

**Rahmad Wahyudi, Nisfil Mufidah,  
Sabila Firdausita**

STIKes Ngudia Husada Madura, Indonesia

Corresponding Author: Rahmad Wahyudi  
Email: rahmadwahyudinhm@gmail.com

## **Diabetes Self-Management and Distress Levels in Patients with Diabetes Mellitus: a Cross-Sectional Study**

### **Article Info**

Online : <http://journal.umy.ac.id/index.php/ijnp>  
ISSN : 2548 4249 (Print)  
: 2548 592X (Online)  
DOI : 10.18196/ijnp.v6i1.16880

### **Article History**

Received : 22 November 2022  
Revised : 11 February 2023  
Accepted : 12 February 2023

### **Abstract**

**Background:** Patients suffering from Diabetes Mellitus face challenges related to care management disease and proper treatment. Distress condition covers passionate stretch, enthusiasm, and behavioral challenges and consequences of the burden of self-management.

**Objective:** This study aims to identify the relationship between Diabetes Self-Management and distress Levels in Diabetes Mellitus patients.

**Methods:** The study utilized analytic correlation through a cross-sectional approach. Diabetes self-management was the independent variable, and distress level was the dependent variable subordinate.

**Result:** 55 patients were selected using the purposive sampling technique at Wound Center Madura with inclusion criteria, such as DM type 1 and 2 patients undergoing wound care with ulcer diabetes. Distress instruments were Diabetes Distress Scale and Diabetes Self-Management survey. This ponder utilized the Spearman rank test. The measurable test showed  $p\text{-value} = 0.000 < \alpha = 0.05$ , indicating a relationship between diabetes self-management with distressed diabetes patients at Wound Center Madura, Indonesia. Nearly half of the diabetes patients had a high level of distress and emotional burden, indicating a high personal emotional burden, such as feeling tired in dealing with various disease management. This personal reaction can lead to feelings of fear and anger due to diabetes mellitus and the behavior of checking blood sugar independently with diabetes self-management control.

**Conclusion:** The goal of Diabetes Self-Management is to reduce Distress and control diabetes mellitus. In contrast, those with poor Diabetes Self-management control the risk of complications and tend to feel worried and frustrated because they cannot control their diabetes.

**Keywords:** diabetes mellitus; diabetes self-management; distress

### **INTRODUCTION**

Diabetes mellitus is a metabolic disease that has become a global health concern and is increasing in prevalence annually (Alfian et al., 2021). Diabetic

patients are exposed to a variety of stressors. They must adhere to various management diseases, treatment of the self, and analysis of probable routines that induce diabetic anxiety. Among these

are emotional stress, emotional and behavioral issues resulting from self-management of consequence burden, and diabetes-related anxiety (Ghaemi et al., 2021).

According to figures from the worldwide diabetes league, as many as 537 million individuals have been diagnosed with diabetes mellitus, with projections of 643 million in 2030 and 783 million in 2045 (Azadbakht et al., 2020). In 2021, the predominance of diabetes disease in Indonesia reached up to 19.5 million. This number has increased by 37% over the past decade (International Diabetes Federation, 2021). Research on 259 persons with sort two diabetes in Bangladesh between July 2019 and June 2020 revealed that 52.5% experienced diabetic distress (29.7% with moderate distress and 22.8% with high distress (Kamrul-Hasan et al., 2022). According to studies conducted in Bandung, 36.2% of diabetic patients fall into the pressure of distress group (Alfian et al., 2021).

175 individuals with diabetes mellitus visited Wound Center Madura in November-December 2021. Out of 10 patients, five had high levels of distress, two had moderate levels of difficulty, and three had low levels of discomfort. Based on the questionnaire, the patient believed that diabetes limited their life, particularly in activities, and that it would lead to significant long-term consequences, with the latter statement receiving the most points.

Several variables influence the distress of diabetic patients, including duration of illness, age, complications, gender, comorbidities, degree of education, and self-management. (Hu et al., 2020) Individuals with diabetes mellitus must prevent distress and other emotional issues. Given the high risk of trouble in diabetes mellitus patients, interventions are necessary to strengthen the emotional response of people with diabetes mellitus, such as providing education about Diabetes Self control so that patients can understand the issues in an organized and coordinated way, thereby reducing the risk of distress reduced (Erida Silalahi et al., 2021).

In DM type 1, the body's safe framework specifically assaults and destroys the insulin-producing cells found in the pancreas, damage to pancreatic  $\beta$  cells and resulting in absolute insulin deficiency (Amir et al., 2018). Distress type 1 diabetes mellitus patients

tend to have unstable emotions, such as fear, worry, and anger, due to lifestyle changes and limited physical activity (Kiriella et al., 2021).

DM type 2 is the most frequent diabetes. The emergence of diabetic distress in patients with DM type 2 results in high blood sugar levels, or vice versa, and increased distress symptoms associated with impaired glucose metabolism (Anita, 2020). The distress of DM type 2 patients who experience difficulties with self-care illustrates the distress due to the need to comply with the therapeutic management plan (Arifin et al., 2017).

The role of nurses in preventing distress or other emotional problems in people with diabetes mellitus is needed, namely strengthening the emotional response of people with Diabetes Mellitus, providing counseling and psychological therapy, and improving communication skills (Lambrinou et al., 2019), as well as providing education about Diabetes Self-Management Education (DSME). Thus, patients can understand and better solve the issues related to their malady so that the risk of distress can be reduced by coping with diabetes mellitus regimens (Erida Silalahi et al., 2021).

## METHOD

Cross-sectional correlation analysis was utilized in this study. This study used diabetic self-management as an independent variable and distress as a dependent variable. This research was conducted at the Wound Center Madura, Indonesia, with a population of diabetes mellitus patients experiencing distress treated at the Madura Wound Center, Indonesia, between March 2022 and June 2022. 102 patients and a total sample of 55 patients were selected using a purposive sampling technique. The inclusion criteria for respondents included type 1 and type 2 DM patients who signed an informed consent form, could read and write, and underwent wound care for diabetic ulcers. Meanwhile, exclusion criteria included patients undergoing long-term treatment for conditions other than diabetes and radiotherapy, chemotherapy, organ transplantation, and other chronic disease complications.

The Diabetes Self-Management Questionnaire (DSMQ) was used in this study consisting of 16 questions with parameters, Dietary adjustments,

Physical exercise, Medication, Blood glucose control, and Foot care. Meanwhile, in measuring distress levels, the Diabetes Distress Scale (DDS 17) (Alzughbi et al., 2020) from Polonsky et al. (2005), which has been translated and corrected into Indonesian by (Arifin et al., 2017) was used. The Diabetes Distress Scale (DDS 17) consists of 17 questions in the form of a Likert scale 1: no issue, 2: Mild issue, 3: Direct issue, 4: Quite social issue, 5: Genuine issue, 6: Exceptionally genuine issue. The assessment obtained a value divided into the number of questions so that an interpretation appears <2.0: Low distress, 2.0 – 2.9: Moderate trouble,  $\geq 3.0$ : High trouble with parameters, Emotional burden, Connection with Health personnel, Difficulty in self-care, and Interpersonal trouble.

The research information was assessed utilizing the Spearman rank statistic test with a certain level of 95% = 0.05 if the p-value was less than alpha. There was a correlation between diabetes self-management and anxiety in people with diabetes mellitus. The findings of the ethical clearance test (Ethical Clearance) with number: 1214/KEPK/STIKES-NHM/EC/V/2022 were declared by the Health Research Ethics Commission of the High School of Health Sciences (STIKes) Ngudia Husada Madura (Ethical Clearance).

## RESULT

Demographic general data discusses the characteristics of diabetes mellitus patients. This data is displayed within the frame of a recurrence dispersion table.

(see table 1)

Based on the frequency distribution of age data, a small portion of diabetes mellitus patients are between the age of 45-60 years (Late Adulthood), 60-75 years (Early Old Age), and 18 patients (32.7%). Based on gender frequency distribution, the majority of diabetes mellitus patients were female, with 36 patients (65.5%). Based on the length frequency distribution of diabetes mellitus, nearly half of diabetes mellitus patients had had diabetes for 5-10 years, with a total of 25 patients (45.5%).

(see table 2)

Based on the recurrence dispersion of *diabetes self-management data*, there were 29 patients (52.7%) with good diabetes self-management, 23 patients (41.8%) with moderate self-management, and 3 patients (5.5%) with poor self-management. Meanwhile, based on the level of distress, almost half of the diabetes mellitus patients were in the high distress category, which was 22 patients (40.0%), 18 patients (32.7%) in low distress, and 15 patients (27.3%) in moderate distress.

(see table 3)

Based on the cross-tabulation of data, almost half have sufficient distress, 15 patients (27.3%) have moderate distress, and 9 patients (16.4%) have low distress. Meanwhile, among patients with good diabetes *self-management*, 13 patients (23.6%) were with low distress. Based on the analysis of the *Spearman Rank test*, it was found that the *p-value* was 0.000, indicating that the *p-value* =  $< \alpha$  (0.05). The correlation coefficient value was 0.491, so  $H_0$  was accepted. It can be concluded that there was a relationship between *diabetes self-management* and the distress level at the Madura *Wound Center* with a moderate interpretation.

## DISCUSSION

The molecular and immunological perspectives between distress and DM should be comprehended and written herein well. Most patients aged 46 to 55 (early elderly) demonstrated effective diabetes self-management. As a person ages, their involvement with diabetes self-management and rational thought increase. This level of mental maturity prompts the patient to weigh the benefits and goals obtained through diabetes self-management against the risks encountered if this self-management is not performed. It is supported by a scholarly publication (Erida Silalahi et al., 2021). According to gender-based data, nearly half of diabetes mellitus patients are women who pay more attention to themselves during treatment and make more significant efforts to always adhere to treatment recommendations. It is supported by research (Anita, 2020) indicating that women appear to be more concerned with their health than men as they attempt self-management. Women have a greater propensity for negative vigilance when confronted with conflicts that cause the body

to produce negative hormones, causing stress, anxiety, and fear. Consequently, women will experience more significant stress when under pressure (Hu et al., 2020). Nearly half of diabetes mellitus patients have a history of suffering for 5 to 10 years, according to historical data. The longer a person has diabetes, the greater their capacity to comprehend and adapt to treatment. This knowledge encourages diabetes mellitus patients to anticipate and adapt better to stressors (Alzughbi et al., 2020).

The capacity of an individual with diabetes to comprehend the conditions caused by their disease, its management, and good self-management indicates diabetes self-management (Tareen & Tareen, 2017). Utilizing health services to obtain information about the management of diabetes mellitus by health professionals is one thing that can be done, in addition to the importance of routine blood sugar control for early detection of blood sugar level and the management of the risk of complications by implementing better diabetes self-management and being discipline (Alfian et al., 2021). Patients with diabetes mellitus will use routine self-checking of blood sugar as a guide for diabetes self-management, such as selecting foods for the diet, diabetes self-control bolster and diabetes-appropriate nourishments for food washroom clients with ineffectively controlled diabetes (Waxman, 2018), taking medication or insulin, engaging in physical activity, and utilizing health services for health checks (Enggarwati et al., 2020). People with diabetes mellitus will be motivated to manage the disease if they understand the management of diabetes mellitus, regardless of whether the management requires health services or is carried out independently (Dehghan et al., 2017). By concurring with diabetes self-control, such exercises incorporate glucose observation, adherence to endorsed solutions and diets, standard healthcare follow-up, and interest in other physical exercises (Alkhormi et al., 2022). Patients who understand their illness will be better at managing themselves. One of them is when the patient knows his blood sugar level by doing a blood sugar test independently so as not to avoid getting treatment late. The earlier the blood sugar levels are checked, the easier it is to control the risk of complications by implementing better diabetes self-management.

Emotional burden in diabetic individuals causes distress and tiredness in illness management. The emotional burden and regimen trouble spaces were combined and renamed “emotional and regimen-related burden.” The physician trouble space was too altered and renamed “physician- and nurture-related trouble (Arifin et al., 2017). Diabetes affects many aspects of life; therefore, this emotional response may include apprehension and rage (Khan & Choudhary, 2018). Elderly patients with comorbidities and higher levels of basic HbA1c play an essential role in interventions targeting emotional and related burdens of Distress that can improve glycemic control (Wong et al., 2017). People with diabetes must improve their adaptive coping abilities immediately after diagnosis. Since the patients receive lifestyle recommendations, they have felt emotional distress. It is supported by other research (Wardaningsih & PeprianaWidyaningrum, 2018). Distress, an emotional stress response, is most affected by emotional strain. People with diabetes experience stress from emotional pressure. It restricts sugar consumption and increases risk factors that worsen the condition of diabetics. DM people without emotional control are anxious (Kiriella et al., 2021). Diabetes alludes to an enthusiastic state where individuals encounter sentiments such as push, blame, or refusal that emerge from living with diabetes and the burden of self-management. Diabetes has been collected to awful well-being outcomes (Kreider, 2017). It impacts self-control and the amount of medicine taken by patients. When distress occurs, patients with diabetes mellitus have more symptoms, among other lifestyle changes. Distress symptoms can adversely affect glycemic control through deficient self-care behaviors (Kintzoglakis et al., 2022). Moreover, diabetes patients with negative mental changes impact metabolic control. Therefore, understanding the mental issues and the changes in glycemic control levels should be considered (Huynh et al., 2021). The researcher assumes that distress in diabetes mellitus causes various aspects of life to be limited. The adaptable coping ability possessed by people with diabetes must be strengthened since they have been first diagnosed with diabetes mellitus. It is because the emotional pressure starts when they first receive advice to change their lifestyle

Spearman Rank statistical analysis test showed a relationship between diabetes self-management and distress in diabetes mellitus patients at the Madura Wound Center with moderate strength. The better the diabetes self-management behavior is performed by people with diabetes mellitus, the lower the psychological impact of diabetes care will be. The lower the anxiety level at living with a chronic disease, the lower the risk and distress level will be. Compliance with diabetes self-management regimens results in controlled blood glucose levels, preventing disease complications (Haris & Kristianti, 2020). Normal blood glucose conditions can reduce the psychological burden that can result in psychological and emotional stress in people with diabetes mellitus (Lambrinou et al., 2019). According to research (Summers-Gibson, 2021), there is a connection between diabetes self-management and anxiety. It indicates that the poorer the adherence to self-management of diabetes care is, the greater the degree of anxiety experienced by people with diabetes mellitus will be. According to another study (Nanayakkara et al., 2018), a lack of self-management in diabetes mellitus patients might create stress, contributing to increased HbA1c levels. Numerous people with diabetes and depressive side effects endure substantial emotional trouble due to anxiety and diabetes-related issues. Self-management strives to maintain stable blood glucose levels to minimize complications, thereby mitigating the adverse physical and psychological effects of diabetes mellitus (Masi et al., 2020). Strict dietary recommendations will restrict the patient's eating habits and cause them to choose healthy meals, which might cause distress (Azadbakht et al., 2020). The temptation to consume items forbidden for diabetic patients and the presence of stress lead to non-compliance with the meal routine (Kheriji et al., 2022). While on a diet, the amount and duration of stress experienced by each individual vary, particularly concerning the quantity and incorrect eating habits before and after being diagnosed with diabetes (Zainudin et al., 2018). The researcher assumes that adherence to a self-management diabetes regimen will improve and keep glycemic control stable to maintain the condition so that it does not worsen. A good glycemic condition will reduce the risk of complications and reduce the psychological burden, which can result in high

emotional and psychic stress experienced by diabetes mellitus patients. DSME ought to take more into account the psychosocial aspects of living with diabetes. Specifically, instruction from specialists might reconsider approaches to decreasing the burden of living with diabetes and instructing coping components (Heise et al., 2022).

## CONCLUSION

There was a correlation between diabetes self-management and the distress level in individuals with diabetes mellitus. Diabetes self-management alluded to the capacity of an individual with diabetes to comprehend and execute treatment proposals and methods to control their blood glucose levels and constrain the risk of diabetes-related complications.

## REFERENCES

- Alfian, S. D., A. Wicaksono, I., A. Putri, N., & Abdulah, R. (2021). Prevalence of diabetes distress and associated factors among patients with diabetes using antihypertensive medications in community health centers in Bandung City, Indonesia. *Pharmaciana*, 11(2), 195. <https://doi.org/10.12928/pharmaciana.v11i2.20094>
- Alkhormi, A. H., Mahfouz, M. S., Alshahrani, N. Z., Hummadi, A., Hakami, W. A., Alattas, D. H., Alhafaf, H. Q., Kardly, L. E., & Mashhoor, M. A. (2022). Psychological Health and Diabetes Self-Management among Patients with Type 2 Diabetes during COVID-19 in the Southwest of Saudi Arabia. *Medicina (Lithuania)*, 58(5), 1–14. <https://doi.org/10.3390/medicina58050675>
- Alzughbi, T., Badedi, M., Darraj, H., Hummadi, A., Jaddoh, S., Solan, Y., & Sabai, A. (2020). Diabetes-related distress and depression in Saudis with type 2 diabetes. *Psychology Research and Behavior Management*, 13, 453–458. <https://doi.org/10.2147/PRBM.S255631>
- Amir, F., Mastutik, G., Hasinuddin, M., & Putra, S. T. (2018). Dhikr (Recitation) and Relaxation Improve Stress Perception and Reduce Blood Cortisol Level in Type 2 Diabetes Mellitus Patients with OAD. *Folia Medica Indonesiana*, 54(4), 249. <https://doi.org/10.20473/fmi.v54i4.10707>

- Anita, D. C. (2020). Komorbiditas, komplikasi dan kejadian distress pasien diabetes tipe-2. *Jurnal Kebidanan Dan Keperawatan Aisyiyah*, 15(2), 126–136. <https://doi.org/10.31101/jkk.646>
- Arifin, B., Perwitasari, D. A., Thobari, J. A., Cao, Q., Krabbe, P. F. M., & Postma, M. J. (2017). Translation, Revision, and Validation of the Diabetes Distress Scale for Indonesian Type 2 Diabetic Outpatients with Various Types of Complications. *Value in Health Regional Issues*, 12, 63–73. <https://doi.org/10.1016/j.vhri.2017.03.010>
- Azadbakht, M., Taheri Tanjani, P., Fadayevatan, R., Froughan, M., & Zanjari, N. (2020). The prevalence and predictors of diabetes distress in elderly with type 2 diabetes mellitus. *Diabetes Research and Clinical Practice*, 163, 108133. <https://doi.org/10.1016/j.diabres.2020.108133>
- Dehghan, H., Charkazi, A., Kouchaki, G. M., Zadeh, B. P., Dehghan, B. A., Matlabi, M., Mansourian, M., Qorbani, M., Safari, O., Pashaei, T., & Mehr, B. R. (2017). General self-efficacy and diabetes management self-efficacy of diabetic patients referred to diabetes clinic of Aq Qala, North of Iran. *Journal of Diabetes and Metabolic Disorders*, 16(1), 10–14. <https://doi.org/10.1186/s40200-016-0285-z>
- Enggarwati, P., Dahlia, D., & Yona, S. (2020). Potensi Pelaksanaan Self Monitoring Blood Glucose Pada Pasien Diabetes Dalam Meningkatkan Kualitas Hidup dan Kontrol Glikemik. *Jurnal Ilmiah Ilmu Keperawatan Indonesia*, 10(02), 39–51. <https://doi.org/10.33221/jiiki.v10i02.560>
- Erida Silalahi, L., Prabawati, D., & Priyo Hastono, S. (2021). Efektivitas Edukasi Self-Care Terhadap Perilaku Manajemen Diri pada Pasien Diabetes Melitus di Wilayah Puskesmas Sukapura Jakarta. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 4(1), 15–22. <https://doi.org/10.56338/mppki.v4i1.1385>
- Ghaemi, F., Firouzabadi, F. D., Moosaie, F., Shadnoush, M., Poopak, A., Kermanchi, J., Abhari, S. M. F., Forouzanfar, R., Mansournia, M. A., Khosravi, A., Mohajer, B., Ramandi, M. M. A., Nakhjavani, M., & Esteghamati, A. (2021). Effects of a Mediterranean diet on the development of diabetic complications: A longitudinal study from the nationwide diabetes report of the National Program for Prevention and Control of Diabetes (NPPCD 2016-2020). *Maturitas*, 153(August), 61–67. <https://doi.org/10.1016/j.maturitas.2021.08.003>
- Haris, F., & Kristianti, L. Y. (2020). Fahni HarisLinda Yuli Kristianti 1 1. *Indonesian Journal of Nursing Practices*, 4(1), 21–27.
- Heise, M., Heidemann, C., Baumert, J., Du, Y., Frese, T., Avetisyan, M., & Weise, S. (2022). Structured diabetes self-management education and its association with perceived diabetes knowledge, information, and disease distress: Results of a nationwide population-based study. *Primary Care Diabetes*, 16(3), 387–394. <https://doi.org/10.1016/j.pcd.2022.03.016>
- Hu, Y., Li, L., & Zhang, J. (2020). Diabetes Distress in Young Adults with Type 2 Diabetes: A Cross-Sectional Survey in China. *Journal of Diabetes Research*, 2020, 6–8. <https://doi.org/10.1155/2020/4814378>
- Huynh, G., Tran, T. T., Do, T. H. T., Truong, T. T. D., Ong, P. T., Nguyen, T. N. H., & Pham, L. A. (2021). Diabetes-related distress among people with type 2 diabetes in Ho Chi Minh City, Vietnam: Prevalence and associated factors. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 14, 683–690. <https://doi.org/10.2147/DMSO.S297315>
- Kamrul-Hasan, A. B. M., Hannan, M. A., Asaduzzaman, M., Rahman, M. M., Alam, M. S., Amin, M. N., Kabir, M. R., Chanda, P. K., Jannat, N., Haque, M. Z., Banik, S. R., Hasan, M. J., & Selim, S. (2022). Prevalence and predictors of diabetes distress among adults with type 2 diabetes mellitus: a facility-based cross-sectional study of Bangladesh. *BMC Endocrine Disorders*, 22(1), 1–9. <https://doi.org/10.1186/s12902-022-00938-3>
- Khan, A., & Choudhary, P. (2018). Investigating the Association Between Diabetes Distress and Self-Management Behaviors. *Journal of Diabetes Science and Technology*, 12(6), 1116–1124. <https://doi.org/10.1177/1932296818789721>
- Kheriji, N., Boukhalfa, W., Mahjoub, F., Hechmi, M., Dakhlaoui, T., Mrad, M., Bahlous, A. H. S., Amor, N. Ben, Jamoussi, H., & Kefi, R. (2022). The Role of Dietary Intake in Type 2 Diabetes Mellitus: Importance of Macro and

- Micronutrients in Glucose Homeostasis. *Nutrients*, 14(10). <https://doi.org/10.3390/nu14102132>
- Kintzoglaniakis, K., Gkousiou, A., Vonta, P., Sagmatopoulos, A., & Copanitsanou, P. (2022). Depression, anxiety, and diabetes-related distress in type 2 diabetes in primary care in Greece: Different roles for glycemic control and self-care. *SAGE Open Medicine*, 10, 205031212210966. <https://doi.org/10.1177/20503121221096605>
- Kiriella, D. A., Islam, S., Oridota, O., Sohler, N., Dessenne, C., de Beaufort, C., Fagherazzi, G., & Aguayo, G. A. (2021). Unraveling the concepts of distress, burnout, and depression in type 1 diabetes: A scoping review. *EClinicalMedicine*, 40, 101118. <https://doi.org/10.1016/j.eclinm.2021.101118>
- Kreider, K. E. (2017). Diabetes Distress or Major Depressive Disorder? A Practical Approach to Diagnosing and Treating Psychological Comorbidities of Diabetes. *Diabetes Therapy*, 8(1), 1–7. <https://doi.org/10.1007/s13300-017-0231-1>
- Lambrinou, E., Hansen, T. B., & Beulens, J. W. J. (2019). Lifestyle factors, self-management and patient empowerment in diabetes care. *European Journal of Preventive Cardiology*, 26(2\_suppl), 55–63. <https://doi.org/10.1177/2047487319885455>
- Masi, G. N. M., Yulia, N., & Masfuri, N. (2020). Motivasi Melakukan Self Monitoring Blood Glucose Dengan Diabetes Self Management Pada Pasien Diabetes Melitus Tipe 2. *Jurnal Keperawatan*, 8(1), 121. <https://doi.org/10.35790/jkp.v8i1.36598>
- Nanayakkara, N., Pease, A., Ranasinha, S., Wischer, N., Andrikopoulos, S., Speight, J., De Courten, B., & Zoungas, S. (2018). Depression and diabetes distress in adults with type 2 diabetes: Results from the Australian National Diabetes Audit (ANDA) 2016. *Scientific Reports*, 8(1), 1–10. <https://doi.org/10.1038/s41598-018-26138-5>
- Summers-Gibson, L. (2021). The Relationships Between Diabetes Self-Care, Diabetes Time Management, and Diabetes Distress in Women With Type 2 Diabetes Mellitus. *Science of Diabetes Self-Management and Care*, 47(4), 245–254. <https://doi.org/10.1177/26350106211014438>
- Tareen, R. S., & Tareen, K. (2017). Psychosocial aspects of diabetes management: Dilemma of diabetes distress. *Translational Pediatrics*, 6(4), 383–396. <https://doi.org/10.21037/tp.2017.10.04>
- Wardaningsih, S., & PeprianaWidyaningrum, D. (2018). Pengaruh Intervensi Doa dan Dzikir Al-Ma'tsurat terhadap Skor Depresi pada Pasien Diabetes Melitus di Puskesmas Mlati 1. *Indonesian Journal of Nursing Practice*, 2(2), 54–60. <https://doi.org/10.18196/ijnp.2179>
- Waxman, E. (2018). *Comprehensive Diabetes Self-Management Support From Food Banks: A Randomized Controlled Trial*. 108(9), 1227–1234. <https://doi.org/10.2105/AJPH.2018.304528>
- Wong, E. M., Afshar, R., Qian, H., Zhang, M., Elliott, T. G., & Tang, T. S. (2017). Diabetes Distress, Depression and Glycemic Control in a Canadian-Based Specialty Care Setting. *Canadian Journal of Diabetes*, 41(4), 362–365. <https://doi.org/10.1016/j.jcjd.2016.11.006>
- Zainudin, S. B., Abu Bakar, K. N. B., Abdullah, S. B., & Hussain, A. B. (2018). Diabetes education and medication adjustment in Ramadan (DEAR) program prepares for self-management during fasting with telehealth support from pre-Ramadan to post-Ramadan. *Therapeutic Advances in Endocrinology and Metabolism*, 9(8), 231–240. <https://doi.org/10.1177/2042018818781669>

**Table 1 shows 3 data on the general characteristics of respondents related to the results of the study (age, gender, duration of DM disease)**

<b>Characteristics of Informants</b>	<b>Recurrence</b>	<b>Rate (%)</b>
<b>Age</b>		
20-30 years (early Adulthood)	0	0
30-45 years (Middle Adulthood)	14	25.5
45-60 years (Late Adulthood)	18	32,7
60-75 years (Early Old Age)	18	32,7
75-90 years (Middle Old Age)	5	9,1
Total	55	100
<b>Gender</b>		
Woman	36	65.5
Man	19	34.5
Total	55	100
<b>Long Suffering DM Type 2</b>		
<5 years	16	29.0
5-10 years	25	45.5
>10 years	14	25.5
Total	55	100

**Table 2 appears the frequency dissemination of patients with diabetes mellitus based on diabetes self-management and the level of distress of patients at Wound Center Madura**

<i>Respondent Characteristics</i>	Frequency	Percentage (%)
<b><i>Diabetes Self-Management</i></b>		
Poor	3	5,5
Enough	29	52,7
Good	23	41.8
<b><i>Distress Level</i></b>		
High	22	40.0
Moderate	15	27,3
Low	18	32,7
Sum	55	100



**Table 3. Cross-tabulation of the Relationship between Diabetes Self-management and distress level in Juvenile Diabetes Patients at the Wound Center**

		Distress						Sum	
		High		Moderate		Low			
		F	%	F	%	F	%	F	%
<i>Diabetes Self-Management</i>	Poor	3	5,5	0	0,0	0	0,0	3	5,5
	Enough	15	27,3	9	16,4	5	9,1	29	52,7
	Good	4	7,3	6	10,9	13	23,6	23	41,8
Total		22	40,0	15	27,3	18	32,7	55	100,0

*Spearman Rank Statistical Test*  
 $\alpha = 0.05$   
 $p = 0.000$   
 $r = 0.491$

**Table 4. The relationship between pregnant women's sexual function and Anxiety Levels (n = 62)**

Anxiety	Sexual Function				Total		p	r
	Normal		Sexual Dysfunction		n	%		
	n	%	n	%				
No Anxiety	7	11,3	7	11,3	14	22,6	0.000	0.475
Mild	2	3,2	24	38,7	26	41,9		
Moderate	0	0	15	24,2	15	24,2		
Severe	0	0	7	11,3	7	11,3		
Total	9	14,5	53	85,5	62	100		

\* $p < 0.005$