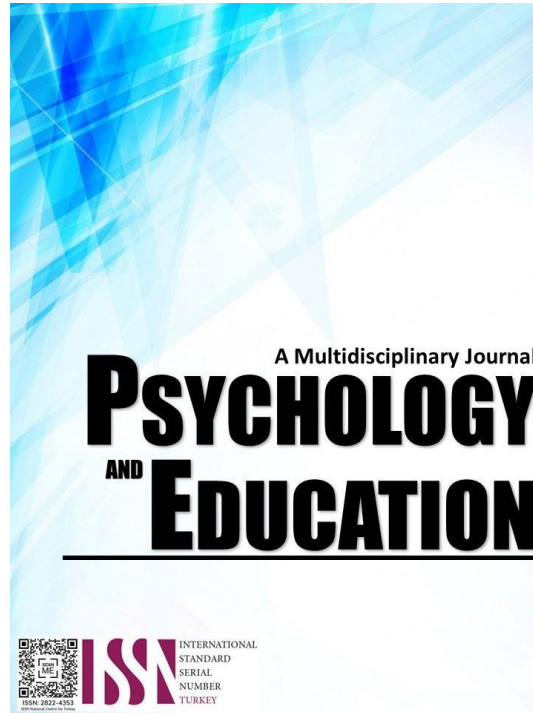


HEALTH LITERACY, SOCIAL SUPPORT, AND PSYCHOLOGICAL DETERMINANTS ON SELF-MANAGEMENT OF PATIENTS WITH CHRONIC DISEASES



PSYCHOLOGY AND EDUCATION: A MULTIDISCIPLINARY JOURNAL

Volume: 32

Issue 7

Pages: 836-846

Document ID: 2025PEMJ3102

DOI: 10.5281/zenodo.14936204

Manuscript Accepted: 02-15-2025

Health Literacy, Social Support, and Psychological Determinants on Self-Management of Patients with Chronic Diseases

Kristoffer G. Villareal*

For affiliations and correspondence, see the last page.

Abstract

Chronic diseases like diabetes and hypertension are significant public health challenges globally, especially in resource-limited rural settings like Barangay Damilag. An increasing incidence of these conditions with limited accessibility to healthcare necessitates effective self-management to improve their outcomes. This study aims to determine the correlation between health literacy, social support, psychological factors, and self-management among chronic disease patients. The study employed descriptive correlational and causal research design, and data were collected from 256 samples using a survey questionnaire. Findings revealed that health literacy ($M = 3.55$, $SD = 0.72$) - knowledge of disease ($M = 3.60$, $SD = 0.82$, $r = 0.218$, $p = .001$), medication management skills ($M = 4.07$, $SD = 0.553$, $r = 0.038$, $p = .550$), and access to health information ($M = 2.97$, $SD = 0.788$, $r = 0.123$, $p = .05$) -- significantly predicts self-management by enabling informed decision-making and improved treatment adherence. Social support ($M = 3.37$, $SD = 0.853$), such as family ($M = 4.04$, $SD = 0.824$, $r = 0.627$, $p = .000$), and peers ($M = 2.51$, $SD = 0.895$, $r = 0.006$, $p = .929$), showed moderate barriers to self-care and improved emotional resilience. Psychological determinants ($M = 3.50$, $SD = 0.858$) - self-efficacy ($M = 3.61$, $SD = 0.839$, $r = 0.714$, $p = .000$), and motivation ($M = 3.91$, $SD = 0.957$, $r = 0.451$, $p = .001$) - emerged as the strongest predictors of self-management. Through regression and structural equation modeling analyses, the researcher identified causal pathways and the combined impact of these factors on self-management. The study contributes insight for healthcare practitioners, policymakers, and community organizations by highlighting the need for holistic interventions. Recommended strategies to address barriers and optimize self-management include integrating health education, social support systems, and psychological empowerment.

Keywords: *health literacy, social support, psychological determinants, self-management, chronic diseases*

Introduction

Chronic diseases, such as diabetes and hypertension, have emerged as significant public health concerns in Barangay Damilag, a rural community in the municipality of Manolo Fortich. Records from the local Health Center indicate that 758 residents have been diagnosed with either diabetes, hypertension, or both. This high prevalence mirrors broader national and global trends, where non-communicable diseases (NCDs) are increasingly common due to aging populations, urbanization, and lifestyle changes (World Health Organization [WHO], 2019).

According to the WHO (2019), an estimated 1.4 billion adults were living with hypertension, and 463 million people were diagnosed with diabetes in 2019. In the Philippines, a study by the Philippine Society of Hypertension (PSH) estimated that 21% or 10 million Filipinos are hypertensive, while the International Diabetes Federation (IDF) reported about 3.9 million diabetes cases in 2020.

Barangay Damilag is characterized by its rural setting and limited healthcare infrastructure, which presents unique challenges for residents managing chronic diseases. Despite the national efforts to combat chronic diseases, there remains a significant gap in the ability of individuals, particularly in low- and middle economic status, to effectively manage these conditions. While much study has been done on chronic disease management, no studies have focused on the combined impact of health literacy, social support, and psychological determinants in rural, resource-limited settings within the locality. This underscores the urgent need for effective self-management strategies in these areas.

This study explores the factors influencing the self-management behaviors of individuals with chronic diseases, particularly diabetes and hypertension. Specifically, this study examines the roles of health literacy, social support, and psychological determinants in managing these conditions. By gaining a deeper understanding of these factors, the study aims to identify strategies that can be implemented to enhance self-management and improve health outcomes. The findings will contribute to developing more targeted, context-specific interventions that could be applied in Barangay Damilag and similar communities across the Philippines. Additionally, the study aims to provide insights that could inform policy decisions and healthcare practices to better address the challenges associated with chronic disease management.

Research Questions

This study aimed to develop a causal model on health literacy, social support, psychological determinants, and self-management of patients with chronic diseases. The primary research questions are:

1. What is the level of health literacy among patients with chronic diseases in terms of:
 - 1.1. knowledge of disease;

- 1.2. medication management skills; and
- 1.3. access to health information?
2. What is the level of social support among patients with chronic diseases in terms of:
 - 2.1. family involvement;
 - 2.2. peer support; and
 - 2.3. community resources?
3. What is the level of psychological determinants among patients with chronic diseases in terms of:
 - 3.1. mental health;
 - 3.2. self-efficacy; and
 - 3.3. motivation?
4. What is the level of self-management among patients with chronic diseases?
5. Is there a significant relationship between the self-management and:
 - 5.1. health literacy;
 - 5.2. social support;
 - 5.3. psychological determinants?
6. Which variables, singly or in combination, best predict the self-management of patients with chronic diseases?
7. What causal model best fits the self-management of patients with chronic diseases?

Methodology

Research Design

This study used a descriptive correlational and causal research design to investigate the relationships between health literacy, social support, psychological determinants, and self-management behaviors in individuals with chronic diseases.

The descriptive component explored a details of the current levels of health literacy, types of social support, psychological determinants, and self-management behaviors among the study participants. Quantitative data was collected through structured surveys and questionnaires to summarize the data using descriptive statistics, offering insights into the general trends and patterns within the population (Creswell, 2014).

The correlational aspect of the study examined the strength and direction of relationships between the variables of interest. By employing correlational analysis, this research seeks to identify whether and how health literacy, social support, and psychological determinants are related to self-management behaviors in individuals with chronic diseases. Pearson correlation coefficients were calculated to determine the degree of association between these variables, helping to clarify how they interrelate within the study population (Gravetter & Wallnau, 2016).

The causal design component explored potential causal relationships between the independent variables (health literacy, social support, and psychological determinants) and the dependent variable (self-management behaviors). Although true experimental designs are not feasible in this context due to ethical and practical considerations, the study used statistical techniques such as regression analysis and structural equation modeling to infer causal links from the observed data. This method allows for controlling confounding variables and examining direct and indirect effects, providing a more comprehensive understanding of the causal pathways (Keith, 2019).

Respondents

The study targets 758 individuals diagnosed with chronic diseases such as diabetes and hypertension within Barangay Damilag. A proportionate stratified random sampling design was employed to ensure a representative sample. This method involves dividing the population into subgroups (strata) based on specific characteristics—in this case, age groups—and then randomly selecting participants from each stratum in proportion to their prevalence in the population.

Using the Raosoft sample size calculator, the sample size was determined to be 256 participants based on a 95% confidence level and a 5% margin of error, deemed sufficient to detect statistically significant relationships between the variables under investigation.

The population was divided into three age groups. Within each age group, participants were randomly selected in proportion to their prevalence in the population, ensuring each stratum was proportionately represented.

This approach aligns with best practices in sampling procedures when studying health outcomes across different demographic groups (Singh & Masuku, 2014).

Table 1. *The distribution of participants by age group*

<i>Age</i>	<i>Population</i>	<i>Sample size</i>	<i>Percentage</i>
20 - 39	150	51	20
40 - 59	350	118	46
60 & above	258	87	34
Total	758	256	100

Instrument

The researcher collected data through survey questionnaires, measured using a 5-point Likert-type Scale with a total of 85 modified questions. The options range from "Strongly Agree" to "Strongly Disagree," with 5 representing the highest score and 1 representing the lowest. The Cronbach's alpha values range from 0.802 to 0.929. Knowledge of disease (0.802), medication management skills (0.835), access to health information (0.887), family involvement (0.826), peer support (0.914), community resources (0.845), mental health (0.929), self-efficacy each item group (0.887), motivation ((0.857), self-management (0.890), indicating a high level of internal reliability for each item group.

The first section focuses on assessing health literacy among individuals with chronic diseases. This section adapted from the Health Literacy Questionnaire (HLQ) by Elsworth et al. (2016), the Medication Adherence Rating Scale (MARS) by Dharvees et al. (2022), and the eHealth Literacy Scale (eHEALS) by Milanti et al. (2023). The second section focuses on assessing social support, adapted from the Family Involvement in Chronic Disease Management Questionnaire (FICDMQ) by Gilliss et al. (2019), Peer Support in Chronic Disease Management by Fisher et al. (2015), and the Chronic Illness Resources Survey (CIRS) by Manemann et al. (2024). The third section is assessing psychological determinants, adapted from the Depression Anxiety Stress Scales (DASS) by Cowles and Medvedev (2022), the General Self-Efficacy Scale (GSES) by Crandall et al. (2021), and the Patient Motivation Questionnaire (PMQ) by El Miedany et al. (2017). The final section assessed self-management using the Self-Management Behavior Questionnaire (SMBQ) by Hardman et al. (2022).

Procedure

The data collection process was divided into several phases: approval and preparation, participant recruitment, data collection, and data analysis while addressing key ethical considerations and data protection protocols. Following the study's approval from the research adviser and panel, the researcher applied to the Liceo Research Ethics Board (LREB) to ensure compliance with ethical standards.

Privacy and confidentiality were maintained throughout the study. Personal data was anonymized during data collection, and participants were only identified by a unique code to protect their identity. The researcher collaborated with Barangay Health Workers (BHWs) to assist in identifying eligible participants and conducting home visits to distribute survey questionnaires.

The data collection occurred between October and November 2024 in Barangay Damilag. Participants were given 30 to 40 minutes to complete the survey. The collected data was organized into a secure Excel file and transferred to the university statistician for analysis. Descriptive and inferential statistical methods were employed to identify patterns and relationships among the variables under study.

Results and Discussion

Problem 1. What is the level of health literacy among patients with chronic diseases in terms of Knowledge of disease; Medication management skills; and Access to health information?

Table 2. Summary of Mean Scores for the Level of health literacy among patients with chronic diseases

Sub-variables	Mean	SD	Description	Interpretation
Knowledge of disease	3.60	0.82	Agree	High
Medication management skills	4.07	0.553	Agree	High
Access to health information	2.97	0.788	Neutral	Moderately High
Over-all Mean	3.55	0.72	Agree	High

Legend: 4.51-5.00, Very High; 3.51-4.50, High; 2.51-3.50, Moderately High; 1.51-2.50, Low; 1.00-1.50, Very Low

Table 2 presents the Summary of Mean Scores for the Level of health literacy among patients with chronic diseases. As shown in the table, patients obtained the highest mean score of $M=34.07$, $SD=.553$ for Medication management skills, followed by Knowledge of disease ($M=3.60$, $SD=.82$), and last Access to health information ($M=2.97$, $SD=.788$). The overall mean score of $M=3.55$, described as "agree," implies that patients generally have a high level of health literacy. This shows high skills in managing medications and adequate knowledge of their diseases. However, access to health information appears comparatively weaker. The variability implied by $SD=0.72$ suggests that while many patients demonstrate high health literacy, there is some inconsistency in their proficiency across these areas.

Medication Management Skills had the highest mean score ($M=34.07$, $SD=0.553$), indicating that patients are proficient in managing their medication routines, a vital component of chronic disease care. This aligns with research showing that high literacy in medication management significantly reduces adherence issues and medication errors, especially when patients receive pharmacist-led support and personalized interventions (Rahman et al., 2020; van der Gaag et al., 2022; Widyakusuma et al., 2019).

The Knowledge of Disease ($M=3.60$, $SD=0.82$) suggests that patients strongly understand their condition, symptoms, and preventative strategies. Studies confirm that disease-specific knowledge is essential for effective self-management, as demonstrated in patients with COPD and chronic kidney disease, who manage their health better when they fully understand symptoms and treatments (Sheng et al., 2023; Lininger, 2023).

Access to Health Information had the lowest score ($M=2.97$, $SD=0.788$), reflecting moderate digital health literacy. This is consistent with literature emphasizing the importance of digital literacy for navigating telehealth and health apps, which improves confidence and health outcomes. Additionally, social media serves as a valuable peer support platform, providing credible information, especially for patients with limited access to traditional healthcare (Palumbo et al., 2021; Robbins & Dunn, 2019; Singh & Rabindranath, 2016).

Problem 2. What is the level of social support among patients with chronic diseases in terms of: Family involvement; Peer support; and Community resources?

Table 3. Summary of Mean Scores for the Level of social support among patients with chronic diseases

Subvariables	Mean	SD	Description	Interpretation
Family involvement	4.04	0.824	Agree	High
Peer support	2.51	0.895	Neutral	Moderately High
Community resources	3.55	0.84	Agree	High
Over-all Mean	3.37	0.853	Neutral	Moderately High

Legend: 4.51-5.00, Very High; 3.51-4.50, High; 2.51-3.50, Moderately High; 1.51-2.50, Low; 1.00-1.50, Very Low

Table 3 presents the Summary of Mean Scores for the Level of social support among patients with chronic diseases. As shown in the table, patients obtained the highest mean score of $M=4.04$, $SD=.824$ for family involvement, followed by community resources ($M=3.55$, $SD=.84$), and last is peer support ($M=2.51$, $SD=.895$). The overall mean score of $M=3.37$, described as "neutral," indicates that patients perceive a moderately high level of social support. Family involvement emerges as the strongest source of support, while support from community resources and peers appears less consistent. As implied by $SD=0.85$, the variability suggests notable differences in the extent of social support received, emphasizing the need to strengthen and balance support systems across family, community, and peer networks.

The literature underscores the importance of family involvement, peer support, and community resources in supporting self-management among chronic disease patients, a concept reflected in Table 3's summary scores. Patients scored highest in family involvement ($M=4.04$, $SD=0.824$), which aligns with findings by Rafii et al. (2024), Muellers et al. (2023), and Alhaqwi et al. (2023), demonstrating that active family support assists in medication adherence, routine management, and lifestyle changes, particularly for COPD and diabetes patients.

Community resources had the next highest score ($M=3.55$, $SD=0.84$), supporting research that highlights the role of community-based models like the Chronic Care Model and the Diabetes Rescue, Engagement, and Management (D-REM) program, which show that access to resources enhances patient self-efficacy and bridges gaps in care, especially for vulnerable populations (Al-Qahtani, 2024; Juntunen et al., 2022).

Lastly, peer support received the lowest score ($M=2.51$, $SD=0.895$), consistent with studies by Sadiq et al. (2024) and Vrtič et al. (2023), which demonstrate that while peer-led programs provide psychological benefits and empowerment, peer support's impact may vary depending on patient engagement.

Problem 3. What is the level of psychological determinants among patients with chronic diseases in terms of Mental health; Self-efficacy; and Motivation?

Table 4. Summary of Mean Scores for the Level of psychological determinants among patients with chronic diseases

Subvariables	Mean	SD	Description	Interpretation
Mental health	2.98	0.778	Neutral	Moderately High
Self-efficacy	3.61	0.839	Agree	High
Motivation	3.91	0.957	Agree	High
Over-all Mean	3.50	0.858	Neutral	Moderately High

Legend: 4.51-5.00, Very High; 3.51-4.50, High; 2.51-3.50, Moderately High; 1.51-2.50, Low; 1.00-1.50, Very Low

Table 4 presents the Level of psychological determinants among patients with chronic diseases in terms of Motivation. The table shows that patients obtained the highest mean score of $M=3.91$, $SD=.957$ for motivation, followed by self-efficacy ($M=3.61$, $SD=.839$), and last mental health ($M=2.98$, $SD=.778$). The overall mean score of $M=3.50$, described as "neutral," indicates that patients generally exhibit a moderately high level of psychological determinants. Motivation emerges as the strongest aspect, reflecting a positive driver in managing chronic disease. However, the variability, as implied by $SD=0.858$, suggests notable differences in psychological resilience, confidence, and mental health challenges among individuals, emphasizing the need for tailored strategies to address these varied psychological factors and enhance overall well-being.

Literature underscores motivation, self-efficacy, and mental health as key psychological determinants in chronic disease self-management. Hadi et al. (2020) and Dye et al. (2016) highlight motivation as a central driver of patient engagement, a finding supported by Table 4, where motivation scored highest ($M=3.91$, $SD=0.957$).

Self-efficacy, essential for managing symptoms and treatments, received the second-highest score ($M=3.61$, $SD=0.839$). Study by Liou

et al. (2020) suggest that combining self-efficacy with health literacy enhances disease management capabilities.

Mental health factors, with a lower score ($M=2.98$, $SD=0.778$), influence self-management behaviors, as higher depression levels correlate with poorer self-care (Daniali et al., 2018). As Kearney (2019) and Vázquez-Atanacio (2018) highlight, interventions like mindfulness and empowerment improve mental health and self-management.

Problem 4. What is the level of self-management among patients with chronic diseases?

Table 5. Level of self-management among patients with chronic diseases

Variable	Mean	SD	Description	Interpretation
Self-management	3.93	0.948	Agree	High

Legend: 4.51-5.00, Very High; 3.51-4.50, High; 2.51-3.50, Moderately High; 1.51-2.50, Low; 1.00-1.50, Very Low

The overall mean score of $M=3.93$, described as "agree," indicates that patients generally exhibit a high level of self-management. This reflects their effectiveness in managing chronic diseases through monitoring their condition, adhering to prescribed treatments, and maintaining a proper diet. However, the variability, as implied by $SD=0.948$, highlights differences in how consistently patients apply these self-management practices. This suggests the need for individualized support to address gaps and ensure sustained self-management across the patient population.

Self-management is critical for enhancing quality of life, promoting independence, and minimizing healthcare use in chronic disease patients. Houtum (2016) notes that effective self-management requires context-sensitive approaches and adaptive support, reinforcing that personalized, integrative strategies are essential to strengthen self-management behaviors in chronic disease care.

Problem 5. Is there a significant relationship between the self-management and Health literacy; Social support; Psychological determinants?

Table 6. Results of Pearson R Correlation Analysis for the Significant Relationship between Respondents' Self-Management, Health Literacy, Social Support, and Psychological Determinants

Variable	Pearson Correlation	P-value	Interpretation
Knowledge of disease	.218	.000	Significant (reject Ho)
Medication management skills	.038	.550	Not Significant (accept Ho)
Access to health information	.123	.050	Significant (reject Ho)
Health Literacy	.201	.001	Significant (reject Ho)
Family involvement	.627	.000	Significant (reject Ho)
Peer support	.006	.929	Not Significant (accept Ho)
Community resources	.056	.374	Not Significant (accept Ho)
Social Support	.302	.000	Significant (reject Ho)
Mental health	.025	.689	Not Significant (accept Ho)
Self-efficacy	.714	.000	Significant (reject Ho)
Motivation	.451	.000	Significant (reject Ho)
Psychological Determinants	.521	.000	Significant (reject Ho)

Legend:
Correlation Coefficient Range Effect Size/Strength of Relationship (Cohen, 1988)
.50 and Above Strong/Large Correlation
.30 to .49 Moderate Correlation
.10 to .29 Weak/Small Correlation

Table 6 presents the Results of Pearson R Correlation Analysis for the Significant Relationship between Respondents' Self-Management, Health Literacy, Social Support, and Psychological Determinants. As shown in the table, the variables Medication management skills ($p>.05$), peer support ($p>.05$), Community resources ($p>.05$), and Mental health ($p>.05$) have no significant relationship with patients' self-management. Meanwhile, knowledge of disease ($p<.05$, $r=.218$), Access to health information ($p<.05$, $r=.123$), and Health Literacy ($p<.05$, $r=.201$) have a small positive significant relationship on patients' self-management. This means that if the said variables increase very lightly, the chance for patients' self-management will increase. On the other hand, the variables social support ($p<.05$, $r=.302$) and motivation ($p<.05$, $r=.451$) have a moderately significant relationship with patients' self-management. This means that if these variables increase, patients' self-management will moderately increase. Furthermore, the variables self-efficacy ($p<.05$, $r=.714$) and psychological determinants ($p<.05$, $r=.521$) have a considerable positive significant relationship on patients' self-management. This implies that patients' self-management will also increase if the variables increase.

Based on these findings, the null hypothesis (H_0), which states that no significant relationship exists between self-management and health literacy, social support, and psychological determinants, is rejected. These results confirm the importance of health literacy, social support, psychological determinants, and other significant factors, such as family involvement and self-efficacy, in influencing self-management behaviors. Conversely, non-significant factors, like medication management skills and peer support, highlight areas that may require different interventions or further exploration.

Studies by RobotSarpoooshi et al. (2020) and Schrauben et al. (2019) emphasize that even marginal increases in health literacy positively influence self-care behaviors and treatment adherence, which is corroborated by the observed small but significant correlations between self-management and variables such as knowledge of disease ($p<.05$, $r=.218$), access to health information ($p<.05$, $r=.123$), and overall

health literacy ($p < .05$, $r = .201$). These findings suggest that incremental improvements in health literacy can slightly enhance patients' self-management, underscoring the potential benefit of targeted health education interventions.

Moreover, social support exhibits a moderate positive effect on self-management behaviors, as supported by Huygens et al. (2016) and Waverijn et al. (2016), who highlighted that supportive networks and accessible community resources facilitate adherence to self-care routines. The variable social support ($p < .05$, $r = .302$) in Table 6 shows a moderate, statistically significant correlation with self-management, implying that patients benefit from increased social support through stronger adherence to self-care practices.

Finally, psychological determinants, particularly self-efficacy, emerge as the strongest predictors of self-management in this study. Zou et al. (2017) and Jacobs et al. (2017) highlight that self-care confidence and emotional resilience significantly enhance patients' ability to manage symptoms and adhere to treatment plans. Table 14's findings reflect this, with self-efficacy ($p < .05$, $r = .714$) and psychological determinants ($p < .05$, $r = .521$) displaying extensive, positive, significant relationships with self-management. This strong association reinforces the literature's emphasis on psychological support as a critical component in fostering self-management among patients with chronic diseases.

Problem 6. Which variables, singly or in combination, best predict the self-management of patients with chronic diseases?

Table 7. Results of Multiple Regression Analysis for the Variables that Singly or in Combination best Predict Respondents' Self-Management

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Interpretation
	B	Std. Error				
(Constant)	-2.97	.511		-5.82	.000	Significant (reject Ho)
Knowledge of disease	-.293	.091	-.149	-3.21	.001	Significant (reject Ho)
Medication management skills	.131	.072	.062	1.81	.071	Not Significant (accept Ho)
Access to health information	.132	.057	.089	2.30	.022	Significant (reject Ho)
Family involvement	.805	.088	.433	9.19	.000	Significant (reject Ho)
Peer support	.038	.045	.029	.836	.404	Not Significant (accept Ho)
Community Resources	-.163	.047	-.131	-3.50	.001	Significant (reject Ho)
Self-efficacy	1.31	.112	.704	11.75	.000	Significant (reject Ho)
Motivation	.715	.098	.360	7.26	.000	Significant (reject Ho)
Psychological Determinants	-.936	.172	-.375	-5.45	.000	Significant (reject Ho)
	R=.845		R2=.715	F=68.25	P=.000	

Table 7 Results of Multiple Regression Analysis for the Variables that Singly or in Combination best Predict Respondents' Self-Management. As depicted in the table, the R-value is .845, signifying a strong positive relationship between respondents' self-management and the independent variables used. The R2 value of .715 implies that significant predictor variables, namely knowledge of disease ($p < .05$), access to health information ($p < .05$), family involvement ($p < .05$), community resources ($p < .05$), self-efficacy ($p < .05$), motivation ($p < .05$), and psychological determinants ($p < .05$) explained 71.5 % of the variability of respondents' self-management. The probability value $p = .000$ of $F = 68.25$ indicates a statistically significant relationship between the respondents' self-management and the independent variables used.

Meanwhile, the variable that significantly best predicted or influenced respondents' self-management is self-efficacy ($\beta = .704$), followed by family involvement ($\beta = .433$), psychological determinants ($\beta = -.375$), motivation ($\beta = .36$), knowledge of disease ($\beta = -.149$), community resources ($\beta = -.131$), and access to health information ($\beta = .089$).

The regression equation model of this study is $Y' = -2.97 - .293X1 + .132X2 + .805X3 - .163X4 + 1.31X5 + .715X6 - .936X7$

Where

Y' = Respondents' Self-Management

-2.97 = is the B constant

$X1$ = Knowledge of Disease

$X2$ = Access to Health Information

$X3$ = Family Involvement

$X4$ = Community Resources

$X5$ = Self-Efficacy

$X6$ = Motivation

$X7$ = Psychological Determinants

The regression equation implies that the respondents' self-management was statistically significantly predicted or influenced by knowledge of disease, access to health information, family involvement, community resources, self-efficacy, motivation, and psychological determinants. As to the significant effect sizes, for a 1-point increase in knowledge of the disease, respondents' self-

management will decrease by .293; for a 1-point increase in community resources, self-management will decrease by .163; and for a 1-point increase in psychological determinants, self-management will decrease by .936. On the other hand, for a 1-point increase in Access to health information, self-management will increase by .132; for a 1-point increase in Family involvement, self-management will increase by .805; a 1-point increase in self-efficacy, self-management will increase by 1.31, and a 1-point increase of motivation, self-management will increase by .715.

Given these findings, the null hypothesis (Ho2), which posits that no predictor variable best predicts self-management, is rejected. The results demonstrate that Family Involvement, Self-Efficacy, and Motivation are the most significant predictors, emphasizing the importance of these factors in fostering effective self-management among patients with chronic diseases. Conversely, addressing barriers related to Knowledge of Disease and Psychological Determinants may be necessary to enhance outcomes further.

Knowledge of disease and access to health information emerge as fundamental factors, as Nicoletti-Rojas et al. (2022) and Fadli (2023) noted. These studies emphasize that patients with greater disease understanding and access to reliable health information are more likely to adhere to self-care practices. This study confirms these findings, showing that knowledge of disease ($p < .05$, $\beta = -.149$) and access to health information ($p < .05$, $\beta = .089$) significantly impact self-management. However, the model suggests a slight decrease in self-management with increased knowledge of disease (-.293), potentially indicating a need for contextually relevant health education that supports actionable self-care knowledge.

Family involvement and community resources are also significant predictors. Fadli (2023) underscores family support as essential in diabetes self-management, while Ladner et al. (2021) highlight the role of community resources in enhancing patients' self-management. In this study, family involvement ($p < .05$, $\beta = .433$) demonstrates a strong positive influence on self-management, with a 1-point increase in family support correlating with a .805 increase in self-management. However, community resources ($p < .05$, $\beta = -.131$) negatively affect self-management, suggesting that while resources are available, the manner of engagement or accessibility might influence their effectiveness.

Self-efficacy stands out as the most powerful predictor of self-management. Research by Hatef et al. (2018) and Zhang et al. (2023) demonstrates that self-efficacy directly improves adherence to self-care and amplifies other factors like family support and access to information. Consistent with these findings, self-efficacy ($p < .05$, $\beta = .704$) has the most significant effect size, with each point increase in self-efficacy corresponding to a 1.31-point increase in self-management. This underscores self-efficacy as a critical area for interventions to enhance patient empowerment and adherence to self-management practices.

Psychological determinants, particularly motivation and resilience, also significantly impact self-management, as shown by Cha (2017) and Schulman-Green et al. (2016), who highlight factors like resilience, illness perception, and motivation. In this analysis, psychological determinants ($p < .05$, $\beta = -.375$) and motivation ($p < .05$, $\beta = .36$) show meaningful effects, with motivation increasing self-management by .715 for each point gained. In contrast, psychological determinants, albeit negatively, indicate that specific psychological states may affect self-care practices.

Problem 7. What causal model best fits the self-management of patients with chronic diseases

Table 8. Summary of Goodness-of-Fit Measures of the Three Causal Models

Model	CMIN/DF	P-value	NFI	TLI	CFI	GFI	RMSEA
1	18.43	.000	.324	.163	.330	.680	.262
2	1.65	1.98	.998	.980	.999	.998	.051
3	.019	.89	1.00	1.00	1.00	.998	.000
Standard	<2	>.05	>.95	>.95	>.95	>.95	<.05

CMIN/DF - Chi-Square Minimum/ Degrees of Freedom

CFI - Comparative Fit Index

RMSEA - Root Mean Square Error of Approximation

NFI - Normed Fit Index

TLI - Tucker-Lewis Index

GFI - Goodness of Fit Index

The summary of goodness-of-fit measures compares the three causal models, revealing that Model 3 provides the best fit for explaining self-management among patients with chronic diseases. Model 3 meets all the criteria for best fit, with a CMIN/DF of 0.019 (well below the threshold of <2), a p-value of 0.89 (exceeding >0.05 standard), and perfect NFI, TLI, and CFI values of 1.00. The GFI of 0.998 and RMSEA of 0.000 confirm its robustness and accuracy. Model 2 also demonstrates a good fit, with a CMIN/DF of 1.65 and NFI, TLI, CFI, and GFI values exceeding 0.95, although the RMSEA of 0.051 is slightly above the ideal <0.05 threshold. In contrast, Model 1 performs poorly, with a CMIN/DF of 18.43, a p-value of 0.000, and significantly low NFI, TLI, and CFI values, all below the acceptable standard of >0.95, and an RMSEA of 0.262, indicating a poor fit. Overall, Model 3 is the most suitable framework for understanding the factors influencing self-management, followed by Model 2, while Model 1 fails to explain the data adequately.

This model 3 implies that psychological determinants, knowledge of disease, and community resources negatively influence patients' level of self-management. In contrast, self-efficacy, motivation, family involvement, and access to health information positively influenced patients' self-management. Moreover, self-efficacy mediated the significant relationships between self-management and family involvement, self-management and motivation, and self-management and psychological determinants.

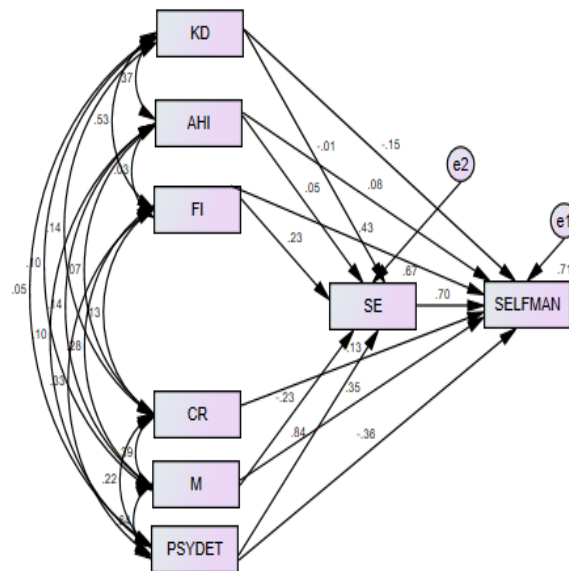


Figure 1. Causal Model-3 of Patients' Self-Management (Best Fit Model)

The exceptional fit of Model 3 underscores its utility as a comprehensive and reliable framework for explaining self-management behaviors in patients with chronic diseases. Its implications extend across clinical practice, policy development, and future research, emphasizing the importance of addressing supportive and hindering factors to enhance patient care.

Conclusions

The study concludes that self-efficacy, motivation, family involvement, and access to health information significantly enhance self-management among individuals with chronic diseases. However, challenges such as psychological barriers, limited disease knowledge, and inadequate community resources hinder effective self-care. These findings highlight the importance of health literacy, social support, and psychological determinants in improving disease management.

It is recommended that healthcare policymakers may implement targeted community-based health education programs to improve health literacy and disease awareness. Mental health support services may also be integrated into chronic disease management to help patients overcome psychological barriers. Healthcare providers may adopt personalized care plans that emphasize patient empowerment, self-efficacy, and adherence to treatment regimens. Moreover, community organizations may foster peer support networks and improve access to telehealth services to provide continuous guidance and motivation.

Future studies may explore the impact of socioeconomic and cultural factors on self-management, ensuring interventions to diverse patient needs. Strengthening collaboration between healthcare institutions, community leaders, and policymakers will be essential in developing sustainable strategies that enhance self-care practices, ultimately improving the quality of life for individuals managing chronic diseases.

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Affiliations and Corresponding Information

Kristoffer G. Villareal

Liceo de Cagayan University – Philippines