Diabetes mellitus (DM) is a chronic disease that usually occurs in adults. Prevention of complications of diabetes mellitus can be done with several management, which includes nutritional management, educational exercise and pharmacological therapy. In addition, factors that can support the prevention of complications include social support, family support and self-efficacy. This study aims to determine the relationship of social support, family and efficacy on the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. This research is a quantitative study with an analytic survey design using a cross sectional design. The number of samples in this study was 46 respondents using the Kendall Tau statistical test. The results of the analysis using the Kendall Tau test showed that there was no relationship between social support and the prevention of complications with a value of p = 0.735. Then also found that there was no relationship between family support and prevention of complications of diabetes mellitus with a value of p = 0.76. While the results of the correlation test for the relationship between the efficacy of the prevention of complications of diabetes mellitus were also obtained value = 0.323. From the results that have been obtained, it is expected that people with diabetes mellitus can prevent complications properly. In preventing complications in diabetes mellitus, it is hoped that it can involve families and people in the surrounding environment, so as to prevent complications maximally.

**Keywords:** Diabetes, Complication, Self-Efficacy, Family Support, Social Support.
A. Introduction

Diabetes Mellitus (DM) is a chronic disease that usually occurs in adults, this disease requires ongoing medical monitoring and also requires self-care education for patients (LeMone, Burke and Bauldoff, 2015, p. 649). The World Health Organization says that diabetes is a serious chronic disease that occurs when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces(Organization, 2016).

Based on data from the results of the International Diabetes Federation report, there are 463 million people in the world who experience diabetes mellitus in 2019 and it is predicted that in 2030 there will be an increase in diabetes mellitus sufferers by 51%, as many as 578 million people who have diabetes mellitus (Lilik pranata, Novita Elisabeth Daeli, & Sri Indaryati, 2019) & (Lilik Pranata, Sri Indaryati, 2020). In Asia, there were 88 million people with diabetes mellitus in 2019, the number of diabetes mellitus sufferers has increased when compared to 2018, which recorded 82 million people with diabetes mellitus. 5) (IDF, 2019).

Basic health research (2018) states that in Indonesia there were 1,017,290 people or around 1.5% who had diabetes mellitus. Meanwhile, South Sumatra itself ranks ninth in Indonesia with the highest number of cases, namely 32,126 or equal to 0.9% of people affected by diabetes mellitus. For the city of Palembang itself, there were 13,593 people who had diabetes mellitus. There were 561 cases of diabetes mellitus at the Palembang Health Center (Puskesmas) who had diabetes mellitus (Dinkes, 2018).

There are four main pillars for patients with diabetes mellitus, which include nutrition, exercise, education and pharmacological therapy (Aini, N. and Aridiana, 2016). Prevention of diabetes mellitus includes three stages, namely primary, secondary and tertiary prevention (Soebagijo Adi Soelistijo, 2015). Primary prevention includes efforts aimed at groups that have risk factors, namely individuals who have not been affected but have the potential to develop diabetes mellitus (Soebagijo Adi Soelistijo, 2015). Secondary prevention is a preventive effort carried out to inhibit the emergence of complications in individuals who have been affected by diabetes mellitus, which in secondary prevention is carried out by controlling glucose levels according to the target and controlling other risk factors by providing optimal treatment (Soebagijo Adi Soelistijo, 2015). Whereas tertiary prevention is aimed at groups of people with diabetes mellitus who have experienced difficulties in efforts to prevent further disability and improve quality of life (Soebagijo Adi Soelistijo, 2015). Complications in diabetes mellitus are likely to develop in some patients even though each individual has tried to carefully control the disease(Black, J.M. & Hawks, 2014). Individuals with diabetes mellitus of any type are still at high risk for complications involving different body systems (LeMone, P., Burke, K. M. and Bauldoff, 2015). Chronic complications are a major cause of illness and death in patients with diabetes mellitus, chronic complications in diabetes mellitus can include macro-vascular complications (coronary artery disease, stroke, leg ulcers, hypertension) and micro-vascular (diabetic retinopathy, nephropathy, neuropathy)(Black, J.M. & Hawks, 2014). Diabetes mellitus is a disease that will suffer for life and chronic complications will occur in people with diabetes mellitus who are more than five or ten years old (Lilik pranata et al., 2019). Apart from the management carried out in the prevention of complications in diabetes mellitus sufferers, there are factors that are also related to the prevention of complications in diabetes mellitus sufferers, including self-efficacy and family support (Zakiyyah, A., Nugraha, P. and Indraswari, 2019). Family support is needed, especially in providing care to individuals directly, not only
physically but also psychosocially (Al-Kahfi, R., Palimbo, 2016). Sources of family support that can be obtained can come from the husband or wife, and the children of the individual (Al-Kahfi, R., Palimbo, 2016). Bussard and Bali (1996) say that the family is a social environment that is very closely related to someone (Harnilawati, 2013). Family support can be given to all family members, both healthy and sick, especially for diabetes mellitus sufferers, support is needed because it can have a positive impact on psychological health, physical well-being and quality of life (Ramadhani, D. Y., Agusman, F. and Hadi, 2020). From the results of the study, it is said that there is a relationship between family support and dietary compliance in people with diabetes mellitus, where diet is one of the management of diabetes mellitus (Jamaludin and Choirunisa, 2019).

Self-efficacy is a belief that is owned by a person in his ability to exercise some form of control over the function of the person himself and events in his environment (Manuntung, 2018). Bandura (1994) also states that self-efficacy determines how a person feels, thinks, motivates himself and behaves (Manuntung, 2018). Coofman (2008) says that self-efficacy is related to behavior in diabetes self-management, where self-efficacy provides an opportunity to develop self-confidence in managing diabetes which is also influenced by physical readiness, role models, experience and appreciation (Ramadhani, D. Y., Agusman, F. and Hadi, 2020).

Apart from family support and self-efficacy, social support is also very helpful for people with diabetes mellitus which can improve diabetes control (Akoit, 2015). Social support is assistance or support received by individuals from certain people from their lives that make individuals feel cared for, valued and feel loved (Tumanggor, R., Ridho, 2017). Social support is beneficial for health and well-being regardless of the amount of stress experienced by individuals (Setyawan, 2019). Almost every individual is unable to solve the problem by themselves, because they need help from other people, which based on the results of research social support is an important mediator in solving problems that are owned by individuals (Setyawan, 2019). Based on the results of research that has been carried out, the results of this study indicate that there is a relationship between self-efficacy and social support for self-care management in patients with type 2 diabetes mellitus, as seen from the spearman rank correlation value with $p = 0.0001 < \alpha = 0.05$ (Putra, P. W. K. and Suari, 2018). The aim of this research is the relationship between family social support and self-efficacy on the prevention of complications in diabetes mellitus sufferers at Palembang Health Center.

B. Literature Review

1. Diabetes mellitus is a group of metabolic disorders characterized by an increase in glucose levels in the blood or hyperglycemia, which is caused by damage to insulin secretion, insulin action, or both (Smeltzer, 2013). Diabetes mellitus is a progressive chronic disease characterized by the inability of the body to metabolize carbohydrates, proteins and fats, which leads to hyperglycemia or high blood glucose levels (Black and Hawks, 2014, p. 631). Diabetes mellitus occurs because beta cells cannot produce insulin or because insulin is not produced in sufficient quantities (DiGiulio, M., Jackson, D. and Keogh, 2014).

2. Social support is defined as information in verbal or non-verbal, suggestions, real help or behavior that has been given by people who are familiar or close to the subject in their social environment or in the form of the presence of things that can provide benefits emotional impact on the behavior of the recipient (Tumanggor, R., Ridho, 2017). Social support is a condition that is obtained from other people so that
individuals will know that there are other people who care, respect and love them (Anggina, L. L., Hamzah, 2010).

3. Family support is the attitude, action and acceptance of the family towards its members (Puspitaningrum, I. and Hartiti, 2017). Friedman (2010) says that family members view that supportive people are always ready to provide help and assistance if needed (Puspitaningrum, I. and Hartiti, 2017). The family has a big role in providing support to each of its members (Pranata, Lilik, Dheni Koerniawan, 2019).

4. Self-efficacy is a belief that an individual has on his or her ability to determine and carry out the various actions needed to achieve success (Hidayat, N. and Atmoko, 2014). The self-efficacy possessed by the individual participates in determining the actions that will be taken to achieve a goal, including the estimation of various events faced (Manuntung, 2018). Self-efficacy is one of the cognitive factors that determine a person's attitude and behavior in a problem, with confidence and ability to solve problems (Hendriani, 2018).

C. Methods

1. Research Design

   This type of research is a quantitative study using an analytic survey design using a cross sectional design. This cross sectional survey research design is a study to study the dynamics between risk factors by approaching, observing or collecting data at once (Notoatmodjo, 2018).

   In this study, the independent variables in this study were family social support and self-efficacy, while the dependent variable in this study was the prevention of complications in diabetes mellitus sufferers. This study aims to determine the relationship between family social support and self-efficacy on the prevention of complications in diabetes mellitus patients at Palembang Health Center.

2. Participants / Respondents / Population and Sample

   Population is a collection of all elements or units to be studied (Asra, A., Irawan, P. B. and Purwoto, 2016). The research population is also an entire individual or object or event that can be recognized as a generalization of research results (Praptomo, A. J., Anam, K. and Raudah, 2017). Population is not just the number of individuals or objects to be studied but also includes all the characteristics or properties possessed by the object or subject (Sugiyono, 2015).

   In this study, the population was diabetes mellitus patients who visited the Palembang health center. The number of visits from March to May 2020 were 83 respondents. Inclusion Criteria: Diabetes mellitus sufferers who went to Palembang Health Center. Respondents who have not had chronic complications (coronary artery disease, hypertension, stroke, leg ulcers, diabetic retinopathy, diabetic neuropathy, and diabetic nephropathy). Exclusion Criteria: Respondents who refuse to become respondents. Respondents who did not follow the research to completion. The sample is part of the number and characteristics of the population to be studied (Sugiyono, 2015, p. 81). The sample can also be said to be an object that is considered to represent the entire population (Notoatmodjo, 2018). In this study, the sampling technique used was purposive sampling, where sampling using this technique was based on certain considerations made by the researcher himself, based on previously known characteristics or traits in the population. Determination of the number of samples in this study using the Slovin formula approach, obtained as many as 46 research samples.
3. Data Collection

The data collection technique is a process which is used for research purposes where the data that has been collected is to test the hypotheses that have been formulated (Rukajat, 2018). Primary data is data that has been obtained directly from the object or individual to be studied and then processed by the author or researcher himself (Rukajat, 2018). In this study, primary data were collected by means of respondents filling out a questionnaire prepared by the researcher at the research location. In this study, the respondents were patients who underwent treatment at the Puskesmas, during the data collection process of respondents who came more than once, data collection was carried out only once. In conducting this research, the researcher needs a research assistant, which for the research assistant the researcher asks for help with a research assistant who is taken from the research partner himself. Research assistants in this study can assist researchers in carrying out the data collection process where before the data collection process is carried out, the researcher will perform a perception equation with the research assistant. Secondary data is data that has been obtained or obtained from a second source or can be said to be data obtained from other people or other institutions (Wagiran, 2019). In this study the data were obtained from the Palembang Health Center. Based on a preliminary study conducted at the Puskesmas, it was found that there was an increase in the number of visits in the last three months with a total of 83 people.

4. Data Analysis

The data that will be used in research is not obtained just like that, which must go through the data collection process, the data collection process can be done using data collection tools or what is often referred to as a research instrument (Swarjana, 2016). In this study, the tools used for data collection were.

The questionnaire or what can be referred to as a questionnaire is a list of questions that must be filled in by the respondent to be measured (Rukajat, 2018). The questionnaire is a list of questions that have been well compiled, are mature, where the respondent only needs to provide answers or by giving certain signs (Notoatmodjo, 2018). In this study, using four questionnaires, namely social support, family support, self-efficacy and prevention of complications in diabetes mellitus. In the social support questionnaire, there are 11 questions which consist of seven positive questions and four negative questions. The social support questionnaire uses a Likert measurement scale which consists of four answer choices, namely, strongly agree = 4, agree = 3, disagree = 2 and disagree = 1 on positive questions and if the questions are negative then vice versa. The family support questionnaire consists of 11 questions consisting of six positive questions and five negative questions. The family support questionnaire has four answer choices, namely, never = 1, rarely = 2, often = 3, always = 4 on positive questions, the opposite will apply if the questions are negative. The self-efficacy questionnaire consisted of 8 questions, all of which were positive questions. The self-efficacy questionnaire uses a Likert measurement scale consisting of four answer choices: never = 1, rarely = 2, often = 3 and always = 4. The questionnaire for preventing complications in diabetes mellitus sufferers consists of 10 questions of which eight are positive and 2 negative question items. The questionnaire for the prevention of complications in diabetes mellitus uses a Likert scale with four answer choices, namely never = 1, rarely = 2, often = 3, and always = 4 which applies to positive statements, the opposite will apply to negative statements.
D. Results and Discussion

a. Results

That as many as 32 respondents (69.6%) with moderate social support and as many as 14 respondents (30.4%) with high social support, while for low social support there were no respondents (0%). That there are 2 respondents (4.3%) with low family support, while on moderate family support there are 38 respondents (82.6%) and there are 6 respondents (13%) high family support. That there are 14 people (30.4%) with moderate self-efficacy and as many as 32 respondents (69.6%) with high self-efficacy while there are no respondents (0%). That the respondents with moderate complication prevention level were 28 respondents (60.9%) and respondents with a high complication prevention rate were 18 respondents (39.1%) whereas with low complication prevention rates there were no respondents (0%). (See table 1)

<table>
<thead>
<tr>
<th>Domains</th>
<th>Categories</th>
<th>High F (%)</th>
<th>Medium F (%)</th>
<th>Low F (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Support</td>
<td></td>
<td>14 (30.4)</td>
<td>32 (69.6)</td>
<td>0</td>
</tr>
<tr>
<td>Family Support</td>
<td></td>
<td>6 (13)</td>
<td>38 (82.6)</td>
<td>2 (4.3)</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td></td>
<td>32 (69.6)</td>
<td>14 (30.4)</td>
<td>0</td>
</tr>
<tr>
<td>Complication prevention</td>
<td></td>
<td>18 (39.1)</td>
<td>28 (60.9)</td>
<td>0</td>
</tr>
</tbody>
</table>

The results of the correlation between social support and prevention of diabetes mellitus complications can be concluded that respondents with high social support have a low rate of prevention of diabetes mellitus complications as many as 8 respondents (57.1%), and respondents who have a high rate of prevention of diabetes mellitus complications who have moderate social support there are as many as 20 respondents (62.5%). The analysis was carried out using the Kendall Tau test, which obtained a p-value of 0.735, where H0 was accepted, it can be concluded that there was no relationship between social support and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. (See table 2)

Table 2. The correlation of domains and the complications prevention of DM

<table>
<thead>
<tr>
<th>Domains Correlation</th>
<th>p-value</th>
<th>Σ/ σ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support – the Complications prevention of DM</td>
<td>0,735</td>
<td>0,51 σ</td>
</tr>
<tr>
<td>Family support – the Complications prevention of DM</td>
<td>0,76</td>
<td>0,261 σ</td>
</tr>
<tr>
<td>Self Efficacy – the Complications prevention of DM</td>
<td>0,323</td>
<td></td>
</tr>
</tbody>
</table>

The results of the correlation test between family support and the prevention of complications of diabetes mellitus can be concluded that 14 respondents who received moderate family support who had a high complication prevention rate were 14
respondents (36.8%) and respondents who had high family support with a low rate of prevention of complications of diabetes mellitus were found. as many as 2 respondents (33.3%). Bivariate analysis carried out using the Kendall Tau test obtained a p-value of 0.76 and H0 was accepted, so it can be concluded that there is no relationship between family support and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. (See table 2)

The results of the correlation test that has been carried out between self-efficacy and the prevention of complications of diabetes mellitus, it can be concluded that respondents who have a moderate level of self-efficacy with the prevention of complications of diabetes mellitus prevention are as many as 7 respondents (50.0%), and respondents with the prevention of complications of diabetes mellitus. 21 respondents (65.6%) had a high self-efficacy level. The analysis was carried out using the Kendall Tau test, the p-value was 0.323 and H0 was accepted, so it could be concluded that there was no relationship between self-efficacy and the prevention of complications in people with diabetes mellitus at Palembang Health Center. (See table 2)

b. Discussion

The relationship between social support and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. Based on the results of the correlation test that has been carried out between social support and the level of prevention of diabetes mellitus complications, it can be concluded that respondents with high social support have a low rate of prevention of diabetes mellitus complications as many as 8 respondents (57.1%), and respondents who have a rate of prevention of diabetes complications. 20 respondents (62.5%) had high mellitus who had moderate social support. The analysis was carried out using the Kendall Tau test, which obtained a p-value of 0.735 where H0 was accepted, it can be concluded that there was no relationship between social support and the prevention of complications in people with diabetes mellitus at Palembang Health Center. The obtained correlation coefficient value is 0.51 which means that the closeness value of this relationship is sufficient between social support and the prevention of complications of diabetes mellitus (Indaryati S, 2019).

The direction of the relationship in this variable is the direction of a positive relationship, which means there is a unidirectional correlation so that it can show that the higher the social support obtained, the higher the level of prevention of diabetes mellitus complications. The results of this study are in line with research conducted by (Christanty, D. A. and Wardhana, 2014) which obtained a p-value of 0.716> 0.05, which states that there is no relationship between perceptions of social support and self-acceptance in post-amputation diabetes mellitus patients. However, the research is also inversely proportional to the results of research conducted by (Utami, 2016) which based on the results of the study show that there is a relationship between family social support and medication adherence with a p-value of 0.000 <0. 05. Sarason (1983) states that social support is an existence, sadness, the exclusion of people who can be relied on, respect and love us (Tumanggor, R., Ridho, 2017).

According to the researcher's analysis, every social support that an individual receives will vary because each individual's character, nature and behavior that is owned by an individual is acceptable in society and some that cannot be accepted in the surrounding community as well. on the contrary, where not all individuals can accept the opinions or support that has been given by those around them. Not all
circles can accept and care about the circumstances experienced by people around them so that it can make individuals feel shunned by those around them. From the results of research conducted by researchers, it was found that there was no relationship between social support and the prevention of complications in people with diabetes mellitus. However, the direction of the relationship in the results shows a positive direction, which means that the higher the social support obtained, the higher the level of prevention of complications in diabetes mellitus will be carried out.

The relationship between family support and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center Based on the correlation test conducted by researchers between family support and the prevention of diabetes mellitus complications, it was concluded that 14 respondents who received moderate family support had a high complication prevention rate (36.8%) and respondents who have high family support with a low level of prevention of diabetes mellitus complications are 2 respondents (33.3%). Bivariate analysis which was carried out using the Kendall Tau test obtained a p-value of 0.76 and H0 was accepted, so it can be concluded that there is no relationship between family support and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. The direction of the relationship in this variable shows the direction of a positive relationship, which means that the higher the family support you get, the higher the level of prevention of diabetes mellitus complications. The results of this study are in line with research conducted by (Astuti, Paramanitaya and Wahyuningsih, 2015, p. 110) with a p-value of 0.937> 0.05 which states that there is no relationship between family support and respondent compliance in undergoing the type diabetes mellitus diet.

This study is also inversely proportional to research conducted by (Jamaludin and Choirunisa, 2019) whose name the results of this study indicate that there is a relationship between family support and dietary adherence in people with diabetes mellitus with a p-value of 0.001 <0.05. Family support is an attitude, acceptance and action from within the family with sick sufferers, where the family functions as a support system that always provides assistance and assistance if needed (Muhith, A., & Siyoto, 2016). According to the researcher's analysis, every support that an individual gets from his or her family is different because it depends on the attitude and actions that the individual raises himself (Elina Susanti, A Manurung, 2018). In addition, the support received by individuals will vary due to the structure within the family itself, where not every individual will live together with the nuclear family. The busyness of each family member can reduce the support given to family members who need it so that it does not allow individuals to prevent complications that may occur in people with diabetes mellitus(Hardika & Pranata, 2019).

From the results of the research conducted, it was found that there was no relationship between family support and the prevention of complications in diabetes mellitus. However, from the results of the correlation, it is found that the direction of the resulting relationship shows a positive direction, which means that the higher the family support received, the higher the rate of complication prevention will be. The relationship between self-efficacy and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center.

Based on the correlation test conducted by researchers using the Kendall Tau test, it can be concluded that respondents who had a moderate level of self-efficacy with high diabetes mellitus prevention complications were 7 respondents (50.0%), and respondents with low diabetes mellitus complication prevention 21 respondents (65.6%) had a high self-efficacy level. The analysis was carried out using the Kendall Tau test, the p-value was 0.323 and H0 was accepted, so it could be concluded that
there was no relationship between self-efficacy and the prevention of complications in diabetes mellitus sufferers at Palembang Health Center. The results of this study are in line with research conducted by (Ariesti, E. and Pradiktama, 2018) with a p-value of 0.155> 0.05, which means there is no relationship between self-efficacy and adherence to elderly hypertension treatment at Puskesmas Bareng Malang City. However, this research is also not in line with the research conducted by (Kawulusan, K. K., Katuuk, M. E. and Bataha, 2019) where the results of this study show that there is a relationship between self-efficacy and adherence to taking medication with a p-value of 0.000.<0.0. Self-efficacy is the level of confidence that a person has in his ability to complete tasks so that they can solve existing problems (Hidayat, N. and Atmoko, 2014). According to the researcher's analysis, individual self-efficacy cannot be a motivation in preventing complications of diabetes mellitus because there is no help received from people around them so that nothing can influence or convince individuals that individuals can achieve success in preventing complications of diabetes mellitus.

E. Conclusion
The results show the importance of participation from various aspects, so social support, family and efficacy have no meaningful relationship prevent complications.

F. References


