

THE MEDIATING EFFECT OF DECISION SATISFACTION ON THE EFFECT OF DECISION CONFLICT ON DECISION REGRET: THE CASE OF CHECK-UP PATIENTS

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ABSTRACT

Aim: Decision satisfaction is inherently linked to both decision conflict and decision regret. In this study, the mediating role of decision satisfaction on the effect of decision conflict on decision regret will be examined.

Methods: This cross-sectional study was conducted with 199 patients who were scheduled for a check-up and volunteered to participate in the study. Correlation, t-test, ANOVA, and SEM were performed. The study complied with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement's guidelines for reporting cross-sectional studies.

Results: According to the t test results, a significant difference in decision regret was found between those who regretted the last decision and those who did not regret the last decision. According to the ANOVA results, decision regret was not found to be significantly different between those who made the treatment decision. A mediating role of decision satisfaction was found in the effect of decisional conflict on decision regret.

Conclusions: The decrease in the effect of decisional conflict on decision regret in healthcare is related to the mediating role of patients' decision satisfaction levels. Our study will play a guiding role for health policy makers and all health professionals working for patient satisfaction in preventing individuals from experiencing decision regret and decision conflict and increasing their satisfaction with health services.

Keywords: Decision conflict; decision regret; decision satisfaction; check up; health policy.

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INTRODUCTION

People may have to make many decisions in every aspect of life, from the simplest to the hardest [1]. This is also the case for health-related decisions. However, making choices and decisions on health-related issues is not easy [2]. Because of the information asymmetry in healthcare, decisions are often not made with the participation of patient individuals. Physicians and other healthcare professionals have a large share in the decisions made [3]. This situation necessitates individuals to choose among often contradictory and uncertain options during decision making [4, 5]. This causes a phenomenon known as decisional conflict to emerge. This phenomenon was first described by Janis and Mann [6]. According to this definition, decisional conflict embodies the turbulent landscape that individuals pass through when faced with important choices. The phenomenon of decisional conflict explains that decisions rarely come with certainty, often involve uncertainty, are weighed down by different considerations, and are hindered by personal interests [7, 8]. This phenomenon of cognitive and emotional conflict has a structure that is fed by many confusing factors that affect the final decision [9, 10]. This structural phenomenon leads to regret sandwiched between cognition and emotion [6, 11, 12]. This emotional state, defined as decision regret, emerges as a poignant outcome filled with disappointment [13–15].

In contrast to decision conflict, decision regret represents a retrospective, emotionally charged

evaluation of a chosen path. It encompasses a range of negative emotions that arise from the belief that a different choice could have produced a more positive outcome. Decision regret experienced in healthcare has the potential to affect an individual's decision-making psychology in the future. Decision regret also has the potential to influence future decision-making efforts by affecting the individual's overall well-being [15].

Decisional conflict and decision regret are two important phenomena that affect each other [6, 16, 17]. These two phenomena have a dynamic intertwined relationship. It is stated that the intensity of the decisional conflict experienced by the individual affects the regret in the decisions to be made [16, 18]. Decisions made through decisional conflict push individuals into a crucible of introspection that is felt according to the weight. An increase in emotional conflict may increase post-decision regret because retrospective evaluation of the decision can bring about a sharper perception of alternative possibilities and unexplored paths [19–21].

It is important to reveal the relationship between decisional conflict and decision regret. However, in order to reveal this relationship, it is necessary to examine the phenomena that have different effects between these two structures as different facts play a role in revealing how the depth of decisional conflict experienced by individuals triggers decision regrets [18, 22]. One of these facts is the satisfaction with the decision taken [23]. Decision satisfaction encompasses an individual's subjective evaluation of a chosen

course of action, reflecting the feeling of satisfaction, contentment, and even happiness that arises during and after the decision-making process [24, 25]. In contrast, decision regret represents a retrospective, poignant evaluation marked by feelings of disappointment, regret, or lamentation toward the chosen path [13, 26].

Decision satisfaction is a potential mediator in the relationship between decisional conflict and decision regret. Decision satisfaction resulting from the decision-making process and outcome represents the individual's subjective evaluation of the chosen course of action. This phenomenon is inherently linked to both decisional conflict and decision regret. In this connection, satisfaction with the decision serves as a critical bridge to understanding how internal conflict in the decision-making process translates into lasting feelings of satisfaction or regret [27–29].

In light of the information given above, this study will examine the mediating role of decision satisfaction in the effect of decisional conflict on decision regret. With this research, not only the theoretical structures of decision making but also the dynamics that increase individuals' decision-making welfare and cause possible decision regret will be revealed.

METHODS

Study setting and timing

This study was conducted at a private hospital located in Ankara, the capital of Turkiye. The

population of the research consisted of patients who had a check-up at the Medical Park Hospital in Ankara. The study was conducted in this hospital because one of the researchers is a physician working in this hospital. The patients who were examined at the internal medicine outpatient clinic between 15/8/2023 and 30/9/2023 as part of the check-up. Data were collected through a face-to-face survey with the patient group.

Study design

This study is a cross-sectional study, which is one of the observational study types. The model of the study is the relational screening model, which is a causal comparison subtype of quantitative research methods. Researchers administered the survey to patients who came to the internal medicine clinic for check-up. The study complied with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement's guidelines for reporting cross-sectional studies.

Participants

Participants of the study were patients who applied to the internal medicine clinic for check-up. All of the participants either had a health problem or were patients who had come without a health problem. The socio-demographic structure of the participants is similar to the people of Ankara who have the economic freedom to apply to private hospitals.

Sample size and sampling

All patients who came to the hospital for check-up between 15.8.2023 and 30.09.2023, the period when the study was conducted, were included in the study. Since all 230 patients who applied to the hospital for check-up between these dates wanted to be included in the study, a sample was not selected. A survey was not conducted for 13 people out of the 230 who did not agree to participate in the study. Data were collected from the remaining 217 patients. However, when the completed questionnaires were examined, it was determined that 18 patients filled out the questionnaires incompletely or incorrectly. For this reason, the study was conducted with the data of 199 people who agreed to participate in the study and filled out the survey completely.

Data collection tools

A demographic information form prepared by the researchers and some measurement tools developed by other authors were used as data collection tools. The first of these measurement tools is the Conflict in Decision Making scale, developed by O'Connor [30] and validated in Turkish by Yeşilçınar and Güvenç[31]. The second measurement tool used was the Decision Regret scale developed by Brehaut et al.[13] and validated in Turkish by Erdurcan and Kirdök[32]. The third measurement tool used was the Decision Satisfaction Scale developed by Holmes-Rovner et al. [24].

Ethical considerations

Ethical approval was received from Ankara city hospital (IRB-E2-23-4631-2023). The necessary permissions were obtained from the hospital where the study was conducted. All patients included in the study voluntarily participated in the study, and oral consent was obtained from the participants.

Data analysis

Frequency and percentage values obtained from descriptive statistics were used to reveal and explain the socio-demographic characteristics of the patients. Frequency and percentage values were used for categorical variables related to decision regret, while mean and standard deviation values were used for continuous variables. Skewness and kurtosis values were also reported to evaluate the normality assumption for continuous variables. The independent-sample t-test for one groups and One-way analysis of variance (ANOVA) for more than two groups were used to determine the significance of differences in decision regret. In addition, the Pearson correlation coefficient (r) was used to evaluate the relationships between continuous variables and structural equation model analyses were performed to evaluate the mediation effect [2]. A p -value <0.05 was considered to indicate statistical significance, and the results were analyzed at the 95% confidence level. All analyses were performed with IBM SPSS ver. 25.0 and AMOS ver. 26.0 [33, 34].

RESULTS

Demographic and clinical results

When the demographic findings were examined, it was seen that most of the participants were female (n = 144), had a bachelor's degree (n = 85), and were married (n = 136). According to clinical findings, it was determined that only 18.6% (n = 37) of the participants were satisfied with the last health treatment they received, whereas 81.4% (n = 162) were not satisfied with the treatment they received. It was observed that participants made most of their treatment decisions together with their physicians, but a small number of participants made them alone. It was determined that the last health decision made by the participants was mostly drug treatment, whereas the least decision was related to physical therapy

and rehabilitation. It was observed that approximately 90% of the participants regretted their last health decision and changed their decision after experiencing regret.

The participants mostly changed their treatment method and physician in the new decisions they made after regretting. The majority of the participants stated that they did not trust the physician and were not satisfied with their last physician's visit. The majority of participants stated that they applied to a hospital less than twice a year, that they were not satisfied with hospitals and clinics, that they felt negative about the decisions made about their health, that they did not have private health insurance, and that they were not satisfied with the last treatment they received (Table 1).

Table 1. The Demographic and Clinical Characteristics of the Patients (n=199)

Variables	n	%
Sex		
Female	144	57.3
Male	85	42.7
Education		
Primary education	25	12.6
High school	51	25.6
Associate degree	28	14.1
Undergraduate	85	42.7
Graduate	10	5.0

Marital status		
Married	136	68.3
Single	57	28.6
Divorced/separated	6	3.0
Satisfaction with the treatment		
Yes	37	18.6
No	162	81.4
Making the treatment decision		
Physician	122	61.3
Patient	34	17.1
Physician and patient	43	21.6
Last health decision made		
Medication	122	61.3
Surgical procedure	28	14.1
Physical therapy/rehabilitation	8	4.0
Traditional method	41	20.6
Last health decision regret		
Yes	177	88.9
No	22	11.1
Change of decision after regret		
Yes	147	73.9
No	52	26.1

New decision after regret		
Changing healthcare institution	43	21.6
Changing physician	52	26.1
Changing treatment method	62	31.2
Giving up treatment	42	21.1
Trust the Physician		
Yes	20	10.1
No	128	64.3
Undecided	51	25.6
Satisfaction with last physician visit		
Dissatisfied	142	71.4
Satisfied	24	12.1
Undecided	33	16.6
Feeling about the decision made regarding your health		
Positive	17	8.5
Negative	118	59.3
Neither positive nor negative	64	32.2
Satisfaction with Hospital/Clinic		
Dissatisfied	117	58.8
Satisfied	20	10.0
Undecided	62	31.2

Frequency of apply to a hospital (yearly)		
<2 times	75	37.7
2-3 times	73	36.7
4 and more times	51	25.6
Private health insurance		
Yes	59	29.6
No	140	70.4
Satisfaction with the last treatment		
Yes	37	18.6
No	162	81.4

Means, standard deviations, and correlations results

It was determined that approximately 129 days had passed since the participants' last decision, the average decision regret score was approximately 24, the average decision conflict score was approximately 31, and the average decision

satisfaction score was approximately 12. Decision regret, decision conflict, and decision satisfaction were found to be significantly related to each other ($p < 0.01$) (Table 2).

Table 2. Means (M), Standard Deviations (SD), and Correlations of Study Variables (n=199)

Variables	M	SD	1	2	3	4
1. Time since last decision (days)	128.56	189.399	1.00	-.013	-.057	-.090
1. Decision regret	24.35	25.387	-.013	1.00	.395**	-.406**
2. Conflict of decision	30.98	18.969	-.057	.395**	1.00	.509**
3. Satisfaction with decision	12.45	6.200	-.090	-.406**	.509**	1.00

**p < 0.01.

T-Test and ANOVA results

According to the t-test analysis performed to reveal whether the decision regret score shows a significant difference according to the regret of

the last decision, it was seen that the decision regret differed statistically significantly (p <0.001). Accordingly, it was observed that the decision regret score of patients who regretted their last decision was high (Figure 1).

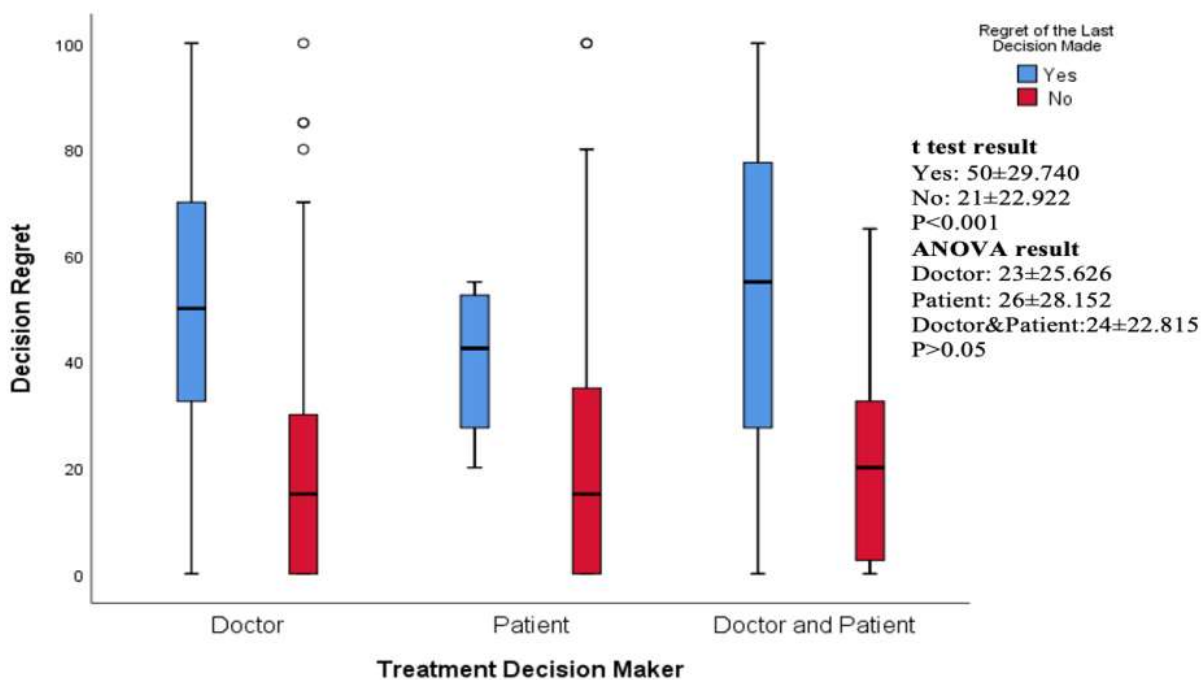


Figure 1. ANOVA and t-test results

According to the ANOVA analysis conducted to reveal whether the decision regret score differs depending on the person who makes the treatment decision, it was determined that the decision regret score did not differ statistically depending on the person who made the decision (Figure 1).

The mediating role of decision satisfaction results

As a finding of the analysis of the three-variable model (decision regret, conflict of decision, satisfaction with decision) made with Structural Equation Modeling (SEM), it was seen that the model showed good fit. Findings of SEM analysis was $\chi^2/df = 0.73$, $N=199$, $p < 0.001$, $CFI = 0.95$, $TLI = 0.97$, $SRMR = 0.03$, and $RMSEA = 0.05$. Table 2 presents the correlations of all the

variables. The results showed that decision regret had a negative association with satisfaction with decision ($r = -0.406$, $p < 0.01$) and a positive association with Conflict of Decision ($r = 0.395$, $p < 0.01$). The results of direct effects and indirect effects are shown in Table 3; the overall regression equation was significant [$R^2 = 0.290$, $F(1, 198) = 143.16$, $p < 0.01$]. The mediating effects of the satisfaction with decision ($CI = [0.059, 0.329]$) on the effect of conflict of decision-on-decision regret was confirmed. The 95% CI associated with indirect effect based on the bootstrap simulation method did not cover zero. The results of the standardized path coefficients are shown in Figure 2.

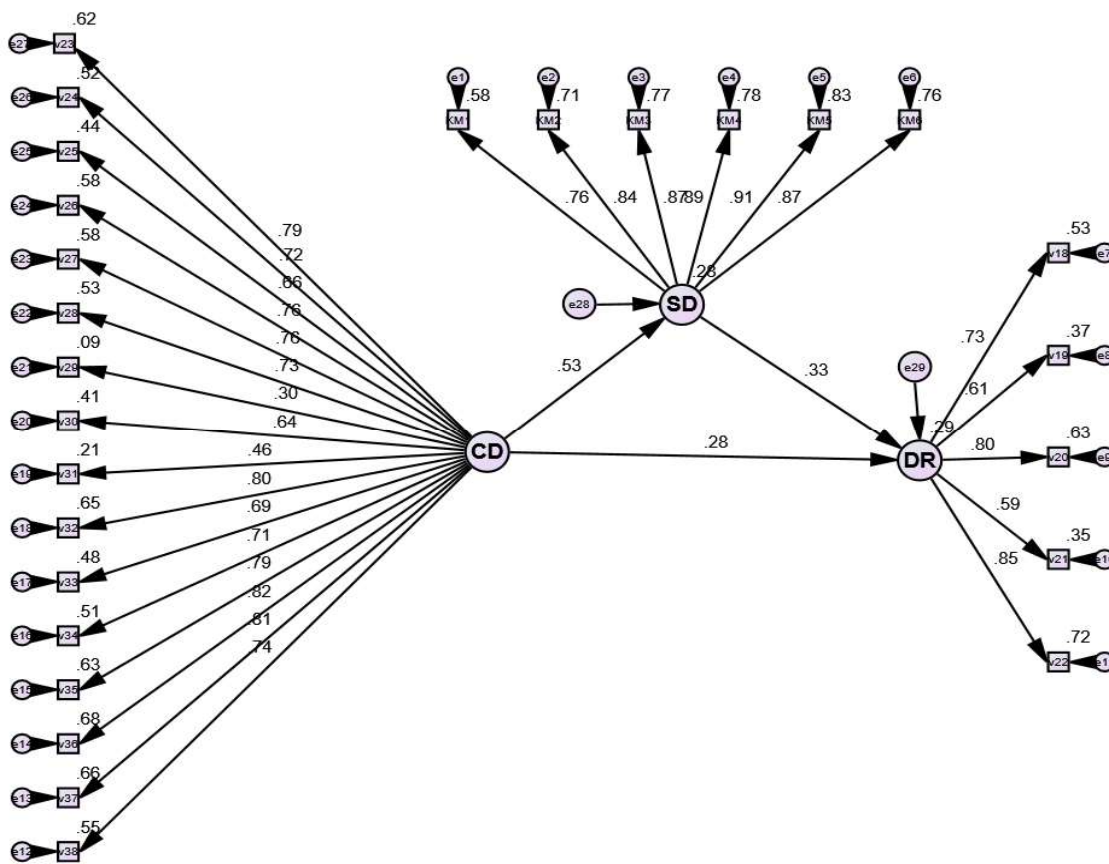


Figure 2. Path diagram for the mediation model with latent variables

Table 3. The Effects in the Mediation Model				
Direct Effects	Beta	SE	LLCI	ULCI
<i>Conflict of Decision</i> → Decision regret (c path)	0.444***	0.080	0.005	0.018
R ²	0.209			
<i>Conflict of Decision</i> → Satisfaction with decision (a path)	0.618***	0.091	0.015	0.113
R ²	0.281			
<i>Conflict of Decision</i> → Decision regret (c' path)	0.270***	0.084	0.034	0.171
<i>Satisfaction with decision</i> → Decision regret (b path)	0.281***	0.074	0.120	0.159
R ²	0.290			
Indirect Effects	Boot Effect	Boot SE	Boot LLCI	Boot ULCI
<i>Conflict of Decision</i> → Satisfaction with decision → Decision regret	0.174***	0.068	0.059	0.329

Notes: N = 199. **p <0.01, ***p <0.001. Beta = Standardized coefficient; SE = Standard Error; LLCI = 95% lower limit confidence interval; ULCI = 95% upper limit confidence interval. R² = Explained Variance. Boot = The statistics of indirect effects are the result of the bootstrap method.

DISCUSSION

This study aimed to reveal the mediating effect of decision satisfaction on the effect of decisional conflict on decision regret and to explain the relationship between these three variables.

Findings from the current study revealed that decision regret had a positive relationship with

decision conflict and a negative relationship with decision satisfaction. It was determined that the decision regret scores of the patients differed statistically depending on whether they regretted the medical treatment decision. However, it was observed that the patients' decision regret scores did not differ statistically depending on who made

the decision. Based on decision regret theory, this study provides evidence supporting the idea that decision conflict leads to changes in decision regret through decision satisfaction. Specifically, the results showed that decision regret can be increased by decreasing the degree of satisfaction by reducing the effect of decision conflict on decision regret.

This study makes an important contribution to the literature by showing that decision regret is not only affected by decisional conflict, but also that decision satisfaction is an important variable, and that regret about the decision made increases decision regret. Based on the regret theory, it has been seen that decisional conflict can decrease with the desired level of satisfaction with health services, and thus decision regret can be reduced. In this regard, it has been revealed that by increasing decision satisfaction, which affects decision regret, both the negative perception towards health services can be reduced and the effectiveness of decision conflict can be reduced, thus preventing possible decision regret.

Authors such as Hickman et al., Lipstein et al., Lee et al., Becerra-Perez et al., and Tan et al. [16, 17, 22, 35, 36] have reported that decisional conflict is positively associated with decisional regret and that patients who experience decisional conflict are more likely to experience decisional regret. Findings from the current study revealed that decisional conflict and decision regret were positively related. This shows that the findings are parallel to the literature. Decision regret should be prevented by preventing patients from

experiencing conflict in the decisions they make, especially during the provision of health services because the regret of the decision both increases the use of health services unnecessarily and causes the formation of a patient population that is dissatisfied with the health services received.

Stating that counterfactual experiences trigger regret as an emotion, Li et al. [28] stated that counterfactual emotional states are associated with negative situations. Based on this finding, the fact that decisional conflict, which is a counterfactual situation, affects decision regret, coincides with our findings.

Many scientific studies have reported that decision regret decreases as patients' satisfaction with the decision increases [23,28,29,35,37,38]. The findings of the current study overlap with the findings of previous studies. The findings reveal the need for studies to increase patients' satisfaction with the decisions taken.

The findings of the current study reveal that decision satisfaction mediates the relationship between decision conflict and decision regret. This finding suggests that the level of satisfaction gained from a decision reduces conflictual decisions and plays an important role in reducing the potential regret associated with that decision. By preventing decision regrets in health services, unnecessary health services can be prevented. For this, it is necessary to reveal the factors affecting decision regret and identify any confounding factors, if any. Satisfaction with the health services received will both increase the quality of

health services and ensure that the patient does not make unnecessary and regrettable health decisions by using his time economically.

Some evidence is provided by the current study. This evidence will pave the way for future studies. Future studies on the subject can be conducted to reveal the determining factors of decision conflict, decision satisfaction, and decision regret, and to reveal the relationships between these variables with new models. In order to examine this triple group of variables in depth, empirical studies can be conducted to reveal different mediating effects.

Strengths and limitations

This study is one of the rare studies conducted in Türkiye in terms of showing the mediating effect of decision satisfaction on the effect of clinical decision conflict on clinical decision regret. Considering that most decisions made in the clinic to date have resulted in regret, it is thought to be an extremely important study in terms of providing evidence to both clinicians and politicians. It is a fact that this study provides strong evidence that decision regret causes many unnecessary health expenses and causes most nursing plans and programs to be made in vain. On the other hand, it is also true that this study has some limitations. First of all, this study was conducted only with check-up patients. For this reason, it may not fully reflect what the current situation is for other healthcare services. Another important limitation is that this study was conducted at a private health institution and may

not reflect the situation of public health institutions regarding this situation.

CONCLUSIONS

In conclusion, the findings reveal the complex interplay between decision conflict, decision satisfaction, and decision regret. Based on the thesis that decision satisfaction plays a mediating role in the effect of decision conflict on decision regret, it is necessary to seek solutions that increase decision satisfaction and reduce decision conflict. These solutions will both increase the level of satisfaction with health services and reduce unnecessary use of health services, helping patients and health institutions win together.

This study shows that unnecessary healthcare services can be prevented by preventing clinical decision regret. In addition, this study will play a guiding role for health policy makers and all health professionals working for patient satisfaction in preventing individuals from experiencing decision regret and decision conflict and increasing their satisfaction with health services.

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