RELATION BETWEEN FAMILY SUPPORT AND STAB FEAR IN DIABETIC PATIENTS USING INSULIN INJECTION

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Abstract

Diabetes mellitus (DM) is *a group* of *metabolic diseases characterized* by *hyperglycemia conditions (increased blood glucose levels) caused* by abnormalities in *insulin secretion, irregular insulin action, or perhaps both. The treatment* given *to DM patients is generally given orally and parenterally by insulin injection. This* injection *has a psychological impact* in the *form of fear of* a *needle stabbing both in the infusion and independent blood sugar checking. This study aimed to determine the effect of family support on* the *fear of diabetic patients who use insulin. The* research instrument *used this research instrument using* the Diabetes Fear Of Injecting And Self- Testing Questionnaire (*D-FISQ)* for *insulin injection fear level* questionnaire *sheet and Hensarling's Diabetes Family Suppor Scale (HDFSS) for family support. The sample used was 30 people. The results showed a significant relationship between family support and patient fear levels (p = 0.02< 0.05).*

Keywords: *Insulin Injection, stab fear, family support*

INTRODUCTION

Diabetes Mellitus (DM) is a disease of the endocrine system characterized by an increase in high glucose levels (Hyperglicemy); this condition is associated with the failure of the pancreas organs to provide insulin hormones, the presence of insulin resistance, or both. DM is one of the fastest-growing diseases in the whole world. The International Diabetes Federation (IDF) noted in 2019 the global prevalence of diabetes was 9.3% (463 million people), increasing to 10% in 2021 and projected to be 10.2% (578 million) in 2030 (Cole & Florez, 2020). The highest prevalence is found in urban rather than rural areas and in high-income countries rather than low-income countries (Saeedi et al., 2019). It is estimated to affect 693 million adults worldwide by 2045. [1]. In Southeast Asia, Indonesia is the only country on the list of 7 of the ten most DM sufferers (10.7 million people). Results of Basic Health Research (Riskesdas) 2018, Riau is one of the provinces with the highest increase in the prevalence of 0.9% (Kementerian Kesehatan RI., 2020)

Diabetes has various microvascular and macrovascular complications that attack organs and threaten life. Macrovascular complications include cardiovascular disease (CVD), peripheral artery disease (PAD), and cerebrovascular disease, while microvascular complications consist of diabetic nephropathy, diabetic microangiopathy, diabetic neuropathy, and diabetic retinopathy (Paul et al., 2020).. Good glycemic management will slow down the emergence of these various complications.

In general, the therapy used in patients with type 1 DM is insulin replacement and oral hypoglycemic drugs for type 2 DM. Still, sometimes a combination of the two is needed in patients who cannot achieve the desired therapeutic results with only oral therapy(Padhi et al., 2020). Insulin injection therapy is the most effective therapy to maintain blood sugar levels within normal ranges, and initiating initial insulin injections is a recommendation on the clinical management guidelines of Type 2 Diabetes (Padhi et al., 2020), But the use of insulin injection therapy often gets a rejection by patients. Several factors cause insulin injection therapy to be reluctantly carried out by patients, including feelings of failure and frustration, loss of personal life control, health problems caused by insulin injection, and stress in insulin injection. In addition, fear of injection, pain caused, shame, and fear of hypoglycemia as a side effect of insulin are also causes of refusal to use insulin injection Patients who receive insulin injection therapy should perform Capillary blood glucose (CBG) examinations regularly. Monitoring CBG by poking a finger can also cause psychological distress. Fear of insulin injections and CBG testing is one of the causes of non-compliance in DM patients that leads to ineffective glycemic control and can increase the risk of complications of type 1 diabetes. (Ultimate & Chamroonsawasdi, 2020).

Family support is one of the factors that influence patients in carrying out treatment related to diabetes mellitus, the information provided by the family dramatically affects the patient's compliance in running insulin therapy, such as the benefits of doing insulin therapy and how to do the injection independently.

The preliminary study was carried out at the health center Simpang Tiga Pekanbaru in June 2022 on ten diabetic patients with insulin injection; six people said they had refused the therapy, four people said they were afraid whenever they had to do an injection and check peripheral blood sugar, four people did not dare to do their injection. Two people felt anxious every time they were about to be injected.

RESEARCH METHODS

The study was a correlational descriptive study with a cross-sectional approach. The samples were 30 patients DM in the Community Health center Simpang Tiga Pekanbaru, who were selected through a purposive sampling technique. Data was collected using the Diabetes Fear Of Injecting And Self- Testing Questionnaire (D-FISQ) for insulin injection fear level questionnaire sheet and Hensarling's Diabetes Family Suppor Scale (HDFSS) for family support. Bivariate analysis was conducted using the Chi-square method to test the association between family support and Insulin Injection Fear.

RESEARCH RESULT

Table 1. Distribution of respondent characteristics.

Characteristics.	n	%
1. Age		
• 36-45 y	8	26,7
• 46-55 y	16	53,3
• 56-65 y	6	20,0
1.Gender		
• Male	8	26,7
• Female	22	73,3
2.Education		
• Primary School	12	
• High school	9	40
• Diploma&Graduate Diploma	9	30
3.Suffering DM		30
• < 1 y	0	0
• 1-3 y	11	36,7
• 4-10 y	19	63,3
• > 10 y	0	0
4.Injection insulin		
•< 1 y	16	53,3
•1-3 y	11	36,7
•> 3 y	3	10
5. Employment		
• Employed	20	40
• Housewife	10	60

From the data above, it is known that the majority of respondents' age is 46-55 years consists of 22 female (73,3%) were Elementary education 40%. They have been suffering from diabetes for 4-10 years (63,3%) and get insulin injection therapy less than 1 year old (53,3%).

Table 2. Patient's level of fear

Variabel	n	%
1. Level of fear		
• Hight	18	60
• Low	12	40
2.Family Support		
• Hight	8	27
• Middle	10	33
• Low	12	40

From the table, it is known that most respondents experienced a high level of fear of stabbing at insulin injections and blood sugar checks (60%), and only 40% had a common fear. Of the overall respondents who had high fear, the majority were in the age range of 35 – 45 years (44%), 46-55 years (38%), and 56 – 65 years (18%), female gender (88%) High school education level (61%) and long insulin therapy less than one year.

Table 3. Chi-square test association between family support and insulin injection fear.

Injection Fear	**Family Support**							***p-Value***
	High		**Midle**		**Low**		∑	
	f	%	f	%	f	%		
High	1	5,6 %	7	38,8	10	55,6	18	0,02
Low	7	58,3	3	25	2	16,6	12	

Based on the results obtained from the analysis using the chi-Square test in table 3, the p-value was 0.02 (<0.05). It explained a significant association between family support and stabbing fears in Diabetic patients who used insulin injections.

DISCUSSION

For gender in this study refert to table, it was found that the percentage of women was more significant than men, and 90% of housewives were. Similar to smokovski's research in Macedonia, of the 84,568 diagnosed DM cases, 57.3% were Women, and 42.7% were men; this was influenced by men's physical activity more given their involvement in agriculture, while Women stayed at home more with the same diet (Smokovski et al., 2018). In addition, the research activities of Mirzaei et al. in Iran found a link between the dominant obesity rate in women and an increase in the incidence of DM in women (Mirzaei et al., 2020)

In this study's prevalence of education in DM patients, most respondents had higher education and diplomas (60%) and primary school 40%. This result is different from previous studies. Sacerdote et al. found that there was an increased risk of DM in populations with low education compared to higher education (Sacerdote et al., 2012), a correlation between low levels of education to the incidence of obesity [, the presence of harmful nutritional consumption behaviours, lower physical activity and higher psychological distress at low education levels (Veghari et al., 2019). The mortality rate of DM patients with low education levels is also 28% higher than that of those with high education. (Dray-Spira et al., 2018)

Type 2 DM is a chronic hyperglycemic condition with a wide range of insulin resistance and deficiency. Prolonged hyperglycemia and an increase in fatty acids make harmful changes to the processes of apoptosis, regeneration and cell function, eventually leading to micro and macrocellular complications. In the course of dm type 2 disease, insulin disorders occur long

before the diagnosis of diabetes (Hanefeld et al., 2020). If previously insulin administration was only given to patients who failed to know blood glucose was stretched normally by oral medication, now insulin is given early with various considerations.

Table 1 shows that most respondents suffer from DM in the range of 4-9 years (63.3%) with a long time of receiving therapy insulin < from 1 year. Early administration of insulin therapy in patients with DM aims to protect the function of pancreas cells, other organs and endothelium from hyperglycemic conditions; even insulin can improve hyperglycemic conditions in just a few days [15]. In insulin administration, the dose is adjusted to the needs of the target achievement of individual HbA1c. But in the course of the disease, DM type 2 patients will end up with insulin dependence (Hanefeld et al., 2020) (Seufert et al., 2019)

Refers to previous research, fear is a normal response When stimuli that appear in the prediction are detrimental or can pose a danger. Although the majority of stabbing and syringe fear is more dominant in children (20% - 50%), it also occurs in adults aged 20 -40 years(20%-30%), and this fear decreases with age (McLenon & Rogers, 2019). The fear of injection in diabetic patients has been widely explained in various studies; the majority Diabetes patients have a fear of insulin self-injection, whereas patients who have fear have higher HbA1c levels and less frequent blood sugar monitoring (Cemeroglu et al., 2018), fear of insulin injection also occurs in gestational diabetic patients, fear is known not to be affected by women's age and insulin dose; however, it diminishes over time (Sangha et al., 2020). Aleali et al. also explained that there was a significant association between education levels and insulin injection fears, those with low education had more difficulty tolerating pain from insulin administration(Aleali et al., 2018)

Fear that cannot be suppressed adaptively will develop into anxiety. (Sangha et al., 2020), and finally gave a negative perception of insulin therapy. Negative perceptions of insulin can arise from family experiences or relationships that undergo insulin therapy experiencing complications and even leading to death. (Kruger et al., 2020) . This fear of insulin injection and CBG testing is often associated with non-compliance in DM patients, which leads to inadequate glycemic control and can increase the risk of severe diabetic complications.
DM is a complex chronic disease that requires ongoing medical care with a multifactorial risk reduction strategy beyond glycemic control. Ongoing diabetes self-management education and support are essential to prevent acute complications and reduce the risk of long-term complications. (Association, 2021). Most of a patient's diabetes management occurs within their family and social environment, so family support is critical to the success of patient management. The Institute for Patient-and Family-Centered Care defines a family member as two or more people who are related in any way—biologically, legally, or emotionally (Cené et al., 2020)

Family involvement in managing diabetic patients can appear in various aspects such as stress management, physical activity, provision of appropriate food, and as a motivator, where the support affects 16-79% of therapeutic success.(Ligita et al., 2021). Family support is one of the factors that influence patients in carrying out treatment related to diabetes mellitus, the

information provided by the family greatly affects the patient's compliance in running insulin therapy, such as the benefits of doing insulin therapy and how to do the injection independently. In this case, social support, namely the family, continues to try to find various information about the health of their family members. If the patient does not receive support in the form of information about his condition, there will be some difficulties in undergoing therapy (Agerskov et al., 2020)

However, several studies have found family behaviors that have a detrimental impact on patients' diabetes management. The lifestyle changes necessary for optimal diabetic self-management often conflict with the already running family routine, changes in the type of food prepared and consumed at home, non-working time for family members to attend medical visits with patients, and re-prioritizing family finances, all of which can affect family routines.

In studies of adults with type 2 diabetes, it has been reported that non-supportive behavior of family members is associated with less adherence to one's diabetes treatment regimen and poorer glucose control. Family members can sabotage or weaken a patient's self-care by providing unhealthy foods, tempting patients to eat unhealthy foods, or questioning the need for medication (Mayberry et al., 2019)]. In table 2, it can be seen that the majority of patients have low family support, 12 people (40%), moderate ten people (33%), and high eight people (27%). In respondents with low support, the majority (8 people) have an age range of 35-45 years, long-suffering DM from 4-5 years, gender female with a high school education level. Meanwhile, respondents with high support come from the age group of 56-65 years and have a duration of DM of 1-3 years and a duration of insulin therapy of less than one year. Based on Hensarling's Diabetes Family Suppor Scale (HDFSS) questionnaire used, it can be seen that respondents who have less support in the form of lack of information provided by the family, lack of time and facilities provided by the family, and lack of family assistance in the treatment process. It is also found in the research of Baig et al. (Baig et al., 2020)

Family is an important part of everyday life. In addition, the health and the emotional and social well-being of each family member are essential to the well-being of the whole family (Agerskov et al., 2020). Family support is one of the factors influencing the success of therapy in DM patients; Family members are the main source of emotional and instrumental support. Instrument support includes helping patients complete specific tasks, such as accompanying them to a health facility or assisting in insulin injections.

In contrast, emotional support can include providing comfort and encouragement when patients face distress or frustration during their lengthy diabetes care (Pamungkas & Chamroonsawasdi, 2020). In table 3, the majority of respondents who received low family support (55.6%) had a great fear of insulin injection. Conversely, those with high family support have common fears about insulin injections. Alhaidar et al. state the importance of family support in treating DM patients, which can act as a protective factor against anxiety-related symptoms. However, Their support is limited to emotional aspects and involves guidance and supervision.

CONCLUSIONS AND SUGGESTIONS

From the results of this study, it can be seen that there is a significant relationship between family support and fear of insulin injection; this needs to be a concern for the importance of family involvement in the therapeutic management of diabetic patients .

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