Research Article / **Araştırma Makalesi**

Bolu Abant İzzet Baysal Üniversitesi
Eğitim Fakültesi Dergisi (BAİBÜEFD)
Bolu Abant Izzet Baysal University
Journal of Faculty of Education

2025, 25(2), 1252– 1264. https://dx.doi.org/ 10.17240/aibuefd.2025..-1564454

The Mediating Role of Rumination between Loneliness and Resilience

Yalnızlık ve Psikolojik Dayanıklılık Arasında Ruminasyonun Aracı Rolü

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Geliş Tarihi (*Received*): 09.10.2024 **Kabul Tarihi (*Accepted*):** 05.05.2025 **Yayın Tarihi (*Published*):** 15.06.2025

Abstract: The aim of this study is to examine the mediating effect of rumination in the relationship between loneliness and resilience. A total of 376 university students, 173 males and 203 females, participated in the study voluntarily. The measurement tools used in the study included the Brief Resilience Scale, the Rumination Scale for Interpersonal Errors, and the UCLA Loneliness Scale. Structural Equation Modelling (SEM) method was preferred for data analysis and bootstrapping method was also used to increase the reliability of the results. The results of the study show that there is an inverse relationship between loneliness and resilience. In addition, a positive relationship was found between loneliness and rumination; it was found that individuals with high loneliness levels were more likely to ruminate. Structural Equation Modelling supported that rumination played a partial mediating role in the relationship between loneliness and resilience. Furthermore, bootstrapping analysis confirmed that this mediation relationship was statistically significant. In conclusion, this study reveals that university students who experience loneliness have both an increased tendency to engage in rumination and a decreased resilience. It has been stated that rumination is an important link between loneliness and resilience, but loneliness can negatively affect resilience independently of rumination. These findings emphasise that the role of rumination should be taken into consideration in developing strategies for coping with loneliness.

Keywords: Loneliness, Resilience, Rumination, Structural equation modelling

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Öz: Bu çalışmanın amacı, yalnızlık ile psikolojik dayanıklılık arasındaki ilişkide ruminasyonun aracılık etkisini incelemektir. Çalışmaya 173 erkek ve 203 kadın olmak üzere toplamda 376 üniversite öğrencisi gönüllü olarak katılmıştır. Araştırmada kullanılan ölçüm araçları arasında Kısa Psikolojik Dayanıklılık Ölçeği, Kişilerarası Hatalara İlişkin Ruminasyon Ölçeği ve UCLA Yalnızlık Ölçeği yer almaktadır. Verilerin analizi için Yapısal Eşitlik Modellemesi (YEM) yöntemi tercih edilmiş ve sonuçların güvenilirliğini artırmak amacıyla bootstrapping yöntemi de kullanılmıştır. Çalışmanın sonuçları, yalnızlık ile psikolojik dayanıklılık arasında negatif yönlü bir ilişki olduğunu göstermektedir. Buna ek olarak, yalnızlık ile ruminasyon arasında pozitif yönlü bir ilişki bulunmuştur; yalnızlık düzeyi yüksek olan bireylerin ruminasyon yapma olasılıklarının da yüksek olduğu tespit edilmiştir. Yapısal Eşitlik Modellemesi, ruminasyonun yalnızlık ve psikolojik dayanıklılık arasındaki ilişkide kısmi bir aracılık rolü oynadığını desteklemiştir. Ayrıca, yapılan bootstrapping analizi, bu aracılık ilişkisinin istatistiksel olarak anlamlı olduğunu doğrulamaktadır. Sonuç olarak, bu çalışma, yalnızlık deneyimi yaşayan üniversite öğrencilerinin hem ruminasyona girme eğilimlerinin arttığını hem de psikolojik dayanıklılıklarının azaldığını ortaya koymaktadır. Ruminasyonun, yalnızlık ve psikolojik dayanıklılık arasında önemli bir bağlantı oluşturduğu, ancak yalnızlığın ruminasyondan bağımsız olarak da psikolojik dayanıklılığı olumsuz yönde etkileyebileceği belirtilmiştir. Bu bulgular, yalnızlıkla başa çıkma stratejilerinin geliştirilmesinde ruminasyonun rolünün dikkate alınması gerektiğini vurgulamaktadır.

Anahtar kelimeler: Yalnızlık, Psikolojik dayanıklılık, Ruminasyon, Yapısal eşitlik modellemesi

Atıf/Cite as: Çağlar, A., Akyıl, Y., İme, Y., &Erdinç, B. (2025). The mediating role of rumination between loneliness and resilience. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 25(2), 1252-1264, *https://dx.doi.org/ 10.17240/aibuefd.2025..-1564454*.

İntihal-Plagiarism/Etik-Ethic: Bu makale, en az iki hakem tarafından incelenmiş ve intihal içermediği, araştırma ve yayın etiğine uyulduğu teyit edilmiştir. / This article has been reviewed by at least two referees and it has been confirmed that it is plagiarism-free and complies with research and publication ethics. https://dergipark.org.tr/tr/pub/aibuelt

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1. INTRODUCTION

To effectively navigate through adverse life circumstances, individuals must possess the ability to adjust to and manage difficult situations. Resilience, when referred to as an effective coping mechanism, serves as a personal asset that enables individuals to overcome numerous negative experiences they may face (Fredrickson et al., 2003). Resilience refers to the capacity of individuals to bounce back and recover from challenging experiences by effectively utilizing their internal and external resources (Levine, 2003). Therefore, resilience assists individuals when they are confronted with challenges. Resilience, as defined in the dictionary, refers to the capacity of individuals to adapt to difficult circumstances by means of their mental, emotional, and behavioral adaptability. It encompasses various factors such as their worldview, social support, and coping mechanisms. The significant role of social resources in the setting of resilience highlights the correlation between loneliness and resilience. Loneliness is a distressing condition that arises when an individual's social connections are lacking in either quantity or quality (Perlman & Peplau, 1981). The correlation between resilience and loneliness is significant at this juncture. Several studies in the literature have demonstrated a negative correlation between resilience and loneliness across different samples (Banerjee & Kohli, 2023; Xie et al., 2022; Zhang, 2023). Furthermore, a longitudinal study conducted with the elderly found similar results, indicating that resilience and social support reduced feelings of loneliness (Yang & Gu, 2020). Furthermore, there is research that examines the correlation between loneliness and resilience, in conjunction with several other ideas. Gerino et al. (2017) found that resilience largely influences the connection between loneliness and mental health. Koğar & Yılmaz Koğar (2024) found that resilience partially mediates the association between loneliness and psychological discomfort.

Research has demonstrated a favorable correlation between loneliness and rumination, as indicated by studies conducted by Borawski in 2021 and 2022, as well as by Dibb in 2021. Research has demonstrated a favorable correlation between loneliness and rumination, as indicated by studies conducted by Borawski in 2021 and 2022, as well as by Dibb in 2021. Additionally, Gan et al. (2015) and Vanhalst et al. (2012) conducted longitudinal studies, while Zawadski et al. (2013) conducted a cross-sectional study, all of which demonstrate the mediating role of rumination in the association between loneliness and depressive symptoms. Furthermore, Hu et al. (2023) found that rumination and loneliness influenced the connection between problematic AI use and social anxiety.

Rumination is a response to distress characterized by a repetitive and passive fixation on the symptoms of discomfort as well as the potential causes and outcomes of suffering (Nolen-Hoeksema et al., 2008). Given that ruminating is characterized in the context of a negative experience, such as distress, and resilience refers to the ability to adjust to negativity, it is imperative to investigate resilience alongside ruminating. Liu et al. (2023) examined the relationship between rumination, resilience, and personality traits in their study. The findings revealed that individuals with high resilience but low levels of neuroticism and agreeableness based on the five-factor personality theory exhibited higher levels of rumination and anxiety compared to individuals with lower resilience. A separate study showed that there is an inverse correlation between resilience and anxiety symptoms and that resilience can mitigate the positive correlation between rumination and anxiety symptoms (Chang et al., 2023).

Based on the findings from the literature review, it is crucial to investigate the interplay between resilience, loneliness, and rumination. The research indicates a negative correlation between resilience and loneliness, as well as a positive correlation between loneliness and rumination. Furthermore, there are studies that demonstrate the interconnectedness of resilience, loneliness, and rumination with other concepts. Therefore, it is imperative to examine these three factors collectively. The adverse effects of loneliness on an individual's life, coupled with the detrimental role of rumination in this environment, allow for the assessment of resilience in the face of these challenging circumstances, as it facilitates adaptation to the inherent challenges. The research in this context seeks to investigate the intermediary function of

rumination in the relationship between resilience and loneliness. In conclusion, we will examine the following hypotheses.

H1: Loneliness positively predicts rumination.

H2: Loneliness predicts resilience negatively.

H3: Rumination predicts resilience negatively.

H4: Rumination has a mediating role between loneliness and resilience.

2. METHOD

2.1. Participants and Procedure

Researchers gathered the research data using internet means and disseminated it via social media platforms. Subsequently, we emphasized that we would exclusively gather data from students who willingly volunteered. Participants were asked to carefully review the informed consent included in the scale sets. A total of 376 university students, including 173 males and 203 females, provided information for the study. The mean age of the participants was 20.35 years (sd = 1.99). In addition, the class levels of the participants were first grade 193 (51.3%), second grade 114 (30.3%), third grade 20 (5.3%) and fourth grade 49 (13%).

2.2. Measures

2.2.1. 2.2.1. Brief Resilience Scale

The scale was created by Smith et al. (2008) to assess resilience. Doğan (2015) translated the scale into Turkish, creating a 6-item 5-point Likert-type measurement tool. On the scale, 'strongly disagree' is 1 and 'strongly agree' is 5. High scale scores show resilience. In his work, Doğan (2015) determined Cronbach's alpha reliability as .81. The scale is valid and dependable for Turkish culture, according to the findings.

2.2.2. Rumination Scale for Interpersonal Error

Wade et al. (2008) created the scale, which Oral and Arslan (2017) translated into Turkish. Six items constitute this 5-point Likert scale. Participants rank scale items from 1 (strongly disagree) to 5 (strongly agree). Individuals can earn 6–30 points on the scale. As scale scores rise, individuals ruminate more about interpersonal error. No item is reverse-scored. Test-retest correlation was .76, and Cronbach's alpha internal consistency reliability coefficient was .88.

2.2.3. UCLA Loneliness Scale

Neto (2014) created a 6-item 4-point Likert scale (1-not appropriate, 4-completely appropriate). Subdimensions are absent. Sarıçam (2023) translated it into Turkish. Confirmatory factor analysis revealed a 6-item unidimensional model fit. There was .77 Cronbach's alpha internal consistency reliability.

2.3. Ethical approval of the research

In this study, all the rules specified in the 'Directive on Scientific Research and Publication Ethics of Higher Education Institutions' were followed. None of the actions specified under the second section of the Directive, 'Actions Contrary to Scientific Research and Publication Ethics', have been carried out.

Ethics committee permission information

Name of the ethics review board: Yıldız Technical University Social and Human Sciences Research Ethics Committee

Date of the ethical assessment decision: 30.09.2024

Number of the ethical assessment document: 2024.09

3. DATA ANALYSIS

This study investigates the association between loneliness, rumination, and resilience levels among university students. We conducted normality analysis, descriptive statistics, reliability analysis, and correlation analysis using SPSS, JASP, and AMOS programs to analyze the data. Subsequently, a Structural Equation Modelling (SEM) analysis was performed. Structural Equation Modeling (SEM) is considered a highly robust quantitative analytic technique due to its ability to incorporate multiple parameters in decision-making processes (Kline, 2011). The study employed a two-stage structural equation modeling (SEM) approach, following the guidelines proposed by Kline (2011). The initial phase involved testing the validation of the measurement model, which examines the connections between indicator variables and latent variables as well as the interconnections among these latent variables. Following the verification of the measurement model, the hypothetical structural model was subjected to testing. The evaluation of SEM results involved the consideration of goodness-of-fit metrics as provided by Hu and Bentler (1999). Within this framework, we computed GFI, RFI, CFI, NFI, IFI, TLI, SRMR, and RMSEA values, alongside chi-square (χ2) and degrees of freedom. The ratio of χ2 to degrees of freedom should be fewer than 5 to be considered important. Additionally, GFI, RFI, CFI, NFI, IFI, and TLI values should be higher than .90, while SRMR and RMSEA values should be lower than .80 (Hu & Bentler 1999; Tabachnick & Fidell, 2001). Furthermore, to determine the optimal model among several models in SEM, we analyzed AIC and ECVI values in addition to conducting the chi-square difference test. The model with lower AIC and ECVI values is considered the best model, as stated by Akaike (1987) and Browne and Cudeck (1993).

In this work, the researchers employed both structural equation modeling (SEM) and bootstrapping techniques to reinforce and provide supplementary evidence for the importance of mediation (Preacher & Hayes, 2008). The sample size was augmented to 5,000 using the bootstrapping technique, and confidence intervals (C.I.I.) were generated using the bootstrapping value. The lack of zero within the confidence intervals indicates that the investigated mediation is statistically significant.

4. RESULTS

In this section, firstly, correlation analysis and descriptive statistics results are presented. Then, the results of the measurement model and the structural model are presented. Finally, the results of the bootstrapping process are presented.

Table 1 displays the correlation and descriptive statistics, including the arithmetic mean, standard deviation, skewness, and kurtosis values, of the variables. Upon examining Table 1, it is evident that the skewness values of the variables fall within the range of -.169 to .598, while the kurtosis values range from -.737 to .561. These values adhere to the normalcy criterion of ±2 for skewness and ±7 for kurtosis, as specified by Finney and DiStefano (2006).

Table 1.

Correlations And Descriptive Statistics

	N	Mean	SD	Skewness	Kurtosis	McDonalds ω	Cronbach's α	Guttman's λ6	1	2
1.Resilience	376	18.3	5.21	.008	.561	.845	.819	.850	-	
2.Loneliness	376	12.1	4.14	.598	-.138	.815	.794	.794	-.30**	-
3.Rumination	376	19.0	6.76	-.169	-.737	.921	.920	.912	-.35**	.28**

***p < .001*

Upon analyzing the associations presented in Table 1, it becomes evident that there is a noteworthy negative correlation between loneliness and resilience (r = -.30, p < .001). Furthermore, there is a strong inverse correlation between rumination and resilience (r = -0.35, p < 0.001). Conversely, there is a notable correlation between loneliness and rumination, with a correlation coefficient of .28 and a p-value of less than .001.

After identifying the significant linkages between the ideas, we initiated the measuring model. The measuring model consists of three latent variables: loneliness, rumination, and resilience. Two observed variables represent each latent variable, resulting in a total of six observed variables. Table 2 presents the fit values, as the results indicate. The fit values are satisfactory. Furthermore, it is acknowledged that the factor loadings exhibit a range of variability, spanning from .67 to .94. Therefore, we can assert that the observed values correspond to the underlying variables.

Table 2. Model fit values

	N	CMIN	DF	CMIN/DF	GFI	NFI	RFI	IFI	TLI	CFI	RMSEA	SRMR	AIC	ECVI
Measurement Model	376	17.472	6	2.912	.986	.981	.952	.987	.968	.987	.071	.023	-	-
Partial Mediator Model	376	17.472	6	2.912	.986	.981	.952	.987	.968	.987	.071	.023	47.472	.127
Full Mediator Model	376	36.697	7	5.242	.970	.960	.914	.967	.930	.967	.106	.069	64.697	.173

**p<.001

The initial step in the structural model was testing the hypothesis that rumination serves as a complete mediator between loneliness and resilience. The comprehensive mediation model does not include a direct relationship between loneliness and resilience. Instead, it focuses on the prediction of loneliness and resilience through the process of ruminating. Table 2 displays the fit values of the model, with rumination acting as a complete mediator. The model that examined rumination as a partial mediator was considered the most optimal mediator model. The partial mediator model posits a direct relationship between loneliness and resilience, with rumination serving as the mediating factor. The calculated results obtained from the test are presented in Table 2. The fit values of both models were satisfactory and all path coefficients were statistically significant.

Based on the chi-square difference test results, we prefer the model with rumination as a full mediator or partial mediator. It is evident that the inclusion of a direct path between loneliness and resilience significantly improves the model ($\Delta x2 = 19.22$, sd = 1, $p < .001$). Furthermore, the AIC and ECVI values of the partial mediation model exhibit a reduced magnitude compared to the AIC and ECVI values of the full mediation model. The researchers favored the model that demonstrated rumination as a partial mediator between loneliness and resilience in university students among all the findings. Figure 1 provides the model's route coefficients.

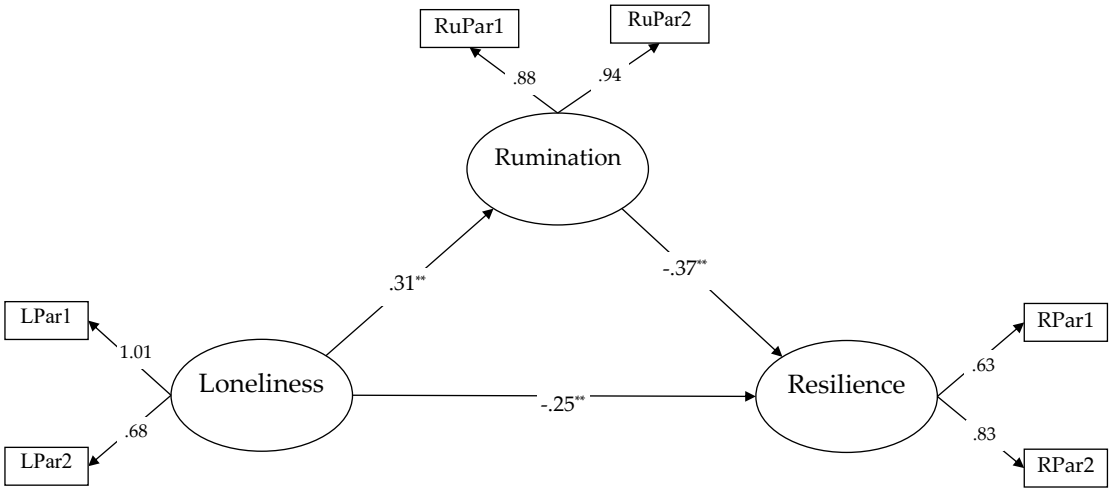

Figure 1. *Standardised factor loadings for the partially mediated structural model*

*Note. N = 376; ** p < .001; LPar parcels of Loneliness; RuPar parcels of rumination; RPar parcels of resilience*

We utilized bootstrapping to bolster and enhance the research. Consequently, it is evident that all direct path coefficients are important. Furthermore, the indirect path coefficient is statistically significant (bootstrap: -.034, 95% confidence interval, lower limit-higher limit: -.198, -.062). These findings suggest that the rumination moods of university students somewhat mediate the relationship between their loneliness and resilience.

5. DISCUSSION

This study investigated the mediating effect of rumination on the relationship between loneliness and resilience. The findings indicate that rumination plays a partial mediating role in the link between loneliness and resilience. Put simply, the rise in loneliness among individuals is a predictor of both increased rumination and less resilience. Moreover, loneliness is a direct predictor of the decline in resilience. We analyzed the hypotheses in relation to the pertinent literature, taking into account this outcome.

The results found a positive correlation between loneliness and rumination. In other words, loneliness enables us to anticipate the rise in rumination levels among individuals. Multiple studies in the literature have discovered a positive correlation between loneliness and rumination, providing support for this conclusion (Borawski, 2021; Borawski, 2022; Dibb, 2021; Hu et al., 2023). Based on these findings, it can be concluded that as social networks develop, loneliness decreases, and consequently, the level of rumination, which involves the individual's fixation on distress and excessive thinking, also decreases, leading to a reduction in its negative effects.

The study conducted by Peter and Basemera (2023) found a notable inverse correlation between loneliness and resilience, indicating that loneliness predicts lower levels of resilience. Peter and Basemera (2023) found a notable inverse correlation between loneliness and resilience in their study. From this perspective, reducing loneliness can be considered one of the characteristics that will aid individuals in coping with the challenges they encounter in their lives.

Researchers discovered that rumination negatively impacts resilience. Çetinkaya et al. (2018) found a significant inverse correlation between rumination and resilience in a study conducted with university students. These findings corroborate the results of the current study. As evident from this, a reduction in rumination implies a decrease in the individual's repetitive fixation on misery. Furthermore, an enhancement in resilience suggests that the individual will naturally develop a greater ability to adjust to adverse life experiences.

Expecting all individuals to respond uniformly to a common negative life event would be an assumption that is contrary to the distinctive characteristics of human beings. Considering that resilience refers to individuals' mental, emotional and behavioural flexibility as well as their capacity to effectively cope and adapt to difficulties by using their perspectives on the world, social resources and coping strategies, it can be said that resilience, which includes social resources, and loneliness, which refers to an unpleasant situation caused by an individual's inadequate social network (Perlman & Peplau, 1981), are related concepts. On the other hand, rumination, which occurs when you are upset, involves thinking about where and why you feel bad (Nolen-Hoeksema et al., 2008), which is more compatible with the idea of resilience in dealing with problems from a different perspective. Reducing rumination would increase resilience even if loneliness remained unchanged, due in part to its mediating effect on the link between loneliness and resilience. Alternatively, reducing loneliness would lead to a decrease in rumination and a subsequent increase in resilience.

6. CONCLUSION

After analyzing the research findings, we conclude that rumination somewhat moderates the relationship between loneliness and resilience among university students. To clarify, loneliness serves as a predictor of resilience, both through direct influence and by means of rumination. Research has found that loneliness raises rumination levels among university students and lowers their resilience. We examined the interrelationships among these variables for the inaugural occasion. This is a quantitative model that elucidates the correlation between loneliness, resilience, and rumination among university students in Turkey. The experience of loneliness in individuals might result in contemplative circumstances. Consequently, it can have a detrimental impact on their resilience. Currently, resilience can be enhanced by offering individuals essential social support, participating in social activities that foster a sense of belonging, and mitigating loneliness to some degree.

7. LIMITATIONS AND FUTURE RESEARCH

It is advantageous to acknowledge the constraints of the study. The study initially acquired data using measurement instruments that relied on self-reporting. This indicates that the acquired data can solely elucidate the factors that fall within the parameters of the measurement instruments employed. In future research, researchers can employ various methodologies (such as observation, interviews, peer assessment, etc.) with self-report-based measurement instruments. Another constraint pertains to the research methodology. While the study utilized the structural equation model, a powerful quantitative method, and increased the sample size to 5000 through bootstrapping, it is important to exercise caution when interpreting the cause-and-effect relationship due to the inherent limitations of the quantitative method and the cross-sectional nature of the sample. While the structural equation model indicates that loneliness predicts rumination and resilience, and rumination predicts resilience, it is important to note that longitudinal and experimental studies are necessary to fully uncover these causal sequences. Furthermore, this approach is limited to the variables that have been explicitly mentioned. One can analyze the mediation

relationship between loneliness and resilience by studying various concepts. However, it is not feasible to entirely eradicate the loneliness experienced by humans. At this point, psycho-educational interventions can be formulated to increase people's resilience to loneliness and to effectively manage their feelings of loneliness, such as coping skills for loneliness, awareness-based programmes on the sources of loneliness, self-compassion and mindfulness-based programmes to support them to protect their mental and emotional health in situations of loneliness, and programmes including cognitive behavioural approaches to reduce negative cognitive processes associated with loneliness.

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GENİŞLETİLMİŞ ÖZET

1. GİRİŞ

Zorlu koşullar yaşamın her anında bireylerin karşısına çıkma tehtidini içermektedir. Zorluklardan kaçınabilmenin mümkün olmadığı durumlarda bireylerin zorluklar karşısında nasıl davrandığı önem kazanmaktadır. Yaşanan olumsuz durumlarla etkili bir şekilde başa çıkıp zorlu yaşantılar sonrasında kendi yaklaşımları ve kaynaklarıyla bireylerin eski hallerine dönebilme becerilerine psikolojik sağlamlık denmektedir. Bunun yanı sıra bireylerin zorluklarla etkin bir şekilde başa çıkabilmesini zorlaştıran farktörler de bulunmaktadır. Bunlar arasında yalnızlık sayılabilir. Sosyal kaynaklardaki bir eksikliği ifade etmek üzere yalnızlık bireylerin sosyal ağlarında hissettiği yetersizlik sonucunda deneyimlenen bir durumdur. Ruminasyon ise yaşanan sıkıntılara bir cevap verme tarzı olarak sıkıntıya dair neden ve sonuçlara ilişkin tekrarlayıcı bir şekilde odaklanma olarak ifade edilmektedir. Alan yazın incelendiğinde söz konusu kavramlardan yalnızlık, ruminasyon ve psikolojik sağlamlık kavramların ikili olarak çeşitli araştırmlarda ilişkili olduğu görülmüştür (Banerjee ve Kohli, 2023; Borawski, 2022). Yalnızlığın bireyin hayatında yol açabildiği zorlu yaşantılar ve ruminasyonun bu bağlamdaki olumsuz işlevi, doğasındaki zorluklara uyum sağlamaya destek olma niteliğince psikolojik sağlamlığı bu olumsuz koşullar kapsamında değerlendirmeyi mümkün kılmaktadır. Araştırma bu kapsamda psikolojik sağlamlık ile yalnızlık arasında ruminasyonun aracılık rolünü incelemeyi amaçlamaktadır.

2. YÖNTEM

Araştırma verileri çevrimiçi yolla ve sosyal medyada duyurularak yapılmıştır. Ardından yalnızca gönüllü olan öğrencilerden veri toplanacağı vurgulanmış ve katılımcılardan ölçek setlerindeki bilgilendirilmiş onamı ayrıntılı bir şekilde okumaları ifade edilmiştir. Böylece mevcut araştırmaya 376 üniversite öğrencisi katılım sağlamıştır. İlgili değişkenleri ölçebilmek için Kısa Psikolojik Sağlamlık Ölçeği (Doğan, 2015), Kişilerarası Hataya İlişkin Ruminasyon Ölçeği (Oral ve Arslan, 2017) ve UCLA Yalnızlık (Sarıçam, 2023) Ölçeği kullanılmıştır. Üniversite öğrencilerinin yalnızlık, ruminasyon ve psikolojik sağlamlık düzeyleri arasındaki ilişkiyi ortaya koymayı amaçlayan bu araştırmada SPSS, JASP ve AMOS programlarından yararlanılarak öncelikle normallik analizi, betimsel istatistikler, güvenirlik analizi ve korelasyon analizi gerçekleştirilmiştir. Ardından Yapısal Eşitlik Modellemesi (YEM) yürütülmüştür. İki aşamalı YEM'in ilk aşamasında gösterge değişkenlerin gizil değişkenleri oluşturmasıyla ve bu oluşan gizil değişkenlerin birbirleriyle olan ilişkilerini ele alan ölçme modelinin doğrulanıp doğrulanmadığı test edilmiştir. Ölçme modelinin doğrulanmasının ardından hipotetik olarak ortaya konulan yapısal modelin test edilmesine geçilmiştir. YEM'in sonuçlarını değerlendirebilmek için Hu ve Bentler (1999) tarafından tavsiye edilen uyum iyiliği indeksleri ele alınmıştır. Diğer taraftan YEM'de birden fazla modelden hangisinin en iyi model olarak nitelendirilip seçilmesi için kay-kare fark testinin yanı sıra, AIC ve ECVI değerleri incelenmiştir. Bu çalışmada YEM'in yanı sıra güçlü bir destekleme için ve aracılığın anlamlı olmasına ek kanıt sağlayan bootstrapping işlemi de kullanılmıştır.

3. BULGULAR, TARTIŞMA VE SONUÇ

Araştırma sonuçlarında yalnızlığın psikolojik sağlamlık ile negatif yönde anlamlı ilişkiye sahip olduğu görülmektedir (r:-.30 p<.001). Benzer şekilde, ruminasyon da psikolojik sağlamlık ile negatif yönde anlamlı ilişkiye sahiptir (r:-.35 p<.001). Diğer taraftan, yalnızlık ile ruminasyon arasında ise pozitif yönde anlamlı ilişkilerin olduğu anlaşılmaktadır (r: .28 p<.001). Kavramlar arası ilişkilerin anlamlı çıkmasından sonra ölçme modeline geçilmiştir. Uyum değerlerinin iyi derecede olduğu belirtilebilir. Yapısal modele geçildiğinde öncelikle yalnızlık ve psikolojik sağlamlık arasında ruminasyonun tam aracı olduğu model sınanmıştır. Tam aracı modelde yalnızlık ve psikolojik sağlamlık arasında doğrudan yol bulunmamaktadır ve ruminasyonun aracılığı ile yalnızlığın psikolojik sağlamlığı yordaması ele alınmaktadır. En iyi aracı model için ruminasyonun kısmi aracı olduğu model de denenmiştir. Kısmi aracıda yalnızlık ve psikolojik sağlamlık arasında doğrudan yol bulunmakta ve ruminasyon aracılık etmektedir. Her iki modelin de uyum değerleri kabul edilebilir ve tüm yol katsayılarının anlamlı olduğu görülmüştür. Ruminasyonun tam

aracı ya da kısmi aracı olduğu modelden hangisinin tercih edileceğine yönelik gerçekleştirilen kay-kare fark testi sonuçlarına göre yalnızlık ile psikolojik sağlamlık arasında eklenen doğrudan yolun modele anlamlı katkı sağladığı anlaşılmaktadır ($\Delta x2 = 19{,}22$, sd = 1, $p < .001$). Ayrıca kısmi aracı modelin AIC ve ECVI değerlerinin tam aracı modelin AIC ve ECVI değerlerinden de küçük olduğu görülmektedir. Tüm bu sonuçlar bünyesinde üniversite öğrencilerinin yalnızlıkları ile psikolojik sağlamlıkları arasında ruminasyonun kısmi bir aracı role sahip olduğu model tercih edilmiştir. Araştırmayı desteklemek ve güçlendirmek amacıyla bootstrapping işlemi yapılmıştır. Sonuç olarak tüm doğrudan yol katsayılarının anlamlı olduğu anlaşılmaktadır.

Bu araştırmada yalnızlık ve psikolojik sağlamlık arasında ruminasyonun aracılık rolü incelenmiş olup araştırmanın neticesinde yalnızlık ve psikolojik sağlamlık arasında ruminasyonun kısmi aracılık rolü olduğu anlaşılmıştır. Analizler sonucunda yalnızlığın ruminasyonu pozitif yönde yordadığı ortaya çıkarılmıştır. Literatürde yalnızlık ve ruminasyon arasında pozitif yönlü ilişki olduğu tespit edilen çeşitli araştırmalar bu bulguyu desteklemektedir (Borawski, 2021; Hu vd., 2023). Yalnızlık ve psikolojik sağlamlık ilişkisine bakıldığında yalnızlığın psikolojik sağlamlığı negatif yönde yordadığı sonucuna ulaşılaraktan bu bulguyla tutarlılık gösteren araştırmalar olduğu görülmüştür (Peter ve Basemera, 2023). Diğer taraftan ruminasyonun psikolojik sağlamlığı negatif yönde yordadığı ve alan yazındaki kanıtlarla benzerliği anlaşılmıştır (Çetinkaya et al., 2018). Son olarak bu araştırmada ruminasyonun yalnızlık ve psikolojik sağlamlık ilişkisinde tespit edilen kısmi aracılık rolü sayesinde bireylenrin kendilerini daha az yalnız hissetmelerinin hem daha az ruminatif düşünceyi hem de daha sağlam bir psikolojik durumu öngöreceği düşünülebilir. Farklı bir deyişle yalnızlık hem doğrudan hem de ruminasyon dolayısıyla psikolojik sağlamlığı yordamaktadır. Bu değişkenler arasındaki ilişkiler birlikte ilk kez araştırılmıştır. Mevcut araştırma Türk üniversite öğrencileri arasında yalnızlık, psikolojik sağlamlık ve ruminasyon arasındaki ilişkiyi açıklayan niceliksel bir modeldir. Gelecek araştırmalarda yalnızlık ile psikolojik sağlamlık arasında farklı kavramların aracılık durumu incelenebilir. Diğer yandan bireylerin yalnız kalmasını tamamen yok etmek mümkün değildir ancak dirençlerini kuvvetlendirecek durumlar ve yalnızlık ile başa çıkma durumlarına ilişkin psiko-eğitimler tasarlanabilir.

ARAŞTIRMANIN ETİK İZNİ

Bu çalışmada "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında uyulması gerektiği belirtilen tüm kurallara uyulmuştur. Yönergenin ikinci bölümü olan "Bilimsel Araştırma ve Yayın Etiğine Aykırı Eylemler" başlığı altında belirtilen eylemlerden hiçbiri gerçekleştirilmemiştir.

Etik kurul izin bilgileri

Etik değerlendirmeyi yapan kurul adı: Yıldız Teknik Üniversitesi Sosyal ve Beşeri Bilimler Araştırmaları Etik Kurulu

Etik değerlendirme kararının tarihi: 30.09.2024

Etik değerlendirme belgesi sayı numarası: 2024.09

ARAŞTIRMACILARIN KATKI ORANI

Her bir yazar araştırmaya ortak katkı sunmuştur.

ÇATIŞMA BEYANI (CONFLICT OF INTEREST)

Araştırmada herhangi bir kişi ya da kurum ile finansal ya da kişisel yönden bağlantı yoktur. Yapılan

Araştırmada hiçbir çıkar çatışması bulunmamaktadır