

Utilization of the Chronic Disease Management Program (Prolanis) at Suak Ribee Primary Health Center, Indonesia

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ABSTRACT

Background: The Prolanis Program at the Suak Ribee Health Center includes monthly health education, biannual supporting examinations, pharmaceutical services (DRR), group exercise sessions, and home visit activities. This study aimed to identify the determinants influencing the utilization of the BPJS Health Prolanis program at the Suak Ribee Health Center. **Method:** The research was conducted from January 7 to February 7, 2025, involving 66 randomly selected participants using a quantitative cross-sectional design. Data were analyzed through univariate and bivariate analyses using the chi-square test, and multivariate analysis using logistic regression. **Result:** The results revealed that age ($p = 0.048$), gender ($p = 0.003$, OR = 6.167), knowledge ($p = 0.042$, OR = 3.630), the role of health workers ($p = 0.015$, OR = 4.750), and family support ($p = 0.045$, OR = 3.600) were significantly associated with the utilization of Prolanis. Education level, however, showed no significant effect ($p = 0.374$, OR = 1.875). Gender emerged as the most dominant factor ($p = 0.002$, OR = 8.930). **Conclusion:** In conclusion, age, gender, knowledge, the role of health workers, and family support influence the utilization of the Prolanis program, whereas education does not. It is recommended that the Suak Ribee Health Center increase male participation in Prolanis, for example by organizing exercise sessions on weekends or in the afternoon, and by conducting home visits as a separate program to better target less active participants

INTRODUCTION

Hypertension and type 2 diabetes mellitus are examples of long-term illnesses that can gradually worsen a patient's health over time and are often indicators of more serious underlying conditions that may become fatal (1). Each year, nearly 41 million people die due to chronic diseases, accounting for 74% of global mortality. Alarmingly, nearly 17 million of these deaths occur between the ages of 30 and 70. This information was reported by the World Health Organization (WHO). Cardiovascular disease (17.9 million, or 46.2%), cancer (9.3 million, or 21%), and respiratory disorders such as asthma and chronic obstructive pulmonary disease (COPD) (4.1 million, or 10.7%) are the leading causes of death related to non-communicable diseases globally. Hypertension affects approximately 5.4 million people, or 7%, while diabetes affects 2 million people, accounting for 4% (1). Low- and middle-income countries now bear 86% of the burden of premature deaths, leading to significant economic losses and trapping millions in poverty due to non-communicable diseases (2). According to the 2023 Indonesian Health Survey, among individuals aged 15 and above, 43.1% routinely manage their hypertension, 38.2% do so occasionally, and 18.7% do not manage it at all. Among people with diabetes mellitus, 59.2% consistently manage their condition through regular check-ups; 27.3% manage it occasionally, and 13.5% do not manage their diabetes regularly (3).

Prolanis, short for *Program Manajemen Penyakit Kronis* (Chronic Disease Management Program), is a comprehensive healthcare initiative designed to enhance the health and well-being of individuals suffering from chronic illnesses by providing proactive, high-quality, and cost-effective medical care. The program stakeholders include participants, healthcare service institutions, and the BPJS Health agency.

The goal is to encourage individuals with long-term conditions to achieve the best possible quality of life, as demonstrated by the fact that 75% of registered participants at leading health institutions received "good" results on specific tests for type 2 diabetes mellitus and hypertension (4). Examples of Prolanis activities include: health club education sessions, health consultations, health monitoring through supporting examinations, home visits, and

provision of routine medications (PRB drugs) (5). Healthcare expenditures related to chronic diseases, particularly hypertension and diabetes mellitus, have increased annually, as reported by the Social Security Administration (BPJS Health). In 2016, hypertension-related expenditures reached IDR 2.8 trillion, rising to IDR 3 trillion in both 2017 and 2018. The total expenditure for diabetes mellitus was IDR 4.9 trillion in 2018 and increased to IDR 6.4 trillion by 2022 (6). Significant hypertension issues have also been identified in Aceh Province, one of Indonesia's provinces. The incidence of hypertension in Aceh has increased by 32%, while the prevalence of diabetes mellitus surged by 62% (7). According to statistics from the West Aceh District Health Office (2021), the number of diabetes cases in West Aceh Regency continues to rise. In 2019, there were 4,238 documented cases; this number declined to 3,553 in 2020. However, by 2021, it was projected to rise again to 5,875 cases (8).

Suak Ribee Primary Health Center (Puskesmas Suak Ribee), in its role as a primary healthcare provider, has established a collaborative relationship with the BPJS Health Meulaboh branch office and is actively implementing the Chronic Disease Management Program (Prolanis). In 2024, Prolanis claims from Suak Ribee reached IDR 88,610,000, with program activities carried out weekly and claims submitted in a timely manner. The Prolanis activities at Suak Ribee include monthly educational sessions, biannual health status monitoring through laboratory examinations, medication services or referral-back (PRB), group activities such as exercise sessions, and home visit programs. Currently, home visits under Prolanis are still integrated with the Non-Communicable Disease Program (NCD), particularly for diabetes mellitus (DM); they have not yet been conducted as a separate activity. Suak Ribee Health Center operates five active Prolanis exercise clubs across several *gampong* (villages), with two dedicated exercise instructors. A preliminary survey conducted at Suak Ribee revealed a significant number of Prolanis participants in the period from January to December 2024, with a total of 191 cases: 96 diabetes mellitus patients, 93 hypertension patients, and 2 patients with both DM and hypertension. The proportion of Prolanis participants achieving controlled disease status at Suak Ribee was 6.85% in 2023 and declined to 2.55% in 2024. These figures reflect a high prevalence of chronic diseases in the area, highlighting the urgent need for enhanced community health management and preventive strategies.

Several detrimental social factors contribute to the prevalence of diabetes mellitus, including overweight status, unhealthy lifestyles, mental health disorders, and smoking. As a response, this study is conducted as part of an academic curriculum that leverages multiple resources. Moreover, adopting a positive outlook is necessary, as it can enhance individuals' responses to various external challenges (9). According to the Hypertension Society, risk factors for hypertension include poor dietary habits with high sugar, salt, and fat intake, and insufficient physical activity. To meet health goals, individuals are recommended to engage in at least 15–20 minutes of exercise daily (10).

Initial observations at Suak Ribee indicated that most Prolanis participants visiting the health center were elderly individuals often accompanied by family members. During these sessions, women represented the majority of participants in Prolanis exercise activities. Several previous studies have explored determinants of Prolanis utilization. Sari (2021) at Kedai Durian Health Center found that education, knowledge, the role of healthcare providers, and family support influenced Prolanis participation (11). Sabrina et al. (2022) reported that Prolanis utilization at Jurangombo Health Center was significantly associated with gender, employment status, and healthcare workers' perceptions (12). Abdullah (2017) in his study at Minasa Upa Health Center, Makassar, found that knowledge, family support, and the role of healthcare workers were statistically related to the utilization of the chronic disease management program (13). However, such studies have not yet been conducted in West Aceh, which has unique social and cultural characteristics. Therefore, the researcher is interested in investigating the factors influencing Prolanis utilization at Suak Ribee Health Center, focusing on variables such as age, gender, education, knowledge, healthcare provider roles, and family support.

METHODS

This study employed a quantitative approach with a cross-sectional design to identify factors influencing the utilization of the BPJS Health Chronic Disease Management Program (Prolanis) at Suak Ribee Primary Health Center. The independent variables in this study included age, gender, educational level, knowledge, the role of healthcare workers, and family support. The dependent variable was the utilization of the Chronic Disease Management Program (Prolanis). The study was conducted in the area served by Suak Ribee Health Center, Johan Pahlawan Subdistrict, West Aceh Regency, Aceh Province, from January 7 to February 7, 2025.

The population in this study comprised all Prolanis participants with hypertension and type 2 diabetes mellitus, whether or not they actively participated in Prolanis activities at Suak Ribee Health Center. Based on 2024 data from Suak Ribee, the total number of Prolanis participants (type 2 diabetes mellitus and hypertension) was 191 individuals. Using the Slovin formula with a 10% margin of error, a sample of 66 respondents was selected. The sampling technique used was accidental sampling. Data were collected through interviews using structured questionnaires. Data sources for this study consisted of two types: Primary data, collected directly from respondents via questionnaires; Secondary data, obtained from Suak Ribee Health Center records and the BPJS Health Meulaboh Branch Office. Data were processed and analyzed using SPSS version 16.0. Data processing procedures included editing, coding, data entry, and data verification. The analysis comprised three stages: Univariate analysis, conducted to describe each research variable; Bivariate analysis, conducted to test correlations between variables using the chi-square test; Multivariate analysis, used to identify the most significant factors, applying logistic regression analysis.

RESULT AND DISCUSSION

RESULT

Univariate Analysis

Univariate analysis was conducted to provide an overview of the study variables, their characteristics, as well as the frequency distribution and proportions. In this study, age, gender, education level, knowledge, family support, and the involvement of healthcare workers were treated as independent variables in the univariate analysis. The utilization of Prolanis was analyzed as the dependent variable.

Table 1. Univariate analysis of variables based on frequency distribution to investigate the factors influencing the utilization of the Chronic Disease Management Program (Prolanis)

Variable	Frequency (n)	Presentase %
Utilization of Prolanis		
Not Utilizing	20	30,3
Utilizing	46	69,7
Age		
Early Adulthood (35-44 yr)	1	1,5
Pre-Elderly (45-59 tyr)	24	36,4
Young Elderly (60-74 yr)	33	50,0
Older Elderly (≥75 yr)	8	12,1
Gender		
Male	21	31,8
Female	45	68,2
Education		
Low Education	26	39,4
High Education	40	60,6
Knowledge		
Poor knowledge	32	48,5
Good Knowledge	34	51,5
Role of Healthcare Wolkers		
Poor	18	27,3
Good	48	72,7
Family Support		
Lack of support	20	30,3
Provides support	46	69,7
Total	66	100

According to the table, the majority of the 66 respondents utilized Prolanis, with 46 individuals (69.7%) participating. Respondents in the elderly category (60–74 years) accounted for 33 individuals (50.0%). Most respondents were female, comprising 45 individuals (68.2%), and 40 respondents (60.6%) had a higher level of

education. According to the data, 34 respondents (51.5%) possessed very good knowledge. The majority of healthcare workers were classified as having a good role, totaling 48 individuals (72.7%). Furthermore, 46 out of 66 respondents (69.7%) reported receiving family support in utilizing Prolanis.

Bivariate Analysis

Bivariate analysis was used to determine the relationship between the independent and dependent variables. If the p-value is less than 0.05, it indicates a statistically significant association between the two variables. In this study, the chi-square test was applied with a 95% confidence level.

Table 2. Bivariate Analysis Results of Factors Influencing the Utilization of the Chronic Disease Management Program (Prolanis)

Variable	Utilizaion of Prolanis				Total		P- value	Odds Ratio
	Utilizing		Not Utilizing					
	N	%	N	%	N	%		
Age								
Early Adulthood (35-44 yr)	1	1,5	0	0	1	1,5	0,048	
Pre-Elderly (45-59 tyr)	4	6,1	20	30,3	24	36,4		
Young Elderly (60-74 yr)	14	21,2	19	28,8	33	50,0		
Older Elderly (≥75 yr)	1	1,5	7	10,6	8	12,1		
Total	20	30,3	46	69,7	66	100		
Gender								
Male	12	18,2	9	13,6	21	31,8	0,003	6,167
Female	8	12,1	37	56,1	45	68,2		
Total	20	30,3	46	69,7	66	100		
Education								
Low Education	10	15,2	16	24,2	26	39,4	0,374	1,875
High Education	10	15,2	30	45,5	40	60,6		
Total	20	30,3	46	69,7	66	100		
Knowledge								
Poor knowledge	14	21,2	18	27,3	32	48,5	0,042	3,630
Good Knowledge	6	9,1	28	42,4	34	51,5		
Total	20	30,3	46	69,7	66	100		
Role of Healthcare Wolkers								
Poor	10	15,2	8	12,1	18	27,3	0,015	4,750
Good	10	15,2	38	57,6	48	72,7		
Total	20	30,3	46	69,7	66	100		
Family Support								
Lack of support	10	15,2	10	15,2	20	30,3	0,045	3,600
Provides support	10	15,2	36	54,5	46	69,7		
Total	20	30,3	46	69,7	66	100		

Based on table 2, it can be concluded that the majority of Prolanis participants at Suak Ribee Health Center were in the young elderly age group (60–74 years), accounting for 50% of respondents. In terms of gender, female respondents dominated the sample (68.2%), and a higher proportion of them utilized the Prolanis program compared to males. Most respondents (60.6%) had a high level of education, and individuals with higher education showed a greater tendency to participate in the program. In relation to knowledge, more than half of the respondents (51.5%) demonstrated good knowledge, which correlated with a higher level of Prolanis utilization. The majority of participants (72.7%) also perceived the role of healthcare workers as good, and among them, Prolanis utilization was notably high (57.6%). Furthermore, family support was present among most respondents (69.7%), and more than half of those who received support (54.5%) utilized Prolanis services. Overall, 69.7% of the respondents were active users of the Prolanis program, indicating a generally positive level of program engagement among the studied population.

Multivariate Analysis

The influence of the independent factors evaluated simultaneously on the dependent variable was determined through multivariate analysis using multiple logistic regression. Based on the study, age, gender, education, knowledge, involvement of healthcare workers, and family support were identified as the six independent variables, while Prolanis utilization served as the dependent variable.

Table 3. Multivariate Analysis Results of Factors Influencing the Utilization of the Chronic Disease Management Program (Prolanis)

Variabel	B	Sig	OR	95 % C.I.for EXP(B)	
				Lower	Upper
Gender	2.189	0,002	8.930	2.246	35.513
Knowledge	1.514	0,033	4.545	1.126	18.348
Role of Healthcare Wolkers	1.469	0,030	4.345	1.156	16.328
Constant	-7.306	0,001	0,001		

The results of the logistic regression analysis indicated that gender was the most influential variable affecting the utilization of the Chronic Disease Management Program (Prolanis). The p-value was 0.002, with an odds ratio of 8.930, indicating that women were 8.9 times more likely to utilize Prolanis than men. Respondents with a high level of knowledge were approximately 4.5 times more likely to utilize Prolanis, and the knowledge factor was found to substantially influence adherence to Prolanis participation ($p = 0.033$). A p-value of 0.030 and an odds ratio of 4.345 showed that the involvement of healthcare professionals increased the likelihood of Prolanis utilization by approximately 4.3 times, indicating that the role of healthcare workers had a substantial impact on Prolanis utilization.

DISCUSSION

The Influence of Age on the Utilization of the Chronic Disease Management Program (Prolanis)

There was a statistically significant relationship between age and participation in the chronic disease management program at Suak Ribee Health Center, as indicated by the chi-square test. The survey revealed that elderly individuals aged 60–74 years, as well as pre-elderly individuals aged 45–59 years, were the most likely to utilize Prolanis. According to researchers at Suak Ribee Health Center, many elderly people who prioritize their health tend to participate in the program. Individuals approaching old age begin to understand the importance of self-care before reaching advanced age, which may explain their increased use of Prolanis. As physical endurance declines and disease burden increases with age, elderly individuals often require more medical care to alleviate symptoms. According to Notoadmodjo (2012), the concept of old age in this context represents a gradual transition experienced over several decades. Aging can lead to a loss of blood vessel elasticity, ultimately contributing to increased blood pressure. This may explain why advancing age is linked to a higher risk of long-term illnesses such as hypertension and diabetes. Therefore, it is essential to pay special attention to older adults in the context of chronic disease prevention and management. Programs like Prolanis should consider age-related characteristics and health risks to provide more effective services tailored to the needs of this population (11). Septiani et al. (2024) in Seberang Ulu District 1 also found that chronic disease management programs were more frequently utilized by elderly individuals, which aligns with the findings of this study (14). In contrast, a previous study by Viona Yuliaristi (2018) at Mandala Medan Wordung Health Center found no significant association between age and participation in chronic disease management programs. The current study's findings contradict this, showing that age is indeed significantly associated with Prolanis utilization (15).

The Influence of Gender on the Utilization of the Chronic Disease Management Program (Prolanis)

A statistically significant correlation between gender and participation in chronic disease management programs was found through the chi-square test, and logistic regression analysis confirmed that gender was the

most influential factor affecting Prolanis utilization at Suak Ribee Health Center. According to the researchers, many male participants are still working or engaged in other activities such as farming, gardening, or trading, which limits their availability to access Prolanis services compared to females. This is especially evident in morning activities like Prolanis exercise, held every Wednesday at 08:00 AM at Suak Ribee Health Center.

Field findings revealed that several female respondents expressed great enthusiasm for participating in Prolanis activities such as group exercise. They reported making time for these sessions and experiencing significant health benefits. Gender was also found to be associated with age; this study showed that the majority of Prolanis participants were women in the pre-elderly (45–59 years) and young elderly (60–74 years) groups. The link between gender and age influences Prolanis utilization, as women in these age categories tend to have more free time than men, particularly for morning exercise sessions. Anderson (as cited in Notoatmodjo, 2012) stated that gender is a predisposing factor in the use of health services. Gender reflects the biological characteristics that differentiate men and women. These biological differences, along with the responsibilities of men and women, are not interchangeable, and their roles remain distinct as defined by societal norms. Gender often represents roles and responsibilities in daily life and professional contexts (16).

This study aligns with the findings of Dian (2019) at Salopa Health Center, Tasikmalaya District, which reported a correlation between gender and Prolanis utilization, particularly among women. Women tend to prioritize and pay more attention to their health than men. Variations in disease-related behavior are also influenced by gender; women are more likely to engage in self-care than men, possibly due to greater availability of time and opportunities to visit primary health care centers (16).

Research conducted by Sabrina et al. (2022) at Jurangombo Health Center also found a substantial correlation between gender and Prolanis utilization at that facility (12). However, these findings contrast with those of Viona (2018), who found no statistically significant correlation between gender and the utilization of chronic disease management programs (Prolanis), as well as with Rahmi (2015), whose findings similarly showed no substantial relationship between gender and the implementation of Prolanis (15).

The Influence of Education on the Utilization of the Chronic Disease Management Program (Prolanis)

No statistically significant relationship was found between education level and participation in the chronic disease management program at Suak Ribee Health Center, according to the chi-square test results. According to respondents with higher education, Prolanis utilization was not always marked by positive health behavior. Factors such as knowledge, education level, and other elements particularly the role of healthcare workers and family support affect Prolanis utilization.

In general, education may influence an individual's knowledge level; however, in this context, education does not always align with Prolanis-related knowledge. When linked to the knowledge variable, Prolanis utilization is more strongly influenced by an individual's actual understanding of chronic disease management and the benefits of the program, rather than by formal educational background. Individuals with lower educational attainment but good knowledge gained through counseling, personal experience, or information from healthcare workers and family tended to utilize Prolanis more actively than those with higher education but limited knowledge of the program.

According to Notoadmodjo (2014), education is an effort to teach or motivate individuals to take action (practice) in order to avoid health risks and improve their well-being. Health education that results in behavioral changes or actions to maintain or improve health is based on raising awareness and understanding through learning processes (15). Consistent with other studies, this study did not find a correlation between education and Prolanis utilization (17). This finding reflects the nature of Prolanis participation, suggesting that a person's level of education is not a guarantee of positive health behavior. Similarly, Purnamasari et al. (2020) also found no correlation between education and participation in the chronic disease management program Prolanis. However, this finding contradicts the study by Shopian Aswar (2023), which reported a significant correlation between education and participation in the Prolanis program (16).

The Influence of Knowledge on the Utilization of the Chronic Disease Management Program (Prolanis)

A significant relationship between knowledge and the utilization of chronic disease management programs was identified through the chi-square test, with knowledge emerging as one of the key aspects influencing Prolanis

utilization at the health center, according to the logistic regression test. It is assumed that individuals are more likely to use Prolanis when they have more information about it, as well-informed patients tend to use healthcare resources more appropriately. Various factors contribute to a person's level of knowledge, including formal education, life experience, media exposure, healthcare providers, and family support. After reading this, readers are expected to feel more informed and motivated to seek Prolanis services offered at primary health centers. Good knowledge does not arise spontaneously; rather, it is shaped and developed through the active role of healthcare professionals.

According to Notoatmodjo (2012), a person's senses provide the foundation for knowledge, which subsequently leads to appropriate understanding. Increased sensory input contributes to greater insight. In terms of influencing individual behavior, the cognitive domain or knowledge is crucial. One's familiarity with a subject can be explained by the intensity of exposure. Inadequate information is a barrier to healthy behavior, as individuals who lack understanding find it difficult to apply health guidance disseminated by professionals, whereas those with adequate knowledge tend to respond more rationally. These findings are consistent with a study by Viona Yuliaristi (2018) at the Mandala Medan Wordung Health Center, which identified a significant correlation between knowledge and the utilization of chronic disease management programs (19). Similar results were found by Firmansyah (2022) at the Kamonji Health Center in Palu City, who also reported a correlation between respondents' knowledge levels and their use of Prolanis (20). However, these results contradict the study by Adina (2020), which reported no correlation between respondents' level of knowledge and their utilization of the Prolanis program (16).

The Influence of Healthcare Workers' Roles on the Utilization of the Chronic Disease Management Program (Prolanis)

Logistic regression and chi-square tests revealed a substantial correlation between the involvement of healthcare professionals and the utilization of the chronic disease management program at Suak Ribee Health Center. The incentives provided by BPJS Health to healthcare workers during the implementation of Prolanis indicate that healthcare staff play a significant role. This is regulated under the joint regulation issued by the Secretary General of the Ministry of Health of the Republic of Indonesia and the President Director of the Health Social Security Agency (BPJS), regulation number 02.05/III/SK/089/2016, as well as Law No. 3 of 2016 regarding the guidelines for the implementation procedures of capitation payments based on fulfillment of service commitments in primary health facilities. Prolanis is one of the service indicators that first-level healthcare facilities (FKTP), including community health centers (puskesmas), are encouraged to fulfill. In addition to affecting the motivation of healthcare workers, these incentives also act as a catalyst to improve the quality of Prolanis services. Participation in educational sessions, health status monitoring, group activities (such as Prolanis exercise), medication services, and home visit activities are all facilitated and motivated by healthcare workers. Healthcare providers are mandated by Law No. 36 of 2014 to support patients in engaging with chronic disease management programs (Prolanis) by disseminating information about chronic diseases and their associated risks particularly hypertension and type 2 diabetes as well as the consequences of failing to implement preventive actions (15). Consistent with the findings of Sari (2021) from Balai Kesehatan Kedai Durian, this study shows that healthcare workers play a vital role in determining Prolanis utilization (19). Similarly, Agustina et al. (2023) found that support from healthcare workers influenced BPJS participant adherence to Prolanis, which aligns with previous research. In contrast, Rosdiana et al. (2022) reported no significant correlation between the role of healthcare workers and Prolanis utilization at Kumba Health Center in Bima City (16).

The Influence of Family Support on the Utilization of the Chronic Disease Management Program (Prolanis)

A statistically significant correlation between family support and participation in the chronic disease management program at Suak Ribee Health Center was identified through chi-square testing. Based on the assumption that having loved ones provide support can serve as a powerful source of motivation, researchers believe that emotional encouragement and increased confidence may drive individuals to participate in Prolanis activities. This form of support includes reminding participants of Prolanis schedules, encouraging regular medication use, helping maintain a healthy diet, and accompanying them to the health center. Family support is particularly crucial for the elderly, who are more likely to be physically and emotionally dependent on those closest to them. Because of the example and influence they receive from the home environment, family members are believed to have the capacity to shape Prolanis participants' behaviors. Participants may find it easier to engage in

program activities when supported by their families. If family members are willing to accompany or supervise the participants and consistently remind them about scheduled activities, they can become a driving force for consistent engagement (1). According to Notoatmodjo (2020), drawing from Green's theory, one of the factors influencing individual behavior—including participation in Prolanis is the presence of a supportive family and social network (18). The findings of this study support research by Mulya et al. (2023), conducted in the FKTP area of Pejaten Timur Village, which identified a strong correlation between family support and motivation to manage diabetes among Prolanis participants. This is consistent with the findings of Akustika et al. (2023), who examined the influence of family support on BPJS participants' involvement in post-Prolanis initiatives at Pancasan Health Center (16).

CONCLUSION

The study found that age, gender, knowledge, the role of healthcare workers, and family support are key variables influencing the utilization of the BPJS Health Chronic Disease Management Program (Prolanis) at Suak Ribee Health Center. To improve Prolanis participation among men with hypertension and type 2 diabetes mellitus, Suak Ribee Health Center has enhanced its Prolanis program. One such improvement includes scheduling Prolanis exercise sessions on weekends or in the afternoons, when more men are available to participate. Separating Prolanis home visit activities from other programs may also facilitate more targeted and organized outreach, especially for underserved populations. Future researchers are encouraged to explore additional variables that may influence the utilization of Prolanis.

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