Original Article

The Relationship Between Adaptation to Chronic Diseases and Fatalistic Tendencies of Individuals with Chronic Diseases in Turkey

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Abstract
Background: Chronic diseases, which are one of the important health problems today, require long-term treatment. This requires individuals to adapt to chronic diseases.
Objective: This study aimed to determine the relationship between the adaptation of individuals with chronic illness to their illness and their fatalistic tendencies.
Methodology: This cross-sectional study was carried out with 387 participants living with chronic conditions. The data were collected through the face-to-face interview method with the help of a questionnaire form. The questionnaire included some sociodemographic questions, the Adaptation to Chronic Illness Scale, and the Fatalism Tendency Scale. The data were analysed by using SPSS 22.0 package program, descriptive statistics, and linear regression analysis.
Results: It was found that 34.5% of the participants (n=271) had hypertension. The mean score of the participants on the Adaptation to Chronic Illness Scale was 83.90 ± 14.55 (min:31, max:125), and their mean score on the Fatalism Tendency Scale was 74.73 ± 12.82 (min:28, max:118). As a result of the linear regression analysis, it was observed that there was a negative and significant relationship between adaptation to chronic illnesses and fatalism tendency ($p<0.05$).
Conclusion: The results of this study revealed that the adaptation to chronic disease and fatalistic tendencies of the participants with chronic diseases were at a moderate level and there was a negative relationship between them.

Key words: Adaptation to Chronic Diseases, Chronic Disease, Fatalistic Tendency

Introduction

Today, the prolonged life span has led to an increase in the prevalence of chronic diseases (García-Olmos et al., 2012). It is estimated that approximately 40 million people die every year due to chronic diseases (WHO, 2023). Chronic diseases are health problems that cause slow, progressive, and irreversible changes in the physiological functions of individuals, leading to the need for continuous medical care and treatment (Maresova et al., 2019). Chronic diseases are considered among the main causes of poor health, disability, and death and constitute the majority of health costs (Bauer et al., 2014). Hence, the World Health Organization (WHO) and the United Nations (UN) have determined various global strategies to prevent chronic diseases (Holmen et al., 2020). However, when the disease occurs, it is very important for individuals to adapt to the disease. This is because when an individual does not adequately adapt to the disease and the disease is not effectively treated, the situation can be exacerbated (Dunbar-Jacob et al., 2001).

Adaptation is an important component of chronic disease management and refers to the ability of the individual to display appropriate behaviours and attitudes in this process

(Aslan et al., 2021; Rafii et al., 2014). An individual's adaptation to a chronic disease is a complex and long-term process that is affected by many forces, both internally and externally (Stewart et al., 2004). In a study conducted in the literature in this regard, it was reported that the educational status of the individual, the chronic disease, and the duration of drug use were associated with adaptation to chronic diseases (Atik & Karatepe, 2006).

Fatalism expresses the belief that the individual's health status is not under his or her own control but is predetermined by a higher power (Dayapoglu et al., 2021). In societies where the majority is Muslim, such as Türkiye, religious beliefs often increase fatalistic attitudes (Aksa, 2020). In studies conducted in different Muslim groups, most participants reported that they believed that diseases come from Allah and that Allah is the one who will provide healing (Aksa, 2020; Dayapoglu et al., 2021; Padela et al., 2012). This approach can help individuals relax emotionally, support coping skills, and facilitate compliance with treatment (Bobov & Capik, 2020). However, an individual with fatalistic beliefs may sometimes refuse to seek treatment because they perceive health to be beyond their control, dependent on luck, fate, or God (Franklin et al., 2007).

In the literature, studies on fatalism tend to focus mostly on cancer screening behaviours (Bakan et al., 2021; Bostan Akmese & Altunbaş, 2023; Duru & Topatan, 2023); but the number of studies examining the relationship between adaptation to chronic diseases and fatalism is limited. In this context, this study aimed to determine the relationship between the adaptation of participants who have chronic illness and their fatalistic tendencies.

Materials and Methods

Design, Data Collection, and Sample: This cross-sectional study was conducted with participants living with chronic health conditions who presented to a state hospital in Canakkale, Turkey. The sample calculation formula used in cases where the population was unknown. According to this formula, it was determined that at least 384 people should be included in the study; calculation reflective of p=0.5, q=0.5, t=1.96, and d=0.05 values. The study was completed with 387 participants. Participants with cognitive problems and communication difficulties were not included in the study. The data were collected between October and November 2023 through a questionnaire form.

Measurements: The questionnaire included some questions describing the sociodemographics of the participants, the Adaptation to Chronic Illness Scale, and the Fatalism Tendency Scale. It took an average of 15-20 minutes to complete a questionnaire.

Questions describing chronic patients: The questionnaire prepared in line with the literature included questions inquiring about the sociodemographic information of the participants (age, income status, educational status, marital status, child presence, employment status, smoking, alcohol use, regular physical activity status) and their health status (health perception, number of chronic diseases, duration, continuous drug use, regular health checks) (Atik & Karatepe, 2016; Kutmec Yilmaz & Kara, 2021).

Adaptation to Chronic Illness Scale *(ACIS):* The scale developed by Atik and Karatepe (2016) consists of 25 items and 3 sub-dimensions, which are physical adaptation (11 items), social adaptation (7 items) and psychological adaptation (7 items) (Atik & Karatepe, 2016). The scale includes the response options of strongly disagree, disagree, undecided, agree, and strongly agree under each item. The total score to be obtained from the scale is 125. An increase in the scores obtained from the sub-dimensions and/or the total scale means an increase in the patient's level of adaptation to the disease. The Cronbach's alpha value in the original scale was found to be 0.88, and the Cronbach's alpha value for this study was determined as 0.79.

Fatalism Tendency Scale (FTS): The scale developed by Kaya and Bozkur (2015) consists of 24 items and four sub-dimensions, which are Predetermination (8 items), Personal Control (6 items), Superstition (6 items) and Luck (4 items) (Kaya & Bozkur, 2015). The scores on the 5-point Likert-type scale range from 24 to 120 points. Fatalist tendency total score is obtained by summing the scores obtained from all sub-dimensions. High scores indicate a high level of fatalistic tendency. The Cronbach's alpha value in the original scale was found to be 0.72, and the

Cronbach's alpha value for this study was determined as 0.76.

Statistical Analysis: All statistical analyses were conducted using SPSS (Statistical Package for the Social Sciences) for Windows 25.0 software. Descriptive statistical methods (number, percentage) and linear regression analysis between variables were used to evaluate the data ($p<0.05$).

Ethical Consideration: Ethical approval for the study was obtained from the Ethics Committee of a university (2023-0732). In addition, the participant's consents were obtained through an informed voluntary consent form describing the content of the study.

Results

The mean age of the participants was 55.67 ± 12.27 (min:22, max:97), and 77.3% (n=299) were married. 59.9% (n=232) of the participants smoked, 27.4% (n=106) used alcohol, and 22.5% (n=87) engaged in regular physical activity (Table 1).

The characteristics of the participants regarding their health status are presented in Table 2. Accordingly, 42.1% (n=163) of the participants evaluated their health status as moderate, while 38.0% (n=147) had one chronic disease.

The mean score of the participants on the Adaptation to Chronic Illness Scale was 83.90 ± 14.55 (min:31, max:125), and their mean score on the Fatalism Tendency Scale was 74.73 ± 12.82 (min:28, max:118) (Table 3).

Table 4 shows the comparison of some of the descriptive characteristics of the participants and the total scale mean scores of ACIS and FTS ($p<.05$). Accordingly, the mean ACIS total scale scores were significantly higher for those with higher education, those who were married, those who had no children, those who worked actively, those who had high incomes, those who smoked and consumed alcohol, and those who engaged in regular physical activity.

Moreover, the mean ACIS total scale scores were significantly higher in those who perceived their general health status as very good/good, had few and short chronic diseases, took their medications regularly, and had regular health check-ups. In addition, those with lower educational status, those who are divorced, those who do not work, those who do not smoke and drink alcohol, those who do not do regular physical activity, and those who do not have regular health checks had significantly higher FTS mean scores.

Linear regression analysis was performed to explain the Adaptation to Chronic Illness Scale ($F=342.352$; $p=0.000$). Accordingly, it was observed that pre-determination ($t=2.309$; $ß = 0.247$), superstition ($t=20.166$; $ß=1.899$), and luck ($t=20.100$; $ß=1.953$) sub-dimensions and the Fatalism Tendency Scale total mean score ($t = -4.368$; $ß = - 0.206$) had a statistically significant effect on adaptation to chronic diseases ($p<0.05$).

Table 1. Characteristics of the participants (n=387)

Variables		Mean ± SD	min-max
Age		55.67 ± 12.27	22-97
Monthly income		13.917 ± 8.926	0-50.000
		n	**%**
Education level	Illiterate	19	4.9
	literate	53	13.7
	Primary school	74	19.1
	Middle school	90	23.3
	High school	101	26.1
	University	50	12.9

Marital status	Single	18	4.7
	Married	299	77.3
	Divorced	70	18.1
Having children	Yes	347	89.7
	No	40	10.3
Employment	Yes	186	48.0
	No	69	17.8
	Retired	132	34.2
Family income balance	Income = expenses	118	30.5
	Income < expenses	233	60.2
	Income > expenses	36	9.3
Smoking	Yes	232	59.9
	No	155	40.1
Alcohol consumption	Yes	106	27.4
	No	281	72.6
Regular physical activity	Yes	87	22.5
	No	299	77.5

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

Table 2. Health status characteristics of the participants (n=387)

Variables		**n**	**%**
Self-perceived health	Excellent/Good	135	34.9
	Average	163	42.1
	Bad/Very bad	89	23.0
Number of chronic diseases	1	147	38.0
	2	115	29.7
	3	93	24.0
	4 and above	32	8.3
Chronic disease (n=786)*	Diabetes	239	30.4
	Hypertension	271	34.5
	Heart	70	8.9
	Cancer	12	1.5
	COPD	58	7.4
	Kidney	69	8.8
	Rheumatism	67	8.5
Chronic disease duration (years)	1-3 years	46	11.9
	4-6 years	95	24.6
	7-9 years	83	21.4
	10 years and above	163	42.1

Use of drugs regularly	Yes	350	90.4
	No	37	9.6
Regular health checks	Yes	213	55.0
	No	39	10.1
	Irregular	135	34.9

** Multiple responses*

Table 3. Adaptation to chronic illness scale and fatalism tendency scale scores

Scales	Min	Max	Mean	±SD	Skewness	Kurtosis
Physical adaptation	11.00	55.00	40.59	7.67	-0.618	0.749
Social adaptation	7.00	35.00	21.47	5.24	0.313	0.437
Psychological adaptation	7.00	35.00	21.83	4.80	0.383	0.532
ACIS Total Score	**31.00**	**125.00**	**83.90**	**14.55**	**0.163**	**0.991**
Predetermination	8.00	40.00	29.25	5.32	-0.584	1.644
Personal control	6.00	30.00	14.45	4.41	0.446	0.638
Superstition	9.00	30.00	19.89	4.00	0.226	-0.114
Luck	4.00	20.00	13.90	3.69	-0.556	0.087
FTS Total Score	**28.00**	**118.00**	**74.73**	**12.82**	**-0.440**	**1.160**

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

Table 4. Distribution and significance (p) levels of some characteristics of the participants and the mean scores of ACIS and FTS

Variables		n	ACIS Mean ± SD Test and p value	FTS Mean ± SD Test and p value
Age (55.67 ± 12.27)			r=-0.341 **p=0.000**	r=0.056 p=0.275
Education level	Illiterate	19	74.52 ± 12.01	80.31 ± 11.00
	literate	53	78.03 ± 14.00	77.86 ± 12.76
	Primary school	74	79.52 ± 14.32	75.21 ± 13.96
	Middle school	90	82.21 ± 12.14	75.13 ± 10.01
	High school	101	88.35 ± 13.16	72.70 ± 12.62
	University	50	94.32 ± 14.93	72.00 ± 15.54
			F=13.850 **p=0.000**	F=2.393 **p=0.037**
Marital status	Single	18	84.64 ± 14.58	74.59 ± 12.69
	Married	299	95.61 ± 17.80	68.72 ± 16.49
	Divorced	70	77.75 ± 10.58	76.91 ± 11.96
			F=13.239 **p=0.000**	F=3.037 **p=0.049**
Having children	Yes	347	83.63 ± 14.51	75.04 ± 12.59
	No	40	88.60 ± 14.20	72.07 ± 14.63
			t=-2.166 **p=0.031**	t=1.389 p=0.166
Employment	Yes	186	88.26 ± 13.75	74.04 ± 12.26
	No	69	76.85 ± 13.97	78.78 ± 12.72
	Retired	132	81.38 ± 14.01	73.59 ± 13.33
			F=20.140 **p=0.000**	F=4.290 **p=0.014**

Family income balance	Income = expenses	118	86.66 ± 15.84	73.05 ± 13.37
	Income < expenses	233	81.28 ± 12.45	75.75 ± 12.33
	Income > expenses	36	91.66 ± 18.26	73.72 ± 13.81
			F=11.642 **p=0.000**	F=1.868 p=0.156
Smoking	Yes	232	87.07 ± 13.79	73.52 ± 12.39
	No	155	79.12 ± 14.40	76.56 ± 13.28
			t=5.450 **p=0.000**	t=-2.265 **p=0.22**
Alcohol consumption	Yes	106	91.22 ± 16.60	72.56 ± 14.87
	No	281	81.13 ± 12.66	75.55 ± 11.89
			t=6.388 **p=0.000**	t=6.388 **p=0.000**
Regular physical activity	Yes	87	94.62 ± 14.75	71.19 ± 14.03
	No	299	80.83 ± 12.97	75.76 ± 12.29
			t=8.426 **p=0.000**	t=-2.955 **p=0.003**
Self-perceived health	Excellent/Good	135	92.32 ±13.98	73.32 ± 14.01
	Average	163	81.56 ± 12.72	74.15 ± 10.93
	Bad/Very bad	89	75.51 ± 11.98	77.94 ± 13.73
			F=49.108 **p=0.000**	F=3.817 **p=0.023**
Number of chronic diseases	1	147	89.27 ± 14.56	73.55 ± 14.10
	2	115	83.20 ± 13.86	76.56 ±12.22
	3	93	80.15 ± 11.98	73.91 ± 12.12
	4 and above	32	72.53 ± 13.75	76.00 ± 10.17
			F=17.264 **p=0.000**	F=1.428 p=0.234
Chronic disease duration (years)	1-3 years	46	91.60 ± 20.14	73.69 ± 18.98
	4-6 years	95	85.64 ±13.15	74.43 ± 11.71
	7-9 years	83	86.73 ± 13.38	74.51 ± 12.11
	10 years and above	163	79.24 ± 12.49	75.32 ± 11.72
			F=12.323 **p=0.000**	F=0.240 p=0.869
Use of drugs regularly	Yes	350	85.11 ± 13.73	74.87 ± 12.39
	No	37	72.51 ± 17.17	73.43 ± 16.56
			Z=-4.311 **p=0.000**	Z=-0.886 p=0.376
Regular health checks	Yes	213	88.10 ± 14.85	73.32 ± 13.63
	No	39	76.15 ± 14.74	77.28 ± 12.91
	Irregular	135	79.54 ± 11.61	76.22 ±11.20
			F=22.700 **p=0.000**	F=2.995 **p=0.050**

Bold values indicate statistically significant ($p < 0.05$)

Table 5. Regression analysis to explain the adaptation to chronic illness scale

	Beta	**Std. error**	**t**	***p* value**	**Tolerance**	**VIF**
Constant	29.156	3.284	8.880	0.000		
Predetermination	0.247	0.107	2.309	**0.021**	0.312	3.206
Personal control	-0.140	0.086	-1.630	0.104	0.703	1.422
Superstition	1.899	0.094	20.166	**0.000**	0.712	1.405
Luck	1.953	0.097	20.100	**0.000**	0.787	1.271
FTS Total Score	-0.206	0.047	-4.368	**0.000**	0.276	3.630
F= 342.352; p=0.000 R^2=0.818 DW=2.026						

Discussion

Today, chronic diseases are among the major health problems that are prevalent worldwide. For this reason, many individuals have to adapt to a chronic health condition (Weinert et al., 2008). In this study, it was observed that the mean score of the participants on the Adaptation to Chronic Illness Scale was at an average level. These results are consistent with the results obtained in other studies (Aslan et al., 2021; Kutmec et al., 2021; Erdogan Yuce & Muz, 2023). The results show that effective strategies should be developed to increase the adaptation of individuals living with chronic diseases. In a study conducted in the literature, health literacy was reported as an important factor in terms of adapting to chronic diseases (Erdogan Yuce & Muz, 2023). Attempts to increase the health literacy levels of individuals with chronic diseases can also facilitate adaptation to chronic diseases, as they encourage the individual to make appropriate decisions about their health (Erdogan Yuce & Muz, 2023; van der Heide et al., 2018).

In this study, it was observed that there was a correlation between some characteristics of the participants and their adaptation to chronic diseases. Similarly, studies in the literature have reported that the educational status of individuals (Kutmec Yilmaz & Kara, 2021; Erdogan Yuce & Muz, 2023), marital status (Aslan et al., 2021), income status (Erdogan Yuce & Muz, 2023), general health perception (Kutmec Yilmaz & Kara, 2021), number and duration of chronic diseases (Bilgic & Pehlivan, 2023) and regular health checks (Bilgic & Pehlivan, 2023) are associated with adaptation to chronic diseases.

In this study, it was observed that individuals living with chronic health conditions had a moderate fatalism tendency according to their total scores on the Fatalism Tendency Scale. Studies conducted in the relevant literature have reported that hemodialysis patients have moderate fatalistic tendencies (Ozer & Turan, 2023), hypertension patients have moderate and above fatalistic tendencies (Pehlivan & Aktas, 2022), and cardiovascular patients have high levels of fatalistic tendencies (Turan & Ciftci, 2023). The reason for the difference may be due to other characteristics of the sample. In addition, the findings show us that nurses, who play a key role in the prevention and management of chronic diseases, should consider the fatalistic tendencies of individuals when planning preventive and therapeutic interventions for individuals with chronic diseases.

As a result of the linear regression analysis conducted to explain the Adaptation to Chronic Illness Scale in this study, it was observed that fatalistic tendency had a negative effect on adaptation to chronic diseases. Similar to the results of this study, studies conducted on patients with hypertension have reported that fatalism negatively affects adaptation to the disease (Ozer & Turan, 2023; Pehlivan & Aktas, 2022).

When the effect of fatalistic tendency on adaptation to chronic diseases was evaluated together with its sub-dimensions, it was seen that the pre-determination, superstition, and luck sub-dimensions, except for the personal control sub-dimension, had an effect on adaptation to chronic diseases. Regarding the pre-determination sub-dimension, participants living with chronic health conditions may believe that the process related to their disease is predetermined and therefore they may not need to do anything to adapt. As for the superstition sub-dimension, participants may have different superstitions about treatment, and with respect to the luck sub-dimension, they may attribute the improvement of their condition or their disease to luck. As a result, participants with a high tendency to fatalism may adapt less to disease processes.

Limitations: This study is one of the limited number of studies describing the relationship between adaptation to chronic diseases and fatalistic tendencies and presents useful evidence. In addition, the data obtained from this study may guide interventions to increase adaptation to chronic diseases in societies with high fatalistic tendencies. However, one limitation of the study is that the study examined a sample of participants living with chronic diseases admitted to a single hospital in Turkey; therefore, the findings may not be generalizable to a wider population.

Conclusion: The results of the study revealed that individuals with chronic diseases had moderate levels of adaptation to chronic diseases and fatalism tendencies, and study participants with high fatalism tendencies had lower adaptation to chronic disease. It can be suggested that the fatalism tendencies of individuals should be considered in the interventions to be made to increase the adaptation of chronic patients and that the programs to be prepared should be planned in line with the beliefs of the society in which they live, and also to raise awareness on the subject during the education of nursing students. Future research may seek to determine the effectiveness of interventions to increase health literacy levels of individuals with any chronic condition.

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