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Prediction of Loneliness Based on Decision-Making Styles in Couples with the Mediation of Social Support

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A B S T R A C T

Objective: This study aimed to predict feelings of loneliness based on decision-making styles in couples, mediated by social support.

Methods and Materials: The research was correlational in nature. The study population consisted of couples attending counseling centers in District Four of Tehran in 2021. The sample size was determined to be 250 individuals, selected through stratified random sampling. Data collection tools included: the Russell Loneliness Scale (1978), the Scott and Bruce Decision-Making Styles Inventory (1995), and the Zimet et al. Social Support Scale (1988). Statistical methods used descriptive statistics, SPSS software, path analysis, t-tests, Sobel test, and PLS software.

Findings: The results indicated that rational and intuitive decision-making styles were positively related to social support, while dependent, spontaneous, and avoidant decision-making styles had an inverse relationship with social support. There was a negative relationship between rational and intuitive decision-making styles and feelings of loneliness, and a direct relationship between dependent, spontaneous, and avoidant decision-making styles and feelings of loneliness.

Conclusion: Decision-making styles were predictors of feelings of loneliness. Additionally, social support played not only a mediating role but also amplified the relationship between decision-making styles and feelings of loneliness.

Keywords: *Loneliness, Decision-making styles, Social Support.*

1. Introduction

Loneliness is a negative emotion experienced by couples as a result of reduced or absent relationships with others, encompassing lost relationships, the loss of a companion, the unpleasant feelings associated with this, and a lack of interaction with others (Akin, 2010; Tsur et al., 2019). In such cases, the individual does not have exciting and intimate relationships with others and does not experience the expected and desired level of conversation and empathy with friends and family members, instead feeling loneliness and longing (Labrague et al., 2021). It is possible that a person suffering from feelings of loneliness may live with family members but be deprived of intimate

relationships with them (Wang et al., 2022). This situation causes the individual anxiety and suffering from the loss of social support from others (Lad & Kakulte, 2022). Therefore, having relationships and feeling a sense of belonging to others are among the essential human needs, the loss of which leads to psychological disorders and feelings of loneliness (Stokes & Barooah, 2021). In the marital life of couples, having intimate relationships with each other influences their psychological well-being, enhances their quality of life, and conversely, the loss of such relationships significantly reduces their quality of life (Wilson et al., 2021).

In the relationships of couples, decision-making styles are also very decisive and important as they aid in properly and constructively dealing with upcoming issues (Karami Boldaghi & Daryazadeh, 2018). Decision-making approaches involve employing cognitive processes such as information, processing it, problem-solving, judgment, memory, and learning to thereby choose different solutions to achieve a specific goal (Parsakia et al., 2023). The types of decision-making styles include rational, intuitive, spontaneous, avoidant, and dependent, each with its advantages and limitations (Hosseinaei & Kaviani 2020; Mikaeli et al., 2015). Couples who can use effective and constructive decision-making styles in resolving marital issues will enjoy a high-quality life free from challenges and tensions (Freak-Poli et al., 2022).

Each decision-making style contributes to the prediction of feelings of loneliness, and it has even been said that rational and intuitive decision-making styles prevent feelings of loneliness (Mohammad Alipour et al., 2021). Therefore, there is a relationship between different types of decision-making styles and feelings of loneliness (Mohammad Alipour et al., 2021). According to Maslow's theory, after meeting physiological needs, having relationships with others and feeling a sense of belonging is considered the second most vital human need (Ali, 2011; Gable & Bedrov, 2022). Therefore, for whatever reason that relationships between couples become cold and disrupted, decision-making about compensating and improving their relationship is necessary and must be done as soon as possible to prevent the occurrence of feelings of loneliness.

Another variable that is influential and related in the marital life of couples is social support. Social support involves benefiting from adaptive resources in stressful situations, which is achieved through the support and attention of close individuals, including experiencing affection, companionship, care, respect, and help received from individuals, relatives, friends, and members of social groups (Huang et al., 2019). In summary, the types of social support include family, friends, and others. Therefore, if couples receive social support among their acquaintances and experience the perception of social support, they have met one of their important emotional needs (Khakpour et al., 2021). Studies have shown that the stress-inducing effect of life events is moderated through the perception of social support, and since loneliness is one of the stress-inducing and tense emotions, it is possible to moderate it through the perception of social support (Gable & Bedrov, 2022). In the results of the conducted research, various findings have been reported regarding the relationship between the variables discussed in this study. Here are some of them. In one correlational study, it was reported that there was a significant inverse relationship between feelings of loneliness and perceived social support (Huang et al., 2019). In the results of another correlational study, it was reported that there was a strong and inverse relationship between indirect emotional support and the reduction of social isolation (Evans & Fisher, 2022). In other research findings, it was stated that there is a significant and positive relationship between a positive attitude towards important relationships with others and perceived support (Cinalioğlu & Gazioğlu, 2022). In a study that examined the relationship between social participation and feelings of loneliness mediated by social support, it was reported that there was a significant and positive relationship between feelings of loneliness and reduced social participation. There is a positive relationship between reduced social participation and reduced social support (Zhao & Wu, 2022). These findings testify that social support, as a positive and constructive variable, has a positive effect on improving individual psychological well-being and is related to reducing feelings of loneliness.

2. Methods and Materials

2.1. Study Design and Participants

This study was applied in objective and correlational in method. The statistical population consisted of couples visiting counseling centers in District 4 of Tehran, aged between 20 and 55 years. The sample size was determined as 250 individuals of both genders, selected using stratified random sampling from 11 chosen counseling centers.

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2.2. *Measures*

The scales used in this study included: the Russell Loneliness Scale (1978), which consists of 20 items rated on a five-point scale from one to five, with a score range of 20 to 100 (Mohammadi et al., 2022). The Scott and Bruce Decision-Making Styles Scale (1995) includes 25 items with a score range of 25 to 125, assessed using a five-point Likert scale from one to five, and it has established validity and reliability (Mikaeilin et al., 2015). The Zimet et al. Social Support Scale (1988) contained 12 items, rated on a five-point Likert scale from one to five, with a score range of 12 to 60 (Namdari & Nouri, 2018). The validity and reliability of these questionnaires have been confirmed by multiple researchers.

2.3. *Data analysis*

Given that the survey data collected in this study were quantitative, they were initially analyzed using descriptive statistical indices such as frequency, percentage, mean, standard deviation, and variance. In the inferential statistics section, multivariate regression statistics and structural equation modeling were utilized, as the conceptual model of this research required examining the relationships between variables and then predicting variables mediated by social support. Initially, SPSS version 23 was used for descriptive analysis, followed by SMART PLS version 3 for hypothesis testing. Structural equation modeling was used for the simultaneous testing of hypotheses, particularly in explaining the main hypothesis, utilizing path analysis, t-tests, and Sobel tests.

3. Findings and Results

This section first describes the descriptive findings obtained from the questionnaires, including mean, standard deviation, minimum, maximum, skewness, and kurtosis. Then, measures of convergent validity, discriminant validity, and the reliability of the measurement model are presented. The sample of this study included 250 individuals, with 20.4% female and 79.5% male. The majority had been married for 11 to 20 years, mostly without children, or having one or two children.

Table 1

Descriptive Statistics Analysis

Components	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Rational	7	23	17.12	6.09	-0.68	-1.36
Intuitive	6	24	15.37	4.64	0.20	-0.60
Dependency	7	22	16.17	5.15	-0.53	-1.37
Instant	5	24	14.56	5.90	-0.05	-1.27
Avoidance	6	24	15.86	4.89	-0.31	-0.91
Loneliness	29	78	57.74	10.86	-0.44	-0.68
Social Support	20	52	37.55	11.81	-0.06	-1.71

Table 1 presents the descriptive statistics of scores related to the variables of rational, intuitive, dependent, spontaneous, and avoidant decision-making styles, feelings of loneliness, and social support, including the lowest and highest scores, skewness, and kurtosis along with mean and standard deviation indices. According to the studies, the average scores for rational decision-making style was 17.12, intuitive style 15.37, dependent style 16.17, spontaneous style 14.55, avoidant style 15.86, feelings of loneliness 57.74, and social support 37.55. Given that the skewness and kurtosis values of the data range between -2 and +2, the data were normally distributed at the 0.05 level.

Table 2

The Results of Reliability and Validity Tests

Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Loneliness	0.773	0.776	0.924
Social support	0.943	0.963	0.898
Rational decision-making style	0.973	0.980	0.924
Intuitive decision making style	0.774	0.849	0.537
Dependency decision-making style	0.952	0.965	0.874

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Avoidant decision-making style	0.779	0.851	0.543

In this research, to examine the direct and indirect effects among the variables, Partial Least Squares Structural Equation Modeling (PLS-SEM) was utilized with the help of SMART-PLS3 software. The results of the validity and reliability tests of the model are reported in Table 2.

All scales have a Cronbach's alpha coefficient and composite reliability higher than 0.7, indicating acceptable reliability. Also, for each scale, the Average Variance Extracted (AVE) is higher than 0.4, confirming the convergent validity and reliability of the measurement model.

To calculate discriminant validity, the Fornell-Larcker test was used, the results of which are presented in Table 3. According to this test, a latent variable should have more dispersion among its indicators than any other latent variable and the square root of the AVE for each latent variable should be greater than the maximum correlation of that latent variable with any other latent variables.

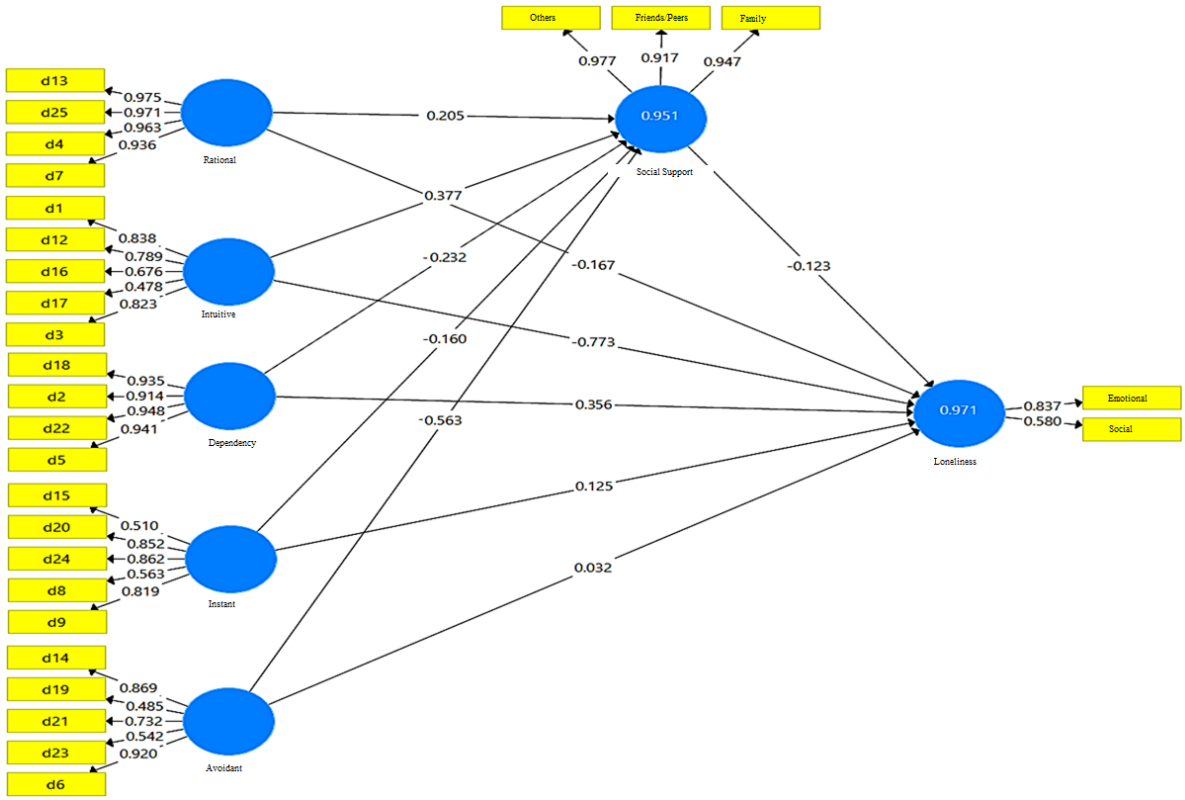
Table 3

The Results of Fornell and Larker Test

Research variables	Rational	Instant	Avoidant	Social Support	Intuitive	Loneliness	Dependent
Rational Style	0.962						
Instant Style	-0.316	0.937					
Avoidant Style	0.500	-0.842	0.930				
Social Support	0.216	-0.915	0.897	0.948			
Intuitive Style	0.314	-0.938	0.838	0.926	0.933		
Loneliness	-0.307	0.942	-0.839	-0.929	-0.983	0.720	
Dependent Style	0.934	-0.263	0.447	0.171	0.266	-0.252	0.935

Figure 1

Final Model with Standard Path Coefficients



To determine the direct relationship of each decision-making style with feelings of loneliness, a path analysis test was used, and to determine the indirect relationship of each decision-making style with feelings of loneliness, the Sobel

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test was utilized. The results of these tests are reflected in Table 4.

Table 4

The Summary of Path Analysis

Relationships	Direct effect			Mediating effect of Sobel test (indirect)		Total effect
	Coefficient	t	p	Coefficient	Z	
Rational style → feeling lonely	-0.167	2.832	0.037	-	-	-
Rational style → social support	0.205	4.608	0.045	-	2.0209	-
Social support → feeling lonely	-0.123	2.515	0.049	-		-
Rational style → social support → feeling lonely	-	-	-	(0.205)×(-0.123)=-0.025		(-0.025)+(-0.167)=-0.192
Intuitive style → feeling alone	-0.773	19.113	0.041	-	-	-
Intuitive style → social support	0.377	8.688	0.045	-	2.533	-
Social support → feeling lonely	-0.123	2.515	0.049	-		-
Intuitive style → social support → feeling lonely	-	-	-	(0.377)×(-0.123)=-0.046		(-0.046)+(-0.773)=-0.779
Dependency style → Feeling lonely	0.356	8.387	0.040	-	-	-
Dependency style → social support	-0.232	4.813	0.040	-	2.755	-
Social support → feeling lonely	-0.123	2.515	0.049	-		-
Dependency style → social support → feeling lonely	-	-	-	(-0.232)×(-0.123)=0.028		0.028+0.356=0.384
Instant style → feeling alone	0.125	2.712	0.049	-	-	-
Instant Style → Social Support	-0.160	3.772	0.047	-	1.99	-
Social support → feeling lonely	-0.123	2.515	0.049	-		-
Instant style → social support → feeling alone	-	-	-	(-0.160)×(-0.123) =0.020		0.020+0.125=0.145
Avoidant style → feeling alone	0.032	0.871	0.037	-	-	-
Avoidance style → social support	-0.563	17.904	0.031	-	2.461	-
Social support → feeling lonely	-0.123	2.515	0.049	-		-
Avoidance style → social support → feeling lonely	-	-	-	(-0.563)×(0.123)=0.069		0.069+0.032=0.101

The results show a direct relationship between the rational decision-making style and feelings of loneliness with a coefficient of β = -0.167 and a t-value of 2.832, which was confirmed. The indirect relationship of the rational style with loneliness, mediated by social support, also had a path coefficient of β = -0.025 and a Sobel z-value of 2.209, confirming it. Ultimately, the rational decision-making style predicts loneliness with a mediation of social support at β = -0.192. The negative sign indicates that with an increase in rational decision-making, loneliness decreases by 0.192.

A direct relationship between the intuitive decision-making style and loneliness was confirmed with a coefficient of β = -0.773 and a t-value of 19.113. The indirect relationship of the intuitive style with loneliness, mediated by social support, had a path coefficient of β = -0.046 and a Sobel z-value of 2.533, confirming it. Ultimately, the intuitive decision-making style predicts loneliness with a mediation of social support at β = -0.779. The negative sign indicates that with an increase in intuitive decision-making, loneliness decreases by 0.779.

A direct relationship between the dependent decision-making style and loneliness was confirmed with a coefficient of β = 0.356 and a t-value of 8.387. The indirect relationship of the dependent style with loneliness, mediated by social support, had a path coefficient of β = 0.028 and a Sobel z-value of 2.755, confirming it. Ultimately, the dependent decision-making style predicts loneliness with a mediation of social support at β = 0.384. The positive sign indicates that with an increase in dependent decision-making, loneliness increases by 0.384.

A direct relationship between the spontaneous decision-making style and loneliness was confirmed with a coefficient of β = 0.125 and a t-value of 2.712. The indirect relationship of the spontaneous style with loneliness, mediated by social support, had a path coefficient of β = 0.020 and a Sobel z-value of 1.99, confirming it. Ultimately, the spontaneous decision-making style predicts loneliness with a mediation

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of social support at β = 0.145. The positive sign indicates that with an increase in spontaneous decision-making, loneliness increases by 0.145.

The direct relationship between the avoidant decision-making style and loneliness was rejected with a coefficient of β = 0.032 and a t-value of 0.871. However, the indirect relationship of the avoidant style with loneliness, mediated by social support, had a path coefficient of β = 0.069 and a Sobel z-value of 2.461, confirming it. Ultimately, the avoidant decision-making style predicts loneliness with a mediation of social support at β = 0.101. The positive sign indicates that with an increase in avoidant decision-making, loneliness increases by 0.101.

4. Discussion and Conclusion

The research findings indicate diverse relationships and directions between decision-making styles and feelings of loneliness. Significant inverse relationships existed between both rational and intuitive decision-making styles and feelings of loneliness. Conversely, positive and significant relationships were found between dependent, spontaneous, and avoidant decision-making styles and feelings of loneliness. Overall, there was a significant positive relationship between decision-making styles and feelings of loneliness. In tests involving the mediating variable of social support, this relationship was found to be positive and significant, suggesting that social support can be effectively utilized in intervention approaches to manage and reduce feelings of loneliness. Previous research results align and are consistent with these findings (Dadoo & Dabiri, 2019; Gable & Bedrov, 2022; Hosseinaei & Kaviani 2020; Lin et al., 2022; Mohammad Alipour et al., 2021), which have reported relationships between decision-making styles and improvements in feelings of loneliness.

The application of the Sobel test for the overall hypothesis of the study indicated that decision-making styles have a direct positive relationship with feelings of loneliness and predict it. Obtaining a coefficient of 0.796 at a significance level of $p < 0.05$ confirmed this relationship. Additionally, predicting feelings of loneliness based on decision-making styles, mediated by social support, resulted in a coefficient of 0.112. Thus, the prediction of loneliness based on decision-making styles, both directly and indirectly, was confirmed at a confidence level of 95% ($p < 0.05$).

Bolton (2005) notes that decision-making based on rational and intuitive styles has positive outcomes and thus plays a decisive role in reducing feelings of loneliness (Bolton, 2005). Mikaili, Golizadeh, & Ghaseminejad (2015) reported that decision-making styles, rational, intuitive, and avoidant, have had a significant relationship with social support, with the rational style being the strongest predictor of social support which indirectly predicts feelings of loneliness (Mikaeli et al., 2015). Sedighi Arfaee & Tabesh (2020) in their research results stated that there is a relationship between each of the decision-making styles and feelings of loneliness, which can be either positive or negative depending on the type of decision-making (Sedighi Arfaee & Tabesh, 2021). Therefore, the existing literature supports and confirms the overall hypothesis of the research.

5. Limitations & Suggestions

This research had limitations that could affect the generalizability of the results. The governance of COVID-19 health constraints and the reduction in people's interactions with others effectively imposed a form of social isolation, influencing respondents' answers to the research scales. Also, the scope of the study determined by the sub-scales of the research tools means that the findings and results will also be generalizable within that scope. As a practical suggestion, it can be stated that in clinical intervention approaches, the factor of social support can be used to reduce and manage feelings of loneliness. Furthermore, in educational interventions for patients experiencing loneliness, adherence to rational and intuitive styles should be emphasized, and these styles should be taught to patients.

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Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors contributed equally.

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