



**Self-Efficacy and Utilization of Prolanis Health Services for Type 2 Diabetes Mellitus Patients**

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### **ABSTRACT**

*The prevalence of type 2 Diabetes Mellitus (DM) continues to increase globally, including in Indonesia, causing a decrease in quality of life and the risk of serious complications. Objective This study aims to analyze the relationship between self-efficacy and the utilization of Prolanis health services in patients with type 2 diabetes mellitus. Specifically, the objectives of this study include Identifying the level of self-efficacy of type 2 DM patients who are members of the Prolanis group and Assessing the level of utilization of Prolanis health services by type 2 DM patients. The research method used a cross-sectional approach at the Lamongan Health Center from March to May 2023. The research sample was 125 DM patients in the Prolanis group who were taken by accidental sampling. The research instrument used a general self-efficacy questionnaire and a questionnaire on utilizing the Prolanis health service system compiled by researchers from the results of a literature review—data analysis using the Spearman Rank test. The results showed that 68% of respondents had high self-efficacy, and 51.2% utilized Prolanis health services well. The results of the Spearman Rank test  $p = 0.000$  and  $r = 0.763$  indicate a relationship between self-efficacy and the utilization of Prolanis health services for type 2 DM patients, and the correlation strength is strong and positive. The conclusion shows that type 2 DM patients with high self-efficacy tend to utilize prolonged health services than those with low self-efficacy.*

*Keywords: Self-efficacy, utilization of health services, prolongs, DM*

### **ABSTRAK**

Prevalensi Diabetes Melitus (DM) tipe 2 terus meningkat secara global, termasuk di Indonesia, menyebabkan penurunan kualitas hidup dan risiko komplikasi serius.. Tujuan Penelitian ini bertujuan untuk menganalisis hubungan antara efikasi diri dengan pemanfaatan layanan kesehatan Prolanis pada pasien diabetes melitus tipe 2. Secara spesifik, tujuan penelitian ini mencakup, Mengidentifikasi tingkat efikasi diri pasien DM tipe 2 yang tergabung dalam kelompok Prolanis dan Menilai tingkat pemanfaatan layanan kesehatan Prolanis oleh pasien DM tipe 2. Metode Penelitian dilakukan dengan pendekatan cross sectional di Puskesmas Lamongan pada bulan Maret hingga Mei 2023. Sampel penelitian adalah 125 pasien DM kelompok prolanis yang diambil secara accidental sampling. Instrumen penelitian menggunakan kuesioner general self-efficacy dan kuesioner pemanfaatan sistem pelayanan kesehatan prolanis yang disusun peneliti dari hasil literatur riview. Analisis data dengan uji Rank Spearman. Hasil penelitian menunjukkan bahwa sebagian besar 68% responden mempunyai efikasi diri tinggi, dan 51,2% memanfaatkan pelayanan kesehatan prolanis secara baik. Hasil uji Rank Spearman  $p=0,000$  dan  $r=0,763$ , berarti terdapat hubungan efikasi diri dengan pemanfaatan pelayanan kesehatan prolanis pasien DM tipe 2, kekuatan korelasi kuat dan bersifat positif. Kesimpulan menunjukkan bahwa Efikasi diri yang tinggi pada penderita DM tipe 2 cenderung lebih baik dalam memanfaatkan pelayanan kesehatan prolanis dari pada efikasi diri yang rendah.

Kata kunci: Efikasi diri, pemanfaatan pelayanan kesehatan, prolanis, DM

### **INTRODUCTION**

Indonesia's health services are generally well-utilized; however, there are still numerous challenges, including limited accessibility and low attendance at Community Health Centres (Bonoto et al., 2017). Health service utilisation encompasses the utilisation of health service facilities, including outpatient care, inpatient care, home visits by health workers, and other activities, to promote the efficiency of health services (Selçuk-Tosun & Zincir, 2019). Health services at Community Health Centers have a vital role in optimizing the community's health, such as treating and controlling chronic disease conditions such as diabetes mellitus (Napirah et al., 2016).

Type 2 diabetes mellitus (DM type 2) is a non-communicable disease that is experiencing a global increase in prevalence, including in Indonesia. This disease is caused by metabolic disorders characterized by insulin resistance and chronic hyperglycemia. According to data from the Indonesian Ministry of Health, The national health system is burdened by the escalating prevalence of type 2 diabetes mellitus. The Indonesian government, through the Social Security Administration (BPJS) Health, has devised the Chronic Disease Management Program (Prolanis) in response to this challenge. The program is intended to improve the quality of life for patients who have chronic diseases, such as type 2 diabetes mellitus (BPJS kesehatan, 2021a). Polaris aims to improve patient compliance with treatment and optimize the use of health services to prevent more serious complications. This program includes various interventions such as health education, routine medical consultations, and regular monitoring of patient conditions. Nevertheless, the efficacy of Prolanis in enhancing the quality of life of type 2 DM patients continues to be impeded by a variety of obstacles, including the challenge of claiming the drug to BPJS, the lack of drug availability, and the lack of patient awareness to partake (de Boer et al., 2022).

Nevertheless, the chronic care model (CCM) is one of the chronic disease treatment models that are currently being developed, according to the International Council of Nurses (2010). Active and informed patient interaction with a proactive health team is the primary focus of this patient care model (Boniol et al., 2022). In order to achieve this, the Indonesian government has formed the Chronic Disease Management Program or Prolanis in partnership with health service providers (BPJS kesehatan, 2021b) The program. The chronic care paradigm is designed to enhance the quality of care for individuals with chronic diseases (Grudniewicz et al., 2023). However, this has not been the choice of most people in Indonesia.

Many obstacles cause suboptimal prolonged activities, such as lack of information, lack of emotional support from partners, friends, and family members, patient errors in understanding the instructions given, the relationship between health workers and patients, and patient belief factors in the management and utilization of services for treatment are strong predictors of non-compliance (Gadkari & McHorney, 2012). Four factors influence the utilisation of health services: predisposing factors (demographics, social structure, knowledge, beliefs, or self-efficacy), enabling factors (income, insurance, accessibility, officers, and quality of service), and the need for health services (Odgers-Jewell et al., 2017).

Self-efficacy originates from social cognitive theory and suggests that individuals have beliefs regarding their abilities in a given situation (Jiang et al., 2019a). Self-efficacy is a predictor of good mental health and is characterised by a person's emotions of control and relaxation (Zamani et al., 2019). The initiation of health behaviour change, the amount of effort required, and the duration of its maintenance in the presence of obstacles and failures are all determined by beliefs or self-efficacy. Self-efficacy is directly correlated with an individual's behaviour and can indirectly influence health behaviour (Méndez, 2015). All stakeholders, including physicians, nurses, nutritionists, families, and patients, must participate in these optimisation initiatives. Good self-efficacy is a factor that influences the development of a more optimal health service strategy. DM patients can reduce the risk of health complications and preserve their quality of life by actively managing their health conditions and utilising available health facilities. Considering these issues, the objective of this

investigation is to investigate the correlation between self-efficacy and the utilisation of health services via proteins in patients with type 2 diabetes mellitus.

The implementation of prolanis activities has not yet achieved the 75% indicator of the anticipated results, as evidenced by previous studies. Notably, the average percentage of visits to the Health Centre is only 49%, and prolanis communication has not been operating at optimal levels (Pamungkas et al., 2017). Data on active Prolanis participants for type 2 diabetes mellitus patients at the Lamongan Health Centre in 2021 contained 210 15 individuals. The specific objectives of this study are to determine the level of self-efficacy of type 2 DM patients who are members of the Prolanis group and to evaluate the level of utilisation of Prolanis health services by type 2 DM patients.

**Novelty:** This study offers a new perspective in understanding the effectiveness of Prolanis by highlighting the role of self-efficacy as a major factor in the utilization of health services by patients with type 2 DM. In contrast to previous studies that focused on program effectiveness or extrinsic factors influencing patient attendance, this study specifically investigated the correlation between patient engagement and self-efficacy in the Prolanis program. This study aimed to examine the correlation between the utilization of Prolanis health services and self-efficacy in patients with type 2 diabetes mellitus. It is hoped that the findings of this study will offer new insights for health professionals and policymakers, thereby facilitating the development of more effective interventions to improve patient engagement in chronic disease healing programs.

## **METHOD**

### **Research Design**

The research design used is a quantitative design with a cross-sectional approach.

### **Settings and Respondents**

The study population was all Prolanis participants diagnosed with type 2 diabetes mellitus at the Lamongan Health Center. The study involved 125 respondents using the accidental sampling method, with inclusion criteria of no comorbidities, ability to communicate well, and willingness to be respondents. This study has passed the ethical test from the Surabaya Ministry of Health Polytechnic No. EA / 1688 / KEPK-Poltekkes\_Sby / V / 2023.

### **The Variables, Instruments, and Measurement**

This study used the GSE (General Self-Efficacy) questionnaire according to Bandura (1999), which consists of 10 questions with parameters of magnitude, generality, and strength using a Likert scale of (Puspita & Wijayanti, 2024a). The instrument for utilizing the Prolanis health service system consists of 10 questions compiled based on the literature review results and modified by researchers. The validity test showed 0.529-0.721, and the reliability test produced Cronbach's Alpha = 0.808. Data analysis using univariate analysis with a frequency distribution table to describe demographic data on age, gender, education level, occupation, income, and duration of DM. The bivariate test used the Spearman test with a significance level of  $\alpha < 0.05$ .

## **RESULTS AND DISCUSSION**

The study results are explained in several parts: characteristics of respondents, self-efficacy, and utilization of protein health services. In detail, the data on the characteristics of respondents are presented in the following table:

Table 1. Data on Characteristics of Type 2 DM Patients in the Prolanis Group (n=125)

Respondent Characteristics	Frequency (n)	Percentage (%)
<i>Gender</i>		
Man	55	44,0
Woman	70	56,0
<i>Age</i>		
< 20 Year	0	0
20-44 Year	9	7,2
45-60 Year	59	47,2
> 60 Year	57	45,6
<i>Level of education</i>		
No school	15	12,0
Elementary School	43	34,4
Junior High School	17	13,6
Senior High School	39	31,2
College	11	8,8
<i>Work</i>		
Self-employed	44	35,2
Indonesian National Armed Forces/Indonesian National Police	3	2,4
Fishermen/Fisheries	11	8,8
Government employees	6	4,8
Farmer/Gardener	38	30,4
Etc	23	18,4
<i>Income</i>		
< 1 Million	18	14,4
1-4 Million	57	45,6
> 4 Million	50	40,0
<i>Long time suffering from DM</i>		
< 1 Year	9	7,2
1-5 Year	39	31,2
> 5 Year	77	61,6

The results in Table 1 show that the respondents in this study consisted of men and women, with the majority of respondents being women. Regarding age, most respondents were 45 years and above, with the 45-60 age group slightly more dominant than those over 60. There were no respondents under 20 years old, while a small number were in the young age group, namely 20-44. Regarding education level, most respondents had a basic education background, with the majority attending elementary school, followed by those who had completed high school. Only a few respondents had higher education, while some had no formal education. Regarding occupation, most respondents work as self-employed farmers or plantation workers, while a small number work as civil servants, fishermen, or members of the Indonesian National Armed Forces/Indonesian National Police. Several respondents also have other jobs not included in the main categories mentioned. Most respondents are in the middle-income range, while the higher and lower-income groups have almost equal proportions. Based on the duration of diabetes mellitus, most respondents have lived with the disease for more than five years. Others have had diabetes for one to five years, while only a few have been diagnosed for less than a year. This indicates that most respondents have a long experience dealing with the condition, which may affect the pattern of disease management and utilization of available health services.

Table 2. Data on Self-Efficacy Conditions and Utilization of Prolanis Health Services for Type 2 DM Patients in the Prolanis Group (n=125)

Variable	Frequency (n)	Percentage (%)
<i>Self-Efficacy</i>		
High Self Efficacy	85	68,0

Variable	Frequency (n)	Percentage (%)
Low Self Efficacy	40	32,0
<i>Utilization of health services</i>		
Good	64	51,2
Enough	48	38,4
Bad	13	10,4

Table 2 shows that the majority (68.0% of DM patients) have high self-efficacy, and the majority (51.2% of DM patients) utilize Prolanis health services well.

Table 3. Results of Spearman Self-Efficacy Test with Utilization of Prolanis Health Services in Type 2 Diabetes Mellitus Patients (n=125)

Self-Efficacy	Utilization of Prolanis Health Services						<i>p-value</i>	<i>r</i>
	Bad		Enough		Good			
	n	%	n	%	n	%		
Low	13	32,5	22	55,0	5	12,5	0,000	0,763
High	0	0	26	30,6	59	69,4		

The Spearman test results indicated a substantial correlation between the utilisation of Prolanis health services and self-efficacy in patients with type 2 diabetes mellitus. The majority of patients with low self-efficacy are sufficient to poor utilisation, and they tend to utilise health services at a reduced level. However, no patients who exhibited high self-efficacy exhibited inadequate service utilisation. The majority of patients who possessed high self-efficacy were able to effectively utilise health services; however, a few fell into the "sufficient" category. The two variables exhibited a significant relationship, as evidenced by a *p*-value of 0.000 in the statistical analysis. Furthermore, the Spearman correlation value (*r*) of 0.763 suggested a robust positive correlation between the utilisation of Prolanis health services and self-efficacy. This implies that patients are more inclined to optimise their utilisation of health services as their self-efficacy increases. This discovery underscores the significance of enhancing patient self-efficacy in the management of diabetes mellitus to facilitate more active utilisation of available health facilities.

The results of this study suggest that the utilisation of Prolanis health services in patients with type 2 diabetes mellitus is significantly influenced by self-efficacy. This discovery can be elucidated by examining the characteristics of respondents and the pattern of health service utilisation based on their level of self-efficacy. The majority of patients who are enrolled in the Prolanis program are women over the age of 45, as indicated by the characteristics of the respondents. This is consistent with the fact that type 2 diabetes mellitus is more prevalent in the adult and elderly population as a result of lifestyle factors and alterations in bodies' metabolism. In addition, the education level of respondents varies, with most having basic education and most having high school education, while only a small number have higher education. This education factor can influence patients' understanding and awareness of managing their disease, including utilizing health services provided by Polaris.

Regarding employment, most respondents work as self-employed or farmers/plantation workers, indicating that they come from the informal sector with limited access to company-based health services or additional health insurance. This factor is also related to their income level, where most are middle to low-income. These economic conditions can affect how much they can access health services regularly. The self-efficacy analysis found that most patients had high self-efficacy, which means they have confidence in managing their health conditions independently. This is important because high self-efficacy is related to compliance in undergoing treatment, maintaining a diet, and following other medical recommendations. Conversely, patients with low self-efficacy tend to doubt making decisions about their health, which can result in a lack of health services utilization.

The Spearman test results indicated a substantial positive correlation between the utilisation of Prolanis health services and self-efficacy. Patients who possess a high level of self-efficacy are more inclined to effectively utilise health services. Conversely, individuals who possess limited self-efficacy are more susceptible to experiencing either adequate or inadequate service utilisation. The correlation value of 0.763 suggests that the relationship between these two variables is quite robust. Consequently, it can be inferred that the utilisation of health services is more favourable when an individual's self-efficacy is higher. These results corroborate that one potential approach to enhancing the utilisation of Prolanis health services is to enhance patient self-efficacy. Continuous health education, social support, and increasing access to relevant information can help patients feel more confident in managing their disease. In addition, the community-based approach in the Prolanis program can also be strengthened to provide motivation and support for patients who still have low self-efficacy.

The Spearman test results in Table 3 indicate a significant relationship between self-efficacy and the utilisation of protein health services in patients with type 2 diabetes mellitus, with a p-value of 0.000 and an r-value of 0.763. The results of  $r = 0.763$  indicate a robust correlation strength, with a positive direction. Positive results suggest a unidirectional relationship, which entails that the utilisation of protein health services is favourable when self-efficacy is high, and vice versa. The statistical evaluations indicate that the majority of patients possess a high level of self-efficacy. A person with high self-efficacy is consistently confident in their abilities, which results in a high level of motivation and commitment to attaining their objectives, such as recoveries (Puspita & Wijayanti, 2024b). This is consistent with Pender's theory in the Health Promotion Model (HPM) concept, which demonstrates that an individual's commitment to taking action to accomplish their objectives is influenced by their self-efficacy (Aqtam & Darawwad, 2018). High self-efficacy shows self-confidence in managing their conditions to reduce behavioral barriers and achieve the expected behavioral change goals.

Self-efficacy is associated with particular circumstances, in contrast to related concepts like self-esteem, self-confidence, and locus of control. In other words, individuals have the ability to ascertain whether they should exhibit confidence. The efficacy of diabetes mellitus management is contingent upon the patient's motivation, self-efficacy, and knowledge of type 2 diabetes mellitus, which are essential for the implementation of self-care measures that are intended to alleviate psychological symptoms and complications. The study's findings indicated that the majority of patients effectively employed Prolanis' health services. Prolanis offers proactive health services that involve patients, health facilities, and BPJS Kesehatan in order to preserve the health of BPJS Kesehatan participants with chronic diseases. The program is likely to be beneficial if the quality of life of Prolanis program participants improves.

The utilization of Prolanis activities at the Lamongan Health Center has been good because of the systematic collaboration between various parties to manage chronic diseases more effectively. In addition, the Prolanis program at the Lamongan Health Center has clear and measurable standard procedures that facilitate program management and allow for continuous evaluation and improvement. The Prolanis program also emphasizes a proactive preventive approach, making it more accessible to all levels of society. The study found that most patients had high self-efficacy with good utilization of protein services. Individuals with high self-efficacy can directly influence a person's health needs. High self-efficacy shows interest and participation in an action, including the treatment plan offered (Susanto et al., 2022). Increasing self-efficacy is an effective way to promote self-care behavior in patients with type 2 diabetes mellitus (Jiang et al., 2019b).

Factors influencing self-efficacy include gender; according to Table 1, most respondents are female. This study's results align with previous studies that show that women are more confident in managing their roles (Gupta et al., 2024). Women can have higher self-efficacy because they are better at solving

problems and seeking social support, which can increase their confidence in facing challenges. The average age of patients is 45-60 years. This age is included in the pre-elderly age category. The observed correlation shows that as they get older, it becomes easier for them to cope with situations directly, which can affect their health behaviors (Çetinkaya et al., 2019). Self-regulation skills greatly influence self-efficacy; this makes a person feel more confident in facing life's challenges because they have experienced many situations.

The next factor is the level of education; based on the study's results, table 1 shows that most respondents have an elementary school education. Education is an important indicator of problem-solving. The ability to act and motivate oneself depends on cognitive activity. The higher a person's level of formal education, the easier it is to absorb the health information presented and the higher the awareness of healthy living behavior. This good acceptance of information will be implemented optimally according to the information provided so that the intervention can be implemented optimally (Teshome & Yitayeh, 2016). Most patients who have suffered from DM for more than 5 years, causing patients to have experience in dealing with their disease conditions. Direct experience from patients is the main source of self-efficacy formation. In addition, other people's experiences can also be used as a learning tool to help manage the disease and maintain adaptive coping (Alshayban & Joseph, 2020). Patients who have suffered from the disease for more than 5 years have better self-efficacy, so patients have experience in managing their disease and have good coping.

Education, diet planning, physical exercise, drug intervention, and routine check-ups comprise diabetes treatment plans. The relationship between self-efficacy and blood sugar control in patients with type 2 diabetes has been the subject of numerous studies. Research has demonstrated a substantial correlation between blood sugar control and self-efficacy. Patients with higher levels of self-efficacy exhibit superior blood sugar control in comparison to those with lower levels of self-efficacy (Zimbudzi et al., 2019). A facility that accommodates these care requirements provides routine check-ups and medication administration through extended activities. The Prolanis program is a health service system that is intended to assist BPJS Kesehatan participants who have chronic diseases in achieving the highest attainable quality of life. Prolanis conducts a variety of activities, including medical consultations for a variety of diseases, home visits for patients who are unable to attend the clinic, and health monitoring, including blood pressure, blood sugar, and uric acid control (Karimy et al., 2018).

The model of belief in the effectiveness of treatment was found in the study as a predictor of self-management behavior, belief in effective therapy to increase the success of diabetes mellitus treatment, that the therapy carried out can control diabetes mellitus, and belief that the therapy carried out can prevent complications from the disease suffered (Afaya et al., 2020) Overall, this study confirms the importance of self-efficacy in utilizing health services. By increasing patient self-efficacy, it is expected that the utilization of Prolanis services can be more optimal so that patients with type 2 diabetes mellitus can undergo better disease management, which ultimately contributes to improving their quality of life.

## **CONCLUSIONS**

The utilisation of Prolanis health services in patients with type 2 diabetes mellitus at the Lamongan Health Centre was significantly correlated with self-efficacy, as demonstrated by this study. Statistical analysis using the Spearman Rank test revealed a strong positive correlation ( $r = 0.763$ ;  $p = 0.000$ ) between the optimal utilisation of Prolanis services by patients with high self-efficacy, as determined by a cross-sectional approach with a sample of 125 respondents. As many as 68% of respondents had high self-efficacy, and 51.2% utilized Prolanis well. Demographic factors such as female gender, pre-elderly age (45–60 years), and long experience in dealing with diabetes (> 5 years) also contributed to high self-efficacy. These findings confirm that patients' confidence in managing

their disease independently is crucial in increasing active participation in health programs. The practical implications of this study emphasize the need for structured education-based interventions, family support, and collaboration with health workers to strengthen patient self-efficacy. Thus, increasing self-efficacy encourages better utilization of Prolanis services and can potentially reduce the risk of complications and improve the quality of life of type 2 diabetes mellitus patients holistically.

#### **AUTHOR'S CONTRIBUTIONS**

Iswatun and Joko. Substantial contributions, design, drafting manuscript, analysed the data. Khotibul and Nur. Interpreting the results and worked on the manuscript. All authors discussed the results and commented on the manuscript.

#### **CONFLICTS OF INTEREST**

All authors have no conflicts of interest to disclose.

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#### **REFERENCES**

- Afaya, R. A., Bam, V., Azongo, T. B., Afaya, A., Kusi-Amponsah, A., Ajusiyine, J. M., & Abdul Hamid, T. (2020). Medication adherence and self-care behaviours among patients with type 2 diabetes mellitus in Ghana. *PLOS ONE*, *15*(8), e0237710. <https://doi.org/10.1371/journal.pone.0237710>
- Alshayban, D., & Joseph, R. (2020). Health-related quality of life among patients with type 2 diabetes mellitus in Eastern Province, Saudi Arabia: A cross-sectional study. *PLOS ONE*, *15*(1), e0227573. <https://doi.org/10.1371/journal.pone.0227573>
- Aqtam, I., & Darawwad, M. (2018). Health Promotion Model: An Integrative Literature Review. *Open Journal of Nursing*, *08*(07), 485–503. <https://doi.org/10.4236/ojn.2018.87037>
- Boniol, M., Kunjumen, T., Nair, T. S., Siyam, A., Campbell, J., & Diallo, K. (2022). The global health workforce stock and distribution in 2020 and 2030: a threat to equity and ‘universal’ health coverage? *BMJ Global Health*, *7*(6), e009316. <https://doi.org/10.1136/bmjgh-2022-009316>
- Bonoto, B. C., de Araújo, V. E., Godói, I. P., de Lemos, L. L. P., Godman, B., Bennie, M., Diniz, L. M., & Junior, A. A. G. (2017). Efficacy of Mobile Apps to Support the Care of Patients With Diabetes Mellitus: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *JMIR MHealth and UHealth*, *5*(3), e4. <https://doi.org/10.2196/mhealth.6309>
- BPJS kesehatan. (2021a). Optimalisasi dan pengelolaan penyakit kronis selama pandemi covid-19. *BPJS Kesehatan*, *3*.
- BPJS kesehatan. (2021b). Optimalisasi dan pengelolaan penyakit kronis selama pandemi covid-19. *BPJS Kesehatan*, *3*.
- Çetinkaya, F., Kavuran, E., & Unal Aslan, K. S. (2019). Validity and reliability of the Amsterdam Preoperative Anxiety and Information Scale in the Turkish population. *Turkish Journal Of Medical Sciences*. <https://doi.org/10.3906/sag-1806-84>

- de Boer, I. H., Khunti, K., Sadusky, T., Tuttle, K. R., Neumiller, J. J., Rhee, C. M., Rosas, S. E., Rossing, P., & Bakris, G. (2022). Diabetes Management in Chronic Kidney Disease: A Consensus Report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). *Diabetes Care*, *45*(12), 3075–3090. <https://doi.org/10.2337/dci22-0027>
- Gadkari, A. S., & McHorney, C. A. (2012). Unintentional non-adherence to chronic prescription medications: How unintentional is it really? *BMC Health Services Research*, *12*(1). <https://doi.org/10.1186/1472-6963-12-98>
- Grudniewicz, A., Gray, C. S., Boeckxstaens, P., De Maeseneer, J., & Mold, J. (2023). Operationalizing the Chronic Care Model with Goal-Oriented Care. *The Patient - Patient-Centered Outcomes Research*, *16*(6), 569–578. <https://doi.org/10.1007/s40271-023-00645-8>
- Gupta, S. K., Lakshmi, P. V. M., Chakrapani, V., Rastogi, A., & Kaur, M. (2024). Understanding the diabetes self-care behaviour in rural areas: Perspective of patients with type 2 diabetes mellitus and healthcare professionals. *PLOS ONE*, *19*(2), e0297132. <https://doi.org/10.1371/journal.pone.0297132>
- Jiang, X., Wang, J., Lu, Y., Jiang, H., & Li, M. (2019a). Self-efficacy-focused education in persons with diabetes: A systematic review and meta-analysis. *Psychology Research and Behavior Management*, *12*, 67–79. <https://doi.org/10.2147/PRBM.S192571>
- Jiang, X., Wang, J., Lu, Y., Jiang, H., & Li, M. (2019b). Self-efficacy-focused education in persons with diabetes: A systematic review and meta-analysis. *Psychology Research and Behavior Management*, *12*, 67–79. <https://doi.org/10.2147/PRBM.S192571>
- Karimy, M., Koohestani, H. R., & Araban, M. (2018). The association between attitude, self-efficacy, and social support and adherence to diabetes self-care behavior. *Diabetology & Metabolic Syndrome*, *10*(1), 86. <https://doi.org/10.1186/s13098-018-0386-6>
- Méndez, M. J. M. (2015). Self-efficacy and adherence to treatment: the mediating effects of social support. *Journal of Behavior, Health & Social Issues*, *7*(2), 19–29. <https://doi.org/10.5460/jbhsi.v7.2.52889>
- Napirah, M. R., Rahman, A., & Tony, A. (2016). Faktor-Faktor Yang Berhubungan Dengan Pemanfaatan Pelayanan Kesehatan Di Wilayah Kerja Puskesmas Tambarana Kecamatan Poso Pesisir Utara Kabupaten Poso. *Jurnal Pengembangan Kota*, *4*(1), 29. <https://doi.org/10.14710/jpk.4.1.29-39>
- Odgers-Jewell, K., Ball, L. E., Kelly, J. T., Isenring, E. A., Reidlinger, D. P., & Thomas, R. (2017). Effectiveness of group-based self-management education for individuals with Type 2 diabetes: a systematic review with meta-analyses and meta-regression. *Diabetic Medicine*, *34*(8), 1027–1039. <https://doi.org/10.1111/dme.13340>
- Pamungkas, R., Chamroonsawasdi, K., & Vatanasomboon, P. (2017). A Systematic Review: Family Support Integrated with Diabetes Self-Management among Uncontrolled Type II Diabetes Mellitus Patients. *Behavioral Sciences*, *7*(3), 62. <https://doi.org/10.3390/bs7030062>
- Puspita, W. G., & Wijayanti, A. C. (2024a). The Relationship Between Self-Efficacy and Self-Care Management with the Quality of Life of Patients With Diabetes Mellitus. *Jurnal Ilmu Kesehatan Masyarakat*, *15*(2), 258–271. <https://doi.org/10.26553/jikm.2024.15.2.258-271>
- Puspita, W. G., & Wijayanti, A. C. (2024b). The Relationship Between Self-Efficacy and Self-Care Management with the Quality of Life of Patients With Diabetes Mellitus. *Jurnal Ilmu Kesehatan Masyarakat*, *15*(2), 258–271. <https://doi.org/10.26553/jikm.2024.15.2.258-271>
- Selçuk-Tosun, A., & Zincir, H. (2019). The effect of a transtheoretical model-based motivational interview on self-efficacy, metabolic control, and health behaviour in adults with type 2 diabetes mellitus: A randomized controlled trial. *International Journal of Nursing Practice*, *25*(4). <https://doi.org/10.1111/ijn.12742>

- Susanto, J., Makhfudli, M., Ilkafah, I., Sairozi, A., Tyas, A. P. M., Wijayanti, E. S., Iswatun, I., & Umam, K. (2022). Kondisi Psikologis dan Kualitas Tidur pada Lansia Kelompok Prolanis. *Jurnal Kesehatan Vokasional*, 7(4), 204. <https://doi.org/10.22146/jkesvo.74460>
- Teshome, A., & Yitayeh, A. (2016). The effect of periodontal therapy on glycemic control and fasting plasma glucose level in type 2 diabetic patients: Systematic review and meta-analysis. *BMC Oral Health*, 17(1). <https://doi.org/10.1186/s12903-016-0249-1>
- Zamani, A. F., Araban, M., Harandy, T. F., Bastami, F., & Almasian, M. (2019). Sources of Health care providers' Self-efficacy to deliver Health Education: A qualitative study. *BMC Medical Education*, 19(1), 1–9. <https://doi.org/10.1186/s12909-018-1448-z>
- Zimbudzi, E., Lo, C., Kerr, P. G., & Zoungas, S. (2019). A need-based approach to self-management education for adults with co-morbid diabetes and chronic kidney disease. *BMC Nephrology*, 20(1), 1–7. <https://doi.org/10.1186/s12882-019-1296-z>