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Original Research

Moderator Effect of Chronic Disease on the Relationship Between Marriage Adjustment and Satisfaction in Married Couples

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ABSTRACT

Objective: The purpose of our study is to show how the relationship between marital adjustment and satisfaction will change in cases of chronic disease in either or both spouses of married couples using a multivariate statistical analysis method.

Methods: Marriage adjustment ve marriage satisfaction scales were used. A structural equation modeling - multiple group analysis method was used in the study, which was designed as a relational screening model.

Results: In the study, which included 898 participants, 56.6% of the participants were female and 43.4% were male. The mean age of the participants was 36.94 ± 8.72 standard deviations. First, the relationship between marital adjustment and satisfaction was analyzed using structural equation modeling, and the relationship between the scales was found to be statistically significant (p=0.001). In the model, which was significant and sufficient, the variable of chronic disease was coded on the arrow representing the regression coefficient between the scales, and multiple group analysis was applied. The relationship between marital adjustment and satisfaction was found to be weak among individuals with chronic diseases. The rate of marriage satisfaction explaining marriage adjustment was lower in individuals without chronic disease (R^2=0.16) than in those without chronic disease (R^2=0.10). While ego scores were not significant in individuals without chronic disease (p=0.237), they were statistically significant in individuals with chronic disease (p=0.017).

Conclusion: Chronic diseases has been found to have a significant impact on the relationship between spouses. Many studies have examined the effects of chronic diseases on marriage. However, our study differs from other studies because of the analytical methods used. In the scales, it was determined whether the chronic disease showed a change in the relationship between the scales, not the scores in the chronic disease state.

Keywords: SEM, multiple group analysis, chronic diseases, marriage satisfaction, marriage adjustment

INTRODUCTION

Chronic diseases is necessary to be under control to ensure that individuals can fulfill their duties and responsibilities in personal care without forcing them and to control the progression of the disease [1]. According to a WHO report in 2011, 85% of the deaths in our country in 2008 were due to chronic diseases [2]. Several studies have revealed that chronic diseases have different psychosocial effects on individuals. In the studies carried out, individuals with chronic diseases, such as fear, hopelessness, depression, helplessness, fear of death, and introversion. It is

known that these situations are experienced very frequently, and as a result, the quality of life of individuals is negatively affected [1,3].

Problems or diseaseses experienced by family members also cause adverse effects on other family members. Families support each other throughout their lives. In adverse situations, the assumeer roles in the family will change, and the people who take on the role of caregiver from the members of the family will change. Family oriented approaches play an important role in the definition and progression of diseases. Studies have shown that family oriented care positively contributes to both the functioning of health systems and diagnosis and treatment of the disease process [4]. It has been stated that marriages are negatively affected by chronic diseases and physical or mental disorders in any of the spouses, and marital adjustment will be damaged [5].

Marriage which is the smallest structural unit of society, is defined as an institution that consists of spouses forming a partnership by sharing responsibilities and a contract on the bond between the spouses [6].

Marital adjustment and satisfaction appear to be concepts used interchangeably. Marital satisfaction: This is the evaluation of the mutual benefits and harms as a whole that spouses have good psychology during the continuation of marriage [7-8]. Marital adjustment: This is defined as the ability of spouses to solve problems together and live with strong communication [9]. As a result of the physical and mental reflection of harmony in marriages to individuals, their quality of life increases, positive effects are observed in their general health status, and life satisfaction increases [10-11]. Quality marriage has positive effects on the happiness of individuals. The most important determinant of happy and healthy marriages is ensuring marital satisfaction. Marriage satisfaction will also increase in individuals who provide marital satisfaction, their quality of life and their support for each other will increase [12].

A significant number of studies in the literature have examined roles of marriage's satisfacion and adjustment. The main issue covered in this study is how the relationship between marital adjustment and satisfaction changes in the case of chronic diseases. Considering that considering the issues chronic diseases has a moderator effect on marital satisfaction and adjustment, a multi-group analysis using structural equation modeling (SEM) was applied. The most important feature of the analysis is that the presence of chronic disease was entered into the expressions representing the basic relationships between the variables (arrows showing the regression coefficients), and the disease was included as a moderator variable in the regression model. SEM is a multivariate analysis method that allows the examination of complex data, examines the indirect and direct effects between observable and unobservable variables, uses multiple regression equations simultaneously, presents the models established between the data visually, includes error terms in the model, and explains the covariance structures between the variables [13-15].

Main Points;

- Chronic diseases may have negative effects on marital satisfaction and adjustment.
- Marriage satisfaction and adjustment of individuals whose self-esteem is affected by chronic diseases may also deteriorate.
- Using multiple group analyses as an alternative to parametric univariate analyses minimized losses in data interpretation.

MATERIAL AND METHODS

Type of Research and Hypotheses

A relational screening model was used to design this study. The preferred model for examining the multifaceted relationships between variable sets provides an opportunity to examine indirect and direct effects [16].

The working hypotheses are as follows:

- H_1: The effect of marital adjustment on marital satisfaction is statistically significant.
- H_2: The moderating effect of chronic disease on marital adjustment and satisfaction is statistically significant.

Place and Time of Research

Data were collected face-to-face and via Google Forms from individuals married for at least three years between January and May 2023. At the stage of obtaining data, the forms were limited to receiving only one answer from each participant. The cookies and IP addresses were checked to determine the reliability of the data.

Sample Selection and Number of Samples

Although there is no clearly defined term for SEM, Schumacher and Lomax (2004) stated that there are studies using 250-500 sample sizes [14]. On the other hand, in the SEM analyses, Kline required a sample number of 200 or more [16]. Accordingly, 918 data forms were collected for this study. However, 23 questionnaires were excluded from the study because they did not provide consent. This study included 895 married participants. Participants were selected by voluntary sampling and snowball sampling, which are non-probability sampling methods.

Inclusion and Exclusion Criteria

Being between the ages of 25-50, being married for at least three years, being literate, and completing the questionnaire completely were the inclusion criteria of the study. Partners with chronic diseases that did not require any additional care assistance (diabetes, blood pressure, cardiovascular diseases, rheumatic diseases, asthma, etc.) were included in the study.

Data Collection Tools

Personal Information Form

The form consisting of gender, age, educational status, occupation, socioeconomic status, and chronic disease variables, which will help define personal characteristics, was applied to the participants.

Marriage Satisfaction Scale (MSS)

The scale developed in 2009 consists of 13 items and three sub-dimensions. The internal consistency coefficient of the scale, whose sub-dimensions were family, sexuality, and self, was calculated as Cronbach's α 0.790. As the score obtained from the scale increases, individuals' marital satisfaction also increases [17].

Marriage Adjustment Scale (MAS)

The scale, first developed by Locke and Walles in 1959 [18], was adapted into Turkish by Tutarel Kışlak in 1999. The scale consists of 15 questions and has a single sub-dimension. The low number of items in the scale is one of the most important reasons for its extensive use. The increase in the scores on the scale, which is scored between 0-60, is expressed as an increase in the harmony of the spouses' feelings, economy, friendship, life criteria, and social characteristics. It has been stated that spouses with high scores have high trust in each other [19].

Statistical Analysis

AMOS 24 and SPSS (Statistical Program in Social Sciences) 28.0 programs were used for the analysis. The significance level (p) value was set at 0.05, and the mean, standard deviation, minimum, maximum, number, and percentage values were used as descriptive statistics. Using the AMOS program, Mardia's coefficient was found to be 1.827 [16]. The calculated value was less than eight showed that the data were suitable for multivariate analysis [20]. Multivariate analysis assumptions, homogeneity of variance, multicollinearity, autocorrelation, etc., were checked, and the reliability coefficient was calculated using Cronbach's α. In the first established path diagram, the measurement model in which the MSS score was the independent variable and the MAS score was the dependent variable. Chronic diseases were included in the model as the moderator variable, depending on the significance of the model. A path diagram was established, in which the MSS score was the independent variable and the MAS score was the dependent variable, and SEM analysis was applied. Structural equation Modeling, which is frequently preferred in the analysis of relational screening models, was used in this study [16].

RESULTS

Demographic information of participants are given in Table 1. In study 508 (56.6 %) were female and 390 (43.4%) were male. The age range of the individuals was 25-50 and the mean was calculated as 36.94 ± 8.72 standard deviations and 159 (17.7 %) were primary school graduates, 294 (32.7%) were high school graduates, and 445 (49.6%) were undergraduate or higher graduates (Table 1).

The descriptive statistics of the scores of the individuals included in the study from the scales and subdimensions used in the study are given in Table 2. The MAS Cronbach's α coefficient was 0.817, and the MSS Cronbach's α coefficient was 0.895 (Table 2).

Multiple Group Analysis - SEM

In the first path diagram, the effect of marital adjustment on marital satisfaction was examined. In the model, marital adjustment scale scores represent the independent variable, marital satisfaction scale scores represent the dependent variable, and e1-e4 are residual terms. Scale sub-dimension scores that do not have the effect of confounding factors on the scale total score, which is a latent variable in structural equation modeling

analyzes, are modeled as observed variables and have a direct effect on the scores. The path diagram of the measurement model is shown in Figure 1.

The regression coefficients and significance of the established models are presented in Table 2.

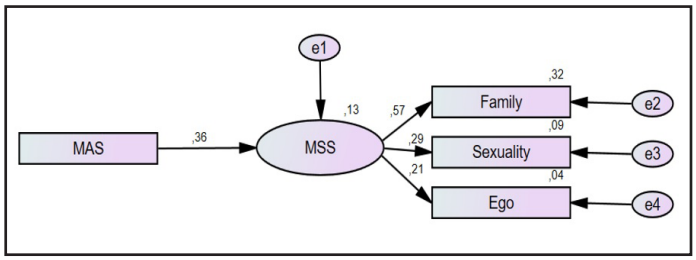

Figure 1. Measurement model path diagram of the relationship between marriage adjustment and marriage satisfaction

In the model; Goodness-of-fit index values obtained as a result of the analysis χ2 (CMIN) 7.794, degrees of freedom (sd) 2, χ^2/ sd 3.897, GFI (Godness of Fit Index, Goodness of Fit Index) 0.996, CFI (Compretive Fit Index, Comparative Fit Index) 0.933, IFI (Incremental Fit Index of Error 0.93), RMSEA (Root Mean Square Root of Approximate Errors) was found to be 0.057 (Table 5).

In the model, 13% (R^2= 0.13) of the MSS score was explained by MAS score. MAS scores had a statistically significant effect on MSS scores (β_1=0.360, p=0.001<0.05, Table 3), and MSS scores also increased depending on the increase in MAS score. In addition, the effects of the MSS sub-dimensions of Family, Sexuality and Ego scores were statistically significant (p<0.05, Table 3).

The established measurement model is statistically sufficient, and the number of samples taken represents the model (Table 5). Since the effects on the measurement model were statistically significant, it was included in the model as a variable with a chronic disease-modulating effect. In the newly established model, the presence or absence of chronic diseases was coded into the path coefficient between the variables, and a multiple group analysis was applied.

Using multigroup analysis, categorical variables consisting of two or more groups that had a moderator effect were included in the model. The main purpose of this study was to determine the role of categorical variables in the relationship between the observed variables. The Critical Z value was interpreted in evaluating the statistical significance of the difference between the groups of the determined categorical variable. The fact that the "Critical Z value," which tests the differentiation in the path coefficients in the groups of the categorical variable, is higher than 1.96, shows a statistical difference for the groups [21]. The path diagram of the established multigroup analysis model is shown in Figure 2.

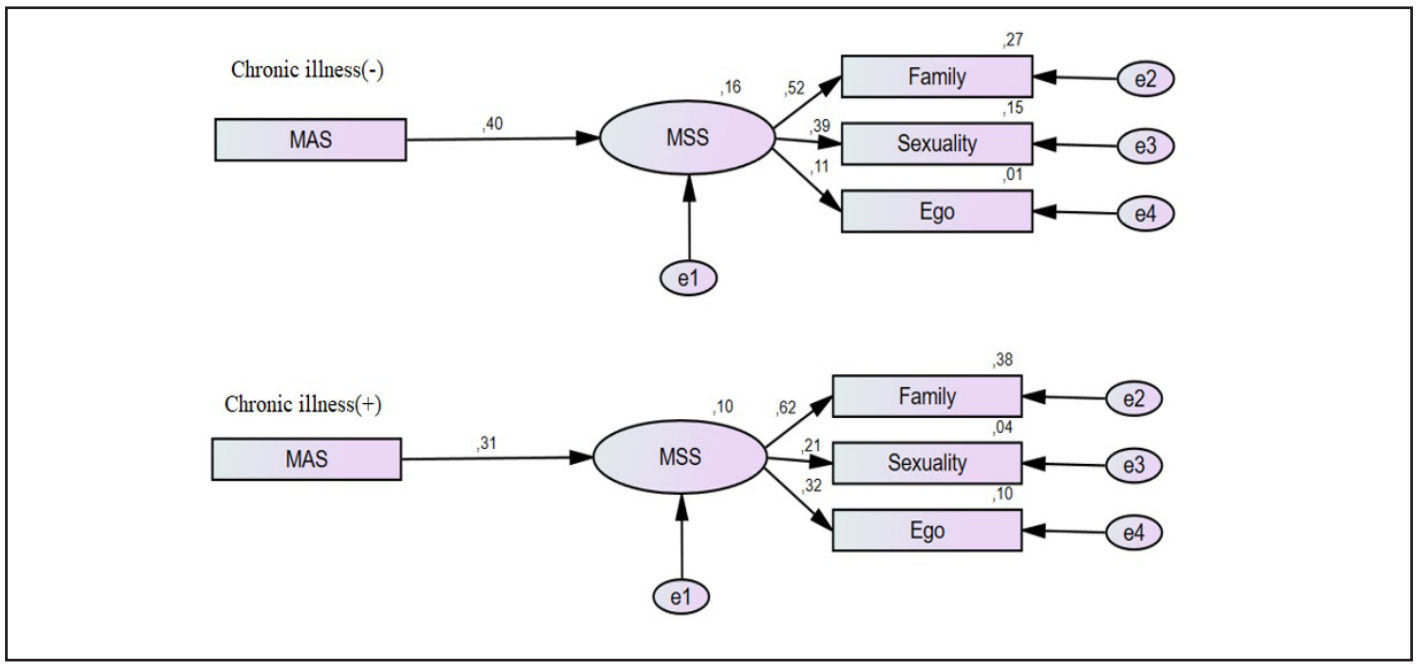

Figure 2. The moderating role of chronic disease in the relationship between marriage adjustment and marriage satisfaction

Table 1. Demographic Information of Participants

Variable	Groups	Frequency	Percent (%)
Gender	Female	508	56.6
	Male	390	43.4
Age	25-30	290	32.3
	31-40	302	33.6
	≥ 41	306	34.1
Education	Primary	159	17.7
	High School	294	32.7
	University and Above	445	49.6
Occupation	No	422	47.0
	Yes	476	53.0
Economical Status	Bad	420	46.8
	Good	478	53.2
Chronic Diseases	No	427	47.6
	Yes	471	52.4
Total		**898**	**100.0**

Table 2. Descriptive Statistics of Scale Scores

Variable	Mean ± sd	(Min - Max)	Cronbach's α
MAS	44.74 ± 5.37	24 - 59	0.817
Family	16.50 ± 3.43	8 - 25	0.895
Sexuality	17.38 ± 3.01	9 - 25	
Ego	10.97 ± 1.94	5 - 15	
MSS	44.85 ± 5.56	26 - 60	

sd; standard deviation

Table 3. Coefficients of Measurement Model Variables

Dependent Variable	Independent Variable	β_1	β_2	p	R^2
MSS	**MAS**	0.360	0.129	***<0.001****	0.13
Family		0.567	1.000	***<0.001****	0.32
Sexuality	**MSS**	0.293	0.453	***<0.001****	0.09
Ego		0.211	0.211	***0.004****	0.04

β_1; Standardized regression coefficents, β_2; Unstandardized regression coefficients, *p<0,05; t test result for the significance of the regression coefficients

A In the newly established model, the goodness of fit index values obtained as a result of the analysis were calculated as χ^2 10,505, sd 2, and $\chi 2$/sd 2.626. The RMSEA value, which is the index showing the adequacy of the sample number, is 0.043, indicating that the sample size is at a very good level for the model used. GFI value of 0.994, CFI value of 0.929, and IFI value of 0.934 were found to be very good in terms of the fit indices of the model (Table 5). The interpretations of the regression coefficients in the path diagram and the "Critical Z value" of the chronic variable are presented in Table 4.

In participants without chronic diseases, 16% (R^2= 0.16) of the MSS score in the model was explained by the MAS score. MAS scores had a statistically significant effect on MSS scores (β_1=0.40, p=0.001<0.05, Table 4), and MSS scores increased depending on the increase in MAS score. In addition, the effect of the MSS sub-dimensions of Family (p=0.001<0.05, Table 4) and Sexuality (p=0.006<0.05, Table 4) scores was statistically significant, but the effect of ego scores was not statistically significant (p=0.237>0.05, Table 4).

In individuals with chronic diseases, 10% (R^2=0.10) of the MSS score in the model was explained by the MAS score. MAS scores had a statistically significant effect on MSS scores (β_1=0.31, p=0.001<0.05, Table 4), and MSS scores also increased with increasing MAS scores. In addition, the effects of the MSS sub-dimensions of Family (p=0.001<0.05, Table 4), Sexuality (p=0.044<0.05, Table 4) and Ego scores were statistically significant (p=0.017<0.05, Table 4).

DISSCUSION

The Cronbach's alpha internal consistency coefficient of the "Marriage Adjustment" and "Marriage Satisfaction" scales are at the desired level [22]. While 427 (47.6%) participants were individuals without chronic disease, 471 (52.4%) were individuals with chronic disease.

A path diagram was established between MAS and MSS, and a measurement model analysis was performed. In the first path diagram established, there was a statistically significant positive relationship between MAS and MSS, and as a result of 1 point increase in MSS scores, MAS scores increased by 0.129 points (β_2=0.129, p=0.001<0.05, Table 3). The measurement model was statistically significant and sufficient, and the fit index values were found at the desired level [20]. Because of the significance of the measurement model, the categorical variable, whether there is a chronic disease, was included in the model. Since the chronic disease included in the model is a variable that has a moderating effect on the relationship between MAS and MSS, the path coefficient was coded according to the presence or absence of disease in the established path diagram, and two different models were obtained. The role, significance, and effect of chronic diseases on the relationship between the scales, and

Table 4. Moderating Role Regression Coefficients in the Relationship Between Marital Adjustment and Satisfaction with Chronic Disease

	Dependent Variable	Independent Variable	β_1	β_2	p	R^2	Critical Z Value
Chronic Diseases (-)	**MSS**	**MAS**	0.400	0.136	***<0.001****	0.16	2.013
	Family		0.522	1.000	***<0.001****	0.27	
	Sexuality	**MSS**	0.391	0.682	***0.006****	0.15	
	Ego		0.105	0.112	0.237	0.01	
Chronic Diseases (+)	**MSS**	**MAS**	0.310	0.119	***<0.001****	0.10	
	Family		0.620	1.000	***<0.001****	0.38	
	Sexuality	**MSS**	0.211	0.289	***0.044****	0.04	
	Ego		0.316	0.293	***0.017****	0.10	

β_1; Standardized regression coefficents, β_2; Unstandardized regression coefficients, *p<0,05; t test result for the significance of the regression coefficients, R^2; Explanatory coefficients

Table 5. Calculated Goodness of Fit Indices for Models

Fit Indexes	Models by Size		Acceptance Ranges		Interpretation
	First	Multiple Groups	Good	Acceptable	
GENERAL MODEL FIT					
CMIN (Chi-Square Goodness of Fit, χ2)	7.794	10.505	The model with the smallest value is chosen.		It measures the similarity of variance and covariance matrices. The model's conformance to the observed covariance structure, as indicated by its structure, is tested.
p	0.001	0.001	p < 0.05		
CMIN / df	3.897	2.626	≤ 3	≤ 4 -5	The low estimated value suggests that the covariance structures are similar. In determining the index, the number of samples is effective. The χ^2 value decreases as the number of samples increases.
COMPARATIVE FIT INDEX					
CFI (Comparative Fit Index)	0.933	0.929	≥ 0.97	0.95 -097	In the absence of latent variables in the model, the independence model compares the covariance matrices of the proposed model. It is sensitive to the number of samples.
IFI (Incremental Fit Index)	0.930	0.934	≥ 0.95	0.94 -0.90	It is obtained by computing the NFI value with df. It eliminates the sample's influence on model calculations.
RMSEA (Root Mean Square Error of Approximation)	0.057	0.043	≤ 0.05	0.05 -0.08	Its goal is to minimize the difference between the observed and estimated covariance matrices. It is sensitive to the amount of samples and may result in the model being rejected if the sample size is limited.
ABSOLUTE FIT INDEX					
GFI (Goodness of Fit Index)	0.996	0.994	≥ 0.95	0.90 -0.95	It is a substitute for the value χ^2. It is calculated independently of sample count. It is also known as the model's sample variance explained. It is comparable to the R^2 value obtained in multivariate regression.

not the scales, were analyzed statistically. Chronic diseases tend to occur, especially in mid-late adulthood and during marriage [23]. Studies on the effect of diseases on marital relationships have shown that the presence of physical diseases in one of the spouses has negative effects on marital adjustment and family functionality [24]. However, this relationship was bidirectional. In other words, marital adjustment can also trigger chronic diseases. It is known that similar lifestyles in couples can be effective in treating chronic diseases [25].

Recently, it has been suggested that marriage is not only related to physical and mental health but also to the relationship between the quality of marriage and health status [26-27]. Studies have shown that high marital satisfaction positively affects couples' physical and mental health. In marriages where marital satisfaction is low, the physical health of individuals may be negatively affected [28-29].

In MSS scores, family ($p=0.001<0.05$, Table 4), sexuality ($p=0.044<0.05$, Table 4), and ego ($p=0.017<0.05$, Table 4) sub-dimensions were statistically significant in those with chronic disease ($p<0.05$; Table 4), but in those without chronic disease, family ($p=0.001<0.05$, Table 4) and sexuality ($p=0.006<0.05$, Table 4) sub-dimensions had a statistically significant effect ($p<0.05$; Table 4), whereas ego sub-dimensions did not have a statistically significant effect ($p=0.237>0.05$; Table 4). Based on these data, it was concluded that self-esteem may be effective in the relationship between marital satisfaction and marital adjustment in the presence of chronic diseases. Self-esteem is a variable associated with marital satisfaction. According to Rosenberg (1979) self-esteem determines an individual's attitude towards himself. Individuals with high self-esteem respected themselves positively. Many factors, such as the long and difficult treatment process of chronic diseases and changes in body image, disrupt the adaptation of individuals [30-31]. This situation can affect self-esteem. Marital satisfaction and harmony of individuals whose self-esteem is affected by chronic diseases may also deteriorate.

In a study conducted with 297 women with heart disease in 2021, it was observed that the support of women from their husbands positively affected their marriage [32]. A study conducted in 2000 showed that marriage had a positive effect on chronic diseases [33]. Waltz et al. Data from 400 men with heart disease and their spouses were collected for five years, and the role of the long-term cognitive effects of diseases in marriage was examined. While supportive marriage environments have positive effects on the health of men in marriages with healthy relationships, negative effects have been found in marriages where adequate social support is not provided between spouses [34].

When the effects of diseases on marriage were examined, it was found that emotional and physical disorders could cause problems in relationships. A health problem in any of the spouses will negatively affect the quality of marriage, and the perception of happiness will decrease among the spouses [5]. In a study conducted in 2014 with the wives of healthy men with Parkinson's, it was observed that the risk of death was higher in women with Parkinson's. The death risk finding, which is one of the most concrete indicators of chronic diseases in marriage, was revealed in the study [35]. In a study conducted by August et al. [36] in 2010, sex and marital status were found to be effective in the management of chronic diseases. In a study conducted using data obtained from 3055 people and their spouses in Korea, Min et al. found that the quality of the relationship and the care of the spouse are effective in alleviating the depression that may be caused by the chronic disease, and the health status of the spouses is related to each other [37].

In our study, the model in which chronic disease has a moderating effect on the relationship between MAS and the MSS was found to be statistically significant and sufficient. The goodness-of-fit indices are at the desired level [20]. A statistically significant difference was found in MAS scores explaining MSS scores between those with and without chronic disease (Critical Z Value=2.013>1.96). The effect of MAS scores on MSS scores was found to be higher in the absence of chronic disease ($\beta_1=0.40$, $p=0.001<0.05$, Table 4) than in the presence of chronic disease ($\beta_1=0.31$, $p=0.001<0.05$, Table 4).

In a statement published by the American Academy of Health Behavior Work Group on Doctoral Research Training in 2005, it was stated that multivariate statistical analysis methods (regression models, generalized linear models, etc.) should be preferred instead of univariate statistical analysis methods (t test, Mann Whitney U test, ANOVA, Kruskal Wallis, etc.) Problems such as data loss and difficulty in interpretation as a result of univariate analyses can be solved by multivariate statistical analysis methods, analyzed and interpreted in unobservable relationships, and researchers will obtain more information about their work [37-38]. In line with this opinion, SEM, a multivariate statistical analysis method, was preferred in

our study. The multiple Gorups analysis method we used was a moderator effect analysis method [21]. SEM shows that the direct and indirect relationships between the variables provide different results for researchers to interpret. In the analysis of error terms, calculations are made by keeping the differences between the sample and estimated covariance matrices at a minimum level, unlike ANOVA and multivariate regression models [14-39]. The model established for the analysis applied in our study and the error terms, relationships between unobservable variables, and change in categorical data in the relationship between the two scales are shown both graphically and mathematically.

Limitations

The limitations of our study; the use of online methods in the data collection system, the unwillingness of married couples to answer some questions, the selected married couples to have been married for at least three years.

CONCLUSION

Our study is the first to include chronic disease as a moderator variable in the relationship between MAS and MSS and to test it using multiple group analysis. For this reason, it will serve as a guide for other studies in this field. The results obtained from the established relationships may differ depending on the sample numbers and structures used in the studies. The reluctance of married couples to answer these questions increased the limitations of the study. As the results of our study may differ between cultures, it will shed light on other studies to be carried out and contribute to the literature.

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Declaration of Competing Interest: The authors have no conflicts of interest to declare.

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Ethics Committee Approval: Ethics Committee approval dated 24/01/2023 was obtained for this study according to the Ethics Committee Guideline for Non-Interventional Clinical Research of Malatya Turgut Özal University.

REFERENCES

[1] Özdemir Ü, Taşçi S (2013) Psychosocial problems and care in chronic diseases. [Kronik hastaliklarda psikososyal sorunlar ve bakim]. Erciyes University Journal of Health Sciences, 1(1): 57-69. ([In Turkish]).

[2] World Health Organization (September 2011), Noncommunicable Diseases Country Profiles 2011. Access: 10.06.2023. https://apps.who.int/iris/handle/10665/44704

[3] Karakoç Kumsar A, Taşkin Yilmaz F (2014) An overview of quality of life in chronic diseases. [Kronik hastaliklarda yaşam kalitesine genel bakiş]. Journal of ERU Faculty of Health Sciences, 2(2): 62-70. https://dergipark.org.tr/tr/pub/erusaglik/issue/5988/79632 ([In Turkish]).

[4] Kuru N, Emiroğlu ON (2017) İndividual and Family Oriented Care in Occupational Health Nursing Practices [İş Sağliği Hemşireliği Uygulamalarinda Birey ve Aile Odakli Bakim], Turkey Clinics J Public Health Nurs-Special Topics, 3(2):83-7. ([In Turkish]).

[5] Michael AM, Michel H, Timothy DVS, Vincent BVH (1995) Parameters of marriage in older adults: A review of the literature. Clinical Psychology Review. 15(8):891-904, https://doi.org/10.1016/0272-7358(95)00051-8

[6] Saxton L (1982) Marriage. the nature of marriage, the individual, marriage, and the family. California: Wadsworth.

[7] Nadolu D, Runcan R, Bahnaru A (2020) Sociological dimensions of marital satisfaction in Romania. Plos One. 15(8):e0237923. https://doi.org/10.1371/journal.pone.0237923

[8] Miller RB, Mason TM, Canlas JM, Wang D, Nelson DA, Hart CH (2013). Marital satisfaction and depressive symptoms in China. Journal of Family Psychology. 27(4):677-682. https://doi.org/10.1037/a0033333

[9] Sabatelli RM (1998) Measurement İssues in Marital Research: A Review and Critique of Contemporary Survey

Instruments. Journal of Marriage and the Family. 50(1):891-915. https://doi.org/10.2307/352102

[10] Hayward M, Zhang Z (2006) Gender, the marital life course, and cardiovascular disease in late midlife. Journal of Marriage and Family 68(3):639-657. https://doi.org/10.1111/j.1741-3737.2006.00280.x

[11] Kluwer E S (2000) Marital quality. İn R. M. Milardo and S. W. Duck (eds.), Families as relationships, 59-78. New York: Wiley.

[12] Çağ P, Yildirim İ (2013) Relational and personal variables predicting marital satisfaction. [Evlilik doyumunu yordayan ilişkisel ve kişisel değişkenler]. Turkish Journal of Psychological Counseling and Guidance. 4(39):13-23. ([In Turkish]).

[13] Stephenson M, Holbert R, Zimmerman R (2006). On the Use of Structural Equation Modeling in Health Communication Research. Health Communication. 20:159-167. https://doi.org/10.1207/s15327027hc2002_7

[14] Schumacker RE, Lomax RG (2004) A Beginner's Guide to Structural Equation Modeling: Fourth Edition (2nd ed.). Psychology Press. https://doi.org/10.4324/9781410610904

[15] Golob, Thomas F (2003) "Structural equation modeling for travel behavior research," Transportation Research Part B: Methodological. Elsevier. 37(1):1-25. https://doi.org/10.1016/S0191-2615(01)00046-7

[16] Kline RB (2010) Principles and Practice of Structural Equation Modeling, 3rd Ed. New York, NY: The Guilford Press.

[17] Çelik M, Yazgan İnanç B, (2009) Marriage Satisfaction Scale: Validity and Reliability Studies. [Evlilik Doyum Ölçeği: Geçerlik ve Güvenirlik Çalişmalari]. C.U. Journal of the Social Sciences Institute. 18(2): 247-269 ([In Turkish]).

[18] Locke HJ, Wallace KM (1959) Short marital adjustment and prediction tests: Their reliability and validity. Marriage and Family Living. 21:251-255. https://doi.org/10.2307/348022

[19] Tutarel-Kişlak Ş (1999) Reliability and validity study of the Marriage Adjustment Scale. [Evlilikte Uyum Ölçeğinin güvenirlik ve geçerlik çalişmasi]. 3P Journal of Psychology, Psychiatry and Psychology. 7(1):50-57. ([In Turkish]).

[20] Arbuckle JL (2012) IBM SPSS AMOS 21 User's Guide, USA: İBM SPSS AMOS Corp: IBM Corp 2012.

[21] Gürbüz S (2019) Structural Equation Modeling with AMOS [AMOS ile Yapisal Eşitlik Modellemesi]. Ankara: Seçkin Publishing. ([In Turkish]).

[22] Gliem AJ, Gliem RR (2003) Calculating, interpreting and reporting cronbach's alpha reliability coefficient for likert-type scales. Midwest Research to Practice Conference in Adult, Continuing and Community Education. 4-6 October, 82-88, USA.

[23] Goodman CR, Shippy RA (2002) Is it contagious? Affect similarity among spouses. Aging Ment Heal. 6(3):266–74. https://doi.org/10.1080/13607860220142431

[24] Melton MA, Hersen M, Van STD, Van HVB (1995) Parameters of marriage in older adults: A review of the literature. Clin Psychol Rev. 5(8):891-904. https://doi.org/10.1016/0272-7358(95)00051-8

[25] Chow CK, Dominiczak AF, Pell JP, et al. (2007) Families of patients with premature coronary heart disease: An obvious but neglected target for primary prevention. Br Med J. 335(7618):481-5. https://doi.org/10.1136/bmj.39253.577859.BE

[26] Lim BKH (2000) Conflict resolution styles, somatization, and marital satisfaction in Chinese couples: the moderating effect of forgiveness and willingness to seek professional help. Dissertation Abstracts International. 61(7-B), 3902.

[27] Fidanoğlu O (2007) The relationship between marital adjustment and the somatization levels of the spouses and their comparison in terms of other sociodemographic variables. [Evlilik uyumu ile eşlerin somatizasyon düzeyleri arasindaki ilişki ve diğer sosyodemografik değişkenler açisindan karşilaştirilmasi]. Unpublished Master's Thesis, Marmara University İnstitute of Health Sciences, İstanbul ([In Turkish]).

[28] Kirby JS (2005) A study of the marital satisfaction levels of participants in a marriage education course. Unpublished doctoral dissertation, University of Louisiana, Department of Educational Leadership and Counseling Department: Louisiana.

[29] Canbulat N, Çankaya ZN (2014) Prediction of Subjective Well-Being Levels of Married İndividuals [Evli Bireylerin

Öznel İyi Olma Düzeylerinin Yordanmasi]. Ege Journal of Education. 15(2):556-576. ([In Turkish]). https://doi.org/10.12984/eed.67597

[30] Rosenberg M (1979) Conceiving the self. New York: Basic Books.

[31] Karadakovan A, Eti Aslan F (2010) Care in Internal and Surgical Diseases. [Dahili ve Cerrahi Hastaliklarda Bakim]. Adana: Nobel Medicine Bookstores: 99-111. ([In Turkish]).

[32] Yuca G, Beydağ, KD (2021) Factors Affecting the Marital Satisfaction and Partner Support of the Women With Heart Disease. Health and Society. 31(1):110-118.

[33] Pienta A, Hayward M, Jenkins K (2000) Health Consequences of Marriage for the Retirement Years. Journal of Family Issues. 21(5):559-586. https://doi.org/10.1177/019251300021005003

[34] Waltz M, Badura B, Pfaff H, Schott T (1988) Marriage and the psychological consequences of a heart attack: a longitudinal study of adaptation to chronic illness after 3 years. Social Science & Medicine. 27(2):149-58. https://doi.org/10.1016/0277-9536(88)90323-1

[35] Nielsen M, Hansen J, Ritz B, Nordahl H, Schernhammer E, Wermuth L, Rod N (2014) Cause-Specific Mortality Among Spouses of Parkinson Disease Patients. Epidemiology, 25:225–232. https://doi.org/10.1097/EDE.0000000000000042

[36] August KJ, Sorkin DH (2010) Marital status and gender differences in managing a chronic illness: the function of health-related social control. Social Science and Medicine. 71(10):1831-8. https://doi.org/10.1016/j.socscimed.2010.08.022

[37] Kaya Ş (2014) Structural equation modeling: The relationship between dizziness, anxiety, and exaggeration of bodily sensations. [Yapisal eşitlik modellemesi: Baş dönmesi, kaygi ve bedensel duyumlari abartma ilişkisi]. PhD Thesis, Uludag University, Bursa. ([In Turkish]).

[38] AAHB Work Groupe (2005) A vision for doctoral research training in health behavior: A position paper from the american academy of health behavior american academy of health behavior work group on doctoral research traininga. Am J Health Behav. 29(6):542-556. https://doi.org/10.5993/AJHB.29.6.9

[39] Lei W, Wu Q (2007) Introduction to Structural Equation Modeling: Issues and Practical Considerations. Educational Measurement: İssues and Practice, 26(3):33-43. https://doi.org/10.1111/j.1745-3992.2007.00099.x

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