The chi-square test results in Table 10 show a p-value of 0.004 ($p<0.05$), thus Ha is accepted and H0 is rejected. This indicates a relationship between family support and compliance with Multi-Micronutrient Supplement (MMS) consumption in the Basarang Community Health Center (Puskesmas) work area in 2024.

Discussion

The Relationship Between Education Level and Multi-Micronutrient Supplement (MMS) Compliance in Pregnant Women

Education is one factor that influences a person's thinking and decision-making. Pregnant women with higher education tend to have a better understanding of health information. Therefore, they are more aware and feel the need to independently seek out important health information, both for their own well-being during pregnancy and for the well-being of their fetus.

The results of the study (Table 2) indicate that 60 pregnant women (62.5%) had a higher level of education. This finding aligns with the research of Hardiani et al. (2024) on the level of compliance of pregnant women with iron supplement (TTD) consumption at the Gunung

Sari Community Health Center, which found that there were more pregnant women with high school and college educations, namely 21 (55%) and 9 (24%), respectively.

This study (Table 8) shows that the majority of pregnant women with higher education were more compliant with MMS consumption (56.7%). The chi-square test results showed a p-value of 0.000 ($p<0.05$), indicating a significant relationship between education level and adherence to MMS consumption. This aligns with research conducted by Muzaina et al. (2024), which found that the education level of pregnant women influenced adherence to MMS supplement consumption, with a p-value of 0.028 (<0.05).

Education is a process of guidance provided by one person for the development of others to achieve certain goals, thereby improving the quality of life. Education influences a person because it serves as a means of obtaining information, for example, in the health sector. Individuals with a higher level of education will have broader knowledge than those with a lower level of education. People with higher levels of education will more easily absorb information because they are accustomed to thinking logically when dealing with problems during their formal education. The higher the mother's education level, the easier it is for her to obtain information about health during pregnancy and the benefits of MMS for the mother and fetus, thus increasing her motivation to consume MMS.

Relationship between Knowledge and Multi-Micronutrient Supplement (MMS) Adherence in Pregnant Women

Knowledge is closely related to education level. The study results (Table 3) show that 65 pregnant women (67.7%) had good knowledge. This finding aligns with research by Nengsih et al. (2022) in Tanah Datar Regency, which found that pregnant women with sufficient knowledge tended to be more numerous, with 26 pregnant women (48.1%). 27 Pregnant women with good knowledge easily absorb accurate and relevant information and strive to maintain access to resources that support their health during pregnancy, such as health facilities, nutritious food, and important information about pregnancy and MMS.

This study (Table 9) shows that the majority of pregnant women with inadequate knowledge of MMS tended to be non-compliant with MMS consumption (77.4%). The chi-square analysis showed a p-value of 0.009 ($p<0.05$), indicating a significant relationship between knowledge and MMS consumption adherence. This aligns with research by Abidah & Sumarmi (2024), which found a correlation between knowledge and adherence to iron tablets and MMS consumption at the Mulyorejo Community Health Center in Surabaya, with a p-value of 0.002.

Medication adherence, particularly for supplements, is a health behavior that involves patients following healthcare providers' instructions regarding the benefits, side effects, and timing of supplement consumption. The better a person's knowledge, the better their behavior. Knowledge is a key factor in encouraging adherence in pregnant women to MMS consumption. Mothers with good knowledge will think and strive to ensure their pregnancy, and especially their baby's, are safe from health problems because they understand the importance of MMS consumption and the consequences of not consuming it.

In this study, pregnant women with less knowledge were more likely to be non-compliant with MMS consumption (77.4%). The reason for not taking MMS was that they forgot (72.9%). This is consistent with research by Abidah & Sumarni (2024), which stated that in the MMS and TTD groups, pregnant women's reason for not taking MMS was forgetfulness (41.6% and 50%, respectively). However, the most common reason for non-compliance in the MMS group was side effects (12.5%), while in the TTD group, forgetfulness was the most common reason (25%). Pregnant women who forgot to take MMS in this study attributed their busy schedules to their own activities, making them less likely to take MMS.

Relationship of Family Support to Multi-Micronutrient Supplement (MMS) Compliance in Pregnant Women

Family support is the primary support system providing direct care in all situations, both healthy and sick. Family support is a determining factor in pregnant women's decision-making, especially husband support. Family support for pregnant women can reduce stress levels, improve mental health, and improve the quality of life of both the mother and her fetus.

The results of the study (Table 5) indicate that 66 pregnant women (68.8%) received insufficient family support. This finding aligns with research conducted by Kristianingsih & Retno (2015) in the Dukuh Klopo Community Health Center (Puskesmas) in Jombang Regency, which found that the majority of pregnant women, 19 respondents (55.9%), did not receive family support.

This study (Table 10) shows that the majority of pregnant women with insufficient family support tended to be non-compliant with MMS consumption (68.2%). The chi-square analysis showed a p-value of 0.004 ($p<0.05$), indicating a significant relationship between family support and adherence to MMS consumption. This is consistent with research by Muzaina et al. (2024) found a correlation between husband's support and adherence to MMS consumption among pregnant women in the Gorontalo City Community Health Center (Puskesmas) with a p-value of 0.000.

Family support is a key driver in fostering understanding of MMS among pregnant women. When family members understand the true purpose of MMS, they will support and remind pregnant women to consume MMS. Therefore, family support also serves as a social support factor in fostering maternal adherence to MMS consumption. Adequate family support, such as encouragement, motivation, attention, or assistance, can make pregnant women feel happy, safe, and comfortable, motivating them to improve their health by regularly consuming MMS as a preventative measure against adverse pregnancy outcomes.

Inadequate family support in this study tended to lead to pregnant women's non-compliance with MMS consumption. This was due to a lack of information from families regarding MMS, as pregnant women were often reminded to consume MMS by health workers from community health centers. Silubonde et al. (2022) suggested that family members sometimes hindered adherence to MMS consumption due to the limited information they received about MMS, which made families suspicious and discouraged mothers from consuming MMS. Therefore, efforts can be made to include family participation as an important foundational factor surrounding pregnant women by empowering family members, especially husbands, to help pregnant women improve their adherence to MMS consumption.

The results of the study (Table 10) also show that some pregnant women with adequate family support were non-compliant with MMS consumption (36.7%), while others with insufficient family support were still compliant with MMS consumption (31.8%). This could be due to personal desire or motivation. Pregnant women with a strong desire to maintain their pregnancy will make it a habit to consume MMS daily without needing reminders or instructions, and vice versa. Even though there is support from the family to consume MMS, if the mother's awareness and indifference are greater, it will affect the mother's compliance.35 In addition, data collection in this study used questionnaires and interviews, which can cause information bias by not showing the actual situation.

4. CONCLUSION

Pregnant women in the Basarang Community Health Center work area mostly have a high level of education (62.5%), good knowledge (67.7%), lack of family support (68.8%), and pregnant women who are not compliant in consuming Multi-Micronutrient Supplement (MMS) (58.3%). There is a significant relationship between the level of education, knowledge, and family support with compliance in consuming MMS in pregnant women in the Basarang Community Health Center work area, with p-values (<0.05) = 0.000, 0.009, and 0.004 (<0.05), respectively. Efforts are needed to increase the level of compliance of mothers in consuming

MMS from the family by reminding pregnant women to consume MMS and then collaborating with health workers to get sufficient education about the importance of MMS.

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