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## **Analysis of Factors Associated with The Utilization of The Chronic Disease Program (Prolanis) in Sorong City**

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### **Keyword:**

Utilization of Prolani; Education; Knowledge; Family Support; Support from Health Workers.

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### **Abstract**

Chronic diseases are conditions that typically develop slowly and have a lengthy duration, as defined by the World Health Organization (WHO). Genetic, physiological, environmental, and behavioural factors are the causes of these conditions, which present concerns at the national, regional, and global levels. By 2030, an epidemiological transition from infectious diseases to non-communicable diseases is projected to occur. The purpose of this study is to determine the factors that affect the utilisation of chronic disease programs in Sorong City. This research employs a cross-sectional design and is an analytical observational study. The total sample size is 197, selected using proportional random sampling. Data analysis was conducted using SPSS version 26, encompassing chi-square tests and multiple logistic regression. The study's findings indicate that the utilisation of the chronic disease management program (Program Pengelolaan Penyakit Kronis, Prolanis) is significantly influenced by knowledge ( $p = 0.007$ ), family support ( $p = 0.026$ ), and support from health personnel ( $p = 0.014$ ). The multivariate analysis identified knowledge ( $p = 0.003$ ) and support from health personnel ( $p = 0.046$ ) as the most closely associated factors, with the knowledge variable being the most significant. Community health centre staff can provide Prolanis participants with clear and accurate information about the illnesses they are managing by extending consultation time.

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## **INTRODUCTION**

Chronic diseases are long-term, primarily slow-developing conditions that result from genetic, physiological, environmental, and behavioural factors, according to the World Health Organization (WHO) (Ackley et al., 2021; Longhi, 2023; Quattrocolo, 2017). By 2030, it is anticipated that a transition from infectious to non-communicable diseases will take place at the global, regional, and national levels (World Health Organization, 2018).

The inability of the pancreas to produce a sufficient quantity of insulin a hormone that regulates glucose or the body's inability to utilise the insulin it produces effectively, is the underlying cause of diabetes mellitus, a serious chronic condition. Diabetes is one of four non-communicable diseases that world leaders have identified as requiring urgent action, and it represents a significant public health concern. Over the past few decades, the prevalence and number of cases of diabetes have continued to rise (World Health Organization, 2016).

The International Diabetes Federation (IDF) estimates that diabetes affected at least 463 million individuals between the ages of 20 and 79 in 2019, corresponding to a prevalence rate of 9.3% among the general population of the same age group. Based on sex, the IDF estimates

that the prevalence of diabetes in 2019 was 9.0% in women and 9.65% in men (Pangestika et al., 2022). The prevalence of diabetes increases with age; approximately 111.2 million individuals, representing 19.9% of the total, were between the ages of 65 and 79. This figure is anticipated to continue rising, reaching 578 million by 2030 and 700 million by 2045 (Mangendai et al., 2017).

Hypertension significantly contributes to the development of non-communicable diseases such as heart disease, stroke, and other cardiovascular conditions, which are responsible for a substantial number of fatalities globally. According to the WHO, hypertension is responsible for nearly 9.4 million cardiovascular disease-related deaths annually. In Southeast Asia, hypertension is the leading cause of death among adults, with a prevalence of 36% and a mortality rate of 1.5 million deaths annually (Dinas Kesehatan Provinsi Papua Barat, 2021). In West Papua, the management of diabetes mellitus and hypertension constitutes the principal objective of non-communicable disease (NCD) control. If these two conditions are not adequately managed, the development of additional NCDs — such as cardiac disease, stroke, and renal failure — will follow. By implementing appropriate interventions targeted at specific population groups, it is possible to reduce the number of new NCD cases, thereby achieving effective NCD control (Dinas Kesehatan Provinsi Papua Barat, 2021).

The urgency of this research is underscored by the growing burden of non-communicable diseases in Indonesia and the need for effective chronic disease management programs. In West Papua, hypertension and diabetes mellitus are the principal targets of NCD control efforts, and understanding the factors that influence Prolanis utilisation is essential for improving program effectiveness and reducing the burden of these conditions. The novelty of this research lies in its focus on Sorong City, Papua — a region with unique geographical and cultural characteristics that may influence Prolanis participation.

The Chronic Disease Management Program (Program Pengelolaan Penyakit Kronis, Prolanis) is being implemented by the Indonesian government through Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan to address diabetes mellitus and hypertension. Prolanis was specifically designed for Primary Health Facilities (Fasilitas Kesehatan Tingkat Pertama, FKTP) to manage hypertension and type 2 diabetes mellitus (DM) (Widiastuti, 2017).. Prolanis is a proactive, integrated approach to healthcare delivery, arising from a collaborative effort among health facilities, participants, and BPJS Kesehatan to provide essential medical care to BPJS Kesehatan participants living with chronic diseases. The program's goal is to deliver healthcare that is both cost-effective and timely, in order to achieve an optimal quality of life for participants.

Prolanis aims to ensure that at least 75% of registered participants attending First Level Health Facilities achieve satisfactory results on specialised examinations for type 2 DM and hypertension, in accordance with the relevant Clinical Practice Guidelines, thereby encouraging individuals with chronic diseases to attain an optimal quality of life. Against this backdrop, the researchers identified the need to conduct a study to determine the factors associated with the utilisation of chronic disease programs in Sorong City.

## METHOD

### Design and Sample

Klasaman Community Health Center, Malawei Community Health Center, and Remu Community Health Center were three of the community health centers in Sorong City where this research was conducted. A *cross-sectional design* was employed in this observational and analytical investigation, which included a total of 197 respondents. *Proportional random sampling* was implemented.

### Instruments and Procedures

According to the researchers, respondents were interviewed for 5-10 minutes using a questionnaire that contained data on research variables, such as age, gender, occupation, education, knowledge, family support, and support from healthcare professionals. All research was conducted only after each participant provided written informed consent. The Health Research Ethics Committee of Hasanuddin University and the Community Health Center where the research was conducted have both approved this investigation.

### Data analysis

In order to identify the most prevalent factors in the utilization of chronic disease programs (Prolanis), data analysis was conducted using IBM SPSS version 2.2. Univariate, bivariate (chi-square test), and multivariate analyses were conducted using a logistic regression model.

## RESULTS AND DISCUSSIONS

The data presented in Table 1 indicates that the majority of the 197 respondents were women (59.2%), the largest age range was Adults  $\leq$  64 years (60.4%), the highest number of prolanis patients were hypertensive (101 respondents, 51.3%), the respondents had a higher education (129, 65.5%), the respondents had a high level of knowledge (164, 83.2%), the respondents had family support (138, 70.1%), the respondents had support from health workers (138, 70.1%), and the respondents had a high level of prolanis utilization (152, 77.2%).

**Table 1. Respondent Characteristics**

Respondent Characteristics	Total n = 197	Percentage (%)
<b>Prolanis patients</b>		
Diabetes	101	51.3
Hypertension	96	48.7
<b>Gender</b>		
Men	74	37.6
Women	123	64.2
<b>Age</b>		
Adults $\leq$ 64	119	60.4
Seniors $\geq$ 64	78	39.6
<b>Employment Status</b>		
Work	85	43.1
Doesn't work	112	56.9

<b>Education</b>		
Tall	129	65.5
Low	68	34.5
<b>Knowledge</b>		
High	164	83.2
Low	33	16.8
<b>Family Support</b>		
Support	122	61.9
Does not support	75	38.1
<b>Healthcare Worker Support</b>		
Support	138	70.1
Does not support	59	29.9
<b>Use of prolanis</b>		
High Utilization	152	77.2
Low Utilization	45	22.8

Source : Primary data, 2024

Based on Table 2, significant factors associated with the use of the chronic disease program (Prolanis) were age ( $p < 0.028$ ), knowledge ( $p < 0.007$ ), family support ( $p < 0.049$ ), and health worker support ( $p < 0.010$ ). Insignificant factors were gender ( $p < 0.888$ ), occupation ( $p < 0.710$ ), and education ( $p < 0.730$ ).

**Table 2. Research variables**

Use of Prolanis Independent Variables	Tall				Amount		Statistical Test ( $\rho$ value )
	Low						
	n	%	n	%	n	%	
<b>Gender</b>							
Men and	58	78.4	16	21.6	74	100	0.888
Women	94	76.4	29	23.6	123	100	
<b>Age</b>							
Adults $\leq$ 64	85	71.4	34	28.6	119	100	0.128
Seniors $\geq$ 64	67	85.9	11	14.1	78	100	
<b>Employment Status</b>							
Work	64	75.3	21	24.7	85	100	0.710
Doesn't work	88	78.6	24	21.4	112	100	
<b>Education</b>							
High Low	101	78.3	28	21.7	129	100	0.730
	51	75.0	17	25.0	68	100	
<b>Knowledge</b>							
Tall	133	81.1	31	18.9	164	100	0.007
Low	19	57.6	14	42.4	33	100	

<b>Family Support</b>							
support	88	72.1	34	27.9	122	100	0.026
Does not support	64	85.3	11	14.7	75	100	
<b>Healthcare Worker Support</b>							
support	99	71.7	39	28.3	138	100	0.014
Does not support	53	89.8	6	10.2	59	100	

The results of the multivariate selection analysis using logistic regression are presented in Table 3. Gender ( $p= 0.753$ ), occupation ( $p= 0.590$ ), and education ( $p= 0.603$ ) were deemed ineligible for inclusion in the multivariate test due to a p-value greater than 0.25. *In contrast*, age ( $p=0.018$ ), knowledge ( $p=0.003$ ), family support ( $p=0.032$ ), and health worker support ( $p=0.005$ ) were eligible variables for inclusion in the multivariate test due to their  $p$  values being less than 0.25.

**Table 3. Results of multivariate logistic regression analysis**

Variables	sig
Gender	0.753
Age	0.018
Work	0.590
education	0.603
Knowledge	0.003
Family support	0.032
Healthcare Worker Support	0.005

A multivariate analysis was conducted after the selection of multiple independent variables and the acquisition of the corresponding variables. Table 4 illustrates the outcomes of the logistic regression test employed in the multivariate analysis. It is clear that the most significant factor associated with the use of chronic disease programs is knowledge, as demonstrated by a p-value of 0.003, an OR of 3.570, and a 95% confidence interval of more than 1 (1.554-8.202). Individuals with a high level of knowledge are 3.570 times more likely to utilize chronic disease programs than those with limited knowledge.

**Table 4. Results of multivariate logistic regression analysis**

Variables	B	Sign	EXP (B)	95% CI	
				Lower	Upper
Knowledge	1,273	0.003	3,443	1,502	8,202
Healthcare Worker Support	1,354	0.046	2,225	1,015	4,876

The percentage of female respondents who utilised Prolanis was higher than that of male respondents, at 64.2%. This may be attributed to the fact that women tend to be more attentive to their health than men. Gender also influences variations in health-risk behaviour patterns, with self-medicating behaviour being more prevalent among women than among men (Notoatmodjo, 2012). The results of this study are consistent with those of Kinasih et al. (2020),

in which the p-value of 0.183 derived from the analysis of the relationship between gender and the utilisation of Prolanis indicates that there is no statistically significant relationship between the two variables.

In the adult age group, the proportion of respondents who utilised Prolanis was 60.4%, which was higher than in the geriatric age group. This may be attributed to the fact that adults are generally in better physical condition than older individuals, enabling them to visit the community health centre independently. This finding is inconsistent with the research of Gayatri et al. (2020), in which the age variable did not demonstrate a significant relationship with Prolanis utilisation, yielding a p-value of 0.09.

The non-working group had a higher proportion of respondents utilising Prolanis than the working group, at 56.9%. Employment may serve as a conduit between health information and practice, encouraging individuals to seek out information and take steps to prevent health problems. However, working individuals may require more time to consult health facilities. The results of this study are consistent with those of Alphonse (2012), which found no significant correlation between employment status and Prolanis utilisation (p-value = 0.908).

In the higher education category, the percentage of respondents who utilised Prolanis was 65.5%, which was higher than in the lower education group. The knowledge and awareness acquired through the learning process form the foundation for the behavioural changes that arise from health education aimed at maintaining and improving health. Research by Wahyuni et al. (2021) demonstrated that there was no significant correlation between educational level and the utilisation of health services at community health centres, regardless of respondents' level of education (Purnamasari & Prameswari, 2020).

The proportion of respondents who utilised Prolanis in the high-knowledge group was higher than that in the low-knowledge group, at 61.9%. An individual's behaviour and adoption of health-related practices are significantly influenced by their level of knowledge, which is shaped by socioeconomic factors, personal experience, and acquired information, in addition to formal education. In this context, knowledge serves as both a motivator and a reminder for individuals to participate in Prolanis at the community health centre. Analysis of the knowledge variable yielded a p-value of 0.007, indicating a significant relationship between respondents' level of knowledge and their utilisation of Prolanis in Sorong City. These findings are consistent with those of prior studies (Mendrofa et al., 2022).

Community participation in Prolanis is thus influenced by knowledge. The percentage of respondents who utilised Prolanis in the group with supportive family support was higher than in the group without supportive family support, at 70.1%. The family also functions as a source and conduit of health information. Patients are more likely to adhere to Prolanis when provided with adequate instructions, information, advice, and encouragement — including information regarding the program schedule and the benefits of participation (Wulandari & Antoni, 2017). A significant correlation between family support and the utilisation of Prolanis was demonstrated by Viona Yuliaristi (2018) at the Mandala Health Centre, Medan Tembung, with a p-value of 0.006. Furthermore, family support has been shown to improve patient health outcomes by reducing stress, controlling anxiety, increasing self-efficacy, reducing negative health behaviours, and assisting in the regulation of the glycaemic index in diabetic patients (Pamungkas et al., 2022).

The group with supportive health worker support had a higher proportion of respondents utilising Prolanis than the non-supportive group, also at 70.1%. Health professionals serve as educators within Prolanis, with the provision of health education constituting one of the program's routine activities. In order to identify potential health issues at an early stage and mitigate the risk of disease progression, health workers must prioritise early screening in accordance with established protocols (Parinussa et al., 2022). This study is consistent with the findings of Shela et al. (2020), in which analysis of the health worker support variable yielded a p-value of 0.016, indicating a significant correlation between Prolanis utilisation and health worker support. The findings are also consistent with those of Viona (2018), which similarly demonstrated a significant correlation between Prolanis utilisation and the support provided by health professionals.

## CONCLUSION

Age, knowledge, family support, and support from healthcare personnel were all significant variables in this study, with knowledge being the most significant. The community health center personnel can provide PROLANIS participants with plain and accurate information about their maladies by allowing for extended consultations. The findings of this study contribute to the growing body of evidence on Prolanis utilization in Indonesia and provide region-specific insights for Sorong City. However, the study has several limitations. First, the cross-sectional design prevents establishing causal relationships between the identified factors and Prolanis utilization. Second, the study was limited to three community health centers in Sorong City, which may not be representative of the entire region. Third, the study relied on self-reported data, which may be subject to recall bias. Fourth, the study did not examine other potential factors that may influence Prolanis utilization, such as health literacy, perceived disease severity, and access to healthcare facilities. Future research should address these limitations by employing longitudinal designs, expanding the geographic scope, and exploring additional factors associated with Prolanis utilization. Further research should also examine the effectiveness of specific interventions to improve Prolanis utilization, such as targeted health education programs, family involvement strategies, and improved health worker training. Additionally, research on the impact of Prolanis participation on health outcomes, including disease control and quality of life, would provide valuable insights into the program's effectiveness.

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