

THE EFFECT OF SMS REMINDER ON THE BEHAVIOR OF CONSUMING FE TABLETS IN PREGNANT WOMEN

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Abstract

This study aims to determine the effect of SMS reminder on the behavior of consuming Fe tablets in pregnant women. This type of pre-experimental research with one group pretest-posttest design used a questionnaire on the behavior of pregnant women in consuming Fe tablets before and after being given treatment in the form of SMS Reminder. Research carried out BPM Nelli Herawati Bogor Regency with a sample of 32 respondents with a total sample. The data analysis technique used statistical tests with the simple paired t test. Before the SMS reminder was given, from 32 respondents, 17 (53.1%) had negative behavior in consuming Fe tablets and 15 (46.9%) respondents with positive behavior in consuming Fe tablets. Meanwhile, after receiving SMS remainder for 1 week in a row, 13 (40.6%) respondents with negative behavior in consuming Fe tablets and 19 (50.4%) respondents with positive behavior in consuming Fe tablets. The results of the simple paired t test statistic obtained a p value of 0.000 (p value <0.05). There was an effect of SMS reminder on the behavior of consuming Fe tablets in pregnant women.

Keywords: Anemia; Pregnant mother; Health Education.

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1. Introduction

WHO (World Health Organization) states that 40% of maternal deaths in developing countries are related to anemia in pregnant women.(WHO 2019)

Based on the results of the 2018 Basic Health Research, the prevalence of anemia in pregnant women in Indonesia is 37.1%.(Kemenkes RI 2018) While in West Java Province the incidence of anemia is 51.7%, in Bogor Regency is 40.4%.(Kementarian Kesehatan RI 2019)

The effect of anemia in pregnancy can be fatal if not treated immediately.(Yosali 2022) Including miscarriage, premature labor, prolonged labor, uterine atony, and causes bleeding and shock.(Dini kurniawati 2018)

Iron supplementation (Fe tablets) is one of the important efforts in preventing and overcoming anemia, especially iron deficiency anemia.(Elba et al. 2021) However, due to various factors such as knowledge, attitudes and behavior of pregnant women who are not good,

the side effects of tablets caused can trigger a person not to take iron tablets properly so that the purpose of giving the tablets is not achieved.(Tarwoto & Wasnidar 2013),(El Hoda Moustafa Mohammed et al. 2021)

One technology-based strategy to improve patient behavior in treatment is to provide controlled treatment services to patients at home using mobile technology using a Short Message Service (SMS) based reminder system.(Masruri 2015) In some countries, SMS delivery programs containing health information have been shown to increase health knowledge and behavior at a low cost.(Prasetya 2013)

Research conducted Yani A, Syria S, Jafar N. (2017) about the Effect of SMS Reminder on the Behavior of Pregnant Women Consuming Fe tabletsrevealed that knowledge, attitudes, motivation, and actions of mothers influence pregnant women to consume iron tablets, so as to increase knowledge of the need for information received through health promotion activities.(Yani et al. 2017)

Based on interviews with 10 pregnant women who did an examination at BPM Nelli Herawati, it was found that as many as 3 pregnant women always took Fe tablets every day, while 4 pregnant women said they often forgot and were lazy to take Fe tablets, and 3 pregnant women stated that after taking iron tablets they felt nauseous and constipated. Information about pregnancy is only obtained when pregnant women do an examination, while SMS reminders have never been given to pregnant women at BPM Nelli Herawati.

2. Methods

The type of research used is *pre-experimental* with a one group pretest-posttest design using a questionnaire to assess the behavior of pregnant women in consuming Fe tablets before and after being given treatment in the form of SMS Reminder. (Hardani et al. 2015) The number of samples is 32 respondents with inclusion criteria, namely pregnant women who do ANC examination at BPM Nelli Herawati, willing to be a respondent. The exclusion criteria were pregnant women who did the ANC examination and those who were not willing to be respondents. After getting patients who meet the criteria, coding is carried out starting from respondents 1 to 32.

Researcher The sampling technique that will be used is total sampling. Statistical test with simple paired t test.

Researchers submitted a research permit issued by STIKes Wijaya Husada Bogor to the owner of BPM Nelli Herawati. The owner of BPM Nelli Herawati gave permission to the researcher to conduct this research. After obtaining research permission, the researcher met with the respondent to ask for permission and explain the instrument to be used for the research. The types of data collected in this study were primary data through questionnaires, and secondary data through records of pregnant women's visits to determine the number of pregnant women who underwent examinations at BPM Nelli Herawati.

The questionnaire contained personal identity and the questionnaire Behavior of consuming Fe tablets as many as 10 statements that have been tested for validity and reliability. (Wawan A 2015) The nominal data scale for the behavior of consuming Fe tablets is a statement using a Likert scale:

Positive statements:

- Never (score 1)
- Rarely (score 2)
- Sometimes (score 3),
- Always (score 4).

Negative statements:

- Never (score 4)
- Rarely (score 3)
- Sometimes (score 2),
- Always (score 1).

Which are then categorized as follows:

1. Positive behavior, if the value of T score \geq mean (26.16).
2. Negative behavior, if the value of T score $<$ mean. (26,16)

3. Results and discussions

Data collection was carried out on May 20-10 June 2022. The average respondent aged 23-26 years was 37.5% (12 people), the average respondent as a housewife was 21 (65.6%).

Table 1. Normality test results of consuming Fe tablets in pregnant women

Group	Shapiro-Wilk		
	Statistics	df	Sig.
Pre Test	0.952	32	0.164
Post Test	0.955	32	0.204

Based on table 1 above, from 32 respondents showed that the data was normally distributed, because the p value in the pre-test and posttest groups the behavior of consuming Fe tablets in Bogor pregnant women was said to be significant (>0.05).

Table 2. Homogeneity test of consuming Fe tablets in pregnant women

	Levene Statistics	Sig.
Based on Mean	1.156	.606
Based on Median	1.309	.625
Based on Median and with adjusted df	1.309	.692
Based on trimmed mean	1.144	.688

Based on table 2 above, from 32 respondents we can conclude that the behavior of consuming Fe tablets in pregnant women shows homogeneous data ($0.688 > 0.05$).

Table 3. Frequency distribution of Fe tablet consumption behavior before being given SMS reminder to pregnant women

Behavior of taking Fe tablets	Frequency	Percentage (%)
Positive	15	46.9
Negative	17	53.1
Total	32	100

Based on table 3, from 32 respondents, it is known that most of the respondents have negative behavior, as many as 17 (53.1%).

This is in line with the research conducted by Alfi Noviyana and Citra Hadi Kurniati with the title "The Relationship of Knowledge, Attitudes and Behavior of Pregnant Women to Disobedience in Consuming Blood-Adding Tablets at the Health Center Purwokerto Barat Banyumas" with a research sample of 30 respondents, with the results of the study being 21 respondents. (65%) with negative behavior in consuming Blood Add Tablets (TTD). (Noviyana & Kurniati 2018)

Iron supplementation (Fe tablets) is one of the important efforts in preventing and overcoming anemia, especially iron deficiency anemia. (Rufaindah & Patemah 2021) (Detlefs et al. 2022) Iron tablets as a supplement given to pregnant women that must be consumed every day. (Nugroho 2019) (Ahmed et al. 2020) However, due to various factors such as knowledge, attitudes and behavior of pregnant women who are not good, the side effects of tablets caused can trigger a person not to take iron tablets properly so that the purpose of giving the tablets is not achieved. (Abujilban et al. 2019)

According to the researcher's analysis, negative behavior in consuming Fe tablets at BPM Nelli Herawati, Bogor Regency, was caused by a lack of knowledge about the importance of consuming Fe tablets, so it needed to be addressed in order to prevent the increase in anemic pregnant women and reduce the number of pregnant women who were already affected by anemia. (Suryaman 2021)

Based on table 4, from 32 respondents, it is known that most of the respondents have positive behavior, as many as 19 (59.4%).

This is in line with the research conducted by Lailatul Hidayah, et.al with the title "The Effect of Giving Posters and SMS Reminders on Compliance with Drinking Iron Tablets and Increasing Hb Levels of Pregnant Women in the

Work Area of Sukoharjo Health Center" with research samples of 17 pregnant women each in treatment and control groups. With the results of the study, pregnant women who were obedient after the intervention were 65% in the treatment group, and 35% in the control group. (Hidayah et al. 2021)

Table 4. Frequency distribution of Fe tablet consumption behavior after being given SMS reminder to pregnant women

Behavior of taking Fe tablets	Frequency	Percentage (%)
Positive	19	59.4
Negative	13	40.6
Total	32	100

SMS (Short Message Service) which means Short Message Service, in this modern era almost everyone has used it. (Elsharkawy et al. 2022) SMS is a form of service from a telecommunications service provider or telecommunications provider. An electronic message sent via a cellular telephone or mobile phone which is then received by the same device (receiver) in the form of a digital cellular telephone to send and receive short letter and number messages (less than 160 characters). Short messages can be forwarded and saved for later reading. (Prasetya 2013)

According to the research analysis, it was concluded that there was a change in the behavior of consuming Fe tablets in BPM Nelly Herawati, Bogor Regency, which was mostly positive, this was because the respondents were reminded by the researcher every day via SMS to consume Fe tablets, thus minimizing forgetting or not taking Fe tablets. In addition, based on the data on the characteristics of the respondents for the work of pregnant women, most of them are housewives, so they have a lot of time to receive messages, read, and do what is ordered.

Table 5. Analysis of the Effect of SMS Reminder on Behavior of Consuming Fe Tablets in Pregnant Women

	Paired Differences				
	mean	T	df	Correlation	Sig. (2-tailed)
Pretest – Posttest	-1.254	-16,112	32	0.884	.000

The table above shows a p value of 0.000, where p value < 0.05. So it can be concluded that there is an average difference between the pretest and the posttest, which means that there is an effect of SMS Reminder on the behavior of consuming Fe tablets in pregnant women.

This is supported by research conducted by Ahmad Yani with the title "The Effect of SMS

Reminder on the Behavior of Pregnant Women Consuming Fe Tablets". The results of this study are that there are differences in knowledge, attitudes, motivation, and actions of pregnant women in consuming Fe tablets before and after receiving SMS Reminder in the treatment group. (Yani et al. 2017)

SMS is a service from GSM technology that can send and receive short messages in the form of written messages (text) with a maximum capacity of 160 characters consisting of letters, numbers, or alphanumeric characters from or to mobile devices. Short Message Service (SMS) is not a new technology in society, so its use cannot be separated from life in society. SMS is a communication using technology that allows one person to send text messages to other mobile phones. Text messages sent are immediately received by the recipient of the message and can be read at any time by the recipient. (Prasetya 2013) SMS reminder can be used as a method to remind pregnant women to take iron tablets. The advantages of this SMS reminder are that in addition to being relatively fast, it only requires a cellular phone, the shipping costs are relatively cheap, efficient, and more convenient than telephone calls. The use of this technology does not require special skills, the important thing is that pregnant women can operate cell phones. (Masruri 2015)

Based on the results of the research and the theory above, the researcher's assumption is that SMS Reminder is effective in preventing the increasing number of anemia in pregnant women and reducing the number of pregnant women who are already affected by anemia.

4. Conclusion

There was a significant effect of using SMS reminders on the behavior of consuming Fe tablets in pregnant women at BPM Nelli Herawati, Bogor Regency, West Java, Indonesia.

5. Limitation and study forward

Some respondents are difficult to monitor simultaneously because they are still in the COVID-19 pandemic. Further research is suggested to compare with the control group.

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