

THE RELATIONSHIP BETWEEN CHRONIC DISEASE MANAGEMENT PROGRAM (PROLANIS) FOR DIABETES MELLITUS AND OUTPATIENT VISITS DIABETES MELLITUS PATIENTS AT CLASS C PALEMBANG HOSPITALS IN 2023

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ABSTRACT

Diabetes mellitus (DM) is a chronic disease with an increasing prevalence on a global scale, including in Indonesia. Based on the International Diabetes Federation (IDF) data, Indonesia ranks fifth in the world in terms of the number of people living with diabetes. In 2021, there were an estimated 19.5 million individuals with diabetes in Indonesia, a figure that is predicted to reach 28.6 million by 2045. Additionally, Indonesia is ranked third in the world for the highest number of undiagnosed cases and sixth for the highest number of deaths related to diabetes globally in 2021. However, it is important to note that Indonesia has a robust primary healthcare system, including the JKN program and the promotion of preventive measures regularly implemented at the primary care level. One of the initiatives designed to enhance the quality of life of individuals with diabetes is the Chronic Disease Management Program (Prolanis). Method: A cross-sectional study explored the relationship between the Diabetes Mellitus Chronic Disease Management Program (Prolanis) and outpatient visits for patients with diabetes mellitus at Class C Palembang Hospitals in 2023. The research utilised secondary data derived from various sources, including 5168 health service data of BPJS Kesehatan, previous research, scientific studies, and the interrelationship between eight independent variables. It was then evaluated using the correlation analysis method and multiple logistic regression. Result and Discussion: The results of the study demonstrate a notable correlation between participation in the JKN program $pvalue=0.000 < 0.05$, utilization of primary healthcare services $pvalue=0.000 < 0.05$, HbA1C $0.000 < 0.005$ and engagement in physical activity $pvalue=0.009 < 0.05$ with the Prolanis DM program and outpatient visits for individuals with diabetes at the Class C Palembang Hospitals in 2023. Conclusion: A reduction in the number of outpatient visits was observed among DM sufferers who participated in the Prolanis program actively

How to cite:

E-ISSN:

Published by:

Dicky Permana Putra et al (2024). The Relationship Between Chronic Disease Management Program (Prolanis) for Diabetes Mellitus and Outpatient Visits Diabetes Mellitus Patients at Class C Palembang Hospitals in 2023. *Journal Eduvest*. 4 (8): 6657-6664

2775-3727

<https://greenpublisher.id/>

participate that influenced JKN membership, health facility, HbA1C result and education-physical activity.

KEYWORDS *Diabetes Mellitus, JKN, Outpatient Visit, Prolanis*



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INTRODUCTION

The International Diabetes Federation (IDF) has forecast that the global prevalence of diabetes mellitus (DM) will triple by 2030, rising from 8.4 million cases in 2020 to 21.3 million. In Asia, the number of patients recorded in 2021 was 90.2 million, with an anticipated increase to 113 million by 2030. The increased number of patients will unavoidably lead to elevated healthcare expenditures. In Indonesia, the current allocation of health funding is directed towards the prevention of the progression and complications of diabetes mellitus (PERKENI, 2021).

A shred of epidemiological evidence has demonstrated an increase in the prevalence and incidence rates of diabetes mellitus on a global scale. In 2022, the International Diabetes Federation (IDF) reported that Indonesia was the fifth most affected country in the world, with 19.5 million cases. The National Socio-Economic Survey (SUSENAS), conducted by the Central Statistics Agency (BPS) in March 2022, revealed that sugar is one of the top five most consumed food commodities in Indonesia, with a consumption rate of 92.30%. (Aryani, 2016; 2022)

In accordance with the stipulations of the National Social Security System (SJSN) 40, 2004 and the BPJS Kesehatan Number 24, 2011, the program has been operational since 2014. The BPJS Kesehatan is responsible for meeting the healthcare needs of all individuals who have paid contributions or whose contributions are paid by the government. Furthermore, programs under the remit of the BPJS Kesehatan contribute to the prevention of diabetes mellitus. This encompasses prevention, treatment, and the avoidance of more severe complications. One such program is Prolanis (Chronic Disease Management Program), which focuses on two primary diseases: hypertension and type 2 diabetes mellitus (Idris, 2014).

The objective of Prolanis is to facilitate the achievement of optimal quality of life among participants with chronic diseases. The target population encompasses all individuals enrolled in the JKN program who have been diagnosed with diabetes mellitus. The Prolanis program comprises a range of activities, including group exercise and education, medical consultations, return medication therapy, and health status monitoring through laboratory tests. The objective of these activities is to prevent the development of complications associated with the disease and to maintain the health of the participants. A review of the literature reveals that patients who participate in Prolanis have significantly lower annual treatment costs than those who do not, thereby making Prolanis a cost-effective intervention. Nevertheless, several studies have identified obstacles to the implementation of Prolanis, including low enrolment rates among participants and suboptimal laboratory testing for HbA1C as a program indicator (Heny et al., 2021).

The impact of Prolanis in Indonesia has been the subject of various studies, which have yielded disparate results. The preceding study focused on primary healthcare. The overarching aim of this study is to determine the relationship between the Prolanis for Diabetes Mellitus and the number of outpatient visits for Diabetes Mellitus at Class C Palembang Hospitals in 2023. Specifically, this study focuses on describing the characteristics of Prolanis participants based on age, gender, JKN membership, education, primary healthcare, exercise, medical consultations, medication, and HbA1C monitoring results on outpatient visits of diabetes mellitus.

RESEARCH METHOD

This study is an observational analytic study designed to elucidate the manner and mechanism by which a phenomenon occurs through statistical analysis, examining the correlation between cause and effect or risk factors and their impacts. Furthermore, the objective is to ascertain how the identified causes or risk factors contribute to the observed effects or outcomes, which will be achieved through a quantitative research design with a cross-sectional approach. This approach is investigated through the utilisation of observational methods and the collection of data. This research employs the PRECEDE-PROCEED method. The study encompassed outpatient visits for diabetes mellitus at Class C Palembang Hospitals between January and December 2023.

The study population comprised all individuals with diabetes mellitus enrolled in the Prolanis program and receiving care at primary healthcare facilities in Palembang City. The total number of participants was 33,665, and the study period spanned from January to December 2023. The sample was selected using the saturated sampling method, encompassing all 5,158 individuals diagnosed with diabetes mellitus who sought outpatient care at a Class C hospital in Palembang over the specified period. To be included in the study, participants had to be diagnosed with Diabetes Mellitus, and were active in Prolanis minimum of 6 months but still visited Class C hospitals.

The data was then subjected to descriptive analysis, after which a multiple linear regression test was employed to predict the dependent variable's value based on the independent variable's value. Before analysis by regression techniques, the regression equation model must be tested for adherence to the classical assumptions. The classic assumption tests carried out in this study included tests for normality, multicollinearity, heteroscedasticity, and autocorrelation (Najmah, 2019).

RESULT AND DISCUSSION

Result

The information about the characteristics of the research variables, including the lowest value, the highest value, the average value, and the standard deviation, is presented. The following table 1, exhibits the summary of the descriptive statistical results of the research variables affecting outpatient visits in hospitals. The relationship between each variable that affects patient visits to class C hospitals

are six variables significant in age (PR 1.186), JKN membership (PR 0.669), personal education (PR 0.885), health facility (PR 0.593), HbA1C result (PR 0.220) and education and physical activity (PR 0.712) with a p-value <0.05.

Table 1. Bivariate Analysis

Independent Variable	Frequency		p-value	PR
	Yes	no		
Gender			0,278	0,940
Female	626 (20,2%)	2469 (79,8%)		
Male	446 (21,5%)	1627 (78,5%)		
Age (year)			0,024	1,186
> 45	900 (21,4%)	3313 (78,6%)		
≤ 45	172 (18%)	783 (82%)		
JKN membership			0,000	0,669
PBI	327 (16%)	1720 (84,1%)		
Non-PBI	745 (23,9%)	2376 (76,1%)		
Personal Education			0,029	0,885
Lower (Primary-junior high school)	446 (19,3%)	1859 (80,7%)		
High (Senior high school – college)	626 (21,9%)	2237 (78,1%)		
Health facility			0,000	0,593
Non-Primary Health Care	730 (18,1%)	3314 (81,9%)		
Primary Health Care (Puskesmas)	342 (30,4%)	782 (69,6%)		
HbA1C (%)			0,000	0,220
≥ 6.5	15 (4,8%)	298 (95,2%)		
< 6.5	1057 (21,8%)	3798 (78,2%)		
Medicine			0,231	0,764
No	1052 (20,9%)	3994 (79,1%)		
Yes	20 (16,4%)	102 (83,6%)		
Education, physical activity			0,002	0,712
No	77 (28,5%)	193 (71,5%)		
Yes	995 (20,3%)	3903 (79,7%)		

Dependent variable: outpatient hospital visit

Regression logistic analysis results are coefficients for each independent variable by predicting value with an equation.

Table 2. Multivariate Analysis

Variabel Independen	B	Standar Error	P value	PR	95% C.I PR	
					Lower	Upper
Pendidikan	0,033	0,077	0,664	0,967	0,832	1,125
Medicine	0,372	0,271	0,170	1,451	0,852	2,471
Age	0,161	0,094	0,087	1,175	0,977	1,413
Education- Pysical	0,375	0,143	0,009	1,455	1,099	1,926
JKN Membership	0,532	0,082	0,001	1,703	1,451	1,998
Health Facility	0,731	0,078	0,001	2,077	1,782	2,420
HbA1c	1,702	0,268	0,001	5,484	3,242	9,277
Constant	0,175	0,309	0,571	32,797		

*Prolanis status. Dependent = outpatient visit.

The analysis revealed that the most influential independent four variables are JKN membership $p=0.000$ ($p<0.05$) PR 1.703, health facility $p=0.000$ ($p<0.05$) PR 2.077, HbA1C result $p=0.000$ ($p<0.05$) PR 5.484 and education-physical activity $p=0.009$ ($p<0.05$) PR 1.455. These results implied that prohibits outpatient hospital visits from each variable.

Discussion

The findings of the study substantiated a notable correlation of between enrolment in the Diabetes Mellitus (DM) Chronic Disease Management (Prolanis) program and the frequency of outpatient visits among patients with DM at the Palembang Class C Hospital in 2023. Those participants who were active in the DM Prolanis program tended to have fewer outpatient visits than those who did not participate in the program. This result suggests that the Prolanis DM program has a positive impact on reducing the frequency of outpatient visits for people with DM, thereby emphasising the importance of coordinated and sustainable interventions in managing chronic diseases such as DM at the hospital level.

Membership of JKN

The chronic disease management program (Prolanis) represents a health service system and a proactive approach that is implemented in an integrated manner. It involves participants in the primary health care (FKTP) scheme and PBI (Penerima Bantuan Iuran) membership at BPJS Kesehatan living with chronic diseases. The objective is to achieve an optimal quality of life for these individuals while ensuring that the costs associated with the provision of effective and efficient health services remain within an acceptable range. The government of Sumatra Selatan and Palembang City provide free membership. The objective of Prolanis is to facilitate improved self-management of chronic diseases, such as diabetes, among patients. This objective is achieved by eliminating the financial burden of treatment, which is instead covered by BPJS Kesehatan services at the Puskesmas (primary health care). Prolanis is provided free of charge. Furthermore, this initiative also ensures the provision of medications, thus enabling Prolanis participants to achieve greater control over their health and well-being (Tuty, 2020).

The Disease Management Program or Chronic Disease Management must include several management programs for patients with chronic diseases. These programs are designed to stage the disease, implement clinical guidelines, educate patients about healthy living, screen for disease complications, and refer patients to specialists when necessary. PBI members can engage in all these activities and those offered by Prolanis because they have more time and support from family, which can be an important aspect of managing their condition.

Health Facility

Health facilities affect the level of patient access. Puskesmas programs are much more complete than others. Non-Puskesmas facilities refer Diabetes patients to hospitals because standardization minimum medical service especially in managed care Program. Education provider to patients and their families aims to

provide an understanding of the course of the disease and its prevention. The management of patients with diabetes is closely related to four key pillars in regulating blood sugar levels and preventing complications. The four pillars of management in patients with diabetes are patient education, health nutrition, physical condition and administration of drugs. The efficacy of therapy is contingent upon a multitude of factors, one of which is the indifference and lack of education in patients regarding dietary regulation and exercise. Additionally, the failure to adhere to anti-diabetic drug regimens represents another significant factor in the development of DM-related complications. These four pillars are reflected in Prolanis activities by guidelines. To optimise the management of the four pillars of Diabetes Mellitus, it is necessary to encourage (motivation) from within and from outside (family and medical personnel). (Puspita, 2022; Lisa, 2023)

HbA1C

Most current issues can be attributed to a lack of comprehension among individuals with diabetes mellitus regarding the objective of the therapeutic regimen they are undergoing, which ultimately proves detrimental to their well-being. It is, therefore, crucial to emphasise the importance of outpatient care for patients with diabetes mellitus. Regular visits to the physician allow patients to monitor and manage their blood sugar levels consistently, it enables medical practitioners to conduct comprehensive monitoring of patients' health conditions, including blood pressure, cholesterol levels, and organ function. This monitoring facilitates the early detection and management of potential complications, such as cardiovascular disease, renal disorders, and peripheral neuropathy.

Primary health facility and physical activity

One of the factors contributing to the rising incidence of diabetes mellitus (DM) morbidity and mortality rates in Indonesia is patient non-adherence to treatment regimens from primary health care-patient centres and physical activity. Furthermore, the physician can provide the patient with guidance and instruction regarding the significance of a salutary lifestyle, encompassing a nourishing diet and regular physical activity, and arrange suitable pharmacological treatment. With periodic outpatient care, patients with diabetes mellitus can sustain their well-being and enhance their overall quality of life (Wigiarti, 2020).

It has been demonstrated that physical activity can facilitate the integration of individuals with diabetes mellitus into their peer groups, which can be achieved by enabling them to engage in activities such as knowledge sharing, peer discussion, and the exchanging experiences related to medical matters. Furthermore, it can foster a sense of camaraderie and support within the group. The program includes educational sessions for doctors and physical activities, such as exercise, which is recommended for each group four times a month. The significance of outpatient care for patients with diabetes mellitus at Class C Palembang Hospital in 2023 extends beyond the scope of routine medical monitoring. It serves as a cornerstone for a productive chronic disease management program.

The program provides patients with coordinated and integrated care, including education, support, and interventions to effectively manage their disease.

The program enables patients to actively manage their condition, including understanding the importance of blood sugar measurement, adhering to diet and exercise plans, and monitoring symptoms that may indicate complications. Furthermore, the chronic disease management program facilitates coordination between various healthcare providers, including general practitioners, nutritionists, and specialists, enabling patients to receive holistic and integrated care. Consequently, outpatient and chronic disease management programs represent a crucial element in ensuring that patients with diabetes mellitus receive comprehensive and coordinated care, thereby enhancing their quality of life and reducing the risk of long-term complications.

CONCLUSION

The findings of the study indicate a notable correlation between enrolment in the Diabetes Mellitus (DM) Chronic Disease Management Program (Prolanis) and the frequency of outpatient visits for DM patients at Class C Hospitals in Palembang during the year 2023. The findings revealed that the number of individuals with diabetes mellitus (DM) actively engaged in the Prolanis program exhibited a lower frequency of outpatient visits than those not participating. This finding indicates that participation in the Prolanis DM program has the potential to positively impact the frequency of outpatient visits to hospitals for DM sufferers. Further research is recommended to expand the scope and explore certain aspects related to the relationship between the Diabetes Mellitus (DM) Chronic Disease Management Program (Prolanis) and outpatient visits for DM sufferers at Class C Hospitals in Palembang. It would benefit future researchers to expand the sample and involve more hospitals and other geographic areas to enhance the generalisability of the research results.

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