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Illness uncertainty as a determinant of self-efficacy among adults with chronic diseases

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ABSTRACT

Aims: This study aimed to determine the relationship between illness uncertainty and self-efficacy levels among adults with chronic diseases.

Methods: This descriptive and cross-sectional study was conducted with 220 adult inpatients aged 18 years and older who were hospitalized in the internal medicine department of a training and research hospital. Data were collected using the Patient Information Form, Mishel Uncertainty in Illness Scale (MUIS), and the 6-Item Self-Efficacy for Managing Chronic Disease Scale. Statistical analyses included descriptive statistics, correlation, and multiple regression tests, with a significance level of $p<0.05$.

Results: The mean age of the participants was 68.30±14.15 years; 51.4% were male, and 58.2% had a diagnosis of hypertension. The mean MUIS score was 48.80±12.98, and the mean self-efficacy score was 4.85±1.81. Regression analysis demonstrated a significant negative relationship between illness uncertainty and self-efficacy ($\beta=-0.467$, $p<0.001$), explaining 21.4% of the variance (Adjusted $R^2=0.214$, $p<0.001$). In the extended model, lower education and income levels, higher hospitalization frequency, comorbidities, polypharmacy, and higher MUIS scores negatively predicted self-efficacy, while employment, smoking cessation, longer disease duration, and regular medical follow-up were positive predictors. The final model explained 62.9% of the variance (Adjusted $R^2=0.629$, $p<0.001$).

Conclusion: As illness uncertainty increases, self-efficacy decreases among adults with chronic diseases. These findings emphasize the importance of nursing interventions aimed at reducing uncertainty, enhancing self-efficacy, and supporting effective chronic disease management.

Keywords: Chronic disease, uncertainty in illness, self-efficacy, nursing, patient compliance, disease management

INTRODUCTION

Chronic diseases are long-term health conditions that require continuous treatment and care, permanently affecting an individual's lifestyle and functionality. The World Health Organization (WHO) reports that chronic diseases such as cardiovascular diseases, diabetes, chronic respiratory diseases, and cancer are the leading causes of global mortality (WHO, 2025). These illnesses not only have profound effects on physical health but also exert significant psychological and social impacts (Shakya, 2018). Individuals diagnosed with chronic diseases often face uncertainty regarding the course of the illness, treatment outcomes, and their future, which may lead to substantial changes in quality of life and psychological adjustment (Arslan, 2024).

Illness uncertainty refers to an individual's inability to fully comprehend their illness and treatment process or to predict its progression. This uncertainty may result in psychological consequences such as anxiety, stress, and depression, thereby negatively influencing quality of life (Verduzco-Aguirre et al., 2021; Skojec et al., 2025). In this context, Mishel's Uncertainty in Illness Theory serves as a significant nursing framework that explains the uncertainty experienced by individuals during the course of illness and its psychological consequences. According to Mishel, uncertainty arises when individuals are unable to interpret the meaning of illness-related events or predict their outcomes. The theory conceptualizes uncertainty through four key components: ambiguity regarding illness, complexity of treatment and care, inconsistency or insufficiency of illness-related information, and unpredictability of the disease trajectory (Mishel, 1988; Hwang et al., 2023; Skojec et al., 2025). This uncertainty may be perceived either as a threat or as an opportunity. When

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perceived as a threat, it may lead to adverse psychological reactions such as anxiety, stress, and depression (Skojec et al., 2025). Conversely, individuals who interpret uncertainty as an opportunity may view it as a chance to make positive changes in their lifestyle, relationships, or careers (Hwang et al., 2023). Mishel's theory is therefore a critical tool for understanding how uncertainty shapes coping strategies and provides guidance for developing interventions aimed at managing uncertainty (Zhang et al., 2015; Skojec et al., 2025). Such guidance can, in turn, enhance individuals' self-efficacy by improving their ability to manage their illness effectively.

Self-efficacy refers to an individual's belief in their own ability to cope with and effectively manage their illness. Individuals with high self-efficacy tend to be more successful in controlling their illness, adhering to treatment, and maintaining lifestyle modifications (Farley, 2020). In the management of chronic diseases, self-efficacy is considered a crucial psychosocial resource that enables individuals to adhere to treatment plans, monitor symptoms, sustain self-care behaviors, and maintain psychological resilience (Kuijer & De Ridder, 2003). In a study by Shakya (2018), individuals with higher levels of self-efficacy were found to use more effective coping strategies, exhibit better treatment adherence, and show greater commitment to maintaining self-care behaviors. Conversely, individuals with low self-efficacy demonstrated greater resistance to treatment, lack of motivation, and feelings of helplessness (Farley, 2020). These findings suggest that self-efficacy is a key determinant of psychological adaptation and successful disease management among individuals with chronic conditions.

Although several studies have examined illness uncertainty and self-efficacy among patients with cancer (Zhang et al., 2015; Hwang et al., 2023), no studies have been found addressing these variables in the context of general chronic diseases. Therefore, the present study aims to investigate the relationship between illness uncertainty and self-efficacy among individuals with chronic diseases, thereby contributing valuable insights to the existing literature.

METHODS

Ethics

Permission to use the Turkish validated versions of the scales was obtained via email from the authors who conducted their validity and reliability studies. Ethical approval for the research was obtained from the Bandırma Onyedi Eylül University Non-interventional Researches Ethics Committee (Date: 05.07.2024, Decision No: 2024-150). Additionally, written institutional permission was granted by the relevant hospital (Date: 25.11.2024). Participants were informed about the purpose of the study, and written informed consent was obtained from those who voluntarily agreed to participate. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Aims

This study was conducted as a descriptive and cross-sectional study to examine the relationship between illness uncertainty and self-efficacy levels in individuals with chronic diseases.

Research Questions

- What is the level of illness uncertainty among adults with chronic diseases?
- What is the level of self-efficacy among adults with chronic diseases?
- Is there a relationship between illness uncertainty and self-efficacy levels in adults with chronic diseases?
- Is the level of illness uncertainty a predictor of self-efficacy in adults with chronic diseases?

Population and Sample

The population of this study consisted of adults with chronic diseases who were hospitalized in the Internal Medicine Clinic of Bandırma Training and Research Hospital. A convenience sampling method was used to recruit 220 patients who met the inclusion and exclusion criteria between December 2024 and April 2025.

The inclusion criteria were as follows: being 18 years of age or older, being hospitalized due to a chronic disease, willingness to participate in the study, ability to speak Turkish, and ability to communicate. Patients who were taking any sleep or psychiatric medication or who had been diagnosed with a psychiatric disorder by a physician were excluded from the study.

According to the post hoc power analysis conducted using the G*power 3.1.9.2 program, the effect size (ρ) was 0.467, the type I error (α) was 0.05, and the power of the study ($1-\beta$) was found to be greater than 99%.

Data Collection Process and Instruments

Participants who met the inclusion criteria were informed about the purpose and content of the study. Those who agreed to participate and met the inclusion criteria were asked to sign an informed consent form. The data collection instruments were administered to the participants by the researchers through face-to-face interviews, which lasted approximately 10–15 minutes for each participant.

Individual Identification Form: This form was developed by the researchers based on relevant literature (Ceyhan & Ünsal, 2018; Bakan & İnci, 2021) and consists of a total of 14 questions. Six of these items address sociodemographic characteristics (age, gender, educational status, marital status, employment status, and perceived income level), while eight items concern disease-related information (smoking habits, reason for hospitalization, length of hospital stay, year of diagnosis, total number of hospitalizations, regular follow-up visits, presence and type of other chronic diseases, and number of medications used daily).

Mishel Uncertainty in Illness Scale (MUIS): Developed by Mishel and Epstein in 1997 and adapted into Turkish by Cal and Aydin Avci (2021), this scale measures the level of uncertainty experienced by individuals with chronic diseases (Mishel & Epstein, 1997; Cal & Aydin Avci, 2021). The Turkish version consists of 20 items and evaluates three subdimensions: perception of the current situation, comprehension, and uncertainty, as well as the total score. Items 1–4, 6, 8, 10–13, and 17 assess the perception of the current situation; items 5, 7, 19, and 20 assess comprehension; and items 9, 14–16, and 18 assess uncertainty. Each item is rated on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). Items 5, 7, 19, and 20 are reverse-scored. The total possible score ranges from 20 to 100, with higher scores indicating a higher level of illness uncertainty. The Cronbach's alpha coefficient was reported as 0.79 in the Turkish adaptation (Cal & Aydin Avci, 2021), while it was found to be 0.882 in the present study.

Six-Item Self-Efficacy Scale for Chronic Disease Management: This scale was developed by Lorig et al. (2001) and adapted into Turkish by İncirkuş and Nahcivan (2020). It is an easy-to-use and effective instrument for assessing self-efficacy levels in patients with chronic diseases. Each item is rated on a 10-point scale ranging from "not at all confident" (1 point) to "totally confident" (10 points). The total score is calculated as the mean of the six items, ranging between 1 and 10, with higher scores indicating greater self-efficacy. In the Turkish validity and reliability study, the Cronbach's alpha coefficient was 0.95 (İncirkuş & Nahcivan, 2020), while in the present study it was found to be 0.895.

Morisky Medication Adherence Scale: The Morisky Medication Adherence Scale was developed by Donald E. Morisky, and its validity and reliability were first tested by Morisky et al. (1986). The scale is designed to assess individuals' level of adherence to medication therapy and consists of four self-reported items answered as "yes" or "no." Answering "no" to all items indicates a high level of medication adherence, one or two "yes" responses indicate a moderate level, and three or four "yes" responses indicate a low level of adherence. In the original study, the Cronbach's alpha reliability coefficient was reported as 0.61 (Morisky et al., 1986). The Turkish validity and reliability study was conducted by Bahar et al. (2014), who reported a Cronbach's alpha of 0.625. In the present study, the Cronbach's alpha reliability coefficient was found to be 0.777.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 23. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the data. The normality of data distribution was assessed using the Kolmogorov–Smirnov test. Depending on the distribution characteristics, Pearson or Spearman correlation analyses were conducted to examine relationships between variables. Multiple linear regression analysis was employed to evaluate the effects of participants' sociodemographic and health/disease-related characteristics, and illness uncertainty scores on self-efficacy. A p-value of <0.05 was considered statistically significant.

RESULTS

Participant Characteristics

The mean age of the participants was 68.30±14.15 years, with an age range of 40–91 years. Of the participants, 63.2% were aged 65 years and older, 51.4% were male, 75% were primary school graduates, 82.7% were married, and 45.9% were retired. Additionally, 73.6% of the participants reported having a moderate- or poor-income level, while 64.1% stated that they did not smoke (Table 1).

Table 1. Sociodemographic characteristics of the participants (n=220)

Characteristics	Mean±SD (min–max)	
Age	68.30 ± 14.15 (40–91)	
Age group	**n**	**%**
<65 years	81	36.8
≥65 years	139	63.2
Gender		
Male	113	51.4
Female	107	48.6
Educational status		
Literate	21	9.5
Primary school	165	75.0
High school ≤	34	15.5
Marital status		
Single	38	17.3
Married	182	82.7
Employment status		
Employed	22	10.0
Unemployed	97	44.1
Retired	101	45.9
Perceived income level		
Moderate–poor	152	73.6
Good	58	26.4
Smoking habit		
Smoker	43	19.5
Non-smoker	141	64.1
Former smoker	36	16.4
Total	220	100.0

SD: Standard deviation, Min: Minimum, Max: Maximum

The most common chronic disease among the participants was hypertension, reported by 58.2% of them. It was found that 47.7% of the participants had been diagnosed less than one year ago, 39.1% had been hospitalized three to four times, 54.1% had comorbidities, and 30% experienced polypharmacy. Additionally, 70.5% of the participants reported attending regular medical check-ups. According to the Morisky Medication Adherence Scale, 36.8% of the participants demonstrated a moderate level of adherence (Table 2).

Scale Scores

The mean score on the MUIS was 48.80±12.98 (range: 20–73), while the mean score on the Self-Efficacy Scale was 4.85±1.81 (range: 1.83–9.17) (Table 3).

Regression Analysis

In this study, a multiple linear regression analysis was conducted to identify the variables predicting self-efficacy levels among individuals with chronic diseases. The analysis was performed using two models.

According to the regression model established for the primary aim of the study (model 1), there was a moderate, negative relationship between illness uncertainty and self-efficacy (β=-0.467; p<0.001). A one-point increase in the MUIS score was associated with a 0.391-point decrease in the Self-Efficacy Scale score (B=-0.391). The explanatory power of model 1 was calculated as 21.4% (Adjusted R^2=0.214), and the model was found to be statistically significant (F=60.719; p<0.001) (Table 4).

In model 2, which was developed to examine the factors affecting self-efficacy among adults with chronic diseases, sociodemographic and clinical variables were added to the model along with the MUIS variable. The explanatory power of this model increased to 62.9% (Adjusted R^2=0.629; F=24.173; p<0.001). In this context, higher MUIS scores (B=-

Table 2. Health- and disease-related characteristics of the participants (n=220)

Characteristics	n	%
Chronic diseases*		
Hypertension (HT)	128	58.2
Diabetes mellitus	84	38.2
Cardiovascular diseases (other than HT)	105	47.7
Respiratory diseases	67	30.5
Urinary system diseases	49	22.3
Other	70	31.8
Year of diagnosis		
<1 year	105	47.7
1–5 years	68	30.9
≥6 years	47	21.4
Number of hospitalizations		
1–2 times	70	31.8
3–4 times	86	39.1
≥5 times	64	29.1
Comorbidity		
None (1 disease)	101	45.9
Present (≥2 diseases)	119	54.1
Polypharmacy		
None (<5 medications)	154	70.0
Present (≥5 medications)	66	30.0
Regular medical follow-up		
No	65	29.5
Yes	155	70.5
Morisky Medication Adherence Scale		
Low adherence (0–1 points)	67	30.5
Moderate adherence (2–3 points)	81	36.8
High adherence (4 points)	72	32.7
Total	220	100.0

*Multiple responses were allowed

Table 3. Mean scores of the scales

Scale	Mean	SD	Minimum	Maximum
Mishel Uncertainty in Illness Scale	48.80	12.98	20	73
Self-Efficacy Scale	4.85	1.81	1.83	9.17

SD: Standard deviation

0.032), being literate (B=-1.023), having a moderate or poor income level (B=-0.963), a higher number of hospitalizations (B=-0.230), the presence of comorbidities (B=-1.349), and the presence of polypharmacy (B=-0.570) were identified as negative predictors of self-efficacy ($p<0.05$).

Conversely, being employed (B=2.275), having quit smoking (B=0.696), having a longer duration since diagnosis (B=0.037), and attending regular medical check-ups (B=1.309) were found to be significantly associated with higher self-efficacy levels ($p<0.05$). However, age, gender, primary education level, marital status, unemployment, and non-smoking status were not found to have a significant effect on self-efficacy ($p>0.05$) (Table 4).

Table 4. Multiple linear regression analysis of variables affecting self-efficacy

Models/variables	B	95.0% CI	β	t	p
Model 1. self-efficacy					
MUIS	-0.391	-0.490, -0.292	-0.467	-7.792	<0.001
DW:2.507		Adjusted R^2: 0.214	F: 60.719	p<0.001	
Model 2. self-efficacy					
MUIS	-0.032	-0.047, -0.018	-0.231	-4.430	<0.001
Age	0.006	-0.009, 0.022	0.051	0.803	0.423
Gender (ref. male)					
Female	-0.427	-0.920, 0.066	-0.118	-1.708	0.089
Educational level (ref. high school ≤)					
Literate	-1.023	-1.738, -0.309	-0.166	-2.823	0.005
Primary school	-0.502	-1.023, 0.020	-0.120	-1.897	0.059
Marital status (ref. single)					
Married	0.090	-0.381, 0.560	0.019	0.375	0.708
Employment status (ref. retired)					
Employed	2.275	1.555, 2.995	0.377	6.230	<0.001
Unemployed	-0.005	-0.450, 0.441	-0.001	-0.020	0.984
Income level (ref. good)					
Moderate/poor	-0.963	-1.433, -0.494	-0.234	-4.044	<0.001
Smoking habit (ref. smoker)					
Non-smoker	0.155	-0.327, 0.637	0.041	0.633	0.527
Quit smoking	0.696	0.096, 1.295	0.142	2.286	0.023
Year of diagnosis	0.037	0.016, 0.059	0.156	3.417	0.001
Number of hospitalizations	-0.230	-0.317, -0.142	-0.304	-5.183	<0.001
Comorbidity (ref. none)					
Present	-1.349	-1.769, -0.929	-0.371	-6.338	<0.001
Polypharmacy (ref. none)					
Present	-0.570	-1.043, 0.098	-0.144	-2.380	0.018
Regular medical follow-up (ref. no)					
Yes	1.309	0.892, 1.727	0.330	6.189	<0.001
DW: 2.063		Adjusted R^2: 0.629, F: 24.173, p<0.001			

MUIS: Mishel Uncertainty in Illness Scale, B: Unstandardized coefficient, CI: Confidence interval, β: Standardized regression coefficient, R^2: Coefficient of determination, DW: Durbin-Watson autocorrelation coefficient.

DISCUSSION

This study was conducted to examine the relationship between illness uncertainty and self-efficacy among adults with chronic diseases. The mean age of the participants was 68.30±14.15 years, with more than half being aged 65 and older. Approximately half of the participants were male, the majority had low educational and income levels, were married, and reported that they did not smoke. These characteristics are consistent with findings from previous studies conducted with individuals living with chronic diseases in Turkiye (Ceyhan & Ünsal, 2018; Bakan & İnci, 2021).

More than half of the participants in this study had hypertension, and nearly half had cardiovascular diseases other than hypertension; diabetes was the next most common chronic condition. Since the present study included only individuals with chronic diseases, the distribution of disease types was similar to that reported by Dünya et al. (2025) in Turkiye. Nearly half of the participants had received their diagnosis within the past year, and most had been hospitalized multiple times. Çınar et al. (2020) reported that about one-third of individuals with chronic diseases were hospitalized at least once during the first year after diagnosis, and the frequency of hospitalization increased as the duration of illness extended. Similarly, Demirbaş & Kutlu (2020) found that nearly half of the participants with chronic diseases visited the hospital two or more times annually. These findings are consistent with the present study, in which frequent hospitalizations were common among participants.

With respect to comorbidity, it is well known that individuals with chronic illnesses often experience multiple conditions simultaneously, and the results of this study align with the literature (Ceyhan & Ünsal, 2018; Demirbas & Kutlu, 2020). Regarding polypharmacy, Kaynak (2022) reported a prevalence of 25–35% among individuals with chronic diseases, consistent with the findings of this study. Given that the majority of participants were older adults, it is expected that comorbidity and polypharmacy would increase with age. The short duration since diagnosis, high hospitalization frequency, and presence of comorbidities and polypharmacy in this study may reflect the complexity of chronic disease burden and challenges in treatment adherence. Indeed, two-thirds of the participants demonstrated low or moderate medication adherence. Ceyhan & Ünsal (2018), who also used the Morisky Medication Adherence Scale, similarly reported that only about one-third of individuals with chronic diseases had high adherence levels. Demirbaş & Kutlu (2020) likewise found that medication adherence was lower among individuals with multiple medications and comorbidities. Literature suggests that poor adherence may heighten the unpredictability of treatment outcomes, reinforcing a sense of uncertainty and subsequently increasing illness uncertainty (Farley, 2020; Brown et al., 2020).

The concept of illness uncertainty is a mid-range nursing theory that explains individuals' experiences of ambiguity, unpredictability, and loss of control during illness. According to Mishel's Uncertainty in Illness Theory, uncertainty arises when individuals lack sufficient information about the course, treatment, or outcomes of their disease, which may adversely affect their psychological adjustment (Mishel, 1988). In this study, the mean score on the MUIS (48.80 ± 12.98) indicated a moderate-to-low level of uncertainty, lower than the levels reported in previous studies (Ali et al., 2025; Uğuz & Doğan, 2025). For example, Ali et al. (2025) found a mean uncertainty score of 63.35±3.04 among patients with type 2 diabetes, and Uğuz & Doğan (2025) reported a mean of 63.25±10.25 among young women with breast cancer. Compared to these findings, participants in the current study experienced lower levels of uncertainty regarding their illness process. This difference may be attributed to the predominance of older adults in the sample, longer illness experience, and high rates of regular physician follow-up, which may contribute to greater disease familiarity and predictability.

The mean self-efficacy score of the participants (4.85±1.81) indicated a moderate level of self-efficacy. This suggests that individuals with chronic diseases possess a moderate sense of confidence and competence in managing their illness, implying that while they can assume some responsibility for treatment and self-care, they may still require guidance and external support in certain areas. Similar findings have been reported in studies using the same instrument among older adults and individuals with chronic diseases in Turkiye (Güney & Basit, 2023; İncirkuş, 2024). These results highlight the importance of interventions by healthcare professionals, particularly nurses, to strengthen self-efficacy through patient education, motivational support, and individualized counseling.

Regression analysis results revealed a moderate negative relationship between illness uncertainty and self-efficacy, with each one-point increase in uncertainty corresponding to a 0.391-point decrease in self-efficacy. Illness uncertainty explained 21.4% of the variance in self-efficacy. This finding underscores that a higher perception of uncertainty adversely affects individuals' self-efficacy in managing chronic diseases. Hwang et al. (2023) similarly reported a moderate negative correlation (r=-0.460) between uncertainty and self-efficacy among older adults with lung cancer, with illness uncertainty explaining 39.2% of the variance in quality of life. Likewise, Zhang et al. (2015) found that both uncertainty and self-efficacy independently predicted self-care behaviors among women with breast cancer, explaining 18.2% of the variance. Both Hwang et al. (2023) and Zhang et al. (2015) noted that higher levels of uncertainty diminish individuals' sense of control, reduce adherence to treatment, and weaken self-care behaviors, ultimately lowering self-efficacy. Farley (2019) also emphasized that uncertainty amplifies feelings of unpredictability and insecurity, undermining individuals' confidence in managing their health and triggering indecision and helplessness. The results of this study are consistent with Mishel's (1988) theoretical framework, which posits that uncertainty in illness reduces one's perceived control and consequently decreases self-efficacy. Thus, the negative relationship identified in this study suggests that individuals experiencing uncertainty may require greater psychological and educational support to effectively manage their illness.

Self-efficacy refers to an individual's belief in their own ability to perform behaviors or manage specific situations. In the context of chronic diseases, self-efficacy is closely associated with one's capacity to manage illness, adhere to treatment, and sustain lifestyle modifications (Bakan & İnci, 2021). In the present study, several sociodemographic and clinical factors were found to influence self-efficacy. Higher illness uncertainty scores, lower education and income levels, more frequent hospitalizations, the presence of comorbidities, and polypharmacy were identified as negative predictors of self-efficacy. Conversely, being employed, having quit smoking, and attending regular medical check-ups were associated with higher self-efficacy. Bakan & İnci (2021) emphasized that self-efficacy is a key determinant of coping, treatment adherence, and quality of life among individuals with chronic diseases. Similarly, Ceyhan & Ünsal (2018) reported that education strengthens self-care behaviors, while lower socioeconomic status diminishes self-efficacy. Demirbaş & Kutlu (2020) noted that frequent hospitalizations and comorbidities weaken individuals' sense of control, reducing self-efficacy. Kaynak (2022) also stated that polypharmacy complicates treatment management and decreases self-care capacity, negatively affecting self-efficacy. From a psychosocial perspective, Farley (2020) and Shakya (2018) demonstrated that self-efficacy is linked to psychological resilience, stress management, and positive health behaviors in chronic illness. Shakya (2018) found that individuals who are employed, socially active, and regularly attend medical check-ups tend to have higher self-efficacy. Similarly, Kuijer and De Ridder (2003) emphasized that self-efficacy directly influences disease management efforts, treatment adherence, and life satisfaction, reinforcing self-care behaviors. Hwang et al. (2023) also found that self-efficacy in chronic illness is strongly related to social support, patient–provider interaction, and individuals' perception of their own role in managing the disease.

Taken together, these findings demonstrate that self-efficacy is not merely an individual trait but a multidimensional construct influenced by socioeconomic, clinical, and behavioral factors. This highlights the critical role of nurses in strengthening self-efficacy among individuals with chronic illnesses. Given that factors such as low education and income, comorbidity, polypharmacy, and frequent hospitalizations decrease self-efficacy, nurses should enhance their educational, informational, and counseling interventions for these individuals. By increasing patients' knowledge about their condition, nurses can reduce illness uncertainty, support treatment adherence, and promote self-care behaviors. Encouraging regular medical follow-ups and healthy behaviors—such as smoking cessation—can further improve individuals' perception of self-efficacy. Therefore, nursing practices should incorporate evidence-based education, continuous monitoring, and psychosocial support strategies.

Limitations

This study contributes to the literature by examining the relationship between illness uncertainty and self-efficacy among adults with chronic diseases, a topic that has not been extensively explored in this population. The use of validated and reliable measurement tools, a sufficient sample size ensuring high statistical power, and face-to-face data collection methods that minimized missing data are notable strengths of the study. However, its single-center and cross-sectional design limits the generalizability of the findings and precludes the establishment of causal relationships.

CONCLUSION

This study demonstrated a moderate negative relationship between illness uncertainty and self-efficacy among adults with chronic diseases, indicating that higher illness uncertainty is associated with lower perceived self-efficacy. Factors such as low education and income levels, comorbidity, polypharmacy, and frequent hospitalizations were found to negatively affect self-efficacy, while employment, smoking cessation, and regular physician follow-ups served as positive predictors.

These findings suggest that reducing illness uncertainty may enhance self-efficacy in managing chronic diseases. Accordingly, nurses play a crucial role in addressing patients' informational gaps, improving treatment adherence, and strengthening self-care capacities. Educational, counseling, and psychosocial support interventions that reduce perceptions of uncertainty can enhance individuals' ability to cope with their illness.

In conclusion, self-efficacy in chronic disease management is a multidimensional construct influenced by socioeconomic, clinical, and behavioral determinants. Therefore, nursing care should adopt a holistic, person-centered approach aimed at reducing uncertainty and empowering patients to manage their health more effectively.

ETHICAL DECLARATIONS

Ethics Committee Approval

Ethical approval for the research was obtained from the Bandırma Onyedi Eylül University Non-interventional Researches Ethics Committee (Date: 05.07.2024, Decision No: 2024-150).

Informed Consent

Written informed consent was obtained from all individual participants prior to their inclusion in the study. Participants were fully informed about the study's aims, procedures, potential risks and benefits, and their rights—including the right to withdraw at any time without consequence. All participants voluntarily signed a written informed consent form.

Peer Review Process

This manuscript was subject to external peer review.

Conflict of Interest

The authors declare no conflicts of interest related to this study.

Financial Disclosure

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Author Contributions

All authors contributed significantly to the study's conception, design, data acquisition, analysis, and interpretation. All authors reviewed and approved the final version of the manuscript.

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