



Correlation of Knowledge and Family Support to Compliance with Iron (Fe) Tablet Consumption for Pregnant Women in Preventing Anemia: New Normal COVID-19 Era in Working Area of Health Centers South Kuta



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Keywords

anemia;
COVID-19 pandemic;
health centers;
health profile;
healthcare;
iron tablet;
pregnancy;
public health;

Abstract

Anemia is a condition where the hemoglobin (Hb) level is lower than the normal value (11g/dL). In pregnant women, the normal Hb level is 11g/dL. One of the causes of anemia in pregnant women is adherence. Factors that affect the adherence of pregnant women include knowledge of pregnant women and family support. To determine correlation between knowledge and family support about anemia in pregnant women to prevent anemia in the new normal era of COVID-19 at South Kuta Health Center. This study used cross sectional method, with 60 pregnant women. Respondents taken with a total sampling. Knowledge was measured by a questionnaire from Maulida, family support using a questionnaire from Tyas and adherence using the MMAS-8 questionnaire, then tested by Spearman Rank. The results obtained from 60 respondents, 36 respondents (60%) were obedient in consuming iron tablets. 25 respondents (41.7%) have sufficient knowledge and 40 respondents (66.7%) have sufficient support. The results showed p-value = 0.030 (p<0.05) on knowledge with low correlation and p-value = 0.007 (p<0.05) on family support with low correlation. There is a significant correlation between knowledge and family support about anemia on adherence to taking iron tablets in pregnant women.

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Contents

Abstract.....	189
1 Introduction.....	190
2 Materials and Methods.....	190
3 Results and Discussions.....	191

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3.1 Results	191
3.2 Discussions.....	195
4 Conclusion	198
Acknowledgments.....	198
References	199
Biography of Authors.....	201

1 Introduction

Pregnant mothers become one of the groups that must gain more attention in the midst of the COVID-19 pandemic. Pregnancy is a unique natural condition, because in pregnancy it often causes complications that occur from various anatomical changes as well as physiology in the mother's body (Sarwono, 2010; Budiarni & Subagio, 2012). According to Rukiyah & Lia (2010), one of the causes of complications in pregnancy is anemia. Anemia is a condition where hemoglobin (Hb) levels in the blood are lower than their normal value of 11 g/dL (WHO, 2011).

Anemia in pregnancy is characterized by pale faces, nails easily brittle, easily tired, weak, weary and listless (Gibson et al., 2001; School et al., 1995). This condition is usually caused by chronic blood loss, increased iron requirements and infectious diseases (Fikawati et al., 2017; Liow et al., 2012). Anemia can have a bad impact for pregnant women that is miscarriage, bleeding and maternal death. The impact for the baby is prematurely born to death. Anemia can decrease body endurance, this is what risks being vulnerable to COVID-19. Related to the current pandemic, the new way of life becomes one of the steps to be made. New ordinances of life are expected to be able to control the spread of COVID-19 and control diseases such as anemia in pregnant women (Hardinsyah et al., 2016).

Based on Riskesdas in 2018 the proportion of anemia in pregnant women in Indonesia has an increase of 48.9% compared to 2013 by 37.1%. According to Indonesian health profile of 2018 as much as 84.6% of anemia in pregnant women occurs in 15-24 year old group (Kemenkes RI, 2018). Research Rini et al. (2019), showed results, where the number of pregnant women who had anemia in Indonesia is still quite high at 74.6%. Increasing presentage of anemia events in pregnant women is caused by several factors, one of which is compliance with the blood-added tablet (TTD) (Ariyani, 2016; Liow et al., 2012).

The low presentation of pregnant women's compliance in consuming TTD is affected by a wide variety of factors such as the lack of family support and pregnant women's knowledge of anemia along with the perils that can occur in fetuses (Kamidah, 2015). One attempt the government made to prevent the incidence of anemia in pregnancy is that each pregnant mother is expected to get a minimum TTD of 90 tablets during pregnancy (Dinkes Prov. Bali, 2019). The year 2018 coverage of TTD administration in pregnant women in Indonesia has increased by 81.16% compared to 2017 by 80.16%, although it has seen an increase in this figure yet to reach the Renstra target of 2018 which is by 95% pregnancy (Dinkes Prov. Bali, 2018).

During this time anemia countermeasures efforts were focused on the target of pregnant women with supplementation of folate iron tablets (200 mg FeSO₄ and 0.25mg folic acid) by giving each day 1 tablet for a minimum of 90 consecutive days (Hadju et al., 2020; Caterino et al., 2015). The capacity results of 2017 Fe tablet giving coverage amounted to 78.52% while 2016 amounted to 93.06%. The distribution of Fe tablet giving coverage according to puskesmas indicates that puskesmas with the highest Fe tablet awarding capaian namely Kuta North Public Health Center at 99.63%, while Fe tablet giving coverage at Kuta South Public Health Center of 2017 amounted to 54.2%. (Dinkes Badung, 2017). The increasing prevalence of anemia in pregnant women still high enough prompted researchers to conduct knowledge-related research and family support about anemia in pregnant women in anemia prevention efforts in the Kuta South Public Health Working Area.

2 Materials and Methods

The study was a Quantitative Correlational study with cross sectional design. The study aims to find out Knowledge Relationships and Family Support on Consumption Compliance of Iron Substances Tablets (Fe) In

Pregnant Mothers in Prevention Efforts of New Normal Era Anemia COVID-19. Research was conducted at the South Kuta Public Health Center during May 2021. This sample of the study was pregnant women who earned TTD in the Kuta South Public Health Working Area and met the criteria for inclusion and exclusion, the sampling technique used was purposive Sampling with a sample count of as many as 60 pregnant women. Data analysis uses the rank spearman test (Leigh-Hunt et al., 2017; Haines et al., 2006).

3 Results and Discussions

3.1 Results

The respondents in the study were pregnant women who earned TTD which were 60 pregnant women. The characteristics of respondents can be seen in the graph below.

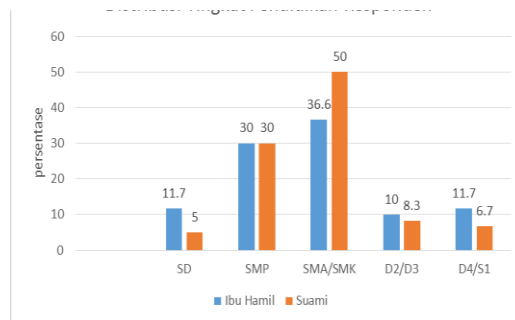


Figure 1. Distribution of education level

In figure 1, most of the respondents were educated high school/SMK. In pregnant women a number of 22 respondents (36.6%) and husbands a number of 30 respondents (50%).

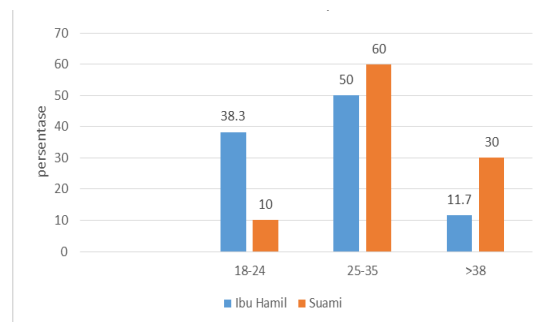


Figure 2. Respondent age distribution

In figure 2, Most are in the 25-35 age category. Where pregnant women in that age category a number of 30 respondents (50%) and husband respondents of 36 respondents (60%).

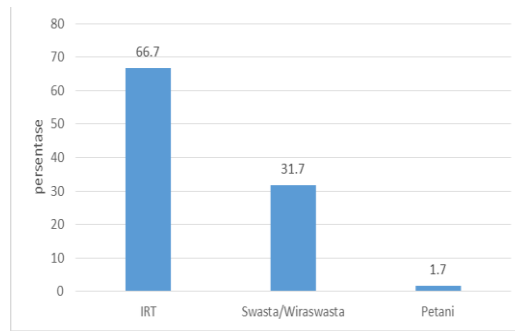


Figure 3. Distribution of pregnant mothers' work

In figure 3, most of the pregnant women's work is that of a housewife of 40 respondents (66.7%).

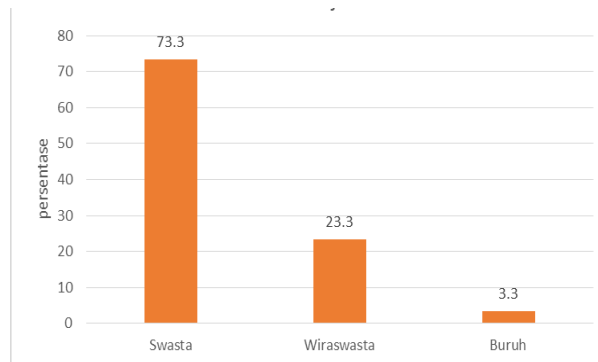


Figure 4. Husband work distribution

In figure 4, most husbands' jobs namely private employees of 44 respondents (73.3%).

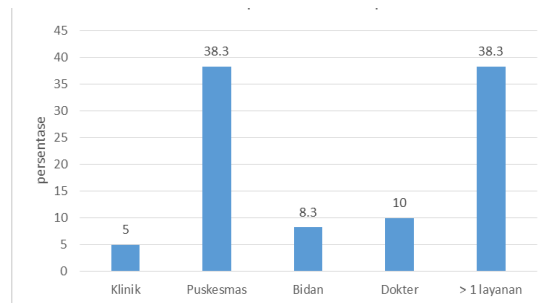


Figure 5. Respondent check place distribution

In figure 5, most respondents stated that they had checks on more than one healthcare site of 23 respondents (38.3%)

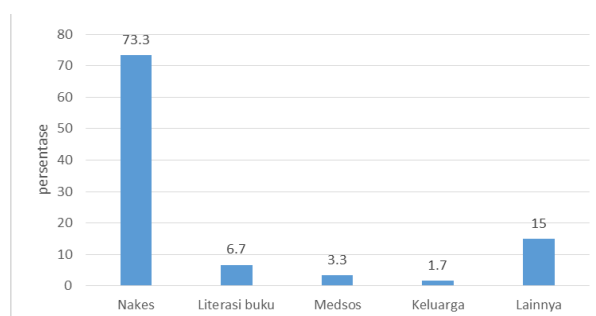


Figure 6. Distribution of acquiring anemia information

In figure 6, the information anemia that pregnant women obtained on this study was more than healthcare based on 44 respondents (73.3%).

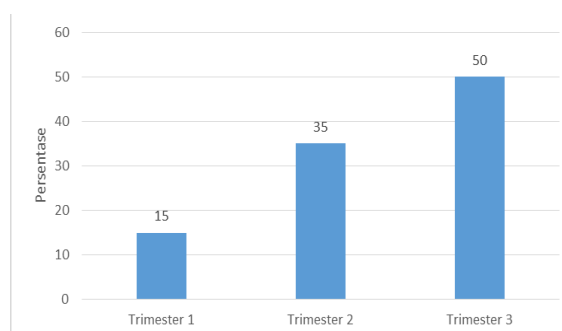


Figure 7. Pregnancy age distribution

In figure 7, Most of the more are at the age of the third trimester's shrewdness, a number of 30 respondents (50%).

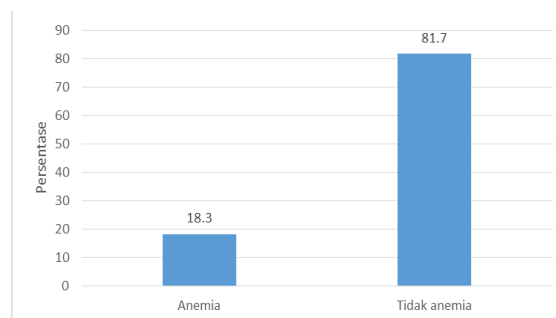


Figure 8. Distribution of anemia status

In figure 8. Pregnant mothers' respondents at this study who did not experience anemia were as many as 49 respondents (81.7%).

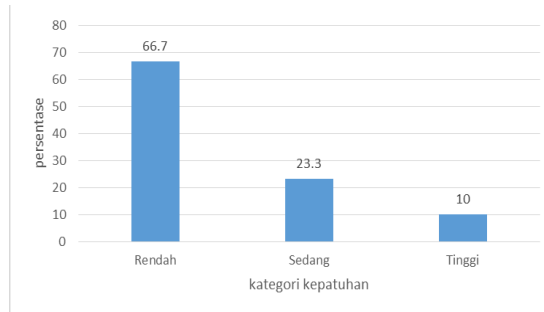


Figure 9. Consumption compliance distribution of blood added tablets

In figure 9, most pregnant women have been compliant in eating blood tablets (TTD) as many as 36 respondents (60%).

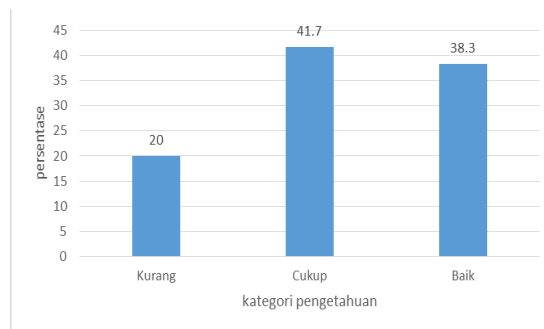


Figure 10. Distribution of knowledge

In figure 10, most respondents had sufficient knowledge that is as many as 25 respondents (41.7%).

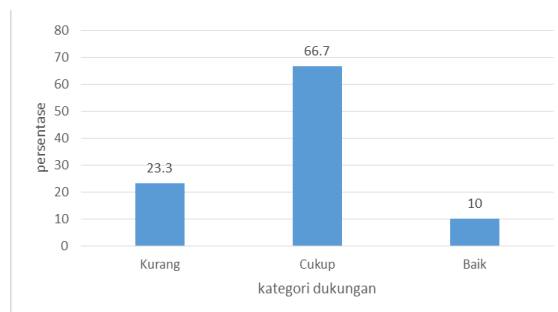


Figure 11. Support distribution

In figure 11, the support on this study showed most pregnant women that is, a number of 40 respondents (66.7%) had sufficient support.

Table 1
The results of knowledge correlation test on TTD consumption compliance

Description	Value
<i>Correlation Coefficient</i>	0,277
<i>Sig.(2-tailed)</i>	0,030
<i>N</i>	60

Based on above calculations are obtained Significant or sig values. (2-tailed) denotes a value of 0.030 meaning smaller than the critical limit $\alpha = 0.05$, meaning there exists a significant relationship between the two variables (0.030 < 0.05). The correlation value of 0.277 which falls into the low category (0-20,399), with such results it is stated that there is a knowledge-level relationship to pregnant women's compliance in consuming TTD.

Table 2
Results of Family Support Correlation Test on TTD consumption Compliance

Description	Value
<i>Correlation Coefficient</i>	0,397
<i>Sig.(2-tailed)</i>	0,007
<i>N</i>	60

Based on above calculations are obtained Significance or sig. (2-tailed) denotes a value of 0,007 greater than the critical limit of $\alpha = 0.05$, it shows there is a significant relationship between the two variables (0.007< 0.05). This relationship is designated with a correlation value of 0.397 that falls into the low category (0.20-0.399), with the result then it is said to be a family support relationship to pregnant women's compliance in consuming TTD.

3.2 Discussions

Demographic data

Most of the high school/SMK-educated respondents total 22 respondents (36.6%) and husbands as many as 30 respondents (50%). Education has a close link to knowledge. The higher the education of pregnant women it will be easier to digest information about the benefits of TTD and the dangers in the event of anemia during pregnancy. It will affect pregnant women in selecting and evaluating something good for her health and pregnancy (Fuady & Bangun, 2013). In line with this study that showed the knowledge level of pregnant women was still lacking. Pregnant mother education strongly influences her behavior in seeking causes and solutions in her life, pregnant women with higher education tend to act more rationally and will more easily accept new ideas or information aimed at her in order to maintain her and fetal health in her content (Walyani, 2015). The average age of respondents at this study was in the age category of 25–35 years. Pregnant mothers in that age category number 30 respondents (50%) and husbands of 36 respondents (60%). Based on such data it can be stated that respondents belong to the early adult age group (26–35) (Depkes RI, 2009).

Amirudin (2014), stated a healthy and safe reproductive age was at the age of 20–35. Pregnancy is expired less than 20 years and over 35 years old can cause anemia because in pregnancy is expired less than 20 years biologically the mother's emotions are not yet optimal, so it is easily emotionally impaired that results in a lack of attention to the fulfillment of nutritional needs during pregnancy especially iron, whereas in ages over 35 with regard to decline and decreasedure of the body as well as various diseases that are often occurring in those ages. As the age of nutritional needs in the body increases, whereas the inner body system will decrease (Syafrudin, 2011).

As of this study most pregnant women conducted pregnancy checks on more than one healthcare place (38.3%). This can be attributed to the economic conditions of the respondents who on this study were largely as workers and had income that could meet the needs of his life (Moazzami et al., 2020; Barello et al., 2020). According to Nuraini & Kurniawan (2015), mentioning that pregnant women with good economic conditions tend to make prepartum visits (pre-natal times) such as those in doctor practices, midwives' and hospital practices caused by assumptions the greater the cost spent on service then the better the service and comfort facilities obtained in the examination.

The results of this study showed that 73.3% of respondents obtained information about anemia from health workers. The results proved that health officials had exercised their role as health labor by providing information to pregnant women. In line with Zahn et al. (2012), states the role of health care workers namely

Primadewi, K., & Diwyami, N. P. (2021). Correlation of knowledge and family support to compliance with iron (fe) tablet consumption for pregnant women in preventing anemia: new normal COVID-19 era in working area of health centers south kuta. International Journal of Health Sciences, 5(2), 189-201. <https://doi.org/10.29332/ijhs.v5n2.1405>

as a cadre of public health among them conduct health promotion, conduct actions and treatments comprehensively on patients, provide support, and conduct referrals.

Respondents in the study were mostly in the gestational age of trimester III (50%). In this gestational age pregnant women will require more amounts of iron to be used for fetal development and delivery preparation (Manuaba, 2010). According to Sarah & Irianto (2018), during pregnancy, if pregnant women acquire less nutrient requirements will cause increased risk of anemia in pregnancy. The impact that can occur when pregnant women experience anemia is miscarriage, BBLR as well as bleeding during childbirth (Sarah & Irianto, 2018). In order to avoid such impacts it is best for pregnant women to routinely conduct a ignition check. Based on the analysis that has been conducted on average pregnant women have conducted the examination 6 times. The examinations that pregnant women have conducted may provide an overview of the state of pregnant women, foetus in content, and general health (Marniyati et al., 2016).

The feature of the pregnant mother's level of knowledge about anemia

This study showed the highest percentage of pregnant women's knowledge levels were in sufficient category that is at 41.7%. The category of pregnant women's knowledge is influenced by the history of education shared by pregnant women. Based on the analysis results, the majority pregnant women's education level is in the high school/SMK category. According to Wulansih (2013), someone who has a history of high school/Degree education is already included into a category that has sufficient education. Education alone will affect the ability of pregnant women in addressing her, if pregnant women know and understand something then she can take attitudes and actions according to what she knows (Wawan & Dewi, 2011).

Good knowledge from pregnant women is more in terms of the dangers that can occur in pregnancy when experiencing anemia. The results showed that pregnant women were easier to receive information about the dangers of anemia in pregnancy. When a pregnant woman has a good knowledge of the impact of anemia on pregnancy, the risk or complications that can occur if she has anemia, as well as the benefits of a tablet or iron supplement, then the pregnant mother will have a will and seek to avoid the onset of anemia by regularly consuming TTD and supported by consuming nutritious foods (Prapitasari, 2013).

A feature of family support on pregnant mothers

Based on the results of the dominating family support percentage research that is, it is in sufficient category (66.7%). One factor that can lead to such results is the level of education. Based on analysis shows results where most respondents (husband) families have a history of high school/Agree education (60.2%). The husband's level of education can affect himself in supporting maternal pregnancy, such as providing motivation, attention and help. This strengthens that family support has an effect on schedule precision leading to the achieving of compliance (Budhisusetyo, 2012).

At this study, the family support that many husbands provide as the next of kin is emotional support such as providing nutritious food and asking for complaints that mothers feel after consuming TTD. Less family support is provided in pregnant women is information support such as helping to find information about nutritious foods and digging into TTD-related information (Afita et al., 2021; Hussin et al., 2021). The results show that there is still less support from families against pregnant women that is information support. The information support in question is like helping individuals find an alternative contained to the problem solving that pregnant women experience. One way it can be done is to provide information in the form of advice, instructions, advice, searching for TTD-related information sourced from print/electronic media, health power such as midwives and doctors (Amanda, 2012). Information support from less husbands can lead to low willpower of pregnant women in consuming TTD, as husbands can create physical and emotional environments that support pregnant women's health and nutrition (Kamidah, 2015).

Another factor that can affect family support is work. Based on the results of the study that had been conducted showed the results of most respondents' families (husbands) having jobs. It showed that by having a job, families could meet financial support for pregnant women, but by working also interactions between families and pregnant women would be reduced. In line with Tyas' 2013 research in the Yogyakarta area suggesting that financial support can only provide support in the form of financing of pregnant women's purposes during pregnancy.

A Feature of pregnant mothers' compliance in consuming TTD

The results of this study showed that most respondents had compliance rates in the category sufficiently consuming TTD which was 41,7%. Based on such results it is seen that some respondents have had awareness to consume TTD during pregnancy. This is due to the high level of knowledge of pregnant women at the danger of anemia in pregnancy (Tefferi, 2003; Alleyne et al., 2008). However there are still difficulties that pregnant women experience in remembering the time to drink TTD. This difficulty is likely due to the most emotional support provided by husbands as the next of kin provides only nutritious food and asks for complaints that mothers feel after consuming TTD alone. That matter can be seen from the presentation of husband sympathy to perceived difficulties showing the lowest value on emotional support that is at 30,6%.

According to Rahmawati & Subagio (2012), compliance with consuming TTD is defined as the behavior of pregnant women obeying all the instructions advocated by health care workers in consuming TTD. Pregnant mothers' compliance in consuming TTD is often a problem because compliance is very difficult to instill in oneself, let alone for others (Wiradyani et al., 2013). Adherence of pregnant women in consuming accepted TTD during her pregnancy is an important factor in increasing pregnant women's hemoglobin levels. Pregnant mother compliance is usually judged from maternal attitudes in following directions in consuming TTDs provided by local health workers.

Relation of knowledge levels against compliance consuming TTD in pregnant mothers

The relationship of the pregnant women's knowledge level to compliance in consuming TTD in Puskesmas South Kuta based on Rank Spearman correlation analysis indicates there is no meaningful relationship between knowledge level with pregnant women's compliance in consuming TTDs shown from $p=0,030$ ($p<0,05$). The relationships that occur at the level of knowledge with compliance are positively expressed and are at the low correlation category. It is shown from the value of the correlation coefficient of 0.277. Based on such results, the higher the level of knowledge pregnant women have, it will be as high as pregnant women's compliance in consuming TTD (Pudiastuti, 2011).

According to Subiyanto (2012), pregnant women with high knowledge will also be good especially regarding treatments about pregnancy, nutritional intake while pregnant, preventing disease as well as attitudes towards childbirth. In line with the opinion of Prapitasari (2013), stating if pregnant women have good knowledge of the impact of anemia on pregnancy, risk or complication if a person has anemia, as well as the benefits of tablets or iron supplements, then the pregnant mother will want to and seek to avoid the onset of anemia, by regularly consuming TTD as well as being supported by consuming nutritious food. Conversely, if knowledge is low, then it is likely to refuse to drink TTD regularly, let alone if it is felt there are disruptive side effects.

TTD delivery in pregnant women is an attempt made for countermeasures of anemia during pregnancy, because when pregnant women have anemia, it can ignite mothers and babies in the content. Based on the results of the study is known the highest presentage of pregnant women's compliance is in the moderate category of 49,0% which shows that still low compliance of pregnant women in consuming TTD during pregnancy.

Research by Sohia Sarah (2017), mentions that pregnant women who do not adhere to eating blood-added tablets have a 3.46 times greater risk of experiencing anemia compared to obedient pregnant women in eating blood-added tablets. Compliance with eating blood-added tablets in gestation is indispensable to fetuses and mothers. Iron substances contained in the blood added tablet are essential in the synthesis process of hemoglobin. The transport of nutritional substances and oxygen throughout the body is an important role of hemoglobin in the body as well as petrifying the process of body metabolism to form energy. If the pregnant mother lacks iron in her body, it will affect the formation of hemoglobin (Yanti, 2016).

Knowledge of TTD and its benefits become one of the factors that encourages mothers to obey in consuming TTD and the majority of pregnant women who consume TTD know the benefits and purposes of consuming such tablets (Wiradyani et al., 2013). In line with the research Utami (2020), on the compliance of pregnant women in consuming TTD in the city of Tanjungpinang, which suggests a meaningful relationship between maternal knowledge levels with maternal compliance consumes iron tablets (p value = $0,025 > 0,05$).

Family support relationships against compliance consuming TTD on pregnant mothers

Correlation test results show a meaningful relationship between knowledge level and pregnant women's compliance in consuming TTDs indicated from $p=0,007$ ($p<0,05$). The relationship that occurs to family support of compliance is said to be positive. The value of the relation's density between variables is designated by the correlation coefficient of 0,397. Based on the interpretation guidelines of correlation coefficients is said to be a low level of density that is at a value of 0,20–0,399. Based on the point, the better family support provided for pregnant women, the higher the adherence of pregnant women in consuming TTD.

The results are in line with the opinions of [Wiradnyani et al. \(2013\)](#), which mentions that, families have a significant role in supporting mothers to regularly consume TTD. Mothers often forget to drink TTD routinely even stopping to eat it when there is no support from her family. Families have a significant role in supporting mothers to take blood-added tablets routinely.

The efforts that can be made by including the family as an important basic factor that exists are around pregnant women by empowering family members especially husbands to participate in helping pregnant women in increasing their compliance in eating blood added tablets. This effort is of great importance, because the husband is the person closest to the pregnant mother, who can create a physical and emotional environment that supports the health and nutrition of the pregnant mother. Her concern in paying attention to the health of pregnant women particularly in monitoring blood-added tablet consumption daily is expected to increase the compliance of pregnant women ([Kamidah, 2015](#)).

According to [Friedman et al. \(2010\)](#), family support is the attitude, action, and acceptance of families towards its members. Family support is a concern that families give to pregnant women. In line with the research of [Rahma \(2020\)](#), which states a connection between husband support for pregnant women's compliance in consuming iron tablets (Fe) in the 2020 Anniversary Health Center Working Area ($p\text{-value} = 0,000 < 0,05$). It explains that the higher the support of pregnant women will then the higher the pregnant women's compliance in consuming iron tablets (Fe) during pregnancy.

4 Conclusion

Access, cost, and health manpower services can significantly improve motivation. The closer the puskesmas are from where he lives then the mother is increasingly motivated to check out his pregnancy. The JKN program funding sources from the government help motivated mothers to check pregnancy and perform childbirth in puskesmas. Services can significantly improve motivation. The better the service provided then the more motivated the pregnant mother to come to the puskesmas. Motivation can significantly increase satisfaction. The motivations shared by pregnant women are closely related to access, costs, and service. This has an impact on the satisfaction of pregnant women.

Acknowledgments

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