

The Link between Loneliness and Well-being among Adults: Investigating the Mediating Roles of Perceived Stress and Affective Experiences*

Yetiřkinlerde Yalnızlık ve İyi Oluř Arasındaki Baęlantı: Algılanan Stres ve Duygusal Deneyimlerin Aracı Rollerinin İncelenmesi

Osman HATUN**

Abstract

This study aimed to investigate whether perceived stress and positive and negative experiences mediate the association between loneliness and well-being. The participants included 443 adults aged between 18 and 60 ($M = 35.50$, $SD = 9.73$, 59.14% female). The data were collected in June 2024 through an online survey that included the UCLA Loneliness Scale-8, the Perceived Stress Scale, the Positive and Negative Experience Scale, and the Mental Health Continuum Short Form. Pearson correlation was utilized to examine the associations between the variables, and the PROCESS macro was used to analyze the mediating roles of perceived stress and positive and negative experiences. The significance of indirect relationships was assessed using the bootstrapping technique. The analysis revealed significant correlations between the variables. Mediation analysis showed that loneliness positively predicted perceived stress and negative experience, and negatively predicted positive experience and well-being. Perceived stress and positive experience significantly predicted well-being; however, negative experience did not predict well-being, and its mediating role was not significant. Bootstrapping results indicated that loneliness significantly predicted well-being through perceived stress and positive experience. These results highlight the need

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** Asst. Prof. Dr., Sinop University, Department of Psychological Counseling and Guidance, Sinop, Turkey
E-mail: osmanhatun@sinop.edu.tr, Orcid ID: 0000-0001-8408-7286.

for programs aimed at supporting adults' well-being to focus on reducing loneliness and perceived stress while enhancing positive affect.

Keywords: Loneliness, perceived stress, positive experience, negative experience, well-being

Öz

Bu çalışma, yalnızlık ve iyi oluş arasındaki ilişkide algılanan stres, olumlu ve olumsuz duygusal yaşantıların aracılık rolünü incelemeyi amaçlamıştır. Katılımcılar yaşları 18 ile 60 arasında değişen 443 yetişkin bireylerden oluşmaktadır (M = 35.50, SS = 9.73, %59.14 kadın). Araştırmanın verileri Haziran 2024'te UCLA Yalnızlık Ölçeği-8, Algılanan Stres Ölçeği, Olumlu ve Olumsuz Deneyim Ölçeği ve Ruh Sağlığı Sürekliliği Kısa Formunu içeren çevrimiçi bir veri toplama formu aracılığıyla toplanmıştır. Değişkenler arasındaki ilişkileri incelemek için Pearson korelasyon analizi kullanılmıştır. Algılanan stres, olumlu ve olumsuz deneyimlerin aracılık rollerini analiz etmek için PROCESS makro kullanılmıştır. Değişkenler arasındaki dolaylı ilişkilerin anlamlılığı bootstrap analizi kullanılarak incelenmiştir. Sonuçlar, değişkenler arasında anlamlı ilişkiler olduğunu göstermiştir. Aracılık analizi sonuçları, yalnızlığın algılanan stres ve olumsuz yaşantıyı pozitif yönde, olumlu yaşantı ve iyi oluşu ise negatif yönde yordadığını göstermiştir. Algılanan stres ve olumlu yaşantı iyi oluşu anlamlı düzeyde yordarken, olumsuz duygusal yaşantının iyi oluş üzerindeki doğrudan etkisi ve aracılık rolü anlamlı bulunmamıştır. Bootstrap sonuçları, yalnızlığın algılanan stres ve olumlu yaşantılar aracılığıyla iyi oluşu anlamlı şekilde yordadığını göstermiştir. Sonuç olarak, yetişkinlerin iyi oluş düzeyini arttırmayı amaçlayan programların yalnızlığı ve algılanan stresi azaltmaya odaklanırken olumlu duyguları desteklemesi etkili olabilir.

Anahtar Kelimeler: Yalnızlık, algılanan stres, olumlu yaşantı, olumsuz yaşantı, iyi oluş

Geniş Özet

Giriş

Sosyal ilişkiler, bireyin yaşam kalitesinin ve iyi oluşunun en önemli belirleyicilerinden biridir. Sosyal bağlantıları sürdürmek aidiyet, güvenlik ve yaşam amacı duygusunu teşvik eden

temel bir insani ihtiyaçtır (Peplau, 1994). Ancak, insan yaşamının evrensel bir deneyimi olan yalnızlık (Peplau, 1985), son zamanlarda önemli bir halk sağlığı sorunu olarak öne çıkmıştır (Smith vd., 2022). Modern dünyada, sosyal bağların güçlü olduğu toplumlarda bile deneyimlenen yalnızlık olgusu, bireylerin mental sağlığını ve iyi oluşunu etkileyebilmektedir (Balki, 2023; Xia & Li, 2018).

Yalnızlık yalnızca sosyal olarak izole olmakla ilgili değildir; kaygı, üzüntü, kızgınlık veya umutsuzluk gibi çeşitli olumsuz duygularla kendini gösterebilen daha derin bir duygusal sıkıntıyı içerir (Gentry & Palmer, 2021). Psikolojik sıkıntı, depresyon, anksiyete ve fiziksel sağlık sorunları gibi olumsuz sonuçlarla bağlantılı olan yalnızlık (Konno vd., 2021), bireylerin iyi oluşunu olumsuz yönde etkileyebilir (Landmann & Rohmann, 2021; Park vd., 2020). Psikolojik, duygusal ve sosyal boyutları içeren iyi oluş kavramı, bireylerin yaşam kalitesini anlamak ve değerlendirmek için kapsamlı bir çerçeve sunar (Keyes, 1998; Keyes vd., 2008). Yalnızlık ile iyi oluş arasındaki negatif ilişki önceki çalışmalarda ortaya konmuştur (Arslan, 2021; Cinalioğlu & Gazioğlu, 2022; Landmann & Rohmann, 2021; Park vd., 2020), ancak bu ilişki karmaşık ve çok yönlü olabilir. Yalnızlık ile iyi oluş arasındaki ilişki algılanan stres, olumlu ve olumsuz yaşantılar (pozitif-negatif duygulanım) aracılığıyla açıklanabilir. Yalnızlık, sosyal desteğin eksikliği nedeniyle algılanan stresi artırır, bu da mental sağlık sorunlarına ve düşük yaşam kalitesine yol açar (Khalil vd., 2022; Cristóbal-Narváez vd., 2020). Yalnızlık, duygusal deneyimleri de olumsuz yönde etkileyebilir, olumlu duyguların sıklığını azaltırken olumsuz duyguları artırabilir, böylece duygusal dengenin bozulmasına yol açar (Diener vd., 2010). Bu denge, yalnızlık ve iyi oluş arasındaki ilişkiyi anlamada önemli bir faktör olabilir. Dolayısıyla bu çalışmada yetişkinlerde yalnızlık ve iyi oluş arasındaki ilişkide algılanan stres ve olumlu-olumsuz duygusal yaşantıların aracılık rolü incelenmiştir.

Yöntem

Bu çalışmanın katılımcıları, kolayda örnekleme yöntemi ile ulaşılan 443 ($\bar{x} = 35.5$, $ss = 9.73$, $ranj = 18-60$) yetişkin bireyden oluşmaktadır. Katılımcıların 262'si (% 59.14) kadın ve 181'i (% 40.86) ise erkektir. Araştırmanın verileri UCLA Yalnızlık Ölçeği (Doğan vd., 2011; Hays & DiMatteo, 1987), Algılanan Stres Ölçeği (Cohen vd., 1983; Eskin vd., 2013), Olumlu ve Olumsuz Yaşantı Ölçeği (Diener vd., 2010; Telef, 2015), ve Ruh Sağlığı Sürekliliği-Kısa Formu (Demirci & Akın, 2015; Keyes vd., 2008) aracılığıyla toplanmıştır. Bu çalışma için İnsan Araştırmaları Etik Kurulu'ndan etik onay alınmış ve tüm katılımcılardan bilgilendirilmiş onam alınmıştır.

Verilerin analizinde deęişkenlerin betimsel istatistikleri, basıklık ve çarpıklık deęerleri ve güvenilirlik katsayıları hesaplanmıştır. Deęişkenler arasındaki ilişkiler için Pearson korelasyon analizi yapılmıştır. Yalnızlık ve iyi oluş arasındaki ilişkide algılanan stres, olumlu ve olumsuz yaşantıların (pozitif-negatif duygulanım) aracılık rolü, Hayes'in PROCESS makrosu (Model 81) kullanılarak analiz edilmiştir (Hayes, 2018).

Bulgular

Deęişkenlerin çarpıklık deęerleri -0.313 ile 0.701 arasında, basıklık deęerleri -0.642 ile 0.267 arasında ve güvenilirlik katsayıları ise 0.806 ile 0.906 deęişmektedir. Bu sonuçlar verilerin normal dağıldığını ve deęişkenlerin güvenilirlik katsayılarının ise iyi düzeyde olduğunu göstermektedir. Analiz sonuçlarına göre iyi oluşun yalnızlık, algılanan stres ve olumsuz yaşantı (negatif duygulanım) ile negatif yönde ilişkili olduğu, olumlu yaşantı (pozitif duygulanım) ile pozitif yönde ilişkili olduğu görülmüştür.

Aracılık analizi sonuçları, yalnızlığın algılanan stres ve olumsuz yaşantıyı pozitif yönde, olumlu yaşantı ve iyi oluşu ise negatif yönde yordadığını göstermiştir. Algılanan stres ve olumlu yaşantılar iyi oluşu anlamlı düzeyde yordar iken olumsuz yaşantıların iyi oluş üzerindeki doğrudan etkisi ve aracılık rolü anlamlı bulunmamıştır. Bağımsız ve aracı deęişkenler iyi oluştaki varyansın %60'ını açıklamıştır. Bootstrap analizi sonuçları, yaş ve cinsiyet kontrol edildiğinde bile, yalnızlığın algılanan stres ve olumlu yaşantılar aracılığı ile iyi oluşu yordadığını, ancak olumsuz duygusal yaşantıları içeren aracılık yollarının anlamlı olmadığını göstermiştir.

Tartışma

Bu çalışma, yalnızlık ve iyi oluş arasındaki karmaşık ilişkiyi, algılanan stres ve duygusal yaşantıların (olumlu ve olumsuz yaşantı) aracı rolleri bağlamında incelemiştir. Bulgular, önceki çalışmalarla (Arslantaş vd., 2015; Cinalioęlu & Gazioglu, 2022; Landmann & Rohmann, 2021; Park vd., 2020) benzer şekilde yalnızlığın iyi oluşun önemli bir yordayıcısı olduğunu göstermiştir. Bu nedenle, sosyal bağlantıları güçlendirmeyi ve yalnızlığı azaltmayı hedefleyen müdahaleler, bireylerin iyi oluşunu artırmak açısından önemli olabilir (VanderWeele vd., 2012).

Bu araştırmanın sonuçları, yalnızlığın algılanan stresi önemli ölçüde artırdığını ortaya koymuştur. Bu bulgu, yalnızlığın yüksek stres ile ilişkili olduğunu gösteren önceki araştırmaları desteklemektedir (Laustsen vd., 2024; Mäkinieniemi vd., 2021). Yalnızlık, sosyal destek eksikliğinden kaynaklanan stres duyarlılığını artırabilir (Cacioppo vd., 2006) ve bireylerin başa

çıkma kapasitesini azaltabilir (Lazarus & Folkman, 1984). Ayrıca, yüksek stres seviyesine sahip bireyler, kendilerini savunmasız ve çaresiz hissedebilir, bu da daha fazla negatif ve daha az pozitif duyguyu deneyimlemelerine neden olarak iyi oluşlarını olumsuz etkileyebilir (Li vd., 2022; Soni & Gawali, 2017). Araştırma, yalnızlığın olumlu ve olumsuz duygusal deneyimleri önemli ölçüde etkilediğini göstermiştir. Yalnızlık, olumlu duygusal yaşantıları azaltarak bireylerin bu kaynakları oluşturma yeteneğini zayıflatır ve bu durum, iyi oluşu olumsuz etkiler (Quadt vd., 2020). Olumlu duygusal yaşantılar, yaşam doyumu ve genel iyi oluş açısından kritik bir rol oynar (Diener & Larsen, 1993; Lyubomirsky vd., 2005). Bu nedenle, yalnızlığın olumsuz etkilerini azaltmak için olumlu duygulanımı teşvik etmeye yönelik müdahaleler önemlidir.

Bulgular, algılanan stres ve olumlu duygusal yaşantıların yalnızlık ile iyi oluş arasındaki ilişkiye aracılık ettiğini; olumsuz duygulanımın ise iyi oluş üzerinde anlamlı bir etkisi olmadığını göstermiştir. Ancak önceki araştırmalar, negatif duyguların anlamlı yaşam ile psikolojik sorunlar arasındaki ilişkide aracı rol oynadığını ortaya koymuştur (Yıldırım vd., 2022). Bu bulgular, yalnızlığın olumsuz etkilerini azaltmak için stresi azaltma (Cacioppo vd., 2006; Li vd., 2022) ve pozitif duyguları artırma (Diener & Larsen, 1993; Lyubomirsky vd., 2005) stratejilerinin önemini vurgulamaktadır.

Bu araştırma, sosyal bağlantıları artırmaya yönelik müdahalelerin önemini vurgularken, algılanan stresin azaltılması ve olumlu duygusal deneyimlerin teşvik edilmesinin iyi oluş üzerindeki olumlu etkilerini göstermektedir. Bu çalışma sadece Türk yetişkinlere odaklandığı için, bulgular diğer kültürel bağlamlara genellenemez. Kültürel farklılıkların ve diğer potansiyel değişkenlerin etkilerini değerlendiren daha kapsamlı çalışmalara ihtiyaç duyulmaktadır. Bununla birlikte, çalışmanın kesitsel yapısı nedeniyle nedensel ilişkilere dair kesin sonuçlara varılamamaktadır. Gelecekteki araştırmalar, bu ilişkilerin zamansal dinamiklerini incelemek için boylamsal ve deneysel desenleri kullanabilir. Bu çalışmada yalnızlık ve iyi oluş arasındaki ilişki sadece algılanan stres ve olumlu olumsuz duygusal yaşantılar aracılığı ile incelenmiştir. Sonraki çalışmalar öz-şefkat, psikolojik sağlık, sosyal destek, öz-saygı, umut vb. değişkenlerin aracılık rollerini inceleyebilir.

Introduction

Interpersonal relationships are vital for quality of life, defining and confirming self-worth, identity, acceptance, and belonging. These connections provide essential social support and fulfill the fundamental human need for social interaction, promoting a sense of belonging and life purpose (Peplau, 1994). However, in the fast-paced modern world, the feeling of loneliness

can affect mental health, even in societies where social bonds are strong. Despite being technologically connected in the digital age, many people report feeling lonelier than ever before (Balki, 2023; Xia & Li, 2018). Loneliness, a universal human experience (Peplau, 1985), has recently emerged as a significant public health concern (Smith et al., 2022). Previous studies have highlighted that loneliness is prevalent across different age groups, including the elderly, university students, and the general adult population, emphasizing its negative impacts on quality of life and mental health (Arslantaş et al., 2015; Cinalioğlu & Gazioğlu, 2022; Hou et al., 2022; Savci et al., 2021).

Well-being is increasingly recognized as a critical component of overall health. Health is considered to include not only the absence of disease but also mental, physical, and social well-being (World Health Organization, 2022). From this holistic perspective, understanding the psychological factors that contribute to or pose risks to individuals' well-being is crucial. Therefore, in this study, the complex relationships between loneliness, perceived stress, positive and negative experiences, and well-being were investigated

Loneliness and Well-being

Loneliness is a distressing emotional state that arises when an individual perceives a gap between the social relationships they desire and those they actually have ((Peplau & Perlman, 1982). This sense of disconnection can lead to feelings of isolation, even in the presence of others (Cacioppo & Hawkley, 2009). In contrast, being alone or solitude refers to the physical state of being alone, which can be experienced either positively or negatively, depending on personal preferences and circumstances (Long & Averill, 2003). Loneliness is not merely about being socially isolated; it is a subjective feeling of distress caused by a perceived lack of meaningful social connections (Peplau & Perlman, 1982). It can arise from the absence of fulfilling relationships and a sense of not belonging to important communities or groups (Birken et al., 2023). This deeper emotional distress can manifest through various negative emotions, such as anxiety, sadness, anger, or hopelessness (Gentry & Palmer, 2021). Loneliness is associated with mental health issues across different age groups. Older adults, especially those dealing with anxiety or depression, are particularly vulnerable to loneliness (Lloyd-Evans et al., 2017).

Individuals with higher loneliness are likely to have higher perceived stress and poorer mental health and general well-being (Konno et al., 2021; Landmann & Rohmann, 2021; Park et al., 2020). The concept of well-being, which is negatively affected by loneliness, is a

multidimensional structure that encompasses psychological, emotional, and social dimensions and provides a comprehensive framework for understanding and evaluating individuals' quality of life (Keyes, 1998; Keyes et al., 2008). Emotional well-being refers to the frequency and intensity with which individuals experience positive emotions (Keyes, 1998; Diener, 2000). Within the context of positive psychology, this dimension addresses the capacity of individuals to experience emotions such as joy and happiness. Social well-being encompasses individuals' satisfaction with social acceptance, coherence, integration, actualization, and contribution (Keyes et al., 2008; Ryff, 1989). Psychological well-being refers to personal fulfillment across dimensions like autonomy, growth, mastery, positive connections, self-acceptance, and purpose in life (Deci & Ryan, 2000; Ryff, 1989). In conclusion, understanding the interplay between loneliness and the multidimensional aspects of well-being can be crucial for developing interventions that address both emotional and social needs, thereby enhancing overall quality of life.

Perceived Stress and Affective Experiences

Perceived stress refers to how individuals evaluate the stress of circumstances in their life and their capacity to cope with them (Cohen et al., 1983; Del Giudice et al., 2018). Factors like resilience and social support can impact how stress is perceived (Khalil et al., 2022). Loneliness can increase sensitivity to stress due to a lack of social support, leading to more threatening perceptions of stressful situations and weakening individuals' ability to cope with challenges. High perceived stress levels have been linked to mental health issues and reduced quality of life (Cristóbal-Narváez et al., 2020; Kwag et al., 2011; Soni & Gawali, 2017). Perceived stress might play a crucial role in the connection between loneliness and well-being. Loneliness can increase perceived stress (Laustsen et al., 2024), which in turn can negatively affect individuals' subjective and psychological well-being (Lazarus & Folkman, 1984; Li et al., 2022; Soni & Gawali, 2017).

Loneliness can negatively impact affective experiences by reducing the experience of positive emotions (Luo & Shao, 2023). Social interactions are sources of positive emotions, and loneliness restricts these opportunities, leading to more negative emotions. Affective balance, characterized by the predominance of positive over negative emotions, is a key aspect of psychological functioning that significantly influences overall well-being (Diener et al., 2010). Positive experiences include pleasant, happy, and joyful feelings, while negative experiences encompass unpleasant, sad, fearful, and angry feelings (Diener et al., 2010). The balance between these emotional experiences is crucial for well-being and satisfaction with life (Diener

& Larsen, 1993). Negative emotions are related to mental health issues such as depression and anxiety (Watson et al., 1988). Positive emotions, on the other hand, predict higher resilience and satisfaction with life (Cohn et al., 2009) and can significantly help in reducing the negative impacts of loneliness (Beller, 2022).

The Present Study

This study investigated whether perceived stress and affective balance mediate the association between loneliness and well-being. Loneliness, perceived stress, positive and negative experiences, and well-being are interrelated factors that can significantly impact adults' mental health. Although previous studies have emphasized the adverse impact of loneliness on well-being (Arslan, 2021; Arslantaş et al., 2015; Cinalioğlu & Gazioğlu, 2022; Landmann & Rohmann, 2021; Park et al., 2020), this relationship can be complex and multifaceted. Understanding how loneliness negatively affects individuals' well-being and the potential mediators, such as perceived stress, positive and negative experiences, can be crucial. Although there is considerable research on the connections between loneliness and well-being, there is a gap in studies specifically exploring the roles of perceived stress and positive and negative experiences in this context, especially among Turkish adults. Exploring how Turkey's unique cultural factors, such as collectivism and family values, influence the experience of loneliness and its effects on well-being could provide valuable insights. Based on previous research, this study proposed the following hypotheses: (H1) Loneliness is significantly correlated with well-being. (H2) Perceived stress mediates the relationship between loneliness and well-being. (H3) Positive experience and (H4) negative experience serve as mediators in the relationship between loneliness and well-being. (H5) Loneliness influences well-being through the serial mediation of perceived stress and positive experience, and (H6) through the serial mediation of perceived stress and negative experience.

Method

Participants and Procedure

The study included 443 adult participants, selected through a convenience sampling method. The participants' ages ranged from 18 to 60 years, with a mean age of 35.5 (SD = 9.73). Of the participants, 262 (59.14%) were female and 181 (40.86%) were male. Regarding marital status, 102 (23.03%) participants reported being single, 282 (63.66%) were married, and 59 (13.32%) were divorced. Regarding educational background, 66 participants (14.90%) had completed primary school, 61 (13.77%) had finished secondary school, 134 (30.25%) had

graduated from high school, 67 (15.12%) were current college students, and 115 (25.96%) were college graduates. Regarding socio-economic income levels, 142 participants (32.05%) reported a low income, 199 (44.92%) reported a medium income, and 102 (23.03%) reported a high income (Table 1).

Table 1

Participant Demographics

| Variables | Group | N | % |
|-----------------------|------------------|-----|-------|
| Gender | Female | 262 | 59.14 |
| | Male | 181 | 40.86 |
| Marital status | Single | 102 | 23.03 |
| | Married | 282 | 63.66 |
| | Divorced | 59 | 13.32 |
| Educational status | Primary school | 66 | 14.90 |
| | Secondary school | 61 | 13.77 |
| | High school | 134 | 30.25 |
| | College student | 67 | 15.12 |
| | College graduate | 115 | 25.96 |
| Socio-economic status | Low | 142 | 32.05 |
| | Middle | 199 | 44.92 |
| | High | 102 | 23.03 |

The data were collected in June 2024 using an online Google Form that included a participant information sheet and relevant measurement tools. Ethical permission was obtained before data collection. The informed consent form clearly indicated that participation was voluntary, with the option for participants to withdraw at any time, and highlighted that the data collected would be used solely for scientific purposes. The study was conducted in accordance with the ethical principles established by the Helsinki Declaration of Human Rights.

Measures

UCLA Loneliness Scale-8 (ULS-8)

The ULS-8 (Hays & DiMatteo, 1987) was utilized to assess participants' levels of perceived loneliness. This scale includes a single dimension and consists of 8 items (e.g., "I feel isolated from others"), using a 4-point Likert scale (1 = never, 4 = always). Higher scores reflect greater loneliness. The Turkish version of the scale, validated by Doğan et al. (2011), showed strong structural validity and acceptable internal consistency ($\alpha = .72$). In this study, the ULS-8 demonstrated excellent reliability ($\alpha = .86$).

Perceived Stress Scale

The scale created by Cohen et al. (1983) was used to assess participants' perceived stress levels. The scale comprises 14 items (e.g., "In the last month, how often have you felt nervous and stressed?") and includes two sub-scales (perceived stress/distress, perceived insufficient self-efficacy). The scale is scored on a 5-point Likert scale (0 = never, 4 = very often), with higher scores indicating greater perceived stress. The Turkish translation of the scale by Eskin et al. (2013) showed acceptable construct validity and a high reliability coefficient ($\alpha = .84$). In this research, the scale had a good reliability value ($\alpha = .81$).

Positive and Negative Experience Scale

Diener et al. (2010) designed the Scale of Positive and Negative Experience to evaluate positive and negative feelings. The scale comprises two sub-scales: a 6-item positive experiences sub-scale (e.g., "Pleasant," "Happy") and a 6-item negative experiences sub-scale (e.g., "Unpleasant," "Afraid"). The scale is scored on a 5-point Likert format (1 = very rarely or never, 5 = very often or always). The scale was translated into Turkish by Telef (2015). The Turkish version of the scale demonstrated good validity indices and reliability coefficients for positive affect ($\alpha = .88$) and negative affect ($\alpha = .83$). In this research, the reliability coefficients were calculated at a good level: positive affect ($\alpha = .90$) and negative affect ($\alpha = .84$).

The Mental Health Continuum Short Form

The Scale (Keyes et al., 2008) was utilized to evaluate participants' well-being levels. The scale comprises 14 items (e.g., "I felt that my life had a direction and purpose") and three sub-dimensions of well-being (psychological, social, and emotional). Higher scores obtained from the scale, which is scored according to a 5-point Likert type (0 = never, 5 = every day), reflect higher levels of well-being. The Turkish version of the scale (Demirci & Akın, 2015) has shown good fit indices and high reliability ($\alpha = .90$). In the current research, the reliability coefficient was also high ($\alpha = .90$).

Data Analysis

Initially, descriptive statistics were analyzed, and skewness and kurtosis values were evaluated to test for normality. Reliability coefficients for the variables were computed using Cronbach's alpha. Bivariate correlations were performed to investigate the relationships between the variables. Next, the study investigated whether perceived stress, positive experiences, and negative experiences mediate the link between loneliness and well-being using the PROCESS macro (Model 81) for SPSS, version 3.4 (Hayes, 2018). In the mediation model,

age and gender were controlled as covariates. Additionally, to assess the indirect relationships, a bootstrapping technique with 5,000 resamples was conducted to estimate 95% confidence intervals. The bootstrapping method is noted for being particularly effective compared to other techniques, especially for studies with relatively small sample sizes (Preacher & Hayes, 2008).

Results

Preliminary Analysis

According to the preliminary analysis results (see Table 2), the skewness values (ranging from -0.313 to 0.701) and kurtosis values (ranging from -0.642 to 0.267) were within the acceptable range for normal distribution of ± 1 , as recommended by Curran et al. (1996). Additionally, the reliability coefficients for the variables ranged from .806 to .906, indicating that the reliability of the scales was at a good level.

The correlation analysis (Table 2) showed that loneliness was positively associated with perceived stress ($r = .420, p < .001$) and negative experiences ($r = .497, p < .001$), and negatively related to positive experiences ($r = -.597, p < .001$) and well-being ($r = -.629, p < .001$). Perceived stress was negatively related to positive experiences ($r = -.557, p < .001$) and well-being ($r = -.529, p < .001$), and positively linked with negative experiences ($r = .616, p < .001$). Finally, well-being was positively related to positive experiences ($r = .719, p < .001$) and negatively associated with negative experiences ($r = -.566, p < .001$).

Table 2

Descriptive Statistics, Reliabilities, and Associations of the Variables

| Variables | Mean | SD | Sk. | Kr. | α | 1 | 2 | 3 | 4 |
|----------------|-------|-------|-------|-------|----------|--------|--------|--------|--------|
| (1) Loneliness | 12.98 | 4.30 | .701 | -.367 | .859 | — | | | |
| (2) Stress | 25.97 | 6.32 | -.018 | .267 | .806 | .420* | — | | |
| (3) PE | 21.47 | 4.36 | .013 | -.642 | .903 | -.597* | -.557* | — | |
| (4) NE | 15.67 | 3.91 | .147 | -.022 | .842 | .497* | .616* | -.681* | — |
| (5) Well-being | 42.24 | 12.77 | -.313 | -.322 | .906 | -.629* | -.529* | .719* | -.566* |

Note. PA = positive experience, NE = negative experience, Sk.= skewness, Kr. = kurtosis, SD= standard deviation, α = Cronbach's alpha, * $p < .001$

Serial Mediation Model

The serial mediation analysis was used to explore how perceived stress and affective balance influence the connection between loneliness and well-being. The results (see Figure 1

and Table 3) indicated that loneliness significantly predicted perceived stress ($\beta = .41, p < .001$), negative experiences ($\beta = .28, p < .001$), positive experiences ($\beta = -.42, p < .001$), and well-being (total effect $\beta = -.59, p < .001$; direct effect $\beta = -.27, p < .001$). Loneliness accounted for 19% of the variance in perceived stress. Perceived stress directly predicted positive experiences ($\beta = -.36, p < .001$), negative experiences ($\beta = .49, p < .001$), and well-being ($\beta = -.14, p < .01$). Loneliness and perceived stress together explained 47% of the variance in positive experiences and 45% of the variance in negative experiences. Additionally, positive experiences significantly predicted well-being ($\beta = .43, p < .001$), but negative experiences did not ($\beta = -.04, p > .05$). The independent and mediating variables combined accounted for 60% of the variance in well-being.

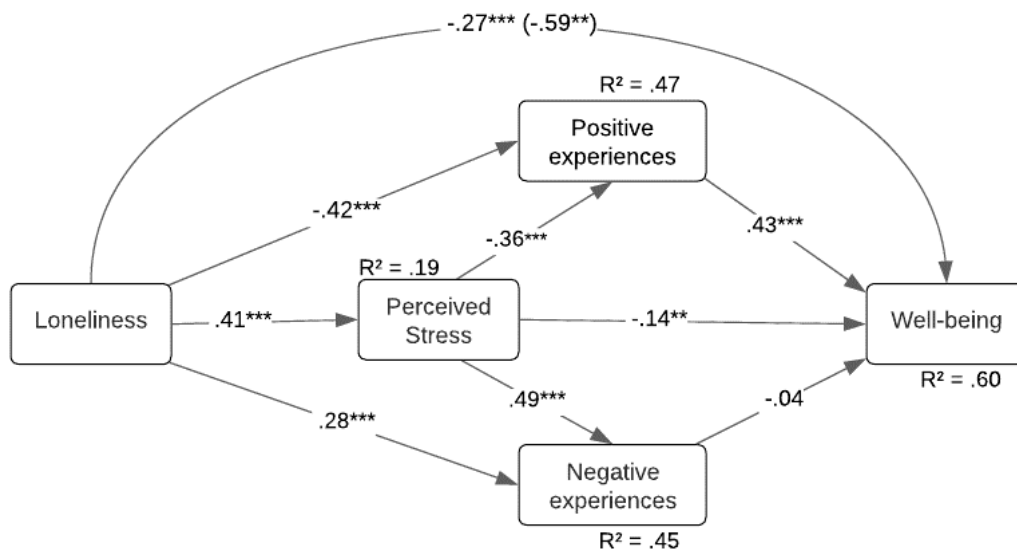


Figure 1. Mediation model illustrating the standardized relationships between the variables.

Table 3

Unstandardized Coefficients for the Mediation Model Predicting Well-being

| Antecedent | Consequent | | | | | | | | | | | | | | | |
|---------------------|----------------------|------|-------|--------|----------------------|------|--------|--------|----------------------|------|-------|--------|----------------------|------|-------|--------|
| | M ₁ (PS) | | | | M ₂ (PE) | | | | M ₃ (NE) | | | | Y (WB) | | | |
| | B | SE | t | p | B | SE | t | p | B | SE | t | p | B | SE | t | p |
| X (loneliness) | .60 | .06 | 9.32 | < .001 | -.43 | .04 | -10.87 | < .001 | .26 | .04 | 7.07 | < .001 | -.79 | .11 | -7.03 | < .001 |
| M ₁ (PS) | — | — | — | — | -.25 | .03 | -9.43 | < .001 | .30 | .02 | 12.42 | < .001 | -.29 | .08 | -3.57 | < .01 |
| M ₂ (PE) | — | — | — | — | — | — | — | — | — | — | — | — | 1.25 | .13 | 9.31 | < .001 |
| M ₃ (NE) | — | — | — | — | — | — | — | — | — | — | — | — | -.11 | .14 | -.76 | > .05 |
| Constant | 18.75 | 1.77 | 10.58 | < .001 | 31.55 | 1.10 | 28.57 | < .001 | 5.11 | 1.19 | 5.10 | < .001 | 27.65 | 5.41 | 5.10 | < .001 |
| | R ² = .19 | | | | R ² = .47 | | | | R ² = .45 | | | | R ² = .60 | | | |
| | F = 36.09; p < .001 | | | | F = 100.83; p < .001 | | | | F = 89.55; p < .001 | | | | F = 112.26; p < .001 | | | |

Note. X = independent variable, M = mediator variables, Y = dependent variable, B = unstandardized coefficients, SE = standard errors. PS = perceived stress, PE = positive experience, NE = negative experience, WB = well-being.

The results (Table 3) provided evidence that loneliness predicts well-being through perceived stress and positive experiences, even when controlling for age and gender. Loneliness explained 19% of the variance in perceived stress. Combined, loneliness and perceived stress accounted for 47% of the variance in positive experiences and 45% in negative experiences. Furthermore, the independent and mediator variables together explained 60% of the variance in well-being. The standardized indirect effects (Table 4) revealed that loneliness predicts well-being through the serial mediation of perceived stress and positive experiences; however, the mediation pathways involving negative experiences were not significant.

Table 4

Standardized Indirect Effects of Loneliness on Well-being and 95% Confidence Intervals

| Paths | Coefficients | CI %95 | |
|---------------------------|--------------|--------|-------|
| | | LL | UL |
| Total indirect effect | -.319 | -.374 | -.263 |
| Loneliness → PS → WB | -.068 | -.090 | -.027 |
| Loneliness → PE → WB | -.181 | -.233 | -.134 |
| Loneliness → NE → WB | -.010 | -.033 | .013 |
| Loneliness → PS → PE → WB | -.064 | -.088 | -.043 |
| Loneliness → PS → NE → WB | -.007 | -.024 | .009 |

Note. PS = perceived stress, PE = positive experience, NE = negative experience, WB = well-being, CI = confidence interval, LL= lower limit, UL = upper limit.

Discussion

This study investigated the complex association between loneliness and well-being in adults, with a particular focus on how perceived stress and positive and negative experiences mediate this connection. The results emphasize the importance of addressing loneliness, perceived stress, and positive experiences to enhance overall well-being. The study reveals that loneliness significantly predicts individuals' well-being. These findings support previous research demonstrating the negative impact of loneliness, a universal human experience (Peplau, 1985), on well-being (Landmann & Rohmann, 2021; Park et al., 2020). Previous studies have shown that loneliness adversely affects psychological adjustment (Arslan, 2021), quality of life (Arslantas et al., 2015), and psychological well-being (Cinalioğlu & Gazioğlu, 2022) among Turkish adults. As a result, initiatives targeted at improving social connections and reducing loneliness may benefit people's well-being (VanderWeele et al., 2012).

This study revealed a connection between loneliness and increased perceived stress. Similarly, previous research has indicated that loneliness predicts perceived stress (Laustsen et al., 2024; Mäkineniemi et al., 2021). Loneliness can heighten sensitivity to stress due to a lack of social support, triggering a range of cognitive and emotional responses (Cacioppo et al., 2006). This can lead to stressors being perceived as more threatening, which negatively impacts individuals' coping abilities (Lazarus & Folkman, 1984) and quality of life (Kang et al., 2018). Additionally, the present study found that perceived stress predicted greater negative emotions, lower positive emotions, and reduced well-being. Individuals with high perceived stress may feel vulnerable and helpless in the face of various stressors, experiencing more negative and fewer positive emotions, which can adversely affect their well-being (Li et al., 2022; Soni & Gawali, 2017).

The results indicate that loneliness significantly predicts both positive and negative experiences. Affective balance, which reflects the dominance of positive over negative feelings (Diener et al., 2010), is an important variable that can be influenced by loneliness and perceived stress. The experience of negative affect might play a significant role in the development of psychological health problems (Yıldırım et al., 2022). In contrast, the experience of positive affect—encompassing emotions like joy, enthusiasm, and satisfaction—can facilitate coping with difficulties and bolster personal resources (Fredrickson, 2001). Loneliness can diminish the experience of positive affect, weakening individuals' ability to generate these resources and thereby negatively impacting their well-being (Quadt et al., 2020). However, positive emotions, which are crucial for life satisfaction and overall well-being (Diener & Larsen, 1993; Lyubomirsky et al., 2005), may mitigate the adverse effects of loneliness, underscoring the importance of fostering positive emotions.

The study also found that perceived stress and positive experiences mediate the connections between loneliness and well-being. Specifically, the study indicated that loneliness increases perceived stress and negative experiences while decreasing positive affect, collectively reducing overall well-being. The mediation analysis results underscore the critical pathways through which perceived stress and positive affect impact the link between loneliness and well-being. These results highlight the importance of stress reduction (Cacioppo et al., 2006; Li et al., 2022) and the enhancement of positive emotions (Diener & Larsen, 1993; Lyubomirsky et al., 2005) to mitigate the detrimental consequences of loneliness. Wang et al. (2022) discovered that perceived stress explained the connection between loneliness and psychological distress in Chinese adults. Similarly, Kong et al. (2019) found that emotional

balance significantly predicted adults' life satisfaction. In this research, negative affect did not significantly predict well-being. In contrast, Yıldırım et al. (2022) discovered that negative affect played a significant mediating role in the connection between meaningful living and various psychological health issues, whereas positive affect did not. Thus, negative affect seems to be an important predictor of psychological health issues, while positive affect is a key predictor of well-being. These findings suggest that interventions focusing on managing stress and enhancing positive affect might be more effective in improving the well-being of people experiencing loneliness.

Conclusion and Limitations

This study has the potential to make significant contributions to the existing literature. First, the results reveal the relationships between loneliness, perceived stress, positive experiences, negative experiences, and well-being among adults. Second, it advances our understanding of the mechanisms underlying well-being by offering insights into the mediating roles of stress and positive affect in these relationships. Third, the findings can guide interventions designed to reduce loneliness and stress, enhance positive affect, and improve overall well-being. Fourth, the study holds practical implications for counseling practitioners, policymakers, and community organizations. Programs should prioritize reducing perceived loneliness and stress while simultaneously enhancing positive affect. Practices such as gratitude exercises, positive psychology interventions, and activities promoting social connections can improve positive affect. Social support networks and community involvement play a crucial role in reducing loneliness and improving well-being. Programs aimed at increasing social integration, such as community centers and social clubs, can provide valuable opportunities for individuals to establish meaningful connections. This is especially important given the current socio-cultural climate, where rapid urbanization and technological advancements have contributed to increased feelings of social isolation.

Despite the study's significant strengths, there are several limitations that should be considered. First, its cross-sectional design limits the ability to draw strong causal inferences. Longitudinal and experimental studies are needed to establish causality and to understand the temporal dynamics among these variables. Second, because the participants were exclusively Turkish adults, the findings may not be applicable to other cultural contexts. Cultural factors can influence experiences of loneliness, stress, and well-being, so future research should include cross-cultural comparisons to explore these potential differences. Third, the study did not account for potential confounding variables such as physical health, self-compassion,

resilience, and social support, which may also impact well-being. Future research should investigate these variables to provide a more comprehensive understanding of the determinants of well-being.

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