The Effectiveness of Using the Modern Reminder My Therapy Application on Fe Tablet Consumption Adherence

Rr. Catur Leny Wulandari[*1], Muliatul Jannah[1], Putri Febriyanti Ludin[1]
[1]*Midwifery Program,*faculty of Pharmacy ,*Sultan Agung Islamic University of Semarang*
Jl. Kaligawe Raya No.Km.4, Terboyo Kulon, Genuk District, Semarang City, Central Java, Indonesia

Corresponding author: Rr. Catur Leny Wulandari
Email: caturleny@unissula.ac.id

ABSTRACT

Pregnant women have a low level of adherence to Fe tablet consumption, due to the factor of forgetting to take medicine and side effects. One of the efforts to improve adherence is to use a reminder application-based intervention, which can improve adherence in mothers who often forget to take Fe tablets. This study aimed to determine the effectiveness of using the My Therapy Modern Reminder Application on adherence to Fe Tablet Consumption in the Bangetayu Public Health Center Working Area, Semarang City. It was quasi-experimental with one group pretest, posttest design. Sampling in this study used a purposive sampling technique with a total sample of 45 respondents and data collection using the MMAS-8 questionnaire. The analysis method used the Wilcoxon test. There was a significant difference between the results of the pre-test and post-test (p = 0.00). Wilxocon test results showed the effectiveness of using my therapy modern reminder application on Fe tablet consumption adherence (p = 0.00). The use of my modern therapy reminder application can improve the adherence of pregnant women to consuming Fe tablets.

Keywords: Adherence; Anemia ; Fe Tablets; My Therapy App

Introduction

Another important measure of public health is the maternal mortality rate. MMR is the number of maternal deaths as a percentage of total births. MMR in the world tragically, 7,389 lives will be lost in Indonesia in 2021. There were 4,627 deaths for every 100,000 live births in 2020, an increase of 427. On the other hand, by 2030, the SDGs aim to achieve MMR to fall to less than 70 per 100,000 live births. The results of the health profile report state that the maternal mortality rate in Central Java Province in 2021 was 976 deaths [1].

In 2021, there were 21 maternal deaths out of 22,030 live births in Semarang City, which is around 95.32 per 100,000 live births according to health center statistics[2]. A total of 2,982 cases of COVID-19, 1,330 cases of bleeding, and 1,077 cases of hypertension during pregnancy were the main causes of maternal death in 2021 [3]. According to[4]. There are still many pregnant women who suffer from anemia; even in Indonesia alone there are 48,900 cases. This is equivalent to almost 50% of pregnant women in Indonesia experiencing anemia. Women aged between 15 and 24 years old contribute 84.6% of all cases of anemia during pregnancy.

Decreased levels of hemoglobin or red blood cells indicate anemia, a medical condition that can interfere with the ability of pregnant women and babies to provide oxygen to vital organs [5]. According to[6]Mild anemia (10-11.9 g), moderate anemia (7-9.9%), and severe anemia (<7 g) are the three categories of anemia. Blood hemoglobin levels below 11 g/dL in the first and third trimesters, below 10.5 g/dL in the second trimester, and below 10 g/dL in the postpartum period are defined by the Centers for Disease Control and Prevention as anemia [3].

Pregnant women with anemia will experience hemodilution (dilution) with an increase in volume of 30% and hemoglobin of around 19%. Pregnancy

complications associated with anemia include abortion, labor that begins too early, labor that lasts too long due to uterine inertia, postpartum hemorrhage due to uterine atony, shock, infection during and after delivery, and severe anemia [7].

Pregnant women can help themselves by eating healthy, nutrient-dense foods, especially those high in iron and folate [8]. With an estimated 84.2% of Indonesian women being pregnant in 2021, the government is taking steps to reduce the prevalence of anemia in pregnant women, one of which is by requiring all pregnant women to consume iron supplements of at least 90-65 mg daily. Pregnant women received an 83.6% increase in the supply of iron pills compared to 2020 [9].

Iron deficiency causes anemia. Inadequate food intake, poor socioeconomic status, inadequate maternal education, and maternal non-compliance are causes of iron deficiency anemia[10]. Pregnant women often experience anemia due to several factors such as not taking iron pills as prescribed, drinking too much, and taking too much medication. The low level of consumption of Fe tablets is caused by individual factors such as forgetting to take Fe tablets, discomfort in taking Fe tablets, side effects that arise, difficulty in getting access to Fe tablets, and lack of understanding about the importance of taking Fe tablets [11].

One of the efforts to improve the compliance of pregnant women is through application-based interventions, which can improve the compliance of pregnant women who often forget to take Fe tablets. Research results [12] that individuals who occasionally fail to take their medications as prescribed may benefit from interventions aimed at improving medication adherence, such as reminder systems. The use of mobile apps is also increasing as a means to improve adherence.

Research results from[13] entitled Factors Affecting the Incidence of Anemia in Pregnant Women in the Third Trimester, Pregnant women are more likely to take iron tablets as prescribed if they receive support from cadres, family, husbands, and health care providers. However, in this modern era, pregnant women can also take advantage of electronic reminder applications on their mobile phones, as well as traditional media such as booklets and short message services (SMS).

Medication reminder apps are one type of health app that has become increasingly popular in recent years, one of which is the my therapy app. The my therapy app is a modern reminder app designed to help users remember to take their medication regularly and on time, by sending notifications or alarms at specified times. In addition, the my therapy app can also help patients better manage their health conditions, because patients who take their medication regularly tend to have more controlled and stable conditions. Therefore, the use of medication reminder apps can have a positive impact on the health and quality of life of patients [14].

My therapy application is a solution to monitor the development of pregnant women's compliance in consuming Fe tablets. The My Therapy reminder application can be used by pregnant women with mild or moderate anemia who often forget to take Fe tablets. With the alarm feature to remind mothers to consume Fe tablets and also the feature to track the history of Fe tablet consumption in the form of graphic reports that can make it easier for midwives or doctors to monitor the increase in compliance of pregnant women.

Based on data from the Bangetayu Health Center, Semarang City in 2023 in September - October 2023, there were 71 pregnant women in the first - third trimester. There were 49 pregnant women in the first - third trimester who were identified as having mild and moderate anemia. This figure shows that anemia in pregnant women at the Bangetayu Health Center, Semarang City is quite high [15].

So the researcher conducted a preliminary survey through interview results, it was found that 5 out of 6 pregnant women in the first-third trimester at the Bangetayu Health Center in Semarang City experienced Hb less than 11 due to forgetfulness so that they were not compliant in consuming Fe tablets. Complaints that are often experienced are often feeling dizzy, getting tired quickly, feeling weak to do daily activities, and 6 of the pregnant women did not know the my therapy application so the researcher was interested in reducing the forgetfulness factor in mothers by using the my therapy application.

Research methods

This type of research usesQuasi Experimental Design with a one-group pretest-posttest designdesign. The instrument used to measure compliance is the Morisky Medicine Adherence Scale (MMAS-8) questionnaire, a questionnaire containing 8 questions used to directly measure patient compliance with medication.

This study has been tested and is ethically appropriate by the medical/health research bioethics commission of the Faculty of MedicineSultan Agung Islamic University Semarang with No. 300/VII/2023/Bioethics Commission. This study was conducted in the working area of Bangetayu

Health Center, Semarang City in September-October 2023. The sampling of this study used a purposive sampling technique, namely pregnant women in the first to third trimester with mild anemia and anemia in the working area of Bangetayu Health Center, Semarang City with a total of 45 respondents. The calculation of the sample size used the Slovin formula.

The data analysis of this study used the non-parametric Wilcoxon test because the data was not normally distributed. The normality test of the data used the Shapiro-Wilk test, the effect of the my therapy application and education on compliance measured using the Logistic Regression test.

The incidence of mild and moderate anemia in pregnant women in the first to third trimester who were given interventionbased on a reminder application, carried out for 1 month using the my therapy application and observation sheets which can increase compliance in mothers who often forget to take Fe tablets.

The researcher was assisted by 1 enumerator to help in distributing the questionnaire and explaining things that were unclear in the questionnaire. Previously, training was conducted for the enumerator regarding the research to be conducted, providing an explanation on how to use the questionnaire and the my therapy application.

Results and Discussion

Table 1. Characteristics of respondents based on age and gestational age in pregnant women with anemia in the first-third trimester in the Bangetyu Health Center Working Area, Semarang City.

Criteria	Frequency (n)	Percentage (%)
Age		
< 20 years	2	4.4%
21-30 years	23	51.1%
31-40 years	17	37.8%
>40 years	3	6.7%
Amount	45	100%
Gestational Age		
Trimester 1	0	0 %
Trimester 2	26	57.8%
Trimester 3	19	42.2%
Amount	45	100%

Table 2. Compliance in Taking Fe Tablets Before and After Intervention

Medication Compliance	Before Intervention		After Intervention	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
High Compliance	0	0.0%	32	71.1%
Moderate Compliance	1	2.2%	9	20.0%
Low Compliance	44	97.8%	4	8.9%
Total	45	100.0%	45	100.0%

Table 3. Effectiveness Use of My Therapy Application as a Modern Reminder of Compliance with Fe Tablet Consumption

Variables	N	Median
Pre-Test	45	3.00
Post-Test	45	1.00
Asymp.Sig	0.00*	

Table 4. Influence Eucation, Parity and Occupation on Compliance with Fe Tablet Consumption

Variables	z	P value
Education after intervention	-5.816b	0.00*
Parity after intervention	-2.784b	0.06*
Post-intervention work	-.426b	0.670*

Table 5. Results of Logistic Regression Test on the Effect of My Therapy Application and Education on Compliance

Variables	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig
My therapy application	26.610b	20,760	2	0.00*
Education	9.824b	3.973	6	0.680*

Respondent characteristics based on age and gestational age in pregnant women with anemia in the first to third trimester in the Bangetyu Health Center Work Area, Semarang City.

Based on table 1, it shows that the majority of respondents were aged 21-30 years, namely 23 people (51.1%), and the majority of respondents' gestational age was in the second trimester, namely 26 people (57.8%).

Women aged 21 - 30 years who are pregnant tend to show good obedient behavior because they are mature and have experience in both thoughts and actions.

According to Notoatmodjo, women aged between 21 and 30 years are the optimal time to have children because they are emotionally and physically mature enough. This shows that the woman has sufficient knowledge about the dangers and benefits of becoming a mother when she is in her twenties or thirties [16].

A person's cognitive capacity changes over time. Knowledge increases with age as one's understanding and thinking habits mature [17]. The results of this study are in line with research[18]that women in the Totoli Health Center service area are more likely to suffer from anemia if their mothers are older. Anemia can occur in any pregnant woman who is under 20 years old or over 35 years old.

The results of this study are the same as the research[19]that the risk of anemia in pregnant women increases with age. Nearly eighty-seven percent of pregnant women who suffer from anemia are between the ages of twenty and thirty-five.

There were 26 people (57.8%) in the second trimester of pregnancy who experienced an increased risk of anemia and hemodilution in pregnant women in the second trimester, which started around week 10 and peaked between weeks 32 and 36. Hemodilution causes anemia, and the mother's hemoglobin level will drop to 9.5-10% if it was around 11gr% before pregnancy [20].

This is in line with research according to[21]in the first trimester of pregnancy the risk of anemia is 20%, The need for iron during the first trimester is 0.8 mg/day, increasing to 5 mg/day in the second trimester, and then to 6.3 mg/day in the third trimester, while in the second and third trimesters it reaches 70% of the total need. This is why blood supplement tablets are designed to be consumed during these two to three trimesters.

The results of this study are in line with research [20], Anemia during pregnancy is significantly more common in women with older gestational age compared to women with younger gestational age; this is indicated by a p value of 0.000 and an odds ratio (OR) of 4.54 at the Jetis Health Center, Yogyakarta City.

Compliance in Taking Fe Tablets Before and After Intervention

Based on table.2, almost all respondents had poor compliance. The study found that 44 (97.8%) mothers had poor compliance in taking Fe tablets before the intervention using the my therapy application for pregnant women. Many circumstances may cause pregnant women not to take Fe tablets as prescribed.

Based on observations, most pregnant women hesitate to drink it because of its negative effects and forgetfulness factors. The results of this study are in line with research [22]The health of pregnant women is influenced by their behavior, especially their compliance in taking Fe tablets. Pregnant women in their later years may have difficulty remembering and applying the information provided,

The results of this study are in line with research [23]The findings showed that 34 participants (72.3%) were not compliant in taking the Fe tablets as prescribed. This can be seen from the number of participants who admitted to not taking all the Fe tablets prescribed by the midwife during pregnancy check-ups and can cause nausea and loss of appetite in pregnant women.

Table.2 shows that after the intervention, most of the respondents 32 (71.1%) showed good compliance in the post-test. Among the pregnant women surveyed, 32 reported a very high level of compliance in taking Fe tablets as prescribed after receiving the intervention through the my therapy application. There was a significant increase in the compliance of pregnant women in taking Fe tablets after the intervention compared to before.

The results of this study are in line with research [12]found that a reminder system, an effective intervention for patients who accidentally missed their prescriptions, increased medication adherence by 30 (81.1%). Another popular and practical method for sending reminders is the use of mobile phone applications.

This is in accordance with research [24]that reminder-based interventions can improve adherence to treatment Adherence to medication through a reminder system is one type of intervention that is beneficial for patients who accidentally forget to take medication. Mobile phone applications are also becoming increasingly popular as an effective and convenient way to remind pregnant women without

having to be reminded by their husband or family. Supported by research [25]. Compliance of pregnant women in taking Fe tablets is influenced by the SMS Reminder application program.

Effectiveness of Using My Therapy Modern Reminder Application on Compliance of Fe Tablet Consumption in Bangetayu Health Center Work Area, Semarang City in 2023

The results of the Wilcoxon statistical test show that the P value: 0.00 with a significance limit (α) of <0.05, then H0 is rejected, meaning H1 is accepted. It can be concluded that there is an effectiveness of using the my therapy modern reminder application on compliance with Fe tablet consumption, with the description of the results of the study where compliance after being given an intervention to consume Fe tablets for 30 days, namely 32 people (71.1%) high compliance, 9 people (20.%) moderate compliance, and 4 people (8.9%) with low compliance. This monitoring can be seen in the my therapy modern reminder application which can increase the compliance score for taking Fe tablets by 91.1%.

There are a number of reasons why so few pregnant women take their iron tablets. These include forgetfulness, anxiety about the size of the baby, a general lack of knowledge about the risks to the mother and unborn baby of not taking the tablets regularly, and the occurrence of unpleasant side effects such as nausea and dizziness [26].

Efforts should be made to educate, motivate and monitor pregnant women to ensure that they take their iron tablets during their pregnancy. This is important in combating anemia and the complications that may arise from it. The purpose of monitoring pregnant women to ensure that they take their iron tablets as prescribed is to ensure that they adhere to the dosage and timing [27].

Dosage, method of administration, and regular time of drug consumption are used to measure compliance with the use of Fe tablets. Knowledge, motivation, family support, side effects, and forgetfulness are some of the variables that affect compliance with the use of Fe tablets. The forgetfulness factor in pregnant women often occurs which can increase anemia, the existence of the My Theraphy Fe tablet consumption reminder application which has many features, one of which is the alarm feature is expected to increase maternal compliance in consuming Fe tablets on time and regularly and the Fe tablet consumption history report feature in the form of a graph that can make it easier for midwives to monitor mothers taking Fe tablets.

My therapy application is very important in maintaining health and successful treatment. My therapy application provides significant benefits in monitoring and improving patient compliance with the use of Fe tablets regularly. Through the features provided, this application can remind patients to take Fe tablets according to the specified schedule.

This application also allows patients to record and track the consumption of Fe tablets, as well as provide reminders and motivation to maintain consistency in treatment. By using the my therapy application, pregnant women can be actively involved in treatment and increase the effectiveness of using Fe tablets to improve iron levels in the body.

This research is in line with research[28]revealed a significant difference between pre- and post-test scores in terms of knowledge level (p=0.001) and compliance (p=0.001). Pregnant women's compliance with the Pemitasi application was shown to be significantly influenced by the presence or absence of audiovisual media.

The results of this study are in line with research [22]shows compliance in consuming Fe tablets after the community service program, 35 people (81.4%) had increased compliance, it was concluded that there was an influence of using the Anedoc APP application: Reminder System, Monitoring to monitor Fe tablet consumption.

In line with this research, the research results from [29] showed that an increase in Hb levels of 0.02 units was associated with an increase in compliance with taking iron tablets by 18.4 percent. Hemoglobin levels in pregnant women were shown to increase drastically after using the Sahabat Ibu Hamil (ASIH) application, which encouraged them to take iron tablets according to the prescription. Another study found that pregnant women in Penyengat Olak Village were more likely to take iron tablets according to the prescription after using the Sumiferos application [30].

Other research results [24] showed that before the administration of "Happy blood" as many as 14 respondents (63.6%) were non-compliant patients. While after being given an intervention known as "Happy blood" there were 12 people who were non-compliant. These results indicate a change in the level of compliance although not significant. Happy blood is an application used to monitor maternal compliance in taking Fe tablets, this android-based tool contains information on when to take Fe tablets.

Relationship between Education, Parity and Occupation on Compliance with Fe Tablet Consumption

In table 4, the results show that education has an effect on compliance (p value=0.00). Meanwhile, parity and occupation do not have an effect on compliance (p value > 0.05).

One of the factors that affect the compliance of pregnant women in taking Fe tablets is the level of education. The ease of a person in absorbing and understanding newly learned nutritional information is also influenced by a person's level of education [31].

According to [32], to obtain knowledge, health support resources, which can improve a person's quality of life, education is very important. This shows that respondents with higher levels of education tend to have information about the proper use of Fe tablets, which is important for the health of mothers and their babies.

In line with the research results [33]The correlation between education and compliance in taking Fe tablets can be seen (p = 0.007). Almost half (46.3%) of the high education group took the tablets as prescribed. One aspect that influences decision making is a person's education level.

In line with the research results[34]Mothers' education level was correlated with their likelihood of consuming Fe tablets; those with low education were almost five times less likely to do so.

Based on parity statistics, there is no correlation between maternal compliance and parity (sig 0.06 > 0.05). The number of births experienced by a woman is called parity. Parity refers to the number of pregnancies that result in a fetus that is able to survive outside the womb.[7].

In line with research[35]it was found that most respondents who gave birth more than four times did not suffer from anemia (75%) and most respondents who gave birth less than four times did not suffer from anemia (51.4%). With a p-value of 0.222 (which indicates p>0.05) from the statistical test, it can be concluded that parity is not related to the rate of anemia in pregnant women. [36]found no statistically significant correlation between parity and anemia in pregnant women, supporting previous findings.

The sig value of 0.670 > 0.05 in the employment data indicates that there is no relationship between maternal compliance and employment. The majority of the non-working group (70%) did not comply with taking Fe tablets, this is in line with previous research [33]More than half (54.4%) of the working group also failed to take the tablets as instructed. Statistical analysis shows a p value of 0.489 which indicates that there is no relationship between employment and compliance with taking Fe tablets.

Working mothers should be more careful in maintaining their health during pregnancy, including taking Fe tablets according to the prescription for the benefit of the mother and child. There is no relationship between the work of pregnant women and compliance in taking Fe tablets, because the majority of pregnant women who did not work in this study did not comply.[37].

Logistic Regression Test Results of the Effect of My Therapy Application and Education on Compliance

Table 4.5 shows the results that the data on the My Therapy application sig 0.00 < 0.05 and education sig 0.680 > 0.05, which states that the My Therapy application has a greater influence on maternal compliance in consuming Fe tablets.

The use of the my therapy application has a greater influence on compliance with Fe tablet consumption than education, the my therapy application was created to facilitate the monitoring process for pregnant mothers in consuming Fe Tablets. This application, in addition to monitoring, can also be used by pregnant women as a reminder (alarm) notification to consume Fe tablets. This study is in line with research[38]With an average increase in knowledge of 6.21% to 7.35%, or 35%, this study found that the use of the Fe-MNHY application increased knowledge and compliance in consuming Fe tablets, thus indicating that the application contributed to the success of monitoring Fe tablet consumption. At the Ciamis Health Center, Ciamis Regency, the use of the Fe-MNHY application was shown to have an impact on the attitudes of pregnant women towards the use of Fe tablets, with an increase in positive attitudes ranging from 56% to 94% in the 2021 period.

Conclusion

In this study, providing intervention using the My Therapy application was effective in increasing compliance in taking Fe tablets in pregnant women with anemia.in the working area of Bangetayu Health Center, Semarang City (P value: 0.00 < 0.05) dEducation has an effect on compliance in taking Fe tablets (p value 0.00). Meanwhile, parity and occupation do not have an effect on compliance in taking Fe tablets (p value > 0.05).

It is expected that all pregnant women use the alternative application of my therapy to increase compliance in consuming Fe tablets. And midwives in health centers can teach and introduce the use of the my therapy application, as an alternative in preventing anemia in pregnant women. Researchers in the future can ideally continue

this study by including a larger sample size and more diverse factors in the study.

In addition, this study used respondents with almost the same background. Therefore, it is necessary to re-test the relationship between the my therapy application and compliance in the control

group, and it is necessary to compare different research sites.

Acknowledgements

References

[1] Central Statistics Agency of Central Java Province, "Health Profile of Central Java Province 2020,"*Central Java Profile*, Vol. 3511351, No. 24, Pp. 116–118, 2021.

[2] Health Profile of Semarang City,*Semarang City Health Profile 2021*. Semarang: BPS Semarang City, 2021.

[3] Ministry of Health of the Republic of Indonesia,*Indonesia Health Profile 2021*. 2022.

[4] K. Riskesdas, "Main Results of Basic Health Research (Riskesdas).," 2018.

[5] S. Prawirohardjo,*Obstetrics*, Empa Edition. Jakarta: Pt. Bina Pustaka, 2016.

[6] World Health Organization, "Global Nutrition Targets 2025: Anaemiaa Policy Brief. Geneva," 2022.

[7] D. Manuaba,*Selected Chapters on Routine Management of Obstetrics, Gynecology, and Family Planning*. Jakarta: Egc, 2014.

[8] Ministry of Health of the Republic of Indonesia, "Guidelines for Providing Iron Supplements (Ttd) to Pregnant Women," 2020.

[9] Ministry of Health of the Republic of Indonesia, "Preventing Stunting is Important,"*Ministry of Health of the Republic of Indonesia*, 2022. .

[10] T. Rachimhadhi,*Medical Disorders In Pregnancy And Childbirth*, 1st Ed.

[11] R. Juwita,*Anemia in Pregnant Women and Factors That Influence It*, First. Pekalongan: Nem Publisher, 2023.

[12] KY Fang, AJ Maeder, And H. Bjering, "Current Trends In Electronic Medication Reminders For Self Care,"*Stud. Health Technol. Inform.*, Vol. 231, pp. 31–41, 2016, Doi: 10.3233/978-1-61499-712-2-31.

[13] Ariyani, "Factors Influencing the Incidence of Anemia in Pregnant Women in the Third Trimester in the Working Area of the Mojolaban Health Center, Sukoharjo Regency," 2016.

[14] E. Topol, "The Patient Will See You Now : The Future Of Medicine,"*J. Clin. Sleep Med.*, Vol. 11, no. 6, Pp. 10–11, 2015.

[15] Bangetayu Health Center, Semarang City, "Data from Bangetu Health Center, Semarang City," Sema, 2023.

[16] I. Suriati, "The Effect of Giving TabletsBlood Supplement (Fe) on Maternal Hemoglobin Levels at Kamanre Health Center," Voice Of Midwifery, Vol. 5, No. 07, Pp. 33–38, 2018, Doi: 10.35906/Vom.V5i07.14.

[17] D. Ramadhini and SSS Dewi, "The Relationship Between Age, Parity and Compliance in Consuming Iron Supplement Tablets with the Incidence of Anemia in Pregnant Women at the Batunadua Health Center, Padangsidimpuan City in 2021,"*J. Health. Ilm. Indones. (Indonesian Heal. Sci. Journal)*, Vol. 6, no. 2, P. 148, 2021, Doi: 10.51933/Health.V6i2.600.

[18] P. Rahmaniah Syari L, "'The Relationship Between Maternal Age and Parity with the Incidence of Anemia in Pregnant Women in the Totoli Health Center Work Area' September 2019.,"*J. Heal. Educ. Lit.*, Vol. Vol 2 (1), No. E-Issn: 2621-9301., P. P. 232-236, 2019.

[19] R. Riyani, S. Marianna, And Y. Hijriyati, "The Relationship Between Age and Parity with the Incidence of Anemia in Pregnant Women,"*Binawan Student J.*, Vol. 2, no. 1, Pp. 178–184, 2020.

[20] N. Rahmi and A. Husna, "Analysis of Anemia Factors in Pregnant Women in the Working Area of the Baitussalam Health Center, Aceh Besar District,"*J. Healthc. Technol. Med.*, Vol. 6, no. 2, Pp. 2615–109, 2020.

[21] A. Wahyuni and A. Maki Zamzami, "Description of the Level of Knowledge and Compliance of Pregnant Women Regarding the Consumption of Fe Tablets with the Otda Point Application at the Alalak Selatan Health Center,"*J. Insa. Farm. Indonesia.*, Vol. 3, no. 1, Pp. 29–37, 2020, Doi: 10.36387/Jifi.V3i1.499.

[22] YF Falah.et al., "Anedoc App: Reminder System, Monitoring, and Education on Consumption of Blood Supplement Tablets for Pregnant Women at Sangkrah Health Center, Surakarta City,"*J. War. Lpm*, Vol. 25, No. 3, 2022.

[23] P. Suriati, "Description of Education Level, Occupation, Mother's Knowledge and Compliance Level of Pregnant Women in Consuming Blood Supplement Tablets at Meo-Meo Health Center, Bau-Bau CitySoutheast Sulawesi Province," Poltekkes Kemenkes

162

Kendari, 2019.

[24] N. Ikaning, "The Effect of the Happy Blood Application as a Monitoring Tool for Compliance in Taking Fe Tablets on Changes in Hb Levels in Pregnant Women in the Work Area of the Nongkojajar Health Center, Pasuruan Regency," P. 12, 2023.

[25] I. Alvionita, "The Effect of Giving Posters and SMS Reminders on Pregnant Women's Compliance in Taking Iron Tablets and Increasing Hb Levels of Pregnant Women in the Sukoharjo Health Center Work Area."*Muhammadiyah University of Surakarta*, 2017.

[26] FI Shofiana, D. Widari, and S. Sumarmi, "The Effect of Age, Education, and Knowledge on Consumption of Iron Supplement Tablets in Pregnant Women at Maron Health Center, Probolinggo Regency,"*Amerta Nutr.*, Vol. 2, no. 4, P. 356, 2018, Doi: 10.20473/Amnt.V2i4.2018.356-363.

[27] Ministry of Health of the Republic of Indonesia, "Ministry of Health of the Republic of Indonesia. Health Profile of Indonesia.," Jakarta, Indonesia, 2017.

[28] AR Fertimah, W. Widyawati, And S. Mulyani, "Effectiveness of Using Audiovisual Media and Permit Applications on Knowledge and Compliance of Mothers in Taking Iron Tablets,"*J. Clinical and Community Nursing*, Vol. 5, No. 3, P. 134, 2022, Doi: 10.22146/Jkkk.44276.

[29] E. Krismawati, B. Widjanarko, and MZ Rahfiludin, "The Effect of the Pregnant Women's Friend Application (Asih) on Compliance in Taking Fe Tablets and Hb Levels of Pregnant Women,"*J. Nursing*, Vol. 14, No. 1, Pp. 121–128, 2022, Doi:10.32583/Keperawatan.V14i1.44.

[30] R. Manik, "Socialization of the Use of Applications (Sumiferos) for Anemia Prevention with Compliance of Pregnant Women in Consuming Iron Tablets,"*J. Health Service.*, Vol. 3, no. 2, P. 229, 2021, Doi: 10.36565/Jak.V3i2.204.

[31] S. Arum And And D. Sarbini, "The Relationship Between Pregnant Women's Education Level and Midwife Service Behavior on Pregnant Women's Compliance in Consuming Fe Tablets at Gatak Health Center, Sukoharjo Regency. Muhammadiyah University of Surakarta," Pp.1–7, 2014.

[32] R. Amalia, EK Untari, and B. Wijianto, "Level of Education, Knowledge, and Compliance of Pregnant Women in Consuming Iron Supplement Tablets,"*J. Mhs. Farm. Faculty of Medicine. Untan*, Vol. 5, no. 1, Pp. 1–6, 2021.

[33] F. Aminin and U. Dewi, "Compliance of Pregnant Women in Consuming Fe Tablets in Tanjungpinang City in 2017,"*J. Ners And Midwifery (Journal Ners Midwifery)*, Vol. 7, no. 2, Pp. 285–292, 2020, Doi: 10.26699/Jnk.V7i2.Art.P285-292.

[34] R. Ariesta and AM Naufalia, "The Relationship between Characteristics of Pregnant Women and Compliance in Consuming Iron Supplement Tablets,"*J. Obs. Sci.*, Vol. 4, no. 1, Pp. 381–400, 2016.

[35] SN Abidah And Y. Anggasari, "Analysis of Factors Related to the Incidence of Anemia in Pregnant Women of Group III at BPM Kusmawati Surabaya,"*J. Heal. Sci.*, Vol. 12, no. 02, PP. 99–108, 2019, Doi: 10.33086/Jhs.V12i02.812.

[36] J J. Peralta-Argomeda*Et al.*, "The Effect of Counseling Using Flip Sheets and Leaflets on Pregnant Women's Compliance in Consuming Iron Tablets," Ucv, Vol. I, No. 02, Pp. 0–116, 2016.

[37] DD Anggraini, "Predisposing Factors of Pregnant Women and Their Influence on Compliance in Consuming Iron (Fe) Tablets and Anemia in Pregnant Women,"*Str. J. Ilm. Health.*, Vol. 7, No. 1, Pp. 9–22, 2018, Doi: 10.30994/Sjik.V7i1.141.

[38] NHHGH Wijanegara Metty, "The Effect of Fe-Mnhy Application on the Success of Monitoring, Knowledge and Attitude of Consuming Fe Tablets in Pregnant Women at the Ciamis Health Center, Ciamis Regency, 2021 Period,"*Bina Gener. J. Health. | 1*, Vol. 1, No. 1, Pp. 1–13, 2021.