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The Moderating Role of Generations in the Effect of General Life Satisfaction on Psychological Ownership Via Psychological Well-Being
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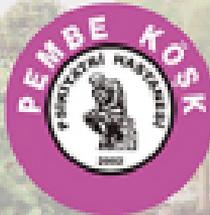
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EDITORIAL / EDİTÖRDEN

Mehmet Çakıcı¹

Değerli Okuyucular,

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi olarak 2026 yılının sayısını yayınlamaktan büyük bir onur duyuyoruz. Dünyanın savaşlar ve çatışmalar içinde daha yoğunlukla bulunduğu bir döneme girdik. Son olarak, ABD, İsrail ve İran savaşının da başlamasıyla dünya daha sorunlu ve korkutucu bir hale dönüştü. Ortadoğu bir ateş çemberine dönüştü. Savaşlar, yüksek teknolojik düzeyde daha büyük zararlar ve ölümlere yol açıyor. Tabii, bu savaşların nedenleri güç kavgasının yanı sıra dini ve ekonomik nedenlere de dayanıyor. Bu şiddete yönelmiş dünyada ölümler artıyor ve acılar büyüyor. Bugünlerde dünya daha da çok savaş ve şiddetle dolu. Yıllar önce, 1932'de Albert Einstein, Sigmund Freud'a bir mektup yazarak, "İnsanları savaşın felaketinden kurtarmanın bir yolu var mı? Psikoloji bir çözüm sunabilir mi?" diye sormuştu. Sigmund Freud'un cevabı ise şöyleydi: "Saldırganlık insan doğasında vardır; tamamen önlenemez, ancak kültür ve hukuk bunu hafifletebilir. Uygarlığın gelişmesi, saldırgan dürtüleri giderek daha fazla bastırabilir." Tüm bu acılara yönelik bugün de bizim cevabımız Freud ile benzer düzeydedir. Ancak ruh sağlığı alanı, tüm bu zorluklara karşı kendini geliştirmeye devam etmelidir. Teknoloji ile ruh sağlığı uygulamalarını birleştirerek insanlığa daha yararlı olabilme mücadelesi içinde çalışmaya devam etmeliyiz. Çünkü bilim alanımız, insanlığın gelişimiyle birlikte gelişen bir alandır. Bu doğrultuda dergimiz, ruh sağlığı alanındaki bilimsel gelişmelere katkı sağlamaya devam edecektir. Dergimiz Kıbrıs'ta tüm alanlardaki en yüksek etki faktörüne sahip dergi konumundadır. Scimago'da Klinik Psikolojide Q3 sınıfında Türkiye'yi ve Kıbrıs'ı temsil eden tek dergi olup birinci sıradadır. Orta Doğu Bölgesi'nde Klinik Psikoloji alanında bulunan 4 dergi arasında ise ikinci sıradadır. Ayrıca psikiyatri alanında ise 10 Türkiye dergisi arasında altıncı sıradadır. Tüm dünyadaki Scimago'da yer alan 320 Klinik Psikoloji dergisi arasında 234. sıradadır. Dergimizin SCOPUS ve Web of Science listelerinde bulunması da bizleri gururlandırıyor. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin Mart 2026 sayısının yayınlanmasına katkısı bulunan herkese çok teşekkür ederiz.

Dear Readers,

We, the Cyprus Turkish Journal of Psychiatry and Psychology, are honored to publish the 2026 issue. We are living in a time when the world is more deeply engulfed in wars and conflicts. The recent war involving the US, Israel, and Iran has made the global situation more problematic and alarming. The Middle East has become a firestorm. Modern wars, driven by advanced technology, cause greater destruction and loss of life. These conflicts are fueled not only by power struggles but also by religious and economic motives. In a world fueled by violence, deaths are rising, and suffering is increasing. Today, the world is overwhelmed with more war and violence than ever before. Years ago, in 1932, Albert Einstein wrote a letter to Sigmund Freud asking, "Is there a way to save people from the catastrophe of war? Can psychology offer a solution?" Sigmund Freud's answer was, "Aggression is inherent in human nature; it cannot be completely prevented, but culture and law can mitigate it. The development of civilization can increasingly suppress aggressive impulses." Today, our answer to this suffering is similar to Freud's. Nevertheless, the mental health field must continue to evolve in response to these challenges. We must keep working to benefit humanity by integrating technology with mental health practices, as our discipline develops alongside humanity itself. In this regard, our journal will continue contributing to scientific progress in mental health. Our journal holds the highest impact factor in all categories in Cyprus. According to Scimago, it is the only journal representing Turkey and Cyprus in the Q3 category of Clinical Psychology, ranking first. Among the four Clinical Psychology journals in the Middle East region, it ranks second. Additionally, in the field of psychiatry, it ranks sixth among ten Turkish journals. Out of 320 Clinical Psychology journals listed in Scimago worldwide, it is ranked 234th. We are also proud that our journal is indexed in SCOPUS and Web of Science. We sincerely thank everyone who contributed to the publication of the March 2026 issue of the Cyprus Turkish Journal of Psychiatry and Psychology.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

The Moderating Role of Generations in the Effect of General Life Satisfaction on Psychological Ownership Via Psychological Well-Being

Genel Yaşam Memnuniyetinin Psikolojik İyi Oluş Aracılığıyla Psikolojik Sahiplenme Üzerindeki Etkisinde Kuşakların Düzenleyici Rolü

Pınar Erdoğan¹, İlknur Çevik Tekin²

Abstract:

This comprehensive study examines the complex relationship between individuals' overall life satisfaction and their psychological ownership. The primary aim is to investigate the mediating role of psychological well-being in this relationship and the moderating effect of generational differences. The main assumption of the study is that higher life satisfaction increases psychological well-being, which, in turn, strengthens employees' psychological ownership of their organizations. The study sample consisted of 386 employees working in public and private healthcare institutions in Konya province. Data were collected through face-to-face surveys. SPSS Process Macro software was used to analyze the quantitative data to examine relational and mediating effects. In this context, Hayes' Model 58 was employed to test whether the indirect effect of life satisfaction on psychological ownership varies across generations, with psychological well-being as the mediator. The results indicate that general life satisfaction has a statistically significant and positive effect on both psychological well-being and psychological ownership. Furthermore, psychological well-being partially mediated the relationship between life satisfaction and psychological ownership. In addition, generational differences were shown to play a significant moderating role in this model. Specifically, the conditional indirect effect was significant for both Generation X and Generation Y employees, with stronger effects observed in Generation X. These findings highlight the importance of considering generational dynamics in organizational practices aimed at enhancing employee satisfaction and strengthening psychological ownership.

Keywords: General Life Satisfaction, Psychological Well-being, Psychological Ownership

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Öz:

Bu kapsamlı araştırma, bireylerin genel yaşam memnuniyeti ile psikolojik sahiplenme düzeyleri arasındaki karmaşık ilişkiyi detaylı bir şekilde incelemeyi amaçlamaktadır. Çalışmanın temel odağı, bu ilişkide psikolojik iyi oluşun aracı rolünü ve aynı zamanda kuşak farklılıklarının düzenleyici etkisini ayrıntılı biçimde ortaya koymaktır. Araştırmanın temel varsayımı, bireylerin yaşamlarından duydukları memnuniyetin yükselmesinin, onların psikolojik iyi oluş düzeylerini de artırarak, nihayetinde çalıştıkları örgütlerine yönelik duydukları psikolojik sahiplenme duygusunu da önemli ölçüde güçlendireceği yönündedir. Çalışmanın örneklemini Konya ilinde faaliyet gösteren hem kamu hem de özel sağlık kurumlarında görev yapan toplam 386 çalışan oluşturmaktadır. Veriler, katılımcılarla gerçekleştirilen yüz yüze anket yöntemiyle toplanmıştır. Elde edilen nicel verilerin analizinde, ilişki ve aracılık etkilerini incelemek üzere SPSS Process Macro yazılımı kullanılmıştır. Bu kapsamda Hayes'in Model 58'i tercih edilerek, genel yaşam memnuniyetinin psikolojik sahiplenme üzerindeki dolaylı etkisinin, aracı sürecin hem yaşam memnuniyetinin psikolojik iyi oluş üzerindeki etkisi hem de psikolojik iyi oluşun psikolojik sahiplenme üzerindeki etkisi aşamalarında kuşak farklılıklarına bağlı olarak değişip değişmediği test edilmiştir. Analizler sonucunda elde edilen bulgular, genel yaşam memnuniyetinin hem psikolojik iyi oluş hem de psikolojik sahiplenme üzerinde istatistiksel olarak anlamlı ve pozitif bir etkisi bulunduğunu açıkça göstermektedir. Daha da önemlisi, psikolojik iyi oluşun yaşam memnuniyeti ile psikolojik sahiplenme arasındaki ilişkide kısmi aracılık etkisine sahip olduğu kesinleşmiştir. Bununla birlikte, beklenen şekilde, kuşak farklılıklarının bu ilişkiler modelinde düzenleyici bir rol üstlendiği tespit edilmiştir. Bu düzenleyici etkinin hem X kuşağı hem de Y kuşağı çalışanlar açısından istatistiksel olarak anlamlı düzeyde gerçekleştiği belirlenmiştir. Bu sonuçlar, örgütlerin çalışan memnuniyetini artırarak sahiplenme duygusunu güçlendirmesi için kuşak dinamiklerini göz önünde bulundurması gerektiğini ortaya koymaktadır.

Anahtar Kelimeler: Genel Yaşam Doyumu, Psikolojik İyi Oluş, Psikolojik Sahiplenme.

Introduction

The demand for healthcare services is increasing every day. According to the 2023 Ministry of Health Health Statistics, the average number of doctor visits per person per year is 11.4. The number of visits may vary by income level, transportation options, and educational status (Akar and Arıkan, 2023). The increasing demand for healthcare has brought with it many negative consequences, such as violence in healthcare. It is stated that incidents of violence in healthcare have been increasing steadily in recent years (Turkish Medical Association, 2024). Rossi et al. (2023) cite high stress levels, long working hours, dealing with patients with a history of violent behavior, lack of communication, dissatisfaction with treatment and service attitudes, etc., as reasons for the increase in violence incidents.

Increasing violence, long working hours, and high stress can negatively affect the psychological health of healthcare personnel. Physician burnout levels range from 36.5% to 60.0% (Shakir, McPheeters, Shallwani, Pittari, and Reynolds, 2018). Other psychological conditions that organizational conditions can affect are life satisfaction and psychological well-being. Life satisfaction is an individual's overall assessment of their life, which includes both cognitive and emotional elements (Veenhoven, 1996). Individuals with high life satisfaction are seen to have a more positive attitude towards their work and organization, with increased feelings of organizational commitment and belonging. Life satisfaction can be influenced by macro-level (e.g., income), meso-level (e.g., autonomy), and micro-level (e.g., social support) factors (Veenhoven, 2015). Psychological well-being, on the other hand, goes beyond happiness and encompasses self-acceptance, personal growth, life purpose, positive relationships, environmental mastery, and autonomy (Ryff, 1995). In healthcare, high psychological well-being enables employees to cope with stress, remain committed to their work, and establish positive relationships with colleagues and patients. Study results have revealed

significant relationships between organizational factors and life satisfaction and psychological well-being (Köylü & Gündüz, 2019; Taşpınar & Eryeşil, 2021; Urgan & Küsbesi, 2022).

The dependent variable in the study, psychological ownership, refers to employees' ownership of their organizations and their commitment to the organization's goals. Employee behavior and performance play an important role in an organization's success or failure. The study's results demonstrate a positive relationship between psychological ownership and job performance (Pierce & Delbecq, 1977; Chi & Han, 2008; Taşdemir, Ceyhan & Çıkmaç, 2022).

The study's moderating variable is generations. A generation is a group of people born in a specific period and sharing similar life experiences (Kerse, 2016). Strauss and Howe (1991) divided people into generations based on their birth years. The common classification is: Silent Generation, Baby Boom Generation, Generation X, Y, and Z. Organizational behavior literature shows that generations have different work values. Since employees from the X and Y generations play a large role in today's business world, these generations were treated as moderating variables in the study.

The study investigated the effect of life satisfaction on psychological ownership through psychological well-being, and the moderating effect of healthcare workers' age cohort on this effect. It is thought that individuals with high life satisfaction can commit more to their organizations and feel greater ownership. Psychological well-being is thought to mediate this effect positively. There are many demographic characteristics that affect the relationships among variables affecting organizational life. One of these variables is undoubtedly generation, which varies by individuals' birth years. In this context, it is thought that generational differences moderate the relationship among the three variables. Based on this

theoretical framework, the following research hypotheses were developed.

H1: General life satisfaction has a positive effect on psychological well-being.

H2: Psychological well-being has a positive effect on psychological ownership.

H3: General life satisfaction has a positive effect on psychological ownership.

H4: Generations moderate the effect of general life satisfaction on psychological well-being.

H5: Generations moderate the effect of psychological well-being on psychological ownership.

H6: Generations have a moderating role in the effect of general life satisfaction on psychological ownership through psychological well-being

Method

This study examines the moderating role of generations in the effect of general life satisfaction on psychological ownership, mediated by psychological well-being. The research model, population, sample, measurement tools, and analysis methods are presented. Both direct and indirect effects were measured, and the moderating role of

generations was tested. Ethics committee approval was obtained (dated August 12, 2024; no. 2024/10), and data were collected from voluntary participants.

Population And Sample

According to the Turkish Health Statistics Yearbook (Ministry of Health, 2022), Konya province has 22,909 health workers, while the number of other personnel is unknown. Employees from health institutions that permit the use of scientific data were included in the study. The sample was selected using simple random sampling, and data were collected face-to-face. A total of 500 questionnaires were distributed, of which 390 were returned. Six questionnaires were excluded from the analyses: three due to incomplete responses and three due to response bias, as all items were answered identically. Consequently, the final sample consisted of 384 participants, which was determined to be sufficient to represent the population at a 95% confidence level with a 5% margin of error (Gürbüz & Şahin, 2018, p. 130). In this study, "Healthcare Personnel" refers to clinical staff such as physicians, nurses, and other healthcare professionals directly involved in patient care, whereas "Other Personnel" includes non-clinical staff such as administrative, technical, and support service employees working in healthcare institutions. Participant characteristics are presented in Table 1.

Table 1. Demographic Findings

Characteristics	Variables	F	%
Gender	Male	108	28
	Female	278	72
Employment Status	Healthcare Personnel	282	73.1
	Other Personnel	104	26.9
Education Level	Primary-Second Education	99	25.6
	Associate Degree	104	26.9
	Bachelor's-Master's Degree	183	47.4
Generations	Generation X (1965-1980)	65	16.8
	Generation Y (1981-2000)	321	83.2
Total		386	100

Table 1 indicates 72% female, 73.1% health staff, 47.4% with bachelor's/master's, and 83.2% Generation Y.

Research Model

This research aims to examine the mediating and moderating effects in the proposed model. While various factors can mediate the influence of the independent variable on the dependent variable, this effect may also vary across generations, defined by birth years. The mediating effect explains how the independent variable influences the dependent variable through an intermediary, while the moderating effect changes the strength or direction of this relationship (Gürbüz, 2019, p. 18-19).

In this study, Model 58 from Hayes' PROCESS Macro software was used, which allows for the simultaneous testing of mediation and moderation effects (Hayes, 2022). Model 58 is a moderated mediation model in which the

impact of the independent variable (X) on the mediating variable (M) and of the mediating variable (M) on the dependent variable (Y) are simultaneously moderated by the same moderator variable (W). In this context, the study examines the mediating role of psychological well-being in the relationship between healthcare workers' general life satisfaction and psychological ownership levels, and whether this mediation process varies across generations. In other words, it is hypothesized that generations moderate both the effect of general life satisfaction on psychological well-being and the impact of psychological well-being on psychological ownership. Thus, the study tests whether the indirect effect of general life satisfaction on psychological ownership differs across generations. The proposed research model is presented in Figure 1.

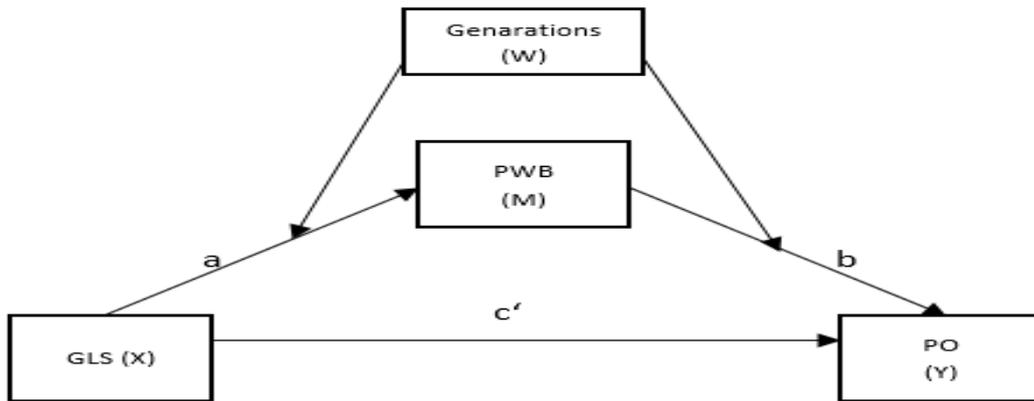


Figure 1. Research Model (Hayes Model 58)

Data Collection Tools

Psychological ownership was measured using the seven-item, one-dimensional scale by Van Dyne and Pierce (2004), adapted into Turkish by Demirkaya and Kandemir (2014). The five-point Likert scale includes six positive and one negative statement. General life satisfaction was measured with Diener, Emmons, Larsen, and Griffin's (1985, p. 7) scale, adapted by Köker (1991), using a 7-point Likert scale with five items. Psychological well-being was measured with an eight-item, seven-point Likert scale by Diener, Napa Scollon, and Lucas (2009a, 2009b), adapted by Telef (2013). Generations were classified using Kerse (2016): 1981–2000 as Generation Y, 1695–1980 as Generation X.

Data Analysis

Data were analysed using SPSS 22. Normality was checked via skewness and kurtosis; structural validity via exploratory factor analysis; reliability via Cronbach's Alpha. Hypotheses were tested using Hayes' PROCESS Macro (model 58), which provides mediator and moderator analyses with 95% confidence intervals via

Bootstrap, yielding more reliable results (Gürbüz, 2019). Mediators explain how and why the independent variable affects the dependent variable, while moderators influence the strength of the relationship (Gürbüz, 2019).

Reliability Analyses of the Scales

The measurement instruments used in this study are well-established scales with established validity. Therefore, no additional validity analysis was conducted. The reliability of the scales was assessed using Cronbach's Alpha coefficients (Gürbüz & Şahin, 2018). The Cronbach's Alpha coefficient was found to be 0.903 for the psychological ownership scale, 0.906 for the psychological well-being scale, and 0.902 for the general life satisfaction scale. These values indicate a high level of internal consistency and reliability (Kayış, 2010).

Results

Testing Hypotheses

Before testing the hypotheses, the correlations between the variables were examined and presented in Table 2.

Table 2. Correlation Analysis of Variables

Variables	1	2	3	4
Generation	1	-.057	-.050	-.060
General Life Satisfaction	-.057	1	.722**	.389**
Psychological Well-Being	-.050	.722**	1	.400**
Psychological Ownership	-.050	.722**	.400**	1

** . Correlation is significant at the 0.01 level (2-tailed).

The study hypotheses were tested using Model 58 of Hayes' PROCESS Macro for SPSS, which employs the bootstrap technique for mediator and moderator analyses (Gürbüz, 2019). The 95% confidence interval (CI) indicates whether a relationship is supported; if it does not include zero, the hypothesis is supported (Hayes & Preacher, 2014). To examine the moderating role of

generational differences (Generation X vs. Y) on the effect of general life satisfaction on psychological ownership via psychological well-being, regression results based on bootstrap analysis are presented. First, results for the model including psychological ownership, presence at work, and marital status are shown in Table 3.

Table 3. Regression Analysis Results Related to Psychological Well-Being

Dependent Variable: Psychological Well-Being	<i>b</i>	SE	<i>t</i>	<i>p</i>	LLCU	ULCI
General Life Satisfaction (X)	.939	.148	6,338	.000	.648	1,230
Generation (W)	.620	.388	1.598	.111	-.143	1.383
X.W.	-.144	.0810	-1.774	.077	-.303	.016

R= ,724 R²= ,525, n=386, p ,000

LLCI: Lower Limit Confidence Interval, ULCI: Upper Limit Confidence Interval

The model examining the effect of general life satisfaction on psychological well-being is statistically significant. Regression analysis showed that predictor variables explained 52% of the variance in psychological well-being ($R^2 = 0.525$). Table 2 shows that general life satisfaction significantly affects psychological well-being ($b = 0.939$; 95% CI [0.648, 1.230]; $t = 6.338$; $p < 0.001$), supporting H1. Generational differences had no significant effect on psychological well-being ($b = 0.620$; 95% CI [-0.143,

1.383]; $t = 1.598$; $p > 0.05$), and the interaction between general life satisfaction (X) and generation (W) was also insignificant ($b = -0.144$; 95% CI [-0.303, 0.016]; $t = -1.774$; $p > 0.05$), rejecting H4.

Results for the model, including psychological well-being, general life satisfaction, generation, and psychological ownership, are shown in Table 4.

Table 4. Regression Analysis Results Related to Psychological Ownership

Dependent Variable: Psychological Ownership	<i>b</i>	Se	<i>t</i>	<i>p</i>	LLCU	ULCI
General Life Satisfaction (X)	.106	.035	3.034	.003	.037	.175
Psychological Well-Being (M)	.171	.125	1.364	.173	-.075	.418
Generation (W)	.026	.327	.079	.937	-.618	.669
Int (M.W)	-.019	.064	-.299	.765	-.146	.107

R= ,4269, R²= ,1823, n=386, p ,000

The model examining the effect of psychological ownership on psychological well-being is significant. Regression results showed predictors explained 18% of the variance in psychological ownership ($R^2 = 0.182$). Table 3 shows that general life satisfaction positively affects psychological ownership ($b = 0.106$; 95% CI [0.037, 0.175]; $t = 3.034$; $p < 0.05$), supporting H3.

Psychological well-being did not have a significant overall effect on psychological ownership ($b = 0.171$; 95% CI [-0.075, 0.418]; $t = 1.364$; $p > 0.05$), rejecting H2. Generational differences alone also did not significantly affect psychological ownership ($b = 0.0259$; 95% CI [-0.618, 0.669]; $t = 0.079$; $p > 0.05$), and the interaction between psychological well-being (M) and generation (W) was not significant ($b = -0.019$; 95% CI [-0.146, 0.107]; $t = -0.299$; $p > 0.05$), rejecting H5.

However, when examining the conditional indirect effects, the mediating role of psychological well-being was significant for both Generation X ($b = 0.121$; 95% CI [0.019, 0.229]) and Generation Y ($b = 0.086$; 95% CI [0.038, 0.135]), with stronger effects in Generation X. Furthermore, the direct impact of general life satisfaction on psychological ownership remained significant ($b = 0.106$; 95% CI [0.037, 0.175]; $t = 3.034$; $p < 0.05$). These results support H6, indicating that the effect of general life satisfaction on psychological ownership via psychological well-being varies by generation, with the effect stronger for older participants.

Discussion

This study examined the effect of general life satisfaction on psychological ownership through psychological well-being and the moderating role of generations in this process. The data obtained within the scope of the research were analysed by means of Process Macro (SPSS).

According to the findings obtained as a result of the analysis; The effect of general life satisfaction on psychological well-being is statistically significant. As the general life satisfaction of individuals increases, their psychological well-being levels also increase. According to Lyubomirsky, King and Diener (2005), there is a strong relationship between individuals' happiness levels and general life satisfaction. Individuals' satisfaction with life is directly related to their psychological well-being (Diener, Scollon & Lucas, 2009). According to the results of Steel, Schmidt and Shultz (2008), the effect of psychological well-being on life satisfaction is more pronounced in individualistic cultures, while social support systems are more effective in patriarchal societies. Optimism is one of the personality traits associated with subjective well-being. Recent research also confirms that multidimensional well-being predicts job satisfaction and reduces distraction in organisational settings (Fung, Chan Lam, Wong & Leung, 2024).

The effect of psychological well-being on psychological ownership was found to be statistically insignificant. This situation shows that employees' psychological well-being does not directly increase their sense of psychological

ownership. Van Dyne and Pierce (2004) argued that employees' psychological well-being will increase their psychological ownership, similarly Avey, Luthans & Jensen (2009) argued that employees with high psychological well-being levels feel more belonging to their organizations and own their jobs. However, recent studies emphasise that psychological ownership develops more strongly in contexts where HR practices support autonomy and participation (Rashid, 2025).

The effect of general life satisfaction on psychological ownership is statistically significant. The psychological ownership levels of employees with high general life satisfaction increase. Pierce, Kostova & Dirks (2003) suggest that employees' general level of happiness and life satisfaction may increase their sense of ownership towards their organizations. Mayhew, Ashkanasy, Bramble & Gardner (2007), in their study on the antecedents and consequences of psychological ownership, suggested that the existence of high life satisfaction is not enough for employees to feel psychological ownership if they do not feel valued in the organisation. This is also consistent with newer findings showing that psychological ownership among younger and millennial employees is closely tied to supportive organisational climates (Nguyen, Vo & Chen, 2024).

Generational differences did not have a moderating effect on psychological well-being. In other words, there was no significant difference between Generations X and Y in terms of the effect of general life satisfaction on psychological well-being. Ryff & Keyes (1995), in their study on the sub-dimensions of psychological well-being, found that the personal growth dimension decreased with age, but the purpose in life and autonomy dimensions increased with age. Büyükyılmaz & Acar (2022) examined the psychological well-being levels of psychologists working in penal institutions and found that psychological well-being levels increased with increasing age. At the same time, recent studies warn that psychological ownership may have both positive and negative (ambivalent) outcomes, depending on organisational support (Kim & Chung, 2023; Yu, Lin & Doty, 2024).

The moderating effect of generation difference on psychological ownership was not found to be significant. There is also no significant difference between generations in the effect of psychological well-being on psychological ownership. Polat and Köse (2024) examined the psychological ownership levels of 386 health care workers and found that the psychological ownership levels of health care workers increased with increasing age. Beğenirbaş, Gökmen and Yalçın (2021) examined the effect of professional identification and psychological ownership levels of service sector employees on job shaping behaviours. According to the results of the study, as the age of service sector employees increases, their psychological ownership levels also increase.

The moderating role of age in the effect of general life satisfaction on psychological ownership through psychological well-being is significant. It was found that this effect was stronger in Generation X employees. This finding can be interpreted as that as the age increases; employees' general life satisfaction increases the sense of psychological ownership more through psychological well-being. Parvizi and Özabacı (2022) examined the relationship between psychological well-being and life satisfaction levels of university students. As a result of the

research, a moderate, positive and significant relationship was found between psychological well-being and life satisfaction. According to Demir and colleagues (2021), a positive and moderate relationship was found between life satisfaction and psychological well-being. Kalmaz and Tozkoparan (2020) examined the effect of psychological ownership on employees' extra role behaviours. Within the scope of the research, the effect of age on psychological ownership was examined, and no significant difference was found in psychological ownership levels with increasing age.

Conclusion

Research findings generally indicate that overall life satisfaction has positive effects on psychological well-being and psychological ownership. Increased life satisfaction among employees contributes to them feeling better psychologically and developing a stronger sense of belonging to their organizations (Lyubomirsky, King & Diener, 2005; Pierce, Kostova & Dirks, 2003). However, the weak direct effect of psychological well-being on identification indicates that this relationship is shaped by organizational context and support systems (Avey, Luthans & Jensen, 2009). The fact that the age variable moderates this process, particularly for Generation X, demonstrates that life experience and maturity are important factors that strengthen a sense of ownership.

Recommendations

Organizations should invest in programmes that enhance employees' overall life satisfaction. This is because employee well-being and life satisfaction are directly linked to work outcomes such as job satisfaction and reduced distractibility (Fung et al., 2024).

Strengthening the alignment between employees' individual goals and organizational goals should be supported by ongoing career discussions. Research shows that psychological ownership is related to organizational commitment and that, especially for millennial employees, this relationship occurs through job satisfaction (Nguyen et al., 2024).

Mechanisms that support psychological well-being should be established (e.g., flexible working, social support, leadership support). This is because when employees' well-being increases, organizational performance also improves, laying the groundwork for a sense of ownership (De Neve, Kaats & Ward 2024).

Generation-specific (particularly for Generation X) practices that enhance ownership and motivation should be developed. Research has shown that ownership effects increase with age and experience; accordingly, it is recommended that experienced employees be included in decision-making processes. At the same time, it should be noted that psychological ownership can sometimes turn into 'uncontrolled ownership' rather than remain solely positive (Yu et al., 2024).

Human resources practices should be reviewed, with a focus on establishing structures that foster strong psychological ownership. For example, elements such as increased participation, task autonomy, and feedback systems can strengthen psychological ownership (Rashid, 2025).

Declarations

Ethics Committee Approval

The research was conducted in accordance with ethical principles and obtained ethical committee approval from the relevant institution (Selçuk University, Beyşehir Ali Akkanat Faculty of Business Administration, Scientific Ethics Evaluation Committee; approval dated August 12, 2024, No. 2024/10). Upon receipt of ethics committee approval, the data collection process was initiated, and all participants voluntarily provided their responses after being informed of the research's purpose and their rights.

Conflict of Interest

The author declares that there is no conflict of interest in this article.

Author's Contributions

Assoc. Prof. Dr. Pınar Erdoğan: She led the development of the research model and methodology, formulated the main hypotheses, and conceptualized the study. She was also responsible for performing statistical analyses of the collected data, interpreting the findings, and finalizing the article (including critical revision). She wrote the introduction and literature review.

Assoc. Prof. Dr. İlknur Çevik Tekin: She managed the process of obtaining the necessary ethical approval for the study and led the collection of research data (survey applications).

She wrote the hypothesis development section by revealing the theoretical connections between the research variables. She wrote about the discussion, conclusion, and recommendations.

All authors reviewed and approved the final version of the article.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

COVID-19 Anxiety and Death Anxiety: The Predicting Role of Death Anxiety

COVID-19 Kaygısı ve Ölüm Kaygısı: Ölüm Kaygısının Yordayıcı Rolü

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Abstract:

The primary aim of this study is to examine the relationship between COVID-19 anxiety and death anxiety among adults in the post-pandemic period. Additionally, the study aims to adapt the COVID-19 Anxiety Scale into Turkish and evaluate its psychometric properties. This research was conducted within the framework of the relational screening model. The COVID-19 Anxiety Scale was adapted into Turkish, and validity and reliability analyses were performed. Data were collected using the COVID-19 Anxiety Scale and the Death Anxiety Scale. The participants consisted of 307 adults from Turkey. The relationship between COVID-19 anxiety and death anxiety was examined using correlation and stepwise regression analyses. Factor analyses were conducted for the scale adaptation process. According to the findings, there were positive relationships between the subdimensions of death anxiety—namely Fear of the Unknown About Death, Thought and Witnessing of Death, and Fear of Pain—and COVID-19 anxiety. Furthermore, the results indicated that the COVID-19 Anxiety Scale is a valid and reliable instrument for use in the Turkish cultural context. In this regard, it can be concluded that death anxiety plays a significant role in understanding anxiety levels among adults during and after pandemic periods. This study strengthens the theoretical understanding of the relationship between death anxiety and pandemic-related anxiety and demonstrates that the subdimensions fear of the unknown, thought and witnessing of death, and fear of pain significantly predict COVID-19 anxiety in adults. The findings show the psychological effects of death-related fears during the pandemic and their potential long-term impacts on mental health. In addition, the results emphasize that managing death anxiety is important for mental health professionals and policymakers in reducing COVID-19-related psychological distress.

Keywords: COVID-19, Anxiety, Death, Death Anxiety.

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Öz:

Bu çalışmanın temel amacı, pandemi sonrasında yetişkinlerde COVID-19 kaygısı ile ölüm kaygısı arasındaki ilişkiyi incelemektir. Ayrıca çalışmada COVID-19 Anksiyetesi Ölçeği'nin Türkçeye uyarlanması ve psikometrik özelliklerinin değerlendirilmesi de amaçlanmıştır. Bu araştırma, ilişkisel tarama modeli kapsamında gerçekleştirilmiştir ve COVID-19 Anksiyetesi Ölçeği, Türkçeye uyarlanarak geçerlik ve güvenilirlik analizleri yapılmıştır. Veri toplama aracı olarak COVID-19 Anksiyetesi Ölçeği ile Ölüm Anksiyetesi Ölçeği kullanılmıştır. Katılımcılar, Türkiye'den 307 yetişkinden oluşmaktadır. COVID-19 Anksiyetesi ile Ölüm Anksiyetesi arasındaki ilişkiler korelasyon analizi ve aşamalı regresyon analizi kullanılarak incelenmiştir. Ölçek uyarlama çalışmasında faktör analizleri yapılmıştır. Araştırmanın sonuçlarına göre yetişkinlerde Ölüm Anksiyetesi Ölçeğinin Ölümün Belirsizliği, Ölümü Düşünme ve Tanıklık Etme ve Acı Çekme Korkusu alt boyutları ile COVID-19 Anksiyetesi arasında pozitif ilişkiler olduğu bulunmuştur. Bununla birlikte COVID-19 Anksiyetesi Ölçeğinin Türk kültüründe uygulanabilir, geçerli ve güvenilir bir ölçek olduğu belirlenmiştir. Bu bağlamda salgın dönemlerinde ve sonrasında yetişkinlerin kaygı düzeylerinin anlaşılmasında ölüm anksiyetesinin önemli bir rol oynadığı söylenebilir. Bu çalışma, ölüm kaygısı ile pandemiyle ilişkili kaygı arasındaki kuramsal ilişkiyi güçlendirmekte ve ölümün belirsizliği, ölümü düşünme ve ölüme tanıklık ile acı çekme korkusu alt boyutlarının yetişkinlerde COVID-19 kaygısını anlamlı biçimde yordadığını ortaya koymaktadır. Bulgular, pandemi döneminde ölümle ilişkili korkuların psikolojik etkilerini ve bunların uzun vadeli ruh sağlığı üzerindeki olası sonuçlarını göstermektedir. Ayrıca, sonuçlar, COVID-19 kaynaklı psikolojik sıkıntının azaltılmasında ölüm kaygısının yönetilmesinin ruh sağlığı uzmanları ve politika yapıcılar açısından önemli olduğunu vurgulamaktadır.

Anahtar Kelimeler: COVID-19, Kaygı, Ölüm, Ölüm Kaygısı.

Introduction

The COVID-19 pandemic has deeply affected individuals' mental health, increasing concerns such as death anxiety, loneliness, and uncertainty in society (Bostan, Hrițuleac, & Măgurianu, 2023). Although death anxiety is one of the psychological processes underlying pandemic-related anxiety, it has not been sufficiently explored, particularly in countries with diverse sociocultural contexts (Karadağ, Ergin, & Erden, 2023). This study aims to address this gap by examining how the subdimensions of death anxiety—such as fear of the unknown, fear of pain, and fear of death—predict COVID-19 anxiety. In doing so, it contributes to understanding the psychological factors behind pandemic-related anxiety while also clarifying how fear of death affects general anxiety levels (Yang et al., 2023). In this context, explaining the theoretical foundation of the study is as important as emphasizing the effects of the pandemic. Existential theories suggest that individuals experience a fundamental level of anxiety upon realizing the inevitability of death (Yalom, 1980). This awareness intensifies during times of heightened threat and uncertainty, such as pandemics. COVID-19 has become a major global stressor that forces individuals to confront death, triggering basic existential fears and shaping psychological responses and coping strategies (Pyszczynski et al., 2020). Therefore, addressing death anxiety within the context of the pandemic provides a critical theoretical basis for understanding COVID-19-specific anxiety.

According to Lu et al. (2020), the first COVID-19 cases emerged in late 2019, linked to a seafood market in Wuhan, China, and the virus rapidly spread worldwide (Hui et al., 2020). Despite high transmission, early mortality was relatively low. In 2020, the WHO declared a pandemic due to its swift global spread (WHO, 2020). Countries like Turkey implemented strict measures, including travel bans, remote education, and stay-at-home orders for vulnerable groups (Torales et al., 2020; Ministry of Health, 2020). By April 2021, there were 165 million cases and 2.9 million deaths globally (WHO, 2020). Prolonged quarantines led to psychological issues including loneliness, hopelessness, PTSD, anxiety, and

depression (Guan et al., 2020). The sudden disruption of daily routines and the invisible nature of the virus triggered intense fear and anxiety (Duan & Zhu, 2020). Precautionary measures increased both fear and perceived threat (Yıldırım, Geçer, & Akgül, 2021). Isolation efforts contributed to feelings of hopelessness and loneliness (Duan & Zhu, 2020), while infected individuals faced fear of death, helplessness, and stigma (WHO, 2020). Increased media exposure during the pandemic, especially to death-related news, further intensified infection-related and death anxiety. Death anxiety is defined as intense, conscious or unconscious fear and discomfort when contemplating one's own death or that of loved ones (Letzner, 2023).

Studies following previous outbreaks such as SARS (Severe Acute Respiratory Syndrome), MERS (Middle East Respiratory Syndrome), and COVID-19 have revealed various psychological responses, including phobias, anxiety disorders, suicide attempts, and hopelessness (Kozloff et al., 2020; Tang et al., 2020; Temel, Ok & Boyacıoğlu, 2023). Duman (2020) emphasized that fear of COVID-19 is strongly linked to low tolerance for uncertainty. Factors such as social distancing, quarantine, economic challenges, and limitations in the healthcare system further intensified anxiety (Arden & Chilcot, 2020; Banerjee & Rai, 2020). Kaplan's (2021) study examined loneliness and burnout in women during home quarantine, finding that variables such as spousal and child relationships, education, marriage duration, number of children, and domestic responsibilities significantly impacted burnout and loneliness. Although housework increased with all family members at home, the burden mainly remained on housewives, leading to heightened exhaustion and isolation. Several studies have adapted the COVID-19 Anxiety Scale (CAS) into Turkish (Akkuzu et al., 2020; Biçer et al., 2020; Şayık et al., 2021), and explored the relationship between COVID-19 anxiety (CA) and death anxiety (DA) (Arslan, 2021; Gündoğan & Arpacı, 2022;

Yiğitalp & Gümüş, 2022). While this relationship has been examined during the acute phase of the pandemic, the current study focuses on the post-pandemic context, addressing a critical gap. Exploring persistent psychological effects and changing anxiety patterns is vital for guiding mental health interventions as societies transition to recovery. The findings offer insights into how death fear influences COVID-19 anxiety in adults after the pandemic's peak, supporting the development of resilience strategies for future health crises and informing clinical and public health policy (Taylor, 2022). Pandemic-related uncertainty, invisible threats, high transmission risk, and lack of treatment options have all contributed to elevated CA and DA (Duan & Zhu, 2020). Understanding whether these patterns persist or change provides valuable knowledge about coping and long-term psychological effects. Thus, this study aims to both adapt the CAS to Turkish culture and examine the relationship between CA and DA.

Method

Research Design

This research employed a correlational survey design, which is a quantitative methodology. The correlational survey approach focuses on examining the relationships among two or more variables (Karasar, 2022). Since the study also involved the evaluation of the CAS, psychometric tests commonly used in validation studies were applied (Çokluk, Şekercioğlu, & Büyüköztürk, 2018).

Study Population & Procedure

The study sample consisted of 307 participants aged between 18 and 60, recruited in 2023 via an online survey platform. Purposive sampling was employed in this study

to ensure that participants who met specific criteria aligned with the research objectives were included. Studies that seek to examine the connections between psychological dimensions like death fear and COVID-19 anxiety within a particular group of adults are best suited for this non-probability sampling technique. Additionally, when random sampling is not feasible or access to specific subgroups is restricted, purposive sampling allows researchers to specifically select participants who are more likely to provide rich, pertinent, and informative data (Palinkas et al., 2015). Purposive sampling was found to be the most effective method for gathering significant data from a diverse adult sample, considering limitations such as time, budget, and the ongoing pandemic. A purposive sampling strategy was employed, and participants were reached through mailing lists and social media platforms, targeting various regions of Turkey, including the Marmara, Central Anatolia, Aegean, and Southeastern Anatolia regions. Inclusion criteria required participants to (a) be between 18 and 60 years old, (b) reside in Turkey, and (c) voluntarily consent to participate in the study. Participants who provided inconsistent or incomplete responses ($n = 21$) were excluded from the final dataset. The final sample consisted of 307 individuals (38% male [$n = 118$], 62% female [$n = 189$]) with a mean age of 33.8 years ($SD = 9.2$). A summary of participants' demographic characteristics is presented in Table 1. The data collection process included clear information about the study's purpose, confidentiality, and the voluntary nature of participation. Ethical approval was obtained from the Ethics Committee of Necmettin Erbakan University (Approval No: 2023/433), and all procedures adhered to the principles outlined in the Declaration of Helsinki. The data for this study were collected in 2023.

Table 1. *The Demographic Information*

	f	%	
Gender	Female	189	72
	Male	118	38
Missing data	21		
Final Sample Size (Analyzed)	307		
Mean Age (SD)	33.8 (9.2)		
Geographic Regions Represented			
Marmara Region			
Anatolia Region			
Aegean Region			
Southeastern Anatolia Region			

Data Collection Instruments

Data were collected using the COVID-19 Anxiety Scale (CAS) and the Death Anxiety Scale (DAS).

CAS

Silva et al. (2021) created the CAS to assess anxiety specifically associated with COVID-19. The scale consists of 7 items and is unidimensional. Items are rated on a four-point Likert scale (0 = not at all, 3 = very much).

Exploratory factor analysis (EFA) revealed a one-factor structure (eigenvalue = 3.14), explaining 62.94% of the total variance, with factor loadings ranging from .57 to .80. The scale demonstrated high internal consistency ($\alpha = .85$). Exploratory Factor Analysis (EFA) was used to assess the correlation matrix and sample adequacy. The sample was deemed appropriate for factor analysis based on the findings of the Bartlett's Test of Sphericity [$\chi^2(21) = 1382.14, p < .001$] and the Kaiser-Meyer-Olkin test (KMO

=.89). With an eigenvalue of 4.34, the results showed a unidimensional structure that accounted for 62.02% of the variance. The range of factor loadings was .53 to .88. The scale's Cronbach's alpha .89, indicating a good level of internal consistency. The fit indices for the configural model indicated an acceptable fit: $\chi^2(28) = 37.84$, $\chi^2/df = 1.35$, CFI = .982, and RMSEA = .059 (90% CI = .000–.104). Separate analyses for men and women also demonstrated acceptable fit values. For men, the results were $\chi^2(14) = 20.74$, $\chi^2/df = 1.48$, CFI = .979, and RMSEA = .070 (90% CI = .000–.130); for women, $\chi^2(14) = 17.10$, $\chi^2/df = 1.22$, CFI = .986, and RMSEA = .047 (90% CI = .000–.112). In the metric invariance model, the fit indices were $\chi^2(34) = 47.84$, $\chi^2/df = 1.40$, CFI = .974, and RMSEA = .064 (90% CI = .000–.103), with a change of $\Delta CFI = .008$ and $\Delta RMSEA = .005$ compared to the configural model. In the scalar model, $\chi^2(40) = 52.62$, $\chi^2/df = 1.31$, CFI = .977, and RMSEA = .056 (90% CI = .000–.094), with a $\Delta CFI = .003$ and $\Delta RMSEA = .008$ compared to the metric model. These results indicate that the changes in CFI and RMSEA remained within acceptable thresholds ($\Delta CFI < .01$; $\Delta RMSEA < .015$), supporting configural, metric, and scalar invariance of the scale across gender groups.

The “Anxiety Associated with COVID-19” scale used in this study is not limited to measuring anxiety during the acute phase of the pandemic; it is also suitable for assessing COVID-19-related anxiety in the post-pandemic period. The developers of the scale emphasized the need for valid and reliable instruments to evaluate the lasting psychological effects of the pandemic. They noted that this scale could be adapted for similar future situations. The scale includes items such as “I feel bad when I think about COVID-19” and “My heart races when I read something about COVID-19,” which reflect emotional and physiological responses that may continue even after the crisis has ended. In this context, the scale's suitability for measuring anxiety experienced in the post-pandemic period was one of the reasons it was chosen for our study (Silva, Brito, & Pereira, 2022).

DAS: The psychometric characteristics of the DAS were evaluated using item-total correlations, exploratory and confirmatory factor analyses (CFA), comparisons between the top and bottom 27% groups, criterion validity, internal

consistency, and test-retest reliability. EFA indicated that the 20-item scale had a three-factor structure explaining 67.27% of the total variance. These factors were labeled “Uncertainty of Death,” “Thinking About and Witnessing Death,” and “Pain.” This three-factor structure was confirmed through CFA. The difference between the means of the top and bottom 27% groups was found to be statistically significant through a t-test. The Cronbach's alpha coefficient was .95, and the two-week test-retest reliability was found to be .82 (Sarıkaya, 2013).

Statistical Analysis

The data were processed and examined utilizing SPSS version 25 and LISREL version 8.8 software. For the validation of the CAS, both EFA and CFA were performed. Cronbach's alpha and item-total correlations were calculated to assess reliability. Furthermore, Pearson correlation and multiple regression analyses were performed to investigate the associations among the variables (Tabachnick & Fidell, 2013).

Findings

To identify the factor structure of the CAS, an EFA was performed using principal component analysis with Varimax rotation on the scale's seven items. The Kaiser-Meyer-Olkin (KMO) index for sampling adequacy was .89, and Bartlett's test of sphericity yielded a statistically significant result ($p < .001$), confirming that the data were appropriate for factor analysis. The extracted single factor accounted for 67.00% of the total variance. Factor loadings for the items ranged between .62 and .80, indicating that each item contributed substantially to the underlying factor.

The model obtained from the EFA was tested on a second subsample of participants using CFA performed in LISREL software with the maximum likelihood estimation method. The hypothesized one-dimensional measurement model demonstrated an acceptable level of fit. The fit indices were as follows: NNFI = .95, CFI = .97, IFI = .97, SRMR = .04, RMSEA = .15. According to the criteria established by Hu and Bentler (1999), these values indicate an acceptable level of model-data fit.

Figure 1. One-Factor CFA Model of the CAS

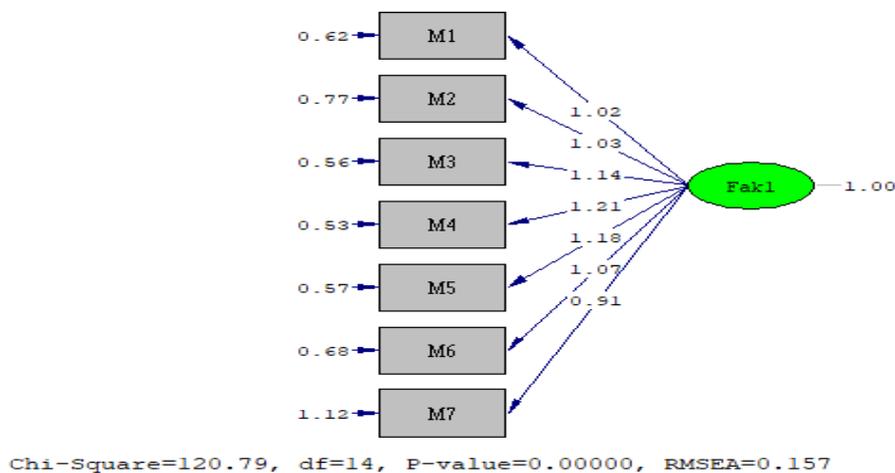


Figure 1 displays the one-factor CFA model structure for the CAS. The fit indices indicate an overall acceptable level of model fit, and all items load significantly onto their corresponding factor.

Pearson correlation and multiple regression analyses were conducted in this study to examine the relationship between COVID-19 anxiety (CA) and death anxiety (DA) among adults. The results of these analyses are presented in Tables 2 and 3.

Table 2. Statistical Descriptions and Correlation Coefficients

Variables	CA	DA	AD	TWD	P
CA	—				
DA	.517**	—			
AD	.482**	.972**	—		
TWD	.505**	.962**	.886**	—	
p	.512**	.892**	.804**	.855**	—

Correlation is significant at the 0.01 level (2-tailed). Subfactor of Death Anxiety; AD= Ambiguity of Death; TWD=Thinking and Witnessing Death; P=Pain

According to the correlation analysis presented in Table 2, CA (r = .51) was found to be positively correlated with DA. This finding indicates that individuals with higher

levels of anxiety related to COVID-19 also tend to experience higher levels of death-related anxiety. The two variables show a tendency to increase together.

Table 3. Hierarchical Regression Analysis of Factors Associated with CA

Variables	B	SE _B	β	t	p	R	R ²	F	p
Step 1									
Ambiguity of Death	.066	.067	.103	7.37	.00	.262	.26	109.9	.00
Step 2									
Ambiguity of Death	.600	.187	.301	3.21	.00	.279	.27	59.0	.00
Thinking and Witnessing Death	.229	.087	.248	2.64	.00				
Step 3									
Ambiguity of Death	.066	.067	.103	.97	.332	.530	.28	40.0	.00
Thinking and Witnessing Death	.159	.113	.171	1.403	.162				
Pain	.565	.190	.283	2.969	.003				

*p<.01

Table 3 presents the outcomes of the hierarchical multiple regression analysis, which assesses the predictive influence of the independent variables on CA. The variable "Fear of the Uncertainty of Death," a subdimension of the DAS, entered the regression equation first and accounted for 26% of the variance in CA. The variable "Thinking About and Witnessing Death" was entered at the second step, explaining an additional 1% of the variance. The "Pain" variable was included in the third step, accounting for another 1% of variance. Together, the final regression model—including "Fear of the Uncertainty of Death," "Thinking About and Witnessing Death," and "Pain"—explained 28% of the total variance in CA. The standardized beta coefficients indicated that all three variables had a statistically significant effect on CA, with "Fear of the Uncertainty of Death" emerging as the strongest predictor.

Discussion

This study gathered evidence on the validity and reliability of the CAS within the Turkish cultural context during the post-pandemic period. It examined the relationship between COVID-19 anxiety (CA) and death anxiety (DA) among adults. The findings confirmed that the CAS is a valid and reliable tool for use with Turkish adults after the pandemic. A significant positive relationship was identified between CA and DA, with the subdimensions of DA significantly predicting CA. Among these, "fear of the uncertainty of death" was the strongest predictor. However, due to the study's cross-sectional design, causal conclusions cannot be drawn (Wang & Cheng, 2020). While most earlier research focused on pandemic-phase stress and anxiety (Mertens et al., 2020; Min et al., 2021), growing evidence shows that pandemic-related worry may

persist as a long-term psychological burden. Continued social isolation, economic instability, and health concerns may contribute to worsening psychological distress in the post-pandemic era (Bourmistrova et al., 2021; Le Vigouroux et al., 2025). Therefore, exploring CA and DA in this period is essential for understanding long-term impacts and developing effective interventions. Bostan, Hrițuleac, and Măgurianu (2023) found a positive correlation between death fear and COVID-19 anxiety, while showing that coping strategies like cognitive reappraisal and religious relational identification were ineffective in reducing anxiety. Similarly, Karadağ, Ergin, and Erden (2023) reported a positive correlation between DA, anxiety, and depression in hospitalized COVID-19 patients, highlighting the need for further evidence-based and non-pharmacological research. Yang et al. (2023) investigated mortality anxiety in elderly Chinese individuals. They found that high DA was associated with greater neuroticism and use of disengagement coping, while quarantine experience had no significant effect. Their regression model showed that the impact of COVID-19, neuroticism, and openness explained 44.6% of the variance in death fear. These findings support the results of the current study.

Fear, anxiety, and stress are emotional responses to perceived danger that enhance survival, and given that illness and death were central concerns during the pandemic, such reactions were expected (Sanderson et al., 2020). COVID-19 caused widespread infection and loss of life, heightening individuals' fear of illness and death. The strong link between COVID-19 anxiety (CA) and death anxiety (DA) suggests that the psychological impact of these emotions continues beyond the pandemic. Thus, fear and anxiety are likely to exert lasting psychological effects even in the post-pandemic period.

National and international studies support the present findings, generally showing that COVID-19 anxiety (CA) is linked to various psychological effects. Choi, Lee, and Lee (2020) found that the COVID-19 obsession scale had strong psychometric properties and that CA correlated with COVID-19 obsession. Lee (2020) reported associations between CA, substance use, hopelessness, and suicidal ideation. Spitzenstätter and Schnell (2020) identified death anxiety (DA) as a significant predictor of CA, noting that increased risk of infection heightens fear and panic, potentially leading to emotional collapse.

Mental health studies during the COVID-19 pandemic have commonly identified anxiety, depression, and increased stress as key psychological responses (Rajkumar, 2020). In an international study with 737 participants, death anxiety (DA) positively predicted COVID-19 anxiety (CA) and related negative emotions (Curșeu et al., 2023). Wang et al. (2021) also found a positive correlation between anxiety and depression, with women reporting higher anxiety levels than men. Similarly, Tsang, Avery, and Duncan (2021) revealed that COVID-19 fear partially mediated the link between virus exposure and depression. As with other disasters, the pandemic triggered widespread panic and psychological distress globally.

In a study among young adults in Turkey, Arslan (2021) found that COVID-19-related stress was significantly influenced by perceived risk and preoccupation with death. Yıldırım et al. (2021) noted that fear, perceived risk, and psychological factors can spread similarly to infectious

diseases, affecting both individual and societal well-being. As fear of infection increased, death anxiety and COVID-19 anxiety (CA) negatively impacted psychological well-being, with rising fear linked to decreased well-being (Silva, Brito & Pereirave, 2021). Singh et al. (2020), analyzing 10,403 tweets, found that negative thoughts and COVID-19-related fear were widespread. Globally, psychological distress has risen during the pandemic. Factors like neuroticism, coronaphobia, and hypochondriasis have been identified as predictors of pandemic-related psychopathology in adults (Lee, 2020). While fear is adaptive, its persistence under uncertain, ongoing threats—as seen in the pandemic—can lead to chronic anxiety. Mertens et al. (2020) found that COVID-19 fear varied by individual differences and was associated with widespread coronavirus-related concerns. Gruchola and Sławek-Czochra (2020) observed that fear about the consequences of the pandemic has, in some cases, exceeded the actual adverse experiences. These findings suggest that pandemic-related fear and anxiety have become chronic burdens, driven not only by the viral threat but also by its ongoing uncertainty.

This study contributes to the theoretical understanding of the link between death anxiety and pandemic-related anxiety by empirically showing that three subdimensions of death anxiety—fear of the unknown, thought and witnessing of death, and fear of pain—predict COVID-19 anxiety in adults. It provides insight into the psychological effects of death fear during the pandemic and highlights its long-term mental health impacts. The findings have practical implications for mental health professionals and policymakers, underlining the importance of managing death anxiety to reduce COVID-19-related distress. The study supports the need for psychological support services that help individuals cope with death-related fears, and for public health policies promoting emotional regulation and resilience during and after pandemics. However, the study has limitations, including the lack of control for demographic and health variables (e.g., age, gender, chronic illness), its cross-sectional design, and a sample limited to Turkish adults, which restricts generalizability. Future research should use longitudinal designs, include control variables, and examine diverse populations better to understand the dynamics of death and COVID-19 anxiety. As the psychological effects of death fear and COVID-19 anxiety persist post-pandemic, supporting individuals in developing resilience and managing negative emotions remains essential. Further studies are needed to identify effective interventions within public health frameworks to address these psychological challenges.

Declarations

Ethics Approval and Consent to Participate

The necessary ethics committee permission to start this study was obtained from the Social Sciences Ethics Committee of Necmettin Erbakan University with the number 2023/433-10 dated 13.10.2023. During the study process, the ethical principles outlined in the Declaration of Helsinki were adhered to, and informed consent was obtained from all participants.

Consent for Publication

Not applicable.

Availability of Data and Materials

Data sets used and / or analysed for the current study with the online database can be obtained from the relevant author upon reasonable request.

Competing Interests

The author declares that no competing interests exist in this manuscript.

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Not applicable.

Authors' Contributions

All five authors contributed equally to this work. Each author participated in all phases of the research process, including study design, data collection, data analysis, and manuscript preparation. All authors reviewed and approved the final version of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

Investigation of the Effects of Problematic Technology Use on Psychosocial Conditions and Executive Functions in Early Childhood

Problemlı Teknoloji Kullanımının Erken Çocuklukta Psikososyal Durum ve Yürütücü İşlevler Üzerindeki Etkilerinin İncelenmesi

Alperen Avcı¹, İsa Kaya²

Abstract:

This study investigated the effects of problematic technology use on psychosocial status and executive functions in early childhood. Using a relational survey model, the sample comprised 225 preschool children aged 36–71 months. Data were collected through three validated instruments: the Problematic Technology Use Scale, the Psychosocial Status Assessment Scale for 3–6-Year-Old Children, and the Executive Functions Behavioural Assessment Inventory. Statistical analyses included Pearson correlation and hierarchical multiple regression. Results indicated that higher levels of problematic technology use were significantly associated with psychosocial difficulties and lower executive functioning. Specifically, problematic use positively predicted psychosocial risks and negatively predicted working memory and inhibitory control. Regression analyses demonstrated that problematic use explained 39% of the variance in psychosocial outcomes and 34% in executive functions; when age and gender were added, explained variance rose to 48% and 42%, respectively. These findings underline that digital use in early childhood should not be regarded solely as a behavioural habit, but rather as a substantial environmental factor shaping cognitive and emotional development. The strong association between the developmental impact dimension and executive dysfunction emphasises that not only the amount of screen exposure but also the quality, purpose, and context of digital content play a decisive role. These results are consistent with theoretical models such as I-PACE, which conceptualise a cyclical interaction between inhibitory control and digital overuse. The study highlights the necessity of parental mediation and comprehensive digital literacy programmes to promote healthy developmental pathways in early childhood.

Keywords: Early Childhood, Problematic Technology, Psychosocial Status, Executive Function.

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Öz:

Bu çalışma, erken çocukluk döneminde problemlili teknoloji kullanımının psikososyal durum ve yürütücü işlevler üzerindeki etkilerini incelemiştir. İlişkisel tarama modelinin kullanıldığı araştırmaya, yaşları 36 ile 71 ay arasında değişen 225 okul öncesi çocuk katılmıştır. Veriler, Problemlili Teknoloji Kullanım Ölçeği, 3–6 Yaş Arası Çocuklar İçin Psikososyal Durum Değerlendirme Ölçeği ve Yürütücü İşlevler Davranış Değerlendirme Envanteri aracılığıyla toplanmıştır. İstatistiksel analizlerde Pearson korelasyonu ve hiyerarşik çoklu regresyon yöntemleri kullanılmıştır. Bulgular, yüksek düzeyde problemlili teknoloji kullanımının çocukların psikososyal güçlükleriyle anlamlı biçimde ilişkili olduğunu ve yürütücü işlev becerilerini olumsuz yordadığını göstermiştir. Özellikle, problemlili kullanım psikososyal riskleri artırıcı; çalışma belleği ve önleyici kontrolü ise negatif yönde yordayıcı bulunmuştur. Regresyon analizleri, problemlili kullanımın psikososyal durumdaki varyansın %39'unu, yürütücü işlevlerde ise %34'ünü açıkladığını; yaş ve cinsiyetin eklenmesiyle bu oranların sırasıyla %48 ve %42'ye yükseldiğini göstermiştir. Bu bulgular, erken çocuklukta dijital kullanımın yalnızca bir alışkanlık değil, çocukların bilişsel ve duygusal gelişimini doğrudan etkileyen çevresel bir faktör olduğunu vurgulamaktadır. Özellikle "gelişim üzerindeki etki" boyutunun yürütücü işlev bozukluklarıyla güçlü ilişkisi, ekran süresinin yanı sıra dijital içeriğin niteliği, amacı ve bağlamının da kritik olduğunu ortaya koymaktadır. Sonuçlar, önleyici kontrol ile dijital aşırı kullanım arasında döngüsel bir ilişki öngören I-PACE gibi kuramsal modellerle de uyumludur. Çalışma, ebeveyn aracılığının ve dijital okuryazarlık programlarının erken çocuklukta sağlıklı gelişimi desteklemeye gerekliliğini vurgulamaktadır.

Anahtar Kelimeler: Erken Çocukluk, Problemlili Teknoloji Kullanımı, Psikososyal Durum, Yürütücü İşlev.

Introduction

In recent decades, digital technologies have become integral to children's daily lives, with exposure to screens increasingly beginning at younger ages. Research indicates that children encounter television by age one, mobile phones by age two, and tablets or computers by age three (Aral & Doğan Keskin, 2018; Taş & Sevinç, 2019). As Rideout (2017) notes, screen exposure among children aged 0 to 3 has shown a consistent upward trend. Despite international guidelines such as those from the WHO (2019), AAP (2016), and Turkish Green Crescent (2022), which limit recommended screen time, many children far exceed these limits (Rideout et al., 2022). This overexposure has sparked concern regarding its developmental consequences, including cognitive, emotional, and behavioural effects (Mallawaarachchi et al., 2022). The growing body of literature highlights the multifaceted nature of problematic technology use (PTU) in early childhood. Numerous studies have shown that excessive or unregulated use of digital devices is associated with negative psychosocial outcomes such as emotional dysregulation, social withdrawal, and increased behavioural problems (Trumello et al., 2018; Domoff et al., 2020; Farchakh et al., 2020). Given that early and excessive exposure to digital devices can impair emotional regulation, fostering emotional regulation skills during early childhood constitutes a critical protective factor against the development of problematic technology use later in life (Elkin & Kılınçel, 2024). Psychosocial status is a multidimensional construct that encompasses how an individual interacts with his/her social environment, emotional reactions, and behavioural adaptation. Especially in childhood, psychosocial development includes skills such as recognizing and regulating emotions, establishing peer relationships, developing empathy, adapting to social rules, and displaying appropriate behaviour (Domitrovich et al., 2007).

In parallel, research into executive functions (EF) suggests that early digital engagement may disrupt the development of cognitive processes essential for attention, inhibition, and working memory (Bağcı & Çetin, 2024; McNeill et al., 2019; Nathanson et al., 2014; Sapsağlam & Birak, 2023). Executive functions include higher-level cognitive

processes such as planning goal-directed behaviours, maintaining attention, controlling impulses, using working memory, and demonstrating cognitive flexibility (Diamond, 2013).

These skills develop rapidly, especially in early childhood, and form the basis of the individual's self-regulatory capacity. While some findings report no consistent effects (Jusiené et al., 2020), the weight of evidence suggests a detrimental influence of PTU on EF.

However, recent studies have begun to unpack the complex directionality and mediating mechanisms within these relationships. Zhao et al. (2024) demonstrated that digital nativeness impacts EF indirectly through problematic internet use (PIU), while Real-Fernández et al. (2025) and Mullin et al. (2020) reported that PIU correlates significantly with EF impairments, anxiety, and cyberbullying. Similarly, Zhang et al. (2023) emphasised that social media addiction undermines EF via poor emotional regulation and disrupted sleep. Supporting these findings, Huang et al. (2025) revealed longitudinal evidence that excessive digital use predicts EF decline over time. These empirical results align with the I-PACE (Interaction of Person-Affect-Cognition-Execution) model (Brand et al., 2019), which conceptualizes a bidirectional, cyclical relationship between cognitive control and digital addiction. Furthermore, studies by Daly (2022), Reed (2023), and León Méndez et al. (2024) support this model, reporting negative correlations between EF and excessive digital use. Although interest in this topic has increased, existing studies tend to revolve around keywords such as "problematic social media use" and "social media and academic performance," and significant gaps in the literature still remain (Ergün, 2025). Notably, the literature often treats cognitive and psychosocial outcomes of PTU in isolation, rarely integrating them within a unified framework (Abi-Jaoude et al. 2020; Henzel et al. 2021). Moreover, the direction of causality remains underexplored.

To address these gaps, the present study aims to examine the effects of problematic technology use in early childhood on both executive functions and psychosocial

well-being, treating these domains as interdependent rather than separate. This research is significant for its attempt to clarify the directionality of these relationships and to define key constructs explicitly. The specific objectives are: (1) to assess the levels of children's problematic technology use, executive functions, and psychosocial well-being; (2) to examine the relationships among these variables; and (3) to determine whether and to what extent problematic technology use predicts executive functions and psychosocial outcomes in children.

By advancing our understanding of how problematic digital engagement intersects with early cognitive and emotional development, this study contributes valuable insights for educators, policymakers, and caregivers aiming to foster healthier digital habits and developmental trajectories in children.

Method

The focus of the research is to determine the effects of problematic technology use on children's psychosocial conditions and executive functions. This study employed a relational research design to examine the associations between key variables. The nature and direction of the relationships were analysed to better understand how these variables interact. (Büyüköztürk et al., 2018).

Sample

The study sample consisted of 225 children aged 36-71 months ($M = 53.47$; $SD = 9.01$) attending preschools affiliated with the Ministry of National Education in Eastern Anatolia during the 2023–2024 academic year. Participants were selected through convenience sampling. Of the children, 48.4% ($n = 109$) were girls and 51.6% ($n = 116$) were boys. Regarding age distribution, 26.7% ($n = 60$) were in the 3-year-old group (36–47 months), 47.6% ($n = 107$) were in the 4-year-old group (48–59 months), and 25.8% ($n = 58$) were in the 5-year-old group (60–71 months).

Data Collection Tools

Problematic Use of Technology in Children: The scale developed by Konca, Baltacı, and Akbulut (2022) was used to assess the level of problematic technology use among preschool children. The scale consists of 26 items rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with no reverse-coded items. It includes four subdimensions: duration of use, resistance to control, impact on development, and withdrawal-escape. The total score ranges from 26 to 130, with higher scores indicating greater problematic use. Although no official cut-off score was specified by the developers, in this study, scores were classified as low (26–60), moderate (61–90), and high (91–130) levels of problematic use, based on the theoretical midpoint. The original study reported high internal consistency coefficients for each subdimension: $\alpha = .903$ for duration of use, $.876$ for resistance to control, $.902$ for impact on development, and $.882$ for withdrawal-escape. The overall Cronbach's alpha coefficient was $\alpha = .938$. In the current study, the total reliability coefficient was calculated as $\alpha = .89$, indicating high internal consistency.

Psychosocial Status Assessment Scale For 3-6 Year Old Children - Parent Form: The scale used in this study was developed by Şan and Altay (2021) and was used to evaluate psychosocial risk in children aged 3 to 6. The scale comprises 31 items rated on a 5-point Likert scale (0

= never to 4 = always), with no reverse-coded items. The total score ranges from 0 to 124, with higher scores reflecting higher psychosocial risk. The original study did not define specific cut-off points; therefore, scores in this study were grouped as low (0–41), moderate (42–82), and high (83–124) risk levels. The items cover a range of psychosocial challenges common in early childhood, such as sleep problems, attention difficulties, aggression, shyness, and separation anxiety. The content validity index (CVI) values ranged from .82 to .97. Exploratory and confirmatory factor analyses confirmed the six-factor structure, with CFA fit indices of $\chi^2/df = 1.447$, RMSEA = .042, and CFI = .95. Cronbach's alpha values for the subdimensions were $\alpha = .777$ (Factor 1), $\alpha = .702$ (Factor 2), $\alpha = .600$ (Factor 3), $\alpha = .602$ (Factor 4), $\alpha = .682$ (Factor 5), and $\alpha = .591$ (Factor 6). The overall internal consistency coefficient reported in the original study was $\alpha = .83$. In the current study, the total Cronbach's alpha was $\alpha = .81$, indicating acceptable reliability.

Executive Functions Behavioural Assessment

Inventory-Parent Form: In this study, the Executive Functions Inventory was utilised to assess children's executive function skills. The original version of the inventory was developed by Thorell and Nyberg (2008) for children aged 4–7. The inventory was adapted into Turkish by Kayhan (2010), who validated it with children aged 6 years 11 months and older. It includes 26 items rated on a 5-point Likert scale and comprises two subscales: working memory and inhibitory control, each with 13 items. There are no reverse-coded items. Although a cut-off score was not defined, in this study, scores were interpreted in three categories: low impairment (26–60), moderate impairment (61–90), and high impairment (91–130). In Kayhan's (2010) reliability analyses, Cronbach's alpha was $\alpha = .86$ for working memory, $\alpha = .82$ for inhibitory control, and $\alpha = .91$ for the total parent form. In a subsequent validity study by Tuncer (2021) with a parent sample of 340, confirmatory factor analysis was conducted, and items 2 and 10 were removed due to high factor loadings. The revised analysis yielded $\alpha = .83$ for working memory, $.80$ for inhibitory control, and $.88$ for the total scale. In the present study, the total Cronbach's alpha coefficient was calculated as $\alpha = .86$. Although CHEXI was initially developed for children aged 4 and above, its use for 3-year-olds in this study was supported by expert opinion from two early childhood specialists, who confirmed the suitability of the items without the need for adaptation.

Data Analyses

Statistical analyses were conducted using SPSS v27. The data met the normality assumptions, permitting the use of parametric tests. Pearson's correlation and hierarchical multiple regression analyses were performed to examine relationships and predictive effects of problematic technology use, age, and gender on psychosocial status and executive functions. Descriptive statistics (mean, SD, min–max) were also reported. The significance level was set at .05.

Ethics

The study was approved by the Ethics Committee of Muş Alparslan University (No: 10.05.2024-141187). Parental consent was obtained, participation was

voluntary, and anonymized data were securely stored and later deleted in line with ethical standards.

In this section, the data collected to address the research sub-questions were systematically analysed, and the findings were evaluated accordingly.

Findings

Table 1. Descriptive Analysis of Problematic Technology Use, Psychosocial Status, and Executive Function Levels

	n	Min.	Max.	Ort.	Ss
Duration of Use	225	8	39	25.24	5.08
Resistance to Control	225	7	30	18.93	3.97
Impact on Development	225	5	25	15.97	3.91
Deprivation - Escape	225	7	35	22.08	4.53
Problematic Technology Use Scale Total	225	29	125	82.28	16.41
PSAS-Factor 1	225	2	40	21.82	11.71
PSAS-Factor 2	225	1	28	15.10	9.023
PSAS-Factor 3	225	0	20	10.72	5.47
PSAS-Factor 4	225	0	12	6.56	3.31
PSAS-Factor 5	225	0	8	4.23	2.20
PSAS-Factor 6	225	0	16	8.68	3.27
Psychosocial Status Assessment Scale Total	225	8	124	67.11	12.35
Working Memory	225	15	65	41.15	8.34
Inhibitory Control	225	13	55	34.92	6.98
Total Executive Functions	225	30	120	76.06	15.12

Table 1 presents descriptive statistics on children's levels of problematic technology use, psychosocial well-being, and executive functions in early childhood, including means and standard deviations. The results indicate that children demonstrate moderate levels of problematic technology use across all subdimensions, including duration of use, resistance to control, impact on development, and withdrawal–escape behaviours. These findings suggest that digital devices are used at moderate intensity and may have a moderate effect on children's behaviour and development. Regarding psychosocial well-being, the overall psychosocial risk level appears to be moderate. Among the scale's dimensions, higher scores were observed on internalising-type indicators, whereas

lower scores were observed in areas potentially associated with externalising or interpersonal difficulties. In terms of executive functions, both working memory and inhibitory control scores point to moderate-level challenges. The total executive function score also reflects that participants occasionally experience difficulties in regulating attention, controlling impulses, and organizing behaviour in daily routines.

The Pearson correlation results for the relationship between problematic technology use in early childhood and psychosocial status and executive functions are shown in Table 2.

Table 2. Pearson Correlation Between Problematic Technology Use, Psychosocial Status, and Executive Functions

	Duration of Use	Resistance to Control	Impact on Development	Deprivation - Escape	Problematic Technology Use Total	PSAS-Factor 1	PSAS-Factor 2	PSAS-Factor 3	PSAS-Factor 4	PSAS-Factor 5	PSAS-Factor 6	Psychosocial Status Assessment Scale Total	Working Memory	Inhibitory Control	Executive Functions Total
Duration of Use	1														
Resistance to Control	.84*	1													
Impact on Development	.78*	.73*	1												
Deprivation - Escape	.75*	.71*	.85*	1											
Problematic Technology Use Scale Total	.64*	.67*	.85*	.65*	1										
PSAS-Factor 1	.64*	.75*	.8*	.84*	.74*	1									
PSAS-Factor 2	.61*	.63*	.68*	.79*	.64*	.76*	1								
PSAS-Factor 3	.82*	.67*	.62*	.83*	.8*	.68*	.8*	1							
PSAS-Factor 4	.75*	.69*	.77*	.82*	.62*	.62*	.61*	.8*	1						
PSAS-Factor 5	.78*	.71*	.71*	.75*	.85*	.68*	.63*	.76*	.73*	1					
PSAS-Factor 6	.61*	.8*	.63*	.83*	.79*	.68*	.61*	.82*	.7*	.61*	1				
Psychosocial Status Assessment Scale Total	.84*	.65*	.72*	.62*	.65*	.78*	.76*	.8*	.66*	.75*	.76*	1			
Working Memory	.81*	.73*	.61*	.56*	.6*	.76*	.68*	.65*	.63*	.73*	.76*	.72*	1		
Inhibitory Control	.65*	.75*	.83*	.61*	.8*	.82*	.73*	.82*	.68*	.61*	.73*	.83*	.76*	1	
Executive Functions Total	.65*	.61*	.66*	.68*	.78*	.72*	.83*	.73*	.84*	.67*	.62*	.63*	.68*	.64*	1

The results of the Pearson correlation analysis indicated statistically significant positive associations between various dimensions of problematic technology use and children's psychosocial status and executive function components. In particular, the total score of problematic technology use was found to be moderately to strongly correlated with psychosocial status ($r = .65, p < .01$),

working memory ($r = .60, p < .01$), inhibitory control ($r = .80, p < .01$), and the total executive functions score ($r = .78, p < .01$).

Among the sub-dimensions of problematic technology use, "resistance to control" and "deprivation/escape" demonstrated significant correlations with both

psychosocial status ($r = .65$ and $r = .62$, respectively) and components of executive functions. Notably, the “impact on development” subscale showed a strong positive correlation with inhibitory control ($r = .83$, $p < .01$) and the overall executive function score ($r = .66$, $p < .01$). These findings suggest that as the perceived developmental impact of technology use increases, executive function difficulties also tend to become more pronounced.

Moreover, the overall correlation results revealed that higher levels of problematic technology use were positively associated with greater difficulties in psychosocial adjustment and executive functions ($r = .65$ and $r = .78$, respectively; both $p < .01$). These patterns underscore the co-occurrence of increased problematic digital engagement with elevated challenges in key domains of child development.

Before conducting the hierarchical regression analysis, key assumptions were evaluated to ensure the data were appropriate. The normality of residuals was confirmed using Q–Q plots and the Shapiro–Wilk test. Linearity and homoscedasticity were verified through residual scatterplots. No multicollinearity issues were identified, as all Variance Inflation Factor (VIF) values were below 2. Additionally, the Durbin–Watson statistic was 1.93, indicating no evidence of autocorrelation. These diagnostic results confirmed that the data met the assumptions necessary for hierarchical multiple regression analysis. Hierarchical multiple regression analyses were

then conducted to assess the effect of problematic technology use in early childhood on psychosocial conditions and executive functions. The results of this analysis are presented in Table 3. This analysis aimed to determine the predictive value of problematic technology use on children’s psychosocial problems and cognitive functions. In the first model predicting psychosocial status, only the variable of Problematic Technology Use was included and found to be a significant positive predictor ($\beta = .64$, $p < .01$), explaining 39% of the variance ($R^2 = .39$). In the second model, age (dummy coded for 3, 4, and 5 years) was added, increasing the explained variance to 44% ($\Delta R^2 = .05$, F -change = 4.10, $p = .02$). In the third model, the addition of gender (0 = Girl, 1 = Boy) further increased the variance explained to 48% ($\Delta R^2 = .04$, F -change = 3.85, $p = .03$). Similarly, in the model predicting executive functions, problematic technology use emerged as a significant negative predictor in the first model ($\beta = -.59$, $p < .01$), accounting for 34% of the variance ($R^2 = .34$). The inclusion of age in the second step raised the explained variance to 39% ($\Delta R^2 = .05$, F -change = 3.92, $p = .02$), and the addition of gender in the third step increased it to 42% ($\Delta R^2 = .03$, F -change = 3.01, $p = .04$). These findings demonstrated the functional value of hierarchical regression analysis in identifying the unique contribution of each variable to changes in psychosocial and executive outcomes.

Table 3. Hierarchical Multiple Regression Results Predicting Psychosocial Status and Executive Functions Based on Problematic Technology Use, Age, and Gender

Model	Independent Variable	Dependent Variable	B	Std. Error	Beta	t	R	R ²	ΔR^2	F	p
1	Problematic Technology Use	Psychosocial Status	0,45	0,09	0,64	5,63	0,63	0,39	–	–	<.01*
2	Age (dummy coded: 36-71 months)	Psychosocial Status	0,42	0,08	0,6	5,42	0,66	0,44	0,05	4,1	.02*
3	Gender (0=Girl, 1=Boy)	Psychosocial Status	0,39	0,08	0,57	5,01	0,69	0,48	0,04	3,85	.03*
1	Problematic Technology Use	Executive Functions	-0,38	0,07	-0,59	-5,43	0,58	0,34	–	–	<.01*
2	Age (dummy coded)	Executive Functions	-0,36	0,07	-0,56	-5,12	0,62	0,39	0,05	3,92	.02*
3	Gender (0=Girl, 1=Boy)	Executive Functions	-0,34	0,07	-0,53	-4,88	0,65	0,42	0,03	3,01	.04*

Discussion

The findings of this study indicate that children’s use of digital technology in early childhood significantly affects both executive functions and psychosocial adjustment. Descriptive analyses revealed moderate levels of risk across digital usage dimensions. Similarly, children demonstrated moderate difficulties in executive function and psychosocial domains. Correlation analyses showed

significant positive associations between problematic technology use and both executive function components (working memory, inhibitory control) and psychosocial difficulties. Notably, the developmental impact and withdrawal–escape subdimensions were strongly linked to executive dysfunction. Hierarchical regression analyses confirmed that problematic technology use accounted for

34% of the variance in executive function difficulties and 39% in psychosocial risk, increasing to 42% and 48%, respectively, when age and gender were added to the models. These results suggest that digital media use is not merely a behavioural habit but a salient environmental factor influencing children's cognitive and emotional development. These results underscore the multidimensional influence of problematic digital media engagement on key developmental domains in children. The results align with emerging theoretical models suggesting that the relationship between digital nativeness and executive functions is indirect, mediated by problematic technology use (Zhao et al., 2024). Notably, the I-PACE model (Brand et al., 2019) posits that deficits in inhibitory control mechanisms may trigger compulsive digital behaviour, creating a reciprocal dynamic where behavioural addiction operates as both a cause and a consequence. In the present study, the significant predictive role of problematic technology use on inhibitory control offers robust empirical support for this cyclical process. The negative correlation between social media addiction (SMA) and executive functions is consistent with previous evidence highlighting the detrimental impact of excessive digital exposure on attention regulation and impulse control (Lin et al., 2018; Zhang et al., 2023). In particular, the strong association between the developmental impact subdimension and executive functions suggests that not only the quantity but also the quality, context, and emotional function of digital content play a critical role in developmental outcomes (Dong et al., 2015; Zhou et al., 2016). This highlights the need to shift the focus from mere screen-time metrics to more nuanced evaluations of media use patterns. The study also illustrates that impairments in executive functions are not solely indicative of cognitive disruption but also serve as a critical predictor of psychosocial difficulties in early childhood. Data from the psychosocial status scale revealed meaningful associations between internalising tendencies (e.g., anxiety, withdrawal) and specific digital use patterns. These findings are congruent with research suggesting that SMA is linked not only to external behavioural dysregulation but also to maladaptive emotional coping mechanisms (Abi-Jaoude et al., 2020; Henzel et al., 2021; Real-Fernández et al., 2025). Interpreted through the lens of Bronfenbrenner's Ecological Systems Theory (1979), these findings acquire additional depth. At the microsystem level, digital media environments have become integral to children's daily lives and exert direct influence on developmental processes. Factors such as parental mediation, access to devices, and adult modelling behaviours shape children's digital experiences and, by extension, their cognitive and emotional functioning (Huang et al., 2025; Zhao et al., 2024). At the mesosystem level, consistencies between home and school environments further modulate the developmental consequences of digital media exposure. Thus, problematic technology use should be viewed not merely as an individual choice or a behavioural symptom, but as an emergent outcome of layered ecological

interactions. Although the cross-sectional nature of the study precludes causal interpretations, the strength and coherence of the findings across multiple statistical approaches provide compelling support for current theoretical frameworks. The results suggest that digital media should not be conceptualized merely as a backdrop to development, but as an active, dynamic, and interactive domain that shapes children's cognitive and psychosocial trajectories. Overall, this study contributes to the growing body of literature emphasizing that early problematic engagement with digital technology has indirect yet powerful effects on executive functions and psychosocial adjustment. It highlights the need for developmentally informed, ecologically grounded conceptualizations of technology's role in child development.

This study emphasises the need for ecologically grounded interventions to mitigate the developmental risks of early digital exposure. First, digital literacy programmes should support families in encouraging healthy, supervised media use and in enhancing parental mediation. Second, early childhood curricula must include developmentally appropriate media regulation and digital self-management skills, and educators should be trained to recognize the cognitive and emotional effects of screen overuse. Third, national policies should promote clear screen time guidelines and literacy campaigns targeting families with preschoolers. Finally, longitudinal research is needed to examine the developmental course of executive functions and psychosocial status in relation to digital media use, and to evaluate early interventions such as digital hygiene and self-regulation training.

Declarations

Ethical approval was obtained from the Science Research Ethics Committee of Mus Alparslan University, Mus, Türkiye (Report No: 10.05.2024-141187).

Consent for Publication

Not applicable.

Availability for Data and Materials

Not applicable.

Competing Interests

The author declares no conflict of interest.

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Authors' Contributions

AA designed and conducted the study, collected and analyzed the data under the supervision of İK. Both authors interpreted the results and contributed to the writing. İK provided critical revisions and overall guidance. All authors approved the final manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

Improving Illness Acceptance and Reducing Stress in Patients with Chronic Kidney Disease Receiving Hemodialysis

Kronik Böbrek Hastalığı Olan Hemodiyaliz Hastalarında Stresi Azaltmak İçin Gestalt Grup Terapisi Kullanarak Hastalık Kabulünü İyileştirmek

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Abstract:

Adapting to the routine of hemodialysis following kidney failure is often accompanied by stress, which can worsen both the physical condition and mental health of patients. The Gestalt method facilitates self-recognition and self-acceptance, prompting healthier emotional adjustment. Illness acceptance, as a component of self-acceptance, contributes to stress reduction. Furthermore, group therapy provides patients with social support, which can enhance the process of illness acceptance. Therefore, this study aimed to examine the effectiveness of Gestalt group therapy in improving illness acceptance and reducing stress among patients with chronic kidney disease receiving hemodialysis. The method adopted was a pre-test post-test control group design. A total of 15 patients were screened voluntarily and completed the Chronic Illness Acceptance Questionnaire (CIAQ; Cronbach alpha = 0.861) and the Perceived Stress Scale (PSS-10; Cronbach alpha = 0.814). Only eight reported low illness acceptance and high stress levels. These patients were recruited and randomly assigned to the experimental and control groups. The experimental groups received treatment during and after the experiment, respectively. The results of the Wilcoxon test showed that Gestalt group therapy significantly improved illness acceptance ($p = 0.046$) and reduced stress levels ($p = 0.046$). Through this process, patients became more aware of their condition, leading to greater engagement in daily activities and reduced perceived stress.

Keywords: Gestalt Group Therapy, Illness Acceptance, Stress, Chronic Kidney Disease, Hemodialysis.

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Öz:

Böbrek yetmezliğini takiben hemodiyaliz rutinine uyum sağlamak genellikle stres yaratır ve bu durum hem fiziksel durumu hem de hastaların ruh sağlığını kötüleştirebilir. Gestalt yaklaşımı, danışanların kendilerini tanımalarına ve kabul etmesine yardımcı olur. Hastalığı kabul etmek, stresin azaltıldığı bilinen öz-kabullenmenin bir parçası olarak kabul edilir. Grup terapisi, hastalardan sosyal destek sağlayarak hastalığı kabul etme sürecini hızlandırdığına inanılmaktadır. Bu deney, Gestalt grup terapisinin hemodiyaliz gören kronik böbrek hastaları arasında hastalığı kabul etmeyi artırma ve stresi azaltmadaki etkinliğini test etti. Ön-test son-test kontrol grubu deseni kullanıldı. On beş hasta gönüllü olarak taramadan geçti ve Kronik Hastalık Kabul Anketi'ni (CIAQ; Cronbach alfa = 0.861) ve Algılanan Stres Ölçeği'ni (PSS-10; Cronbach alfa = 0.814) doldurdu. Sadece sekiz hasta düşük hastalık kabullenmesi ve yüksek stres seviyeleri bildirdi. Katılımcılar rastgele olarak 2 gruba alındı ve bölündü; deney sırasında tedavi alan deney grubu 4 katılımcı ve deney tamamlandıktan sonra tedavi alacak kontrol grubu 4 katılımcıdan oluşuyordu. Wilcoxon testi sonuçları, Gestalt grup terapisinin hastalık kabulünü anlamlı şekilde artırdığını ($p = 0,046$) ve stres düzeylerini azalttığını ($p = 0,046$) ortaya koydu. Bu bulgular, Gestalt grup terapisinin, hemodiyaliz uygulanan kronik böbrek hastalarında stres düzeylerini azaltırken hastalık kabulünü artırmak için kullanılabileceğini önermektedir. Bu süreç aracılığıyla, hastalar durumlarının daha fazla farkına vardı ve bu da günlük aktivitelere daha olumlu katılım ile algılanan stresin azalmasına katkıda bulundu.

Anahtar Kelimeler: Gestalt Grup Terapisi, Hastalık Kabulü, Stres, Kronik Böbrek Hastalığı, Hemodiyaliz.

Introduction

Kidney failure is a major health concern that occurs when the organ fails to maintain the balance of fluids and electrolytes in the body. (Widiana et al., 2017). It is ranked as the 18th leading cause of mortality globally in 2010, and rose to 12th in 2017 (Srianti et al., 2021). In Indonesia, 1,417,104 cases were recorded in 2021 (Indonesian Ministry of Health, 2022).

Among the common treatment options for kidney failure is hemodialysis therapy (Widiana et al., 2017). This treatment aims to replace the function of the damaged organ by removing harmful nitrogenous substances from the blood and eliminating excess water. (Sompie et al., 2015). The therapy needs to be conducted continuously. (Siwi, 2021) and can lead to various social problems due to changes in activity (Rahayu et al., 2019). These disruptions may negatively affect patients' mental well-being.

Rohaeti et al., (2021) Reported that 81% of patients with kidney failure have unpleasant feelings due to the inability to accept changes in condition, contributing to the risk of developing psychological problems such as stress (Sopha & Wardhani, 2016; Syahrizal et al., 2020). Patients receiving hemodialysis frequently experience heightened stress levels, partly due to changes such as a decline in quality of life, increased anxiety and substance abuse, sleep difficulties, impaired sexual function, decreased immune function, susceptibility to pain, and risk of mortality. (Hopko et al., 2014).. Abbott et al., (2004) Also reported a range of emotions, including tension, worry, stress, and melancholy. This necessitates special attention to prevent the development of anxiety and depression. (Nurrezki & Irawan, 2020).

There is a need to adapt to medical conditions and discover ways to live a new everyday life (Cluley et al., 2023). Self-acceptance is possible by going through several stages of denial, anger, bargaining, depression, and acceptance (Kübler-Ross & Kessler, 2005). This model emphasizes that stress often arises when individuals struggle to accept their medical condition.

Illness acceptance is a psychological adaptation to living with illness and is related to various aspects, such as quality of life, psychological well-being, and life

satisfaction. (Pompey et al., 2019). It features fewer negative emotional responses toward chronic illness and therapy. (Kurpas et al., 2013). Acceptance of medical conditions among patients with kidney failure reduces stress. This is consistent with a study by Ghimire et al., (2017) Illness acceptance facilitates patients' adjustment to daily life activities.

Acceptance of medical conditions leads to the development of positive optimism, thereby allowing patients to set new self-goals (Ryff, 2014). This is certainly desirable for patients with chronic kidney failure to feel more confident about receiving treatment. Illness acceptance is achieved when an individual fully acknowledges, understands, and embraces the condition as part of life, accompanied by a commitment to continuous self-development to live well and responsibly. (Paramita & Margaretha, 2013). The ability to accept the condition significantly impacts one's way of life. (Kapadi et al., 2023). Therefore, patients with chronic kidney failure require attention to facilitate acceptance of the medical condition, which can reduce the level of stress.

A therapy believed to improve illness acceptance and reduce stress, potentially, is Gestalt, which focuses on unresolved issues or "unfinished business." (Jacobs et al., 2012). The goal of this therapy is for patients to recognize, accept, and express feelings, thoughts, and beliefs. Thereby indirectly reducing stress, particularly when administered in a group setting. Implementing Gestalt group therapy can create dynamics among group members. As a result, it enables positive interaction among members. The stages entail the initial, transition, activity, and termination phases. (Austin & Austin, 2022).

The effectiveness of Gestalt group therapy has been widely studied in reducing anxiety and depression. Konghoiro et al. (2018) Showed that Gestalt group therapy reduced anxiety among narcotics prison inmates.

This study examined the effectiveness of Gestalt group therapy in improving illness acceptance and reducing stress among patients with chronic kidney disease, offering an alternative approach to support hemodialysis patients in enhancing self-acceptance and relieving stress.

Method

The method used was a pre-posttest control group experimental design. Ethical approval was granted by the Ethical Committee of the Psychology Faculty of the University of Muhammadiyah Malang (Decision no: E.5.a/215/KEPK-UMM/VIII/2024; Date: 08/08/2024).

Subjects

The subjects were eight chronic kidney failure patients undergoing hemodialysis. Purposive sampling was used, with criteria including low illness acceptance, moderate to high stress levels, and at least three months of hemodialysis treatment.

Instruments

Illness acceptance was measured using the Chronic Illness Acceptance Questionnaire (CIAQ) (Beacham et al., 2015), a 20-item Likert scale with a Cronbach’s alpha of 0.861. Stress levels were assessed using the 10-item Perceived Stress Scale (PSS-10) (Cohen et al., 1983), which had a reliability score of 0.814.

Procedure

A module was first developed to guide the intervention process. Its development was conducted in stages and reviewed by clinical psychology experts for validation. Following the approval, a pilot test of the module was performed to ensure applicability and coherence.

The process began with obtaining ethical approval, after which the study was conducted upon receiving the necessary clearance. Approval was also secured from the hospital administration and from the patients who participated as study subjects.

Screening included administering a pre-test to patients with chronic kidney failure receiving hemodialysis, with the collected data serving as the baseline. Based on the pre-test results, patients with low illness acceptance and moderate to high stress levels were identified. After completing data collection, informed consent was obtained, confirming willingness to participate in the planned series of interventions.

The patients were randomly assigned to an experimental and a control group. Unintentionally, each group consisted of 2 males and two females. The ages of the experimental group members were older (mean = 44.75) than the control group members (mean = 25.25).

The experimental group received Gestalt group therapy, while the control group did not receive any intervention to allow comparison of changes in illness acceptance and stress levels. After the experiment, the control group was given the same therapy protocol.

Gestalt group therapy was delivered in 5 sessions, each lasting 40-60 minutes. The treatment was conducted in accordance with the established procedure, modified to address issues of illness acceptance and stress. The five sessions were a) introduction and orientation, b) awareness and acceptance, c) potential exploration, d) responsibility, and e) evaluation and termination.

In the first session, an introduction was given before sharing experiences and exploring awareness and illness acceptance. The patients took turns explaining the factors that contributed to their feelings of weakness and stress.

The next step included introducing patients to the empty chair method, which aimed to enhance awareness of changes experienced before and after the onset of illness. Through this process, each patient gradually recognized and accepted adjustments in daily activities. By the end of the session, group members provided mutual support in coping with these changes and offered suggestions regarding suitable activities that could still be performed.

In the third session, patients discussed the abilities still possessed, often sharing stories about supportive workplaces that allowed time off for medical appointments. This became a key focus, as participants were encouraged to reflect on what could still be done despite the illness.

In the next session, the discussion centered on prioritizing personal responsibilities such as attending medical check-ups, fulfilling parental roles, and maintaining work duties. By the final session, participants conduct an evaluation and reflection on their new awareness, coping skills, and communication before the therapy terminates.

Upon completing all of the sessions, data analysis to assess changes in illness acceptance and stress was conducted using the Wilcoxon test. After data analysis, the results were compiled for reporting.

Result

Homogeneity Test

A homogeneity test was conducted to determine whether the experimental and control groups were drawn from populations with equal variances. The Levene statistic was 0.16, with a p-value of 0.701. This indicated that the two groups were considered homogeneous ($p > 0.05$) and had equal variances despite the age difference.

Descriptive Test Results

Based on the pre-test and post-test results in each group, descriptive tests were conducted to examine the data profiles. The pre-test and post-test results for both groups were obtained from the mean total scale scores.

Table 1. Descriptive test

Variable	Group	Pre-Test		Post-Test	
		M	SD	M	SD
Illness Acceptance	Experiment	35.00	4.32	52.25	3.77
	Control	33.75	7.54	33.50	6.02
Stress	Experiment	22.00	4.96	18.00	4.96
	Control	24.25	1.70	25.00	0.81

Referencing Table 1, the descriptive test results showed an increase in the mean score for the experimental group's illness acceptance variable ($M = 35.00$ to 52.25), alongside a change in the standard deviation score from pre-test ($SD = 4.32$) to post-test ($SD = 3.77$). In the control group, a decrease in the mean score was observed ($M = 33.75$ to 33.50), with a change in the standard deviation score from pre-test ($SD = 7.54$) to post-test ($SD = 6.02$).

Table 2. Wilcoxon test

Variable	Group	Result	
		Z	P
Illness Acceptance	Experiment	-2.00	0.046
	Control	-0.184	0.854
Stress	Experiment	-2.00	0.046
	Control	-0.736	0.461

Based on Table 2, the Z value was -2.00, and the p-values for the experimental group in the stress and illness acceptance variables are both 0.046. This signified a significant change in both variables following Gestalt group therapy. Consequently, the treatment showed a significant effect in reducing stress levels and enhancing illness acceptance in the experimental group.

Discussion

The present study showed that participants who received Gestalt group therapy demonstrated observable improvements in illness acceptance and reduced stress levels. The treatment enabled participants in the experimental group to identify key stressors, including difficulties in accepting changes to daily routines. This result supports existing evidence that Gestalt and Gestalt group therapy enhance self-acceptance and reduce stress, though some studies remain inconclusive.

Gestalt group therapy promotes self-awareness and acceptance of present experiences. (Ali & Cerkez, 2020). Through reflection, participants recognize their thoughts, emotions, and bodily sensations, helping them identify inner conflicts and stress triggers, which, in turn, strengthen illness acceptance.

The group setting offers feedback, support, and a safe space for emotional expression and role-play, enabling resolution of conflicts and relief from stress. Peer support within the group fosters feelings of empathy and validation, thereby mitigating feelings of isolation. Members are also becoming collectively aware of each patient's potential. The therapy helps members to take more pleasure in the activities, such as working in moderation.

Abd Alrazaq et al. (2022) identified the benefits of the therapy, including increased emotional stability and reduced stress intensity. Furthermore, it offers advantages in inter-group interaction, which can increase patients' awareness of their condition or perceived changes in activities. A similar result was also observed in the study by Frediani & Bussone (2019), in which acceptance was considered a good strategy for coping with pain. These

Table 1 suggests a decrease in the mean stress score for the experimental group ($M = 22.00$ to 18.00), despite a relatively stable standard deviation ($SD = 4.96$). In the control group, the mean score increased ($M = 24.25$ to 25.00), accompanied by a change in the standard deviation score from pre-test ($SD = 1.70$) to post-test ($SD = 0.81$).

Wilcoxon Test Results

The Wilcoxon test was used to assess differences in pre-test and post-test scores between the two groups.

outcomes are consistent with (2016), who reported that low levels of illness acceptance are associated with heightened stress, anxiety, and feelings of being a burden to others. This is also in line with a study by (2024), who suggested that acceptance is negatively associated with the intensity of distress. Oppositely, the experiential avoidance, or the unwillingness of an individual to engage with a present particular internal experience, such as bodily sensation, emotion, or thought disposition, is closely related to somatization, such as headaches, muscle pain, nausea, or fatigue, or even contributes to the development and maintenance of depression and anxiety disorders.

Gestalt group therapy has been shown to increase self-esteem. (Ulhaq, 2022). Results showed an increase in self-esteem, which, in turn, indirectly reduces stress. Consequently, patients with chronic conditions such as kidney failure may experience improved daily functioning and a greater sense of personal worth, which contributes to increased illness acceptance. This indirectly helps patients be more accepting of the condition and less likely to blame themselves or others.

In this study, among the themes in the Gestalt group therapy, responsibility was a key theme. This is a technique in the Gestalt approach known to support individuals experiencing a quarter-life crisis. (Syahri, 2021). Among the aspects reduced in individuals with a quarter-life crisis was stress, thereby adding insight that Gestalt group therapy is also able to decrease stress in patients with kidney failure.

The present study can contribute to the development of therapeutic interventions to increase illness acceptance and reduce stress among patients with kidney failure. Given that such patients often form peer support networks at both national and local levels within hospital settings, Gestalt group therapy holds promise as a feasible intervention model.

Despite the promising results of this experimental study, the method adopted has limitations. The influence of extraneous variables, particularly family engagement, may have affected the outcomes. Previous studies have

emphasized the critical role of familial support in enhancing treatment efficacy for patients with kidney failure. Encouragement, companionship, and support from the family are associated with stress levels. (Basirun, 2015). The more attention and encouragement are given, the more able patients are to accept the condition. This factor is observed to have a positive effect on the treatment provided. However, the differences in family support levels among members are uncontrollable and might impact the outcome.

Another limitation of this study pertains to the small sample size, which may have influenced the statistical analysis. With only eight participants, evenly divided between the control and experimental groups, the statistical power is limited; hence, the results should be interpreted with caution.

Scheduling constraints among members of the experimental group limited the implementation of Gestalt group therapy. Difficulties in scheduling among participants led to inconsistent therapy sessions, which may have affected the continuity and depth of the intervention. These factors were the reasons a homogeneity test was conducted. Furthermore, the Wilcoxon analysis was adopted to strengthen the results. The ideal study process could potentially be the focus for future investigations on the topic. These factors should be considered when exploring the same area in the future.

Conclusion and implications

In conclusion, there was an increase in illness acceptance and a reduction in stress levels amongst patients receiving hemodialysis after Gestalt group therapy. This implied the potential development of a Gestalt group therapy program as an alternative option in the management of stress in patients with kidney failure. Hospitals can provide the therapy as an accompaniment service to hemodialysis. Furthermore, this study offered opportunities for future investigation, including a comparative analysis of group

therapy versus an individual approach, as well as the evaluation of alternative intervention techniques that could enhance patients' well-being.

Future investigations are recommended to include long-term follow-up to evaluate the sustainability of the therapy's effects and to explore the role of family engagement as an integrated component of the intervention.

Declaration

Ethical Approval

The Ethical Committee of the Psychology Faculty of the University of Muhammadiyah Malang granted ethical approval (Decision no: E.5.a/215/KEPK-UMM/VIII/2024; Date: 08/08/2024).

Consent to Participation

Informed consent was obtained from all participants.

Consent to Publication

Not applicable.

Availability of Data and Materials

Data may be made available upon reasonable request.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Not applicable.

Author Contributions

The authors are responsible for the study. The authors have read and approved the final version of the article.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

A New Source of Psychosocial Stress for Aviation Sector Employees: Illegitimate Tasks

Havacılık Sektörü Çalışanları için Yeni Bir Psikososyal Stres Kaynağı: Meşru Olmayan Görevler

Server Sevil Akyürek¹, Duygu Uludağ¹, Melis Soyer¹

Abstract:

This research aims to understand the mechanisms by which employees are exposed to psychosocial stress (PSOSTR) in work processes through illegitimate task (ILT) experiences. The mediating effect of emotional labor (EL) and the moderating effect of leader-member interaction (LMX) are included in this research. Data were collected through a survey from 251 participants working in the aviation industry in Turkey. Nine hypotheses tested with the SEM statistical analysis method were supported. The results show that ILT increases the psychosocial stress level of aviation employees. Besides, LMX acts as a moderating factor between ILT and EL, EL and PSOSTR, and between ILT and PSOSTR. Additionally, EL serves as a mediating factor between ILT and PSOSTR. The originality of the research lies in the empirical measurement and discussion of the relationships between ILT, EL, and PSOSTR for the first time, considering aviation industry employees. These results fill an important gap in literature. This study contributes to the organizational behavior literature by highlighting how illegitimate tasks, considered unnecessary or unreasonable, directly impact employees' psychological well-being, health, motivation, work efficiency, and endurance. The findings emphasize that when employees face tasks perceived as unfair, their emotional burden grows, leading to higher levels of stress. This situation is particularly critical in the aviation industry, where employees are already subject to intense working conditions and safety-sensitive responsibilities. Furthermore, the moderating role of leader-member exchange underscores the importance of effective leadership practices.

Keywords: Illegitimate Tasks, Emotional Labor, Leader-Member Exchange, Psychosocial Stress, Aviation Sector.

*This research was derived from the paper presented as a paper at the 22nd International Business Congress and extended by increasing the number of data collected. Also, this study has a small amount of similarity with the extended abstract in the 22nd International Business Congress Proceedings Book.

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Öz:

Bu araştırma, çalışanların iş süreçlerinde gayri meşru görev (ILT) deneyimleri yoluyla psikososyal strese (PSOSTR) maruz kalma mekanizmalarını anlamayı amaçlamaktadır. Duygusal emeğin (EL) aracılık etkisi ve lider-üye etkileşiminin (LMX) düzenleyici etkisi bu çalışmada yer almaktadır. Veriler, Türkiye'deki havacılık sektöründe çalışan 251 katılımcıdan anket yoluyla toplanmıştır. SEM istatistiksel analiz yöntemi ile test edilen dokuz hipotez desteklenmiştir. Sonuçlar, ILT'nin havacılık çalışanlarının psikososyal stres düzeyini artırdığını göstermektedir. Ayrıca LMX, ILT ile EL, EL ile PSOSTR ve ILT ile PSOSTR arasında düzenleyici bir faktör olarak işlev görmektedir. Ayrıca EL, ILT ile PSOSTR arasında aracı bir faktör olarak işlev görmektedir. Araştırmanın özgünlüğü, ILT, EL ve PSOSTR arasındaki ilişkilerin ilk kez havacılık sektörü çalışanları dikkate alınarak ampirik olarak ölçülmesi ve tartışılmasıdır. Bu sonuçlar literatürdeki önemli bir boşluğu doldurmaktadır. Bu çalışma, gereksiz veya mantıksız olarak kabul edilen gayri meşru görevlerin çalışanların psikolojik, sağlık, motivasyon, iş verimlilik ve dayanıklılık refahını nasıl doğrudan etkilediğini vurgulayarak örgütsel davranış literatürüne katkıda bulunmaktadır. Bulgular, çalışanların haksız olarak algılanan görevlerle karşılaştıklarında duygusal yüklerinin arttığını ve bunun da daha yüksek stres seviyelerine yol açtığını vurgulamaktadır. Bu durum, çalışanların zaten yoğun çalışma koşullarına ve güvenlik açısından hassas sorumluluklara maruz kaldığı havacılık sektöründe özellikle kritik öneme sahiptir. Ayrıca, lider-üye etkileşiminin düzenleyici rolü, etkili liderlik uygulamalarının önemini vurgulamaktadır.

Anahtar Kelimeler: Meşru Olmayan Görevler, Duygusal Emek, Lider-Üye Etkileşimi, Psikososyal Stres, Havacılık Sektörü.

Introduction

Multi-faceted research to understand complex situations, involving many factors relating to both employees and work processes, can shed light when it comes together. On the one hand, task dynamics and on the other hand, internal processes such as stress and employees' mental state due to work strongly influence both work processes, work outcomes, and employees' performance and motivation (e.g. Demerouti et al., 2001; Erez, 2010; Pecino et al., 2019). Although it falls outside occupational norms, illegitimate tasks (ILT) (Semmer et al., 2007) are considered a major workplace stressor (Semmer et al., 2007; Akyurek & Can, 2017, 2021). However, the impact of ILT on workers as a psychosocial stressor has not been studied or measured. Although ILT, which involves social meanings based on the employee's occupational identity in work processes, was thought to be a stressor with social impact (Semmer et al., 2007), no empirical research has been conducted in this direction. This study is important in this regard. It should be empirically investigated to what extent ILT generates psychosocial stress in employees and whether it affects their psychological processes. By examining the effects of ILT (both ILUN and ILUR) on employees in detail, the processes can be provided, and new methods can be developed to enhance tasks and work processes, as well as the motivation and well-being of employees. Apart from this, previous studies have shown that ILT (ILUN and ILUR) demands have positive or negative effects on most phases of manager-employee interaction (Muntz et al., 2019; Muntz & Dormann, 2020; Akyurek, 2022). However, the lack of research on how LMX increases the employee's psychosocial sources of stress and how the quality of LMX affects emotional labor processes indicates a gap in the literature. This research, designed to help fill this gap, may yield insightful findings on how effective ILT is in enhancing internal processes among employees and the situation in work processes. Uncertainty in workload and job descriptions are significant factors that increase stress levels in aviation workers (Köprülü et al., 2024). Research shows that appropriate coping strategies can alleviate secondary traumatic stress, particularly by reducing anxiety (Saylam & Sapançı, 2025). These findings highlight the importance of psychosocial support and effective management practices in reducing the stress created by illegitimate tasks.

Theoretical Background and Hypotheses of The Current Study**Illegitimate Tasks**

The concept of Illegitimate Tasks (ILT) refers to tasks that fall outside the occupational boundaries of employees. ILT is based on the "theory of stress as an attack on the self" (SOS) (Semmer et al., 2007). The SOS approach is based on a person's positive self-image expectations, which is a fundamental human characteristic (Alicke & Sedikides, 2009). Therefore, stress occurs when the expected self-image is threatened. ILT with two dimensions - Unnecessary tasks (ILUN) and Unreasonable tasks (ILUR) - can threaten this self-image because of its out-of-norm. ILUN includes tasks that do not need to be performed or can be performed with less effort if better planned. ILUR are tasks that lie outside the occupational norms (Semmer et al., 2007). Role theory is one of the theories on which the concept of ILT is based. This theory suggests that an individual's expectations are influenced by their roles. Individuals focus on their roles in relationships (Biddle, 1986).

Emotional Labor (EL)

Since the employee whose self-identity is threatened will first experience negative affect at the emotional level, it is likely that one or more of the eight different emotion categories, such as weak-powerful, attracted-disaffected, secure-insecure, generalized-focused, and socially connected-disconnected (Chocrane, 2009), will be affected. It is known that stress affects individuals profoundly in many layers (Demirel & Çakıcı, 2025). Thus, the individual's positive psychological capital spent on emotional labor is also negatively affected. It is known that psychological capital is explained by the individual's characteristics, including self-efficacy, optimism, hope, and resilience (Luthans et al., 2007a). The fact that ILT tasks (ILUR and/or ILUN) are a source of psychosocial stress is mainly due to the way they are demanded. The physical conditions and the social and organizational climate of the tasks also increase this psychosocial stress (Semmer et al., 2007). For example, not assigning tasks that should be delegated to the employee is also considered an illegitimate task (Fila et al., 2022). The aim of the present study is therefore to investigate how employees' psychological capital is generally influenced and how ILT

(ILUR and ILUN) affects employees' psychological processes.

H1: Illegitimate tasks negatively affect the emotional labor processes of the employees.

Moderation Impacts of Variables

The Moderating Effect of Leader-Member Interaction (LMX) Between ILT and EL Processes

The effects of LMX on ILUR and ILUN have been relatively well studied in the literature to date. For example, researchers found that managers' explanations and transparency reduced the negative impact of ILT on employees (Muntz & Dorman, 2020), and the negative effects of ILUR and ILUN on perceptions of job prestige were discovered. Additionally, ILUR and ILUN were found to individually mitigate the negative effects on job prestige perception (Akyurek, 2022). Also, workplace incivility (Hatipoğlu et al., 2025) by managers can be perceived as a type of illegitimate task due to not being an expected legitimacy. In this process, ILT (ILUR and ILUN) can have a negative impact on employees' internal processes, such as the frequency of emotion display, adherence to display rules, variety of emotions to be displayed, and emotional disharmony. Emotional labor processes lead to many consequences, such as job dissatisfaction and burnout (Brotheridge & Grandey, 2002; Brotheridge & Lee, 2003). A high-quality LMX can mitigate these negative processes, or a low-quality LMX can further exacerbate the negative effects of ILT on employees' emotional labor processes.

Thus, we suggest the hypothesis:

H2a: A high-quality leader-member interaction reduces the adverse impact of ILT on emotional labor.

H2b: Low-quality leader-member interaction increases the adverse impact of ILT on emotional labor.

Illegitimate Tasks and Psychosocial Stress

The concept of ILT, which is based on role theory (Biddle, 1986) and SOS theory (Semmer et al., 2007), has a negative impact on employees' professional identity (Akyurek & Can, 2017). While affirmation of occupational identity, which is an essential part of the self and enhances an individual's self-worth and self-esteem (Ashforth et al., 2008; Haslam & Ellemers, 2005), can be threatened by stress, it can lead to many negative outcomes (Meyer, 2006). ILT (ILUR and ILUN) emerges as one of these threat elements (Semmer et al., 2007).

Within the framework of justice theory, ILT is also associated with the dimension of distributive justice in the context of work tasks, as well as the dimensions of relational and procedural justice, in terms of the unfair distribution of tasks and inappropriate attitudes and

behaviors in processes (Akyurek & Can, 2021). The stress factor formed in this direction and the perception of threat to the self are also consistent with the SOS theory.

Organizational stressors affecting flight crews include factors related to the nature of work, management, career development, promotion, recognition, financial opportunities, colleagues, and family life (Gümüştekin & Öztemiz, 2004). The non-normative nature of ILT may affect employees' PSOSTR levels by affecting professional identity and causing unfavorable situations on a relational basis. Additionally, ILUR and ILUN, which have a negative impact on emotional labor, may further negatively affect employees' psychosocial stress levels. We therefore hypothesize the following.

H3a: Illegitimate tasks (ILUR and ILUN) increase the psychosocial stress level of the employees.

H3b: Illegitimate tasks (ILUR and ILUN) increase the psychosocial stress level of employees by negatively affecting emotional labor.

The Moderating Effect of LMX Between Emotional Labor and Psychosocial Stress in ILT Processes

The quality of leader-member interaction (LMX), discussed in terms of the illegitimacy of a task given at the organizational level, leads to various processes and outputs (Muntz et al., 2019; Muntz & Dormann, 2020; Akyurek, 2022). According to role theory (Graen & Uhl-Bien, 1995), leaders evaluate members according to their job assignments and task roles. The leading stressors are associated with task roles, role overload, conflict, and role ambiguity (Khan et al., 1964). Since leaders have a significant influence in shaping employees' job roles, the LMX is associated with role stressors (Jian & Dalisay, 2015).

The following hypotheses can be put forward:

H4a: A high-quality LMX reduces the psychosocial stress level of the employee by lessening the negative effect of the ILT.

H4b: A low-quality LMX increases the psychosocial stress level of the employee by increasing the negative effect of the ILT.

H4c: A high-quality LMX reduces the psychosocial stress level of the employee by reducing the negative effects of emotional labor.

H4d: A low-quality LMX increases the psychosocial stress level of the employee by increasing the negative effect of emotional labor.

In the light of all of these hypotheses, the model of the research is as follows:



Figure 1. The theoretical model of the study

Method

Data Collection and Sample

Population, Sample, and Study Group

The study population consists of aviation employees in Turkey. This research examines the moderating role of LMX in creating a source of psychosocial stress, the mediating role of emotional labor, and the impact of ILT on psychosocial stress. The convenience sampling method was utilized, and the questionnaire was administered to employees currently working at various airports in Turkey via virtual platforms. 251 people were reached by using the survey, including a 5-Likert scale.

Data Collection and Participants

The research was carried out with the approval of the Istanbul Nişantaşı University Ethics Committee (Decision Date: 30/01/2023, No: 2023/7). Data was collected from employees currently working in the aviation sector in

Turkey. Due to the use of convenience sampling, the generalizability of the findings is limited to similar populations within the Turkish aviation sector. The respondents' profiles are presented in Table 1. Based on the table, more than half of the participants are male 51.8%. The percentage of females is 46.6%, and 1.6% of respondents have not answered their gender. The general profile in terms of age is a younger generation, with 60.1% of individuals aged 18-25. Those aged 26-35 years follow this by 23.1%, and those aged 36-45 by 10.1%. Only 6.7% represent 46 years old and above. In addition, the education levels of respondents are as follows: 28.9% represent high school, 8.4% associate, 55% undergraduate, and 6.6% indicate master's degree and above. While ground personnel comprise the largest number 81%, the number of flight personnel is 19%. Regarding marital status, respondents were mostly single at 70.8%. The percentage of married people is 29.2%.

Table 1. Profile of respondents

Attribute	Category	Percentage
Gender	Female	46.6
	Male	51.8
	Not Answered	1.6
Age	18-25 years old	60.1
	26-35 years old	23.1
	36-45 years old	10.1
	46 and above	6.7
Education Level	High School	29
	Associate	8.7
	Undergraduate	55.4
	Master and Ph.D	6.9
Professional Status	Ground Personnel	81
	Flight Personnel	19
Marital Status	Single	70.8
	Married	29.2

Measurement

As a data collection tool, a questionnaire form was prepared, including scales, and their validity and reliability were established in previous literature. The survey consists of 32 questions, including demographic questions and different scales. 5-point Likert Scale includes the choices: 1: "strongly disagree", 5: "strongly agree", and 1: "never", 2: "rarely", 3: "sometimes", 4: "often", 5: "usually".

First, ILT (independent variable of the current study) was measured in studies to date with the Bern Illegitimate Task Scale (BITS) (Jacobshagen, 2006). The scale consists of 8 items in total, and each ILT dimension was measured with 4 items. The Turkish adaptation of the BITS scale was carried out in the study (Akyurek, 2020) and $\alpha = 0.881$ in that study.

Second is the LMX Scale (Liden & Maslyn, 1998), which consists of 12 items. The scale's reliability and validity measures are $\alpha = 0.92$, and $\alpha = 0.94$. The third scale is the

Emotional Labor scale (Pala and Surgevil, 2016), which consists of 12 questions in total. The total value of the EL scale, which was adapted into Turkish in the study (Basim & Beğenirbas, 2012), was found to be $\alpha = 0.80$. In addition, according to the same scale adapted in the study (Pala & Surgevil, 2016), the highest alpha value was reported as $\alpha = 0.778$. The fourth scale is the Psychosocial Stress Scale (Block et al. 2009).

Findings

Validity of measures

The diagnosis is complete. There was no outlier in the data set. Firstly, the convergent and divergent validity of the scales were measured, secondly, the reliabilities of the individual items were assessed, and thirdly, the internal consistency of the scales was evaluated to ensure the validity and reliability of the measures. Different models were then created to obtain the best representation in the CFA phase. As shown in Table 2, each model represents

an alternative. Model 3 consists of all the measures theorized in the study. The suggestion of Hair et al. (2014) for small samples (N > 250 with observed variables (m) between 12 and 30) was considered to evaluate the suitability of the alternative CFA models. The GFI, CFI, and TLI values, as well as the RMSEA and SRMR values in the CFA phase, are close to the expected range (GFI=0.850, CFI=0.889, TLI=0.877, RMSEA=0.061, and SRMR=0.0656 for model 3). Additionally, the results of the normality, outlier, and multicollinearity tests conducted prior to the CFA phase indicate that the data structure is suitable for parametric analysis.

The validity (convergent and divergent) was checked by investigating the factor loadings and using the AVE. The latent variables were examined about the factor loadings of the items. LML items, LMR items, LMC1 and two LML items (LML1, LML2), ESA items, EGE4, PSOW items, PSODM1, PSODM4, PSOD1, PSOD2, PSOD3 items and

two ILT items (ILUN4 and ILUR1) were excluded from the study. The excluded items have relatively low factor loadings and exhibit some cross-loadings, as indicated by modification indices. Items with low factor loadings (< 0.5) or high cross-loadings were excluded from scale purification. The researchers mainly aimed to obtain an appropriate balance between the sample size (N) and the size of the latent variables (m) to achieve the expected validity results. In the end, the latent variables did not exhibit cross-loadings. The values for CR and Cronbach's alpha were acceptable. This means that the measures have high internal consistency and reliability. Some AVE values are slightly lower than expected. However, they may be acceptable as they are close to 0.5. If all items are significant, convergent validity can be present. If the CR value is above 0.7, convergent validity is accepted even if the AVE value remains below 0.5 (Fornell & Lacker, 1981; Bagozzi et al., 1991).

Table 2. CFA Measurement model

Model	X ²	Df	X ² /df	Δx ²	Δdf	GFI	CFI	TLI	SRMR	RMSEA
Model 1	2339.779**	939	2.492	—	—	0.680	0.742	0.728	0.0982	0.077
Model 2	1720.825**	734	2.344	619,954**	148	0.734	0.788	0.774	0.0803	0.073
Model 3	567.603**	293	1.937	1153.222**	441	0.850	0.889	0.877	0.0656	0.061

Note: N: 251, M: means, SD: standard deviations. Internal consistency values are on the diagonal *p ≤ 0.05 (two-tailed). **p ≤ 0.01 (two-tailed)

Descriptive Statistics

Table 3 indicates that the independent variable ILT has significant negative correlations with dependent variables of EL (β = -0.250, p <.001) and positive correlations with PSOSTR (β = -0.151, p <.05) . Also, LMX has negative

correlation with EL (β =-0.234, p <.001) and positively correlated with PSOSTR (β= 0.414, p <.001). Similarly, EL has a negative correlation with PSOSTR (β=0.223, p <.001).

Table 3. Descriptive statistics

	M	SD	1	2	3	4
1 ILT	2.7490	0.78406	0.818			
2 LMX	3.4900	0.88812	-0.085	0.770		
3 EL	3.5681	0.81581	-0.305**	-0.263**	0.814	
4 PSOSTR	3.2161	0.89741	0.152*	0.323**	0.207**	0.806

Table 4. Reliability of study measures

	CR	AVE	MSV	ASV	C. Alpha
ILT	0.826	0.501	0.418	0.347	0.818
LMX	0.810	0.692	0.522	0.449	0.770
EL	0.798	0.463	0.376	0.212	0.814
PSOSTR	0.788	0.437	0.358	0.203	0.806

SEM Results

As seen in Table 5, based on SEM Analysis results, five different direct relationships are significant. As seen in Table 5, ILT has a significant negative effect on EL ($\beta = -0.144, p < .05$) and has significant effect on PSOSTR ($\beta = 0.162, p < .05$). Besides, EL has significant effect on PSOSTR ($\beta = 0.223, p < .05$). Also, LMX has significant effect on EL ($\beta = -0.274, p < .011$), and PSOSTR ($\beta = 0.236, p < .05$). Thus, the analysis results confirmed the prediction of the model. Besides, the moderating impacts were confirmed by the statistical analyses. The three

different moderating effects of LMX between ILT and PSOSTR ($\beta = -0.208, p < .006$), ILT and EL ($\beta = -0.103, p < .05$), and EL and PSOSTR ($\beta = 0.184, p = .05$) have been found statistically significant. In addition, the moderating impact of LMX between ILT and PSOSTR is significant at ($\beta = 0.174, p < .05$). The mediation effect of EL ($\beta = 0.216, p < .05$) on the relationship between ILT and PSOSTR is also significant. Effect sizes (β) were generally in the low-to-moderate range, indicating a limited practical impact.

Table 5. SEM results

	Coefficient(β)	SE	CI 95%	t-value	P value
ILT → EL	-0.144	0.084	-0.512 -0.124	-2.305	0.050*
ILT → PSOSTR	0.251	0.096	-0.030 0.413	2.316	0.001**
LMX → EL	-0.274	0.102	0.028 0.521	2.542	0.011**
EL → PSOSTR	0.223	0.047	0.012 0.426	2.092	0.050*
LMX → PSOSTR	0.162	0.103	-0.076 0.411	1.832	0.050*
ILTxLMX → PSOSTR	-0.208	0.112	-0.473 -0.086	-2.177	0.006*
ILTxLMX → EL	-0.103	0.099	-0.009 0.433	1.742	0.050*
ELxLMX → PSOSTR	0.184	0.128	-0.022 0.618	1.610	0.050*
ILT → EL → PSOSTR	0.216	0.097	-0.123 0.339	1.223	0.050*

Note(s). N:251, Model Fit: CMIN/df=1.737, GFI=0.906, CFI=0.931, TLI=0.920, SRMR=0.0575, RMSEA=0.054. * $p \leq 0.05$ (two-tailed). ** $p \leq 0.01$ (two-tailed)

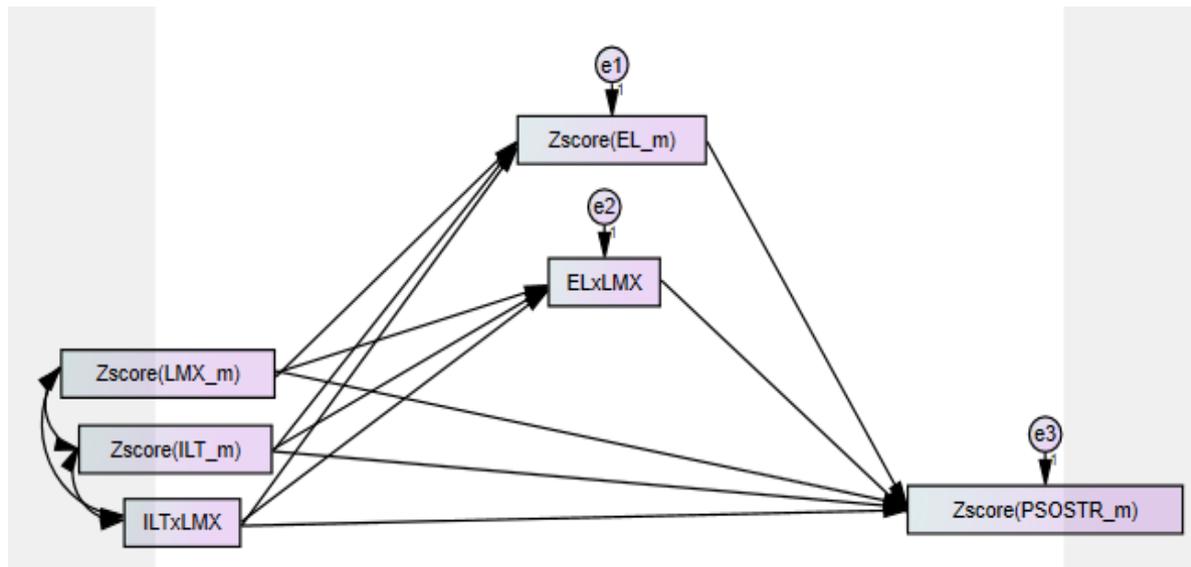


Figure 2. SEM model of the current study

Discussion and Conclusion

Illegitimate tasks increase the employees' workload and weaken their sense of meaningfulness, and they can also lead to a sense of burnout (Fila & Eatough, 2018). Most importantly, ILUR negatively affects the psychological and physical well-being of the employee by causing role conflict. This research results fill this gap by predicting that employees who engage in emotional labor are more affected when they are exposed to ILT. Furthermore, the current research results indicate that low- or high-quality LMX does play a moderating role between EL and PSOSTR after the emotional labor process has begun. Moreover, LMX has two distinct moderation impacts on the relationship between ILT and PSOSTR, as well as on the relationship between EL and PSOSTR. Likewise, the study results discover that ILT directly affects both PSOSTR formation and stress factors more through EL. Therefore, this study's results contribute to the literature,

including the moderating effect of LMX on different variables such as ILT, EL, and PSOSTR.

The emotional labor, not only for employees but also for leaders in organizational processes, is negatively related to emotional exhaustion (Noreen et al., 2021; Cheung et al., 2011; Zheng et al., 2018). The current results support previous literature.

In the aviation industry, errors seem small but can often lead to fatal consequences; for that reason, error minimization is remarkably crucial. As well as stress, fatigue, and workload factors, one of the most vital factors is the leader-member relationship, which increases the human error rate (e., Vagner et al., 2018; Kumari & Aithal, 2020). Thus, ILT, EL, and low-quality LMX during the work processes may cause increased levels of psychosocial stress in the aviation sector.

Theoretical and Practical Implications

Role theory encompasses the expectations that individuals hold for themselves and others regarding the characteristics of roles and behavior patterns (Biddle, 1986). In addition, roles (Haslam & Ellemers, 2005), a crucial component of social identity, contribute to the formation of a sense of purpose and meaning in the individual and are embedded in the employee's identity (Thoits, 1991). Additionally, an occupational role is crucial for self-view improvement (Semmer et al., 2007) and is an integral part of the self (Sluss & Ashforth, 2007). The results also contribute to the literature based on the role theory of ILT and EL. As practical implications, the substantiality of ILT for employees performing EL in aviation and other service industries can be considered at the HR and management levels. As a consequence, measures can be taken by considering the unique work environments and conditions of employees and their well-being levels, and job performances can be enhanced. Therefore, innovative and efficiency-enhancing approaches can be revealed.

Limitations of the Study and Future Research Suggestions

Because the analyses are based on one-time self-reported data and have a relatively small sample size, common method bias may exist. To mitigate this effect, the "maximum likelihood" and "bootstrapping with two-tailed 95% confidence interval" methods were employed. Additionally, procedure controls and the error-corrected percentile method were implemented to minimize statistical bias. Future studies should also conduct new research through alternative measures to enlighten new relationships among the variables. Studies can be conducted to separately measure ILUN and ILUR in relation to other variables, provided an appropriate sample size is used. Besides, the dimensions of EL can be measured separately and explored to determine to what extent they are effective, and which emotional labor

dimension (ELAB, ELDB, ELSUP) is most effective. In future studies, the functions of PSYCAP as a mediator or outcome variable in these processes can be empirically investigated. Qualitative studies examining not only the psychological processes of the ILT but also the psychological processes of the leaders, and comparing the perspectives of employees and leaders, may contribute to both ILT and leadership literature.

Declarations

Ethics Committee Approval

The field study decision for this article was made at the meeting of the Istanbul Nişantaşı University Ethics Commission on January 30, 2023. It was approved with the Ethics Committee Permission No: 2023/7.

Consent for Publication

Not applicable.

Availability for Data and Materials

Not applicable.

Competing Interests

The author declares that no competing interests in this manuscript.

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Authors' Contributions

SSA, MS, and DU contributed to the conceptualization and methodology of the study. SSA was responsible for data analysis, drafting the initial manuscript version, and project management. MS contributed to the literature review, research design, data interpretation, and manuscript revision. DU was responsible for data collection, visualization, ethics committee procedures, and final approval of the manuscript. All authors have read and approved the final version of the article.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

Attachment Styles and Marital Satisfaction: A Comparative Study of North Cyprus and Saudi Arabia

Bağlanma Stilleri ve Evlilik Doyumu: Kuzey Kıbrıs ve Suudi Arabistan'da Karşılaştırmalı Bir Çalışma

Enas Saifeldin Ahmed¹, Ayşe Özada Nazım¹

Abstract:

This study employed a cross-sectional quantitative research design to explore the relationship between attachment styles and marital satisfaction among Turkish Cypriot and Saudi couples, with a focus on gender, type of marriage, and number of children. A total of 201 married individuals participated, selected through convenience sampling; 100 resided in Northern Cyprus, and 101 lived in Saudi Arabia. The majority of participants were university graduates aged 35-44. Data collection included the Experiences in Close Relationships-Revised (ECR-R), the Relationship Assessment Scale (RAS), and a personal information form developed by the researchers. The data were analyzed using descriptive statistics, Spearman correlation, the Mann-Whitney U test, and multiple regression in SPSS version 29. The results indicated that both anxious ($r = -0.688$) and avoidant ($r = -0.564$) attachment styles were significantly and negatively associated with marital satisfaction in both samples. Additionally, Turkish Cypriots reported higher marital satisfaction than their Saudi counterparts. Among Saudi participants, those in monogamous marriages exhibited higher marital satisfaction than those in polygamous marriages. Importantly, no significant relationship between gender and marital satisfaction was identified in either group. Overall, the findings suggest that marital satisfaction is linked to the number of children, attachment styles, and the type of marriage. These results are intended to provide insights for family counselors, psychologists, and social workers. Furthermore, it is recommended that future research examine attachment styles and marital satisfaction across different populations and with various variables.

Keywords: Attachment styles, Socio-cultural factors, Marital satisfaction, Gender roles, Cross-cultural study.

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Öz:

Bu çalışma nicel araştırma modeli kullanılarak tasarlanmış kesitsel bir araştırmadır. Araştırmanın amacı, cinsiyet, evlilik türü ve çocuk sayısına vurgu yaparak Kıbrıslı Türk ve Suudi çiftler arasında bağlanma stilleri ve evlilik doyumu arasındaki ilişkinin belirlenmesidir. Kolayda örnekleme yöntemiyle toplam 201 evli birey çalışmaya dahil edilmiştir; bunların 100'ü Kuzey Kıbrıs'ta, 101'i ise Suudi Arabistan'da yaşamaktadır. Katılımcıların çoğunluğu 35-44 yaş aralığında olup üniversite mezunudur. Veriler, Yakın İlişkiler-Revize Ölçeği, İlişki Değerlendirme Ölçeği ve araştırmacılar tarafından geliştirilen kişisel bilgi formu aracılığıyla toplanmıştır. Elde edilen veriler SPSS 29 programında tanımlayıcı istatistikler, Spearman korelasyonu, Mann-Whitney U testi ve çoklu regresyon kullanılarak analiz edilmiştir. Sonuçlar, her iki örnekleme de kaygılı ($r = -0.688$) ve kaçınmacı ($r = -0.564$) bağlanma stillerinin evlilik doyumu ile anlamlı ve negatif yönde ilişkili olduğunu ve Kıbrıslı Türklerin daha yüksek memnuniyet düzeyleri bildirdiğini göstermiştir. Tek eşli evlilik yapan Suudilerin, çok eşli evlilik yapanlara kıyasla daha yüksek düzeyde evlilik memnuniyeti hissettikleri belirlenmiştir. Her iki grupta da cinsiyetin evlilik doyumu ile anlamlı bir ilişki göstermediği saptanmıştır. Araştırma bulgularına göre evlilik doyumu çocuk sayısı, bağlanma tarzları ve evlilik türü ile ilişkilidir. Bu araştırmanın bulgularının aile danışmanları, psikologlar, sosyal hizmet uzmanları ve aile danışmanlarına yol gösterici olacağı düşünülmektedir. Ayrıca, bağlanma stilleri ve evlilik doyumunun farklı popülasyonlarda çeşitli değişkenlerle incelenmesinin yararlı olacağı düşünülmektedir.

Anahtar Kelimeler: Bağlanma stilleri, Sosyo-kültürel faktörler, Evlilik doyumu, Toplumsal cinsiyet rolleri, Kültürler arası çalışma.

Introduction

A formal definition of marriage includes the legal, economic, and emotional joining of two consenting adults (Imam & Akhouri, 2022). However, the functions that marriage serves, such as supporting child development, strengthening family ties, providing economic advantages, and offering a stable foundation for shared work and resources, vary across cultures and regions. (Argyle, 2021; Sassler & Lichter, 2020). Although perspectives on marriage differ, research strongly suggests that successful marriages demonstrably benefit individuals, families, and communities (Umberson & Thomeer, 2020). A key indicator of a successful marriage is the marital satisfaction reported by the partners. Al-Darmaki et al. (2016) define marital satisfaction as the perceived balance of benefits and drawbacks experienced within a marital union. The significance of marital satisfaction on emotional well-being, mental and physical health, parenting efficacy, and overall life satisfaction has been explored by numerous researchers. Demographic factors, personality traits, religious and spiritual beliefs, sexual intimacy, parenting styles, and attachment styles have been shown to impact marital satisfaction (Yucel & Koydemir; Jose, 2007; Abbasi, 2016).

Attachment styles are derived from the attachment theory, developed initially by Bowlby (1969), and later refined by Ainsworth (1973) and other developmental researchers (Bowlby, 1979). Bowlby (1969) defines attachment as the deep emotional bonds individuals feel towards people they see as important. Attachment forms the foundation of interpersonal relationships, and the relationship established between the caregiver and the infant also supports adult relationships (Bowlby, 2012). Ainsworth identified three distinct patterns or styles of attachment, which were termed secure, anxious-resistant, ambivalent, and avoidant (Ainsworth et al., 1978). Although attachment theory was developed to explain the complex nature of infant-caregiver relationships, the theory was later extended to include emotional bonds between partners in adulthood. Some studies have shown that secure attachment styles correlate with higher levels of satisfaction, while insecure attachment styles correlate with lower levels (Kamel Abbasi et al., 2016; Martins et

al., 2023). However, Mohammadi, Samavi, and Ghazavi (2016) found that avoidant and anxious-ambivalent attachment styles were negatively associated with marital satisfaction, whereas secure attachment was not significantly associated. Findings on cross-cultural gender differences in adult attachment are inconsistent. For instance, Ergin and Dag (2013), working with a Turkish sample, reported that women scored significantly higher than men on anxious attachment. In contrast, Al-Jabeila (2019) found that men scored higher on secure attachment in a study of 380 married adults in Saudi Arabia. In contrast, no significant gender differences were observed in anxious or avoidant attachment. Such discrepancies are likely influenced by factors including the educational level, geographical location, and cultural values of the populations studied. These differences are thought to be caused by factors such as the educational level, geographical location and cultural values of the sample group from which the data were collected. Cross-cultural differences in attachment patterns are attributable to variations in relevant child-rearing beliefs and social norms (Pearson & Child, 2007).

In the cross-cultural literature, the dynamics of marriage is shaped by individualism and collectivism (Triandis, 1995). In individualist cultures, marriage is typically conceived as a self-selected partnership grounded in personal choice and affective gratification. On the other hand, in collectivist cultures, stronger bonds have been observed within families of origin, extended family networks, and marital kin (Keller, 2012).

Although studies on attachment styles and marital satisfaction exist in both Northern Cyprus and Saudi Arabia, no study has examined both societies together. In this respect, it is considered beneficial to be acquainted with the general characteristics of the two societies. The population of Northern Cyprus consists of native Turkish Cypriots and immigrants from Türkiye. Turkish culture, shaped in part by Islamic influences, is generally regarded as more collectivist compared to many Western cultures (Hofstede, 2001). Collectivist values also shape Saudi Arabian society, but these are strongly reinforced by conservative interpretations of Islam and tribal traditions

(Long & Maisel, 2010). The country maintains a highly patriarchal structure, where gender roles are rigidly defined and male authority is deeply embedded in both family and societal contexts (Alhazmi, 2016). Another critical factor in both societies is the divorce rate. There has been an upward trend in the divorce rate in North Cyprus. The divorce rate per 1,000 people was around 1.9% in 2005 and rose to 2.23% in 2023 (Yucel & Koydemir, 2015; TRNC State Planning Organization, 2024). Similarly, the divorce rate in Saudi Arabia has increased, reaching 2.18% per 1,000 individuals in 2020 (Alrebh & Al-Mabuk, 2025; General Authority for Statistics, 2021).

The present study investigates the correlation between sociocultural factors, attachment styles, and marital satisfaction through a cross-cultural comparative analysis of North Cyprus and Saudi Arabia. This study employed a quantitative, cross-sectional design to examine how sociocultural factors, attachment styles, and marital satisfaction interrelate among married Turkish Cypriot and Saudi couples. Specifically, the research addressed two questions:

1. To what extent are attachment styles associated with marital satisfaction?
2. Do Turkish Cypriot and Saudi couples differ in their attachment styles and levels of marital satisfaction?

Methods

Sample

Participants were recruited through convenience sampling. The sample consisted of 201 married individuals, including 100 from North Cyprus and 101 from Saudi Arabia. All participants were 18 years of age or older and currently residing in their respective countries. Invitations to participate were shared through social media groups. Respondents who met the inclusion criteria-being married, at least 18 years old, and a current resident-completed an online questionnaire.

Procedure

The researchers proceeded without obtaining formal approval from the authors of the Experiences in Close Relationships-Revised Scale and the Relationship Assessment Scale. The consent and demographic forms were translated into Turkish and Arabic by native speakers who ensured clarity and made necessary adjustments. Informed consent was secured from all participants in the study. The data were gathered spanning from December 2023 to February 2024. Participants typically completed the questionnaire in 30 minutes using Google Forms. Online survey administration may amplify social desirability bias when assessing cultural effects (Kreuter et al., 2008). Nevertheless, participants were explicitly informed that their responses would remain detached from personal identifiers; for sensitive items, Likert-type scales were utilized instead of binary response formats.

Measures

In addition to the personal information form, which included sociodemographic questions, the Experiences in Close Relationships Scale-Revised Form and the Relationship Assessment Scale were also used.

Personal Information Form

Researchers designed the Personal Information Form after reviewing existing demographic questionnaires in the attachment and marriage literature. The form included 15 closed-ended questions on:

Age, gender, income, education level, number of children, marital duration and type, sex education, gender roles, marital satisfaction, perceived marital quality.

Experiences in Close Relationships-Revised (ECR-R)

Attachment styles and interpersonal dynamics in relationships were assessed using the ECR-R. The ECR-R was developed initially by Brennan (1998). It comprises 36 items designed to measure maladaptive adult attachment patterns within romantic relationships. It has two subscales, named avoidance and anxiety. The Arabic version of the ECR-R demonstrated high reliability, with Cronbach's alpha coefficients of .89 for the avoidance subscale and .88 for the anxiety subscale (Al-Tamimi, 2009). Similarly, the Turkish adaptation showed substantial reliability, with Cronbach's alphas of .90 and .86 for the avoidance and anxiety subscales, respectively (Selçuk et al., 2005).

Relationship Assessment Scale (RAS)

The RAS was developed initially by Hendrick (1988) to measure individuals' self-reported satisfaction with their intimate relationships. The scale consists of seven items that evaluate overall relationship satisfaction. Items such as "To what extent does your partner fulfil your needs?" are rated on a five-point Likert scale ranging from 1 (low satisfaction) to 5 (high satisfaction). The RAS has been translated into both Turkish and Arabic and has demonstrated acceptable reliability, with Cronbach's alpha coefficients of .84 for the Arabic version (Al-Tamimi, 2009) and .87 for the Turkish version (Çelik, 2014).

Statistical analyses

Data analysis was conducted using SPSS, version 29. The study's hypotheses were tested using exploratory and descriptive analyses, Spearman correlation, the Mann-Whitney U test, and multiple regression. The scale's reliability was evaluated using Cronbach's alpha. Exploratory analysis revealed distribution patterns, outliers, and anomalies; descriptive statistics were utilized to summarize demographic information and central tendency measures. Multiple regression examined the effects of socio-cultural factors on marital satisfaction. While Spearman correlation explored associations between insecure attachment and marital satisfaction, the Mann-Whitney U test compared attachment and satisfaction levels by nationality, gender, and marital structure.

Results

Participants' sociodemographic characteristics

Table 1 illustrates the sociodemographic characteristics of the participants. The groups showed balanced gender ratios and high levels of education, with Saudis holding more master's degrees and Turkish Cypriots holding more doctorates. Turkish Cypriots were typically older and reported higher incomes.

Table 1. Participants' Sociodemographic Characteristics

Variable	Saudi (n =101)	Turkish Cypriot (n =100)
Gender		
Female	53 (52.5%)	54 (54%)
Male	48 (47.5%)	46 (46%)
Age Group		
18-24	5 (5%)	-
25-34	30 (29.7%)	30 (30%)
35-44	35 (34.7%)	39 (39%)
45-54	12 (11.9%)	23 (23%)
55-64	9 (8.9%)	4 (4%)
65>	10 (9.9)	4 (4%)
Education Level		
Lower than high school level	4 (4%)	5 (5%)
High school diploma or equivalent	7 (6.9%)	9 (9%)
Bachelor's degree	43 (42.6%)	42 (42%)
Master's degree	32 (31.7%)	21 (21%)
Doctorate	15 (14.9%)	23 (23%)
Income Level		
<4000 SAR/<12,000 TL	10 (9.9%)	11 (11%)
4000 - 10,000 SAR/12,100-20,000 TL	16 (15.8 %)	12 (12%)
10,000 - 15,000 SAR/20,100-30,000 TL	30 (29.7 %)	1 (1%)
15,000 - 25,000 SAR/30,100-40,000 TL	25 (24.8 %)	33 (33%)
>25,000 SAR/>40,000 TL	20 (19.8 %)	43 (43%)

Descriptive findings about marriage

Descriptive findings about marriage are presented in Table 2. 13.9% of Saudis were in polygamous unions, while all Turkish Cypriots were in monogamous marriages. Marriage duration was similar across groups, but Turkish

Cypriots were more often married for over ten years. In comparison, Saudis reported a broader range, including larger families, whereas the former had one or two children. Perceived marital quality was higher among Saudis, but response variability was greater.

Table 2. Descriptive Findings about Marriage

Type of Marriage	Saudi (n =101)	Turkish Cypriot (n =100)
Monogamous	85 (84.2 %)	100 (100%)
Polygamous	14 (13.9%)	-
Unspecified	2 (2%)	-
Duration of marriage		
1 year <	6 (5.9%)	9 (9 %)
1-3 years	19 (18.8)	8 (8%)
4-6 years	24 (23.8%)	21 (21%)
7-10 years	25 (24.8 %)	18 (18%)
10-15 years	10 (9.9%)	22 (22%)
15 years >	17 (16.8%)	22 (22%)

Number of children		
0	18 (17.8%)	22 (22%)
1	16 (15.8 %)	30 (30 %)
2	15 (14.9 %)	34 (34%)
3	15 (14.9 %)	11 (11%)
4	18 (13.9 %)	3 (3%)
5	11 (10.9 %)	-
6	8 (7.9%)	-
7	1 (1%)	-
Perceived marital quality		
Very good	29 (28.7%)	25 (25%)
Good	19 (18.8 %)	36 (36%)
Neutral	24 (23.8)	16 (16%)
Bad	23 (22.8)	16 (16%)
Very bad	6 (5.9)	7 (7%)
Mean	2.67	1.43
Sd.	1.950	1.047
Min.	0	0
Max.	7	4

Attachment and Marital Satisfaction

Table 3 illustrates that Spearman correlation analysis identified substantial negative correlations between marital satisfaction and insecure attachment. Both anxious ($r = -0.70, p < .001$) and avoidant attachment ($r = -0.56, p < .001$) were negatively correlated with marital satisfaction in the Saudi group.

Similar trends were observed in the Turkish Cypriot sample, with negative correlations for both anxious attachment ($r = -0.39, p < .001$) and avoidant attachment ($r = -0.53, p < .001$).

Table 3. Correlation of Attachment and Marital Satisfaction

Variable	Saudi Group		Turkish Cypriot Group	
	r	p	r	p
Anxious attachment	-0.688**	<.001	0.393**	<.001
Avoidant attachment	-0.564**	<.001	-0.532**	<.001

Gender and Marital Satisfaction

Correlation of gender and marital satisfaction is presented in Table 4. Mann-Whitney U tests were used to assess gender differences in marital satisfaction within each cultural group. In the Saudi sample, both males (Mdn = 3.71, n = 101) and females (Mdn = 3.71, n = 101) did not differ significantly in marital satisfaction (U = 1235.50, p

= 0.804). Similarly, among Turkish Cypriot participants, no significant difference was observed between males (Mdn = 4.93, n = 100) and females (Mdn = 4.86, n = 100), with U = 1235.50 and p = 0.964. These findings suggest that there is no gender-based differences in marital satisfaction in either group.

Table 4. Correlation of Gender and Marital Satisfaction

Variable	Saudi Group			Turkish Cypriot Group		
	Male	Female	p	Male	Female	p
	Mdn			Mdn		
Marital satisfaction	3.71	3.71	0.804	4.93	4.86	.964

Marriage Type and Marital Satisfaction

Marriage type and marital satisfaction levels among Saudi participants are presented in Table 5. The results revealed that participants in polygamous marriages (Mdn = 2.50, n

= 101) had lower levels of marital satisfaction than participants in monogamous marriages (Mdn = 4.14, n = 101), $U = 234$, $z = -3.629$, $p < .001$, $r = -36.47$.

Table 5. Differences between Marriage Type and Marital Satisfaction

Variable	Monogamy	Pologamy	P
	Mdn	Mdn	
	4.14	2.50	<.001

Discussion

This study examined how sociocultural factors and attachment styles affected marital satisfaction in Saudi and Turkish Cypriot couples. In line with Rashidi Fakari et al. (2022), sociocultural factors emerged as significant predictors of marital satisfaction. Nevertheless, only the number of children and insecure attachment levels predicted marital satisfaction across both groups. In Saudi Arabia, gender roles and marital structure were impactful, and polygamous unions correlated negatively with marital satisfaction. In contrast to previous research (Kaba & Güngör, 2024), no gender-based disparities in attachment styles or marital satisfaction were observed, consistent with the findings of Momeni et al. (2022). In Saudi Arabia, traditional gender roles were more common, and couples who adhered to them reported lower levels of marital satisfaction. These roles are deeply embedded in Saudi culture, unlike the more equal roles seen in Northern Cyprus (Yucel & Koydemir, 2015). Research also revealed a notable link between family size and marital satisfaction, with larger families experiencing lower satisfaction (Kowal et al., 2021). Furthermore, polygamy was associated with lower marital satisfaction among Saudi participants, aligning with previous studies (Sinai & Peleg, 2020).

Attachment styles were found to be significantly correlated with marital satisfaction. Higher levels of insecure attachment were associated with lower marital satisfaction, whereas secure attachment was associated with higher satisfaction (Kamel Abbasi et al., 2016). No significant differences in secure attachment levels were observed between the two groups, which aligns with findings from cross-cultural studies (McLeod, 2024). The influence of insecure attachment on marital satisfaction, however, varied between groups. Avoidant attachment had a more substantial negative effect on marital satisfaction among Turkish Cypriots, while both types of insecure attachment notably impacted Saudi participants.

Conclusion

This study explores the relationship between sociocultural characteristics, attachment styles, and marital satisfaction among married couples from North Cyprus and Saudi Arabia. The findings indicate that a higher percentage of Turkish Cypriots (61%) rate their marriage as good or very good compared to Saudi respondents (48%). Additionally, the study shows that higher levels of insecure attachment are associated with lower marital satisfaction. There is no significant difference in marital satisfaction based on sex in either group. Finally, the research reveals that marital satisfaction is lower in polygamous marriages.

Recommendations

The current study found that secure attachment is a key factor influencing marital satisfaction. Therefore, it is crucial to create environments that foster secure attachments between children and their caregivers from an early age. Clinical practitioners should assist their clients in adapting to the changes that occur during the prenatal and postnatal periods, helping them adjust to new parental roles and respond effectively to their babies' needs. Additionally, raising public awareness through various media channels can help reach a broader audience. On the other hand, the decline in marital satisfaction with increasing numbers of children highlights the importance of effective family planning. Providing services such as complimentary premarital counselling before marriage has been shown to help establish a harmonious relationship between couples. Finally, it is recommended to organize family education programs through collaborative efforts between school guidance units and social services.

Limitations

This study has several limitations. First, the sample size was restricted to 201 participants, which may have affected the results and limited the generalizability of the findings to larger populations. Second, the gender distribution was slightly imbalanced, with 53% female and 47% male participants. This imbalance may have arisen partly because the researchers' gender made it easier to access female participants. Third, the data were collected through online platforms, potentially increasing social desirability bias when measuring cultural effects. Fourth, the small number of participants in polygamous marriages, particularly among Saudi participants, limits the generalizability of the results regarding the impact of polygamy on marital satisfaction. Lastly, it was assumed that participants responded honestly and accurately to the questionnaire items, genuinely reflecting their thoughts and experiences.

Declarations**Ethics Committee Approval**

Ethical approval was obtained from the Scientific Research Ethics Committee of Cyprus International University (EKK23-24/01/004). Before their participation, all participants were provided with and approved informed consent forms.

Consent for Publication

Not applicable.

Availability for Data and Materials

Not applicable.

Competing Interests

The authors declare that they have no competing interests in this manuscript.

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Authors' Contributions

This Research was a part of the first author's master's thesis. The second author was responsible for the study design and supervision. The first author contributed to data collection, follow-up, analysis, manuscript drafting, critical revision of the article, and provided technical and material support. All authors have read and approved the final version of the manuscript.

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The Shadow Epidemic: A Five-Year Retrospective Analysis of Workplace Violence and Aggression Pathways in a Psychiatric Hospital

Görünmeyen Salgın: Bir Psikiyatri Hastanesinde İş Yeri Şiddeti ve Saldırganlığın Yolları Üzerine Beş Yıllık Bir Geriye Dönük Analiz

Cengiz Cengisiz¹, Sevgi Nehir²

Abstract:

Workplace violence (WPV) in psychiatric settings is a global crisis, yet its true prevalence is often obscured by systemic underreporting. This study analyzes officially documented incidents of violence in a psychiatric hospital to uncover underlying patterns of aggression and to estimate the magnitude of this reporting deficit. The aims were threefold: (1) to analyze the characteristics of officially reported violent incidents in a high-security Turkish psychiatric hospital over a five-year period; (2) to critically evaluate the observed incident rate against international benchmarks of comparable violence types to quantify the likely magnitude of underreporting; and (3) to delineate distinct aggression pathways based on the identities of those involved. The analysis was framed by specific Trauma-Informed Care (TIC) principles - safety, trustworthiness, transparency, and empowerment - to identify points of systemic failure. A retrospective analysis of all 51 Code White reports filed between January 1, 2018, and December 31, 2022, was conducted. Data were analyzed using descriptive statistics and Chi-Square tests of independence, with Cramer's V calculated to measure effect size. An exceptionally low annual incident rate was identified. Similar forms of violence were compared, and it was found that the rate of reported physical violence (0.55 incidents per 100 beds per year) was approximately 98.5% lower than international benchmarks for forensic psychiatric settings. Two distinct aggression pathways emerged: a "communication-frustration pathway," characterized by verbal aggression from patient relatives directed at physicians, and a "coercion-resistance pathway," characterized by physical aggression from patients directed at frontline staff. The association between the identity of the individual engaging in aggression and the type of violence was statistically significant and large ($\chi^2(4, N=51) = 34.171, p < .001, \text{Cramer's } V = 0.579$).

Keywords: Workplace violence, Aggression, Underreporting, Psychiatric hospital, Forensic psychiatry.

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Öz:

Bu çalışma, saldırganlığın altında yatan örüntüleri ortaya çıkarmak ve bu bildirim eksikliğinin boyutunu tahmin etmek amacıyla bir psikiyatri hastanesinde resmi olarak belgelenmiş şiddet olaylarını analiz etmektedir. Çalışmanın üç temel amacı bulunmaktadır: (1) Türkiye'de yüksek güvenlikli bir psikiyatri hastanesinde beş yıllık bir süre boyunca resmi olarak bildirilen şiddet olaylarının özelliklerini analiz etmek; (2) gözlemlenen vaka oranını, karşılaştırılabilir şiddet türlerini temel alan uluslararası ölçütlerle eleştirel bir şekilde karşılaştırarak bildirim eksikliğinin olası boyutunu nicelemek; ve (3) olaya karışan kişilerin kimliklerine dayalı olarak belirgin saldırganlık yollarını tanımlamak ve bu örüntüleri, sistemik başarısızlık noktalarını belirlemek amacıyla spesifik Travma Odaklı Bakım (TOB) ilkelerine (güvenlik, güvenilirlik, şeffaflık, güçlendirme vb.) dayalı bir çerçeveye analiz etmek. 1 Ocak 2018 ile 31 Aralık 2022 tarihleri arasında dosyalanan 51 "Beyaz Kod" raporunun tamamının geriye dönük bir analizi yapılmıştır. Veriler, tanımlayıcı istatistikler ve Ki-Kare bağımsızlık testleri kullanılarak analiz edilmiş, etki büyüklüğünü ölçmek amacıyla Cramer V değeri hesaplanmıştır. İstisnai derecede düşük bir yıllık olay bildirim oranı tespit edilmiştir. Benzer şiddet türleri karşılaştırıldığında, bildirilen fiziksel şiddet oranının (yıllık 100 yatak başına 0.55 olay) adli psikiyatri ortamları için uluslararası ölçütlerden yaklaşık %98.5 daha düşük olduğu bulunmuştur. İki belirgin saldırganlık yolağı ortaya çıkmıştır: hasta yakınları tarafından hekimlere yöneltilen sözel saldırganlıkla karakterize bir "iletişim-engellenme yolağı" ve hastalar tarafından ön saflardaki personele yöneltilen fiziksel saldırganlıkla karakterize bir "zorlama-direnç yolağı". Saldırgan davranışta bulunan kişinin kimliği ile şiddet türü arasındaki ilişki istatistiksel olarak anlamlı ve büyük bir etkiye sahiptir ($\chi^2(4, N=51)=34.171, p<.001, \text{Cramer's } V=0.579$).

Anahtar Kelimeler: İş yeri şiddeti, Saldırganlık, Bildirim eksikliği, Psikiyatri hastanesi, Adli psikiyatri.

Introduction

Healthcare institutions face a disproportionately high risk of violence compared to other sectors, with some estimates suggesting a 16-fold greater likelihood of exposure. A meta-analysis involving over 333,000 participants found that 61.9% had experienced at least one episode of violence, with verbal abuse being the most common form (Liu et al., 2019). The consequences are severe, contributing to staff burnout, psychological distress, including post-traumatic stress disorder (PTSD), increased turnover, and a subsequent decline in care quality.

Within this broader landscape, psychiatric environments present a uniquely elevated risk for WPV. The confluence of acute mental illness, involuntary admissions, and restrictive inpatient conditions can create a volatile atmosphere conducive to conflict (Mento et al., 2020). This risk is further amplified in forensic psychiatric hospitals, which manage individuals with complex clinical-legal profiles, often detained by court order. The intersection of psychiatric symptoms with carceral elements can exacerbate patient distress and frustration, increasing the likelihood of aggressive behavior toward staff (Deniz & Yüksel, 2020). Research indicates that violence rates on forensic wards can be nearly double those on general acute psychiatric units (Nielssen et al., 2015), firmly establishing these settings as among the most hazardous in any industry.

Despite this high prevalence, the true incidence of WPV remains largely obscured by systemic underreporting. The metaphor of a "shadow pandemic," used by the United Nations to describe crises hidden by institutional silence particularly gender-based violence during the COVID-19 pandemic (UN Women, 2020) aptly characterizes WPV. Evidence suggests underreporting may reach 70%, with verbal aggression the most frequent form least likely to be documented (Arnetz et al., 2015). This reframes underreporting not as a methodological flaw but as a primary symptom of a dysfunctional organizational safety culture. Contributing factors include the normalization of aggression as "part of the job," fear of blame, cumbersome reporting procedures, and lack of meaningful follow-up,

all of which are shaped by broader institutional and socio-cultural dynamics (Büyükbayram & Okçay, 2013).

In Turkey, rising concerns over violence against healthcare workers led the Ministry of Health to implement the "White Code" (Beyaz Kod) system in 2013. This centralized mechanism allows any healthcare worker to trigger an immediate security response, with automatic reporting to the Ministry and public prosecutor for potential investigation (Sağlık Bakanlığı, 2013). However, in practice, staff often perceive administrative consequences negatively or report inadequate follow-up. Indeed, several studies have analyzed White Code data to understand the characteristics of violence in general hospital settings across Turkey (Özen Bekar & Çevik, 2021; Eğici & Öztürk, 2018; Polat & Çırak, 2019; Torun, 2020). However, detailed analyses of this data from specialized, high-security psychiatric facilities remain scarce a significant gap this study addresses. Despite this national framework, detailed analyses of White Code data from specialized, high-security psychiatric facilities remain scarce a significant gap this study addresses.

Given the high-risk nature of forensic psychiatric settings and the pervasive issue of underreporting, a simple descriptive analysis of official reports is insufficient. A deeper, more critical approach is required. Therefore, this study aims to: (1) retrospectively analyze the epidemiological characteristics of all officially reported White Code incidents over five years in a regional high-security psychiatric hospital; (2) critically evaluate the low incident rate against international benchmarks to quantify the likely magnitude of underreporting; and (3) delineate distinct pathways of aggression and analyze them through the lens of Trauma-Informed Care (TIC) to identify specific points of systemic failure. The TIC framework provides a powerful explanatory tool, suggesting that patterns of violence are not random but predictable responses to failures in providing safety, trust, transparency, and empowerment positioning this research as explanatory and diagnostic, not merely descriptive.

This study is critical as it addresses a significant gap in the literature regarding high-security forensic psychiatric settings in Turkey, a region where such data is scarce. By moving beyond descriptive statistics to apply a Trauma-Informed Care (TIC) framework, the study offers a novel explanatory model for why violence occurs and persists. Furthermore, it provides the empirical evidence needed to shift institutional policy from reactive security measures to proactive, culture-based interventions, potentially serving as a model for similar institutions facing the 'shadow epidemic' of unreported violence.

Research Questions

What are the types of violence in code white?

What are the sociodemographic variables in types of violence in code white?

Materials and Methods

This research employed a retrospective record review design to analyze White Code incident reports filed at a 545-bed, high-security regional psychiatric hospital in Turkey between January 1, 2018, and December 31, 2022. Data extraction was conducted using a standardized form developed by the researchers to ensure consistency across the archival review. All units in the facility are closed wards with controlled entry and exit managed by security personnel and electronic systems; patients cannot leave without authorization, and the population is predominantly forensic. The study population comprised a census of all 51 official White Code reports during this period.

The "White Code" reports analyzed in this study represent formal administrative and legal documents. The process is initiated when a healthcare worker dials the internal emergency line "1111," prompting an immediate response from security personnel. Following the event, the affected employee is required to complete an official "White Code Incident Report," providing a detailed and uncensored account of the incident. This report is submitted to the

institution's Employee Rights Unit, which then forwards it via the hospital's legal department to the Public Prosecutor's Office to initiate a formal judicial inquiry. Therefore, the 51 reports examined in this research are not merely incident logs but are the foundational documents for official legal investigations.

Data were extracted from archived paper files using a standardized form developed by the researchers, capturing incident date, time, location, type and officially recorded cause of violence, and sociodemographic and professional characteristics of both perpetrators and victims. Data were analyzed using SPSS for Windows (Version 22.0). Descriptive statistics (frequencies, percentages, means, standard deviations) summarized the data. Inferential analysis used Chi-Square tests of independence ($p < .05$) to examine associations between categorical variables, with Cramer's V calculated to assess effect size. While primary variables (e.g., incident type, gender, profession) were complete, age data was missing for 31.4% of the perpetrators. Since Chi-Square tests require complete contingency tables, 'listwise deletion' was applied for analyses involving the age variable; thus, cases with missing values were excluded from those specific calculations to maintain statistical validity. The study protocol received approval from the XXX University Faculty of Medicine Ethics Committee (Approval No. 20.478.486/1740, March 8, 2023), and all data were fully anonymized.

Findings

Over five years, 51 White Code incidents were reported. Incidents occurred most frequently in inpatient wards (31.4%) and the emergency department (29.4%), primarily during the day shift (66.7%). Verbal violence was the most common form (56.9%), followed by physical violence (29.4%). Official reports attributed 72.5% of incidents to the "attitudes and behaviors of patients/patient relatives" (Table 1).

Table 1. Descriptive characteristics of incidents

Variable	Category	n	%
Incident Location	Polyclinic	12	23.5
	Ward	16	31.4
	Emergency Department	15	29.4
	Other ^a	8	15.7
Incident Time	08:00-16:00	34	66.7
	16:00-23:00	11	21.6
	24:00-08:00	6	11.8
Type of Violence	Verbal	29	56.9
	Physical	15	29.4
	Other ^b	7	13.7
Cause of Violence	Attitudes of Patients/Relatives	37	72.5
	Unwillingness to Wait	3	5.9
	No Appointment	4	7.8
	Other [*]	7	13.7

Note: The 'Other' location category includes committee office (n=2), chief physician's office (n=2), and two other unspecified locations (n=4). The 'Other' violence type category includes damage to public property (n=1), combined verbal-physical violence (n=3), and social media insults (n=3). The 'Other' cause category includes various requests, non-compliance issues (n=4), and miscellaneous reasons (n=3).

Perpetrators were predominantly male (70.6%, mean age 34.14 years), nearly equally split between patients (47.1%) and patient relatives (45.1%). Victims were mostly female

(54.9%, mean age 41.43 years), with physicians being the most targeted group (47.1%), followed by security personnel (21.6%) (Table 2).

Table 2. Demographic characteristics of individuals involved in incidents

Group	Characteristic	Category	n	%
Individuals engaging in aggressive behavior	Gender	Female	15	29.4
		Male	36	70.6
	Identity	Patient	24	47.1
		Patient relative	23	45.1
		Other ^d	4	7.8
Staff exposed to violence	Gender	Female	28	54.9
		Male	23	45.1
	Profession	Physician	24	47.1
		security	11	21.6
		Nurse / Health officer	8	15.7
		Other ^e	8	15.7

Note: The 'Other' aggressor category includes a police officer (n=1), an ambulance attendant (n=1), and two physicians (n=2). The 'Other' staff profession category includes cleaning staff (n=5), general practitioners (n=2), and a secretary (n=1).

Chi-Square analyses revealed statistically significant and large associations (all p<.001): between aggressor identity

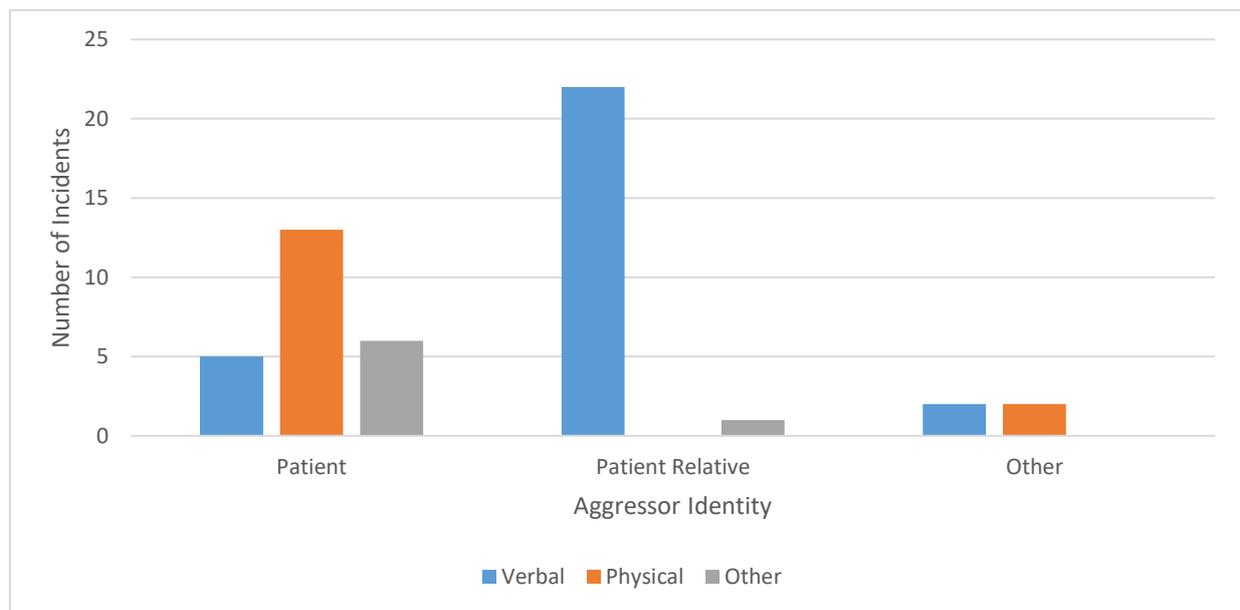
and violence type (Cramer's V=0.579) patient relatives accounted for 75.9% of verbal violence (Table 3).

Table 3. Association between aggressor identity and type of violence

Aggressor Identity	Type of violence			Total
	Verbal violence	Physical violence	Other	
Patient	5	13	6	24
Patient Relative	22	0	1	23
Other	2	2	0	4
Total	29	15	7	51

Note: χ^2 (4, N=51) = 34.171, p<.001; Cramer's V=0.579.

Figure 1. Aggressor Identity and Type of Violence



While patients accounted for 86.7% of physical violence; between staff profession and violence type (Cramer's $V=0.613$) physicians were primary targets of verbal violence (69.0% of cases) (Table 4), whereas security personnel were primary targets of physical violence (46.7%); and between incident location and violence type (Cramer's $V=0.696$) physical violence was most prevalent

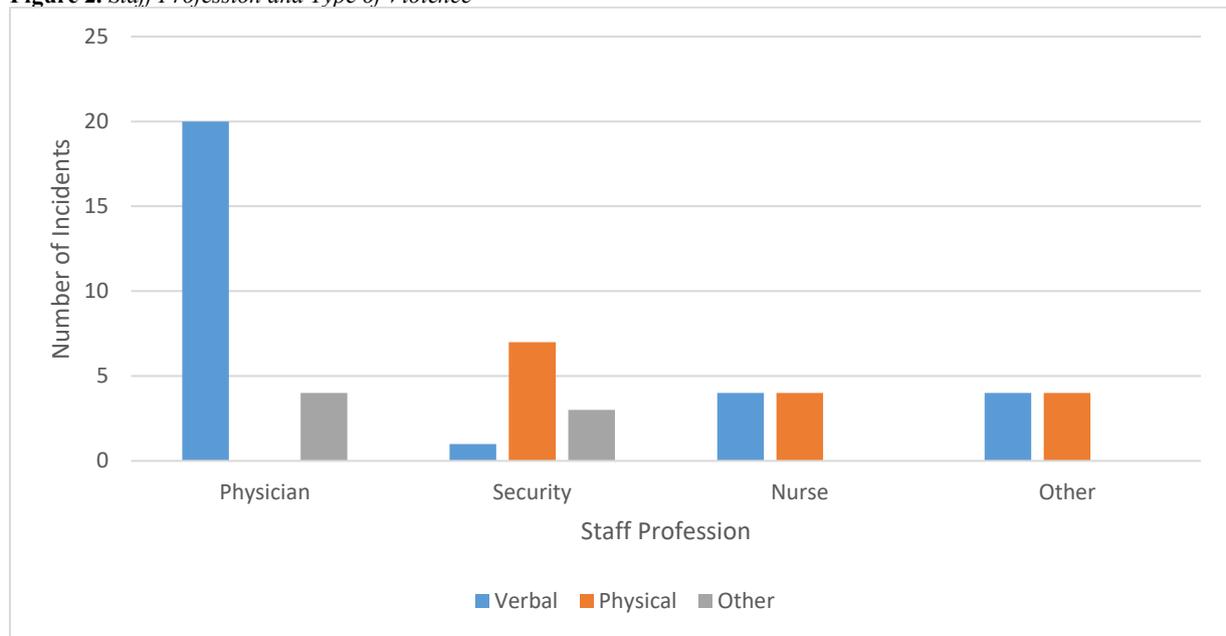
in inpatient wards (46.7% of cases), while verbal violence was more common in polyclinics (34.5%) and the emergency department (31.0%) (Table 5). Due to the small sample size, some expected cell frequencies were below 5; thus, findings should be interpreted cautiously as preliminary.

Table 4. Association between staff profession and type of violence

Incident location	Type of violence			Total
	Verbal violence	Physical violence	Other	
Staff profession				
Physician	20	0	4	24
Security	1	7	3	11
Nurse	4	4	0	8
Other	4	4	0	8
Total	29	15	7	51

Note: $\chi^2 (6, N=51) = 38.342, p < .001$; Cramer's $V=0.613$.

Figure 2. Staff Profession and Type of Violence



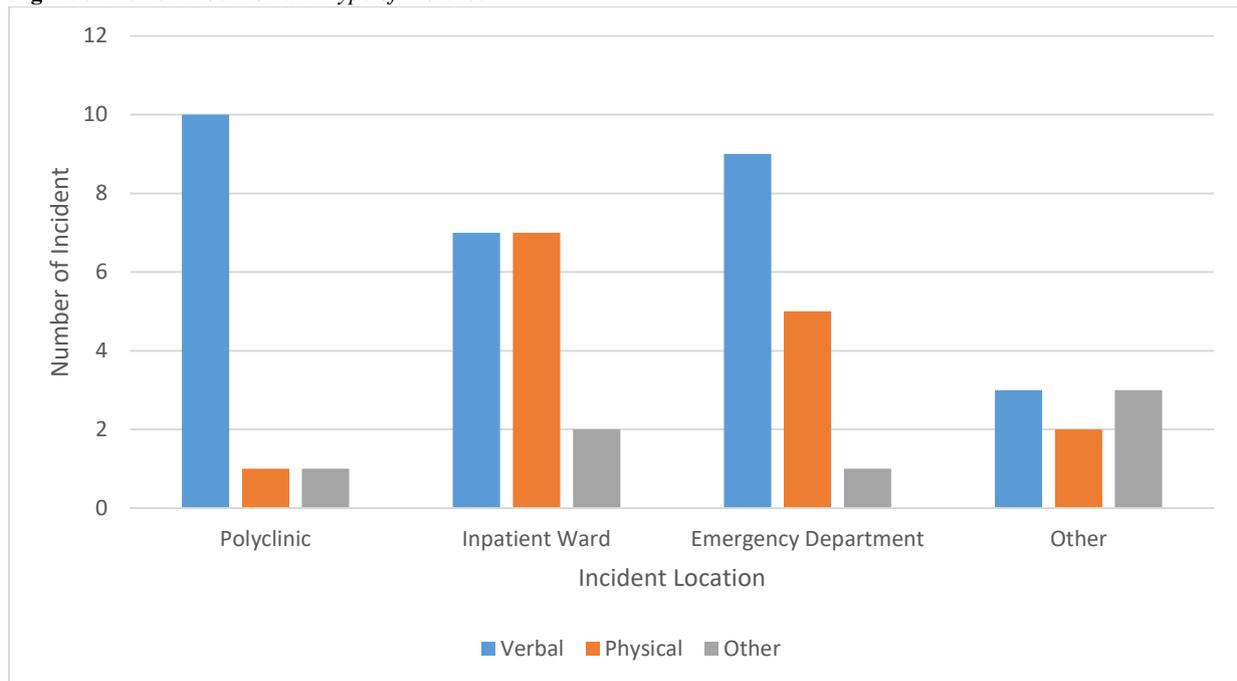
Between incident location and violence type (Cramer's $V=0.696$), physical violence was most prevalent in inpatient wards (46.7% of cases), while verbal violence was more common in polyclinics (34.5%), and the

emergency department (31.0%) (Table 5), (figure 3). Due to the small sample size, some expected cell frequencies were below 5; thus, findings should be interpreted cautiously as preliminary.

Table 5. Association between incident location and type of violence.

Incident location	Type of violence			Total
	Verbal violence	Physical violence	Other	
Polyclinic	10	1	1	12
inpatient ward	7	7	2	16
Emergency department	9	5	1	15
Other	3	2	3	8
Total	29	15	7	51

Note: $\chi^2 (6, N=51) = 49.163, p < .001$; Cramer's $V=0.696$.

Figure 3. Incident Location and Type of Violence

Discussion

The central hypothesis of this study posits that official violence reports in high-security psychiatric settings represent only the tip of the iceberg, obscuring a systemic culture of silence. Confirming this hypothesis, the most significant finding is not merely the characteristics of the 51 reported incidents, but the exceptionally low volume of reports in a 545-bed forensic institution with over a century of history handling complex cases. This discrepancy serves as the primary evidence of a 'shadow epidemic,' where the normalization of aggression and bureaucratic barriers have effectively rendered the vast majority of violent encounters invisible to administrative scrutiny.

Given that the institution is a regional forensic center founded in 1925, with over a century of experience managing the most challenging cases in a vast hinterland, the figure of 51 reports over five years serves as potent evidence of 'systemic underreporting' driven by 'professional habituation.' Staff members, dealing with a highly aggressive patient group daily, appear to have developed a high threshold for reporting, viewing violence as an intrinsic part of their routine. This habituation, rather than a lack of incidents, artificially suppresses the data, confirming the existence of a 'shadow epidemic' hidden behind normalized aggression.

To quantify this deficit, we compared our institution's rate of reported physical violence 0.55 incidents per 100 beds per year with international benchmarks from forensic psychiatric settings. This direct comparison suggests that approximately 98.5% of physical violence incidents are not being reported. Given that physical violence is the most visible and legally consequential form of aggression, this figure implies that verbal abuse and other subtle hostilities have likely become so normalized that they are no longer perceived as reportable events. The result is a profound distortion of institutional reality, where policies

are built on incomplete data, and staff safety remains compromised yet invisible.

Beyond the scale of underreporting, our analysis uncovered two distinct pathways of aggression, each tied to specific relational and systemic dynamics. The first, which we label the *communication-frustration pathway*, primarily involves verbal aggression from patient relatives directed at physicians. This pattern should not be dismissed as the behavior of "difficult families" but understood as a predictable response to systemic failures in transparency and collaboration. Drawing on the Trauma-Informed Care (TIC) framework outlined by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2014), this aggression reflects breaches of the core principles of *trustworthiness*, *transparency*, and *collaboration and mutuality*. When families are excluded from care decisions, receive inconsistent information, or perceive staff as dismissive, their anxiety and helplessness can manifest as verbal hostility a desperate attempt to regain control in a system that feels opaque and unresponsive. This interpretation is supported by local research indicating that patients' relatives often attribute conflicts to systemic communication failures and a perceived lack of empathy (Takak & Artantaş, 2018).

The second pathway the *coercion-resistance pathway* involves physical aggression from patients toward frontline staff, especially in inpatient wards. In the context of a high-security forensic unit, where autonomy is severely restricted, such aggression may reflect a trauma-based response to perceived threats or a desperate attempt to reclaim agency. From a TIC perspective, this dynamic signals a failure to uphold the principles of *safety* and *empowerment, voice, and choice* (SAMHSA, 2014). Rather than viewing this behavior as purely pathological, it should be interpreted as resistance to an environment that may inadvertently re-traumatize individuals already vulnerable due to psychiatric and legal histories. In contrast to these restrictive conditions, community-based

models emphasizing psychiatric rehabilitation have been shown to significantly enhance patients' hope and quality of life (Cengiz et al., 2023). This aligns with the concept of *institutional betrayal*, as defined by Smith and Freyd (2014), wherein the very institution tasked with care becomes a source of harm through its rigid, coercive structures.

Compounding these dynamics is a striking dissonance in attribution. Official reports attributed 72.5% of incidents to the “attitudes and behaviors of patients or relatives,” effectively locating the cause of violence within the individual rather than the system. This internal blame narrative contrasts sharply with societal perceptions documented in recent research by Duğan (2024), which analyzed public discourse and found that poor communication and lack of empathy among staff are widely perceived as key triggers for conflict. This discrepancy is not merely anecdotal; it reflects a self-reinforcing institutional cycle. Systemic stressors such as understaffing and burnout erode the quality of staff-patient-family interactions. When families or patients react with frustration, staff interpret this as “bad behavior” and document it as the root cause. The institution, seeing only these reports, reinforces behavioral management over systemic reform. Over time, this cycle discourages reporting, as staff learn that filing a “White Code” does not lead to meaningful change but instead validates a punitive or dismissive stance. This cognitive simplification under stress partially aligns with Bandura’s (1999) theory of *moral disengagement*, where blame is displaced onto victims to justify inaction.

"The category of 'patient/relative attitudes' must be critically interpreted within the institution's dual role as both a therapeutic hospital and a custodial 'detention center.' Since the majority of patients are not voluntary admissions but are remanded by judicial authorities and accompanied by law enforcement, families often perceive the facility through a punitive rather than a medical lens. This misinterpretation creates inherent friction regarding institutional rules. Consequently, behaviors coded as 'attitude errors' such as aggressive intolerance to waiting times or hostility when denied access outside visiting hours are often manifestations of this structural conflict, where the hospital's custodial function clashes with families' expectations of a standard care environment."

While this study is limited by its retrospective design, single-center scope, and reliance on incomplete records, these very limitations underscore the urgency of methodological innovation. Future research must adopt prospective, mixed-methods approaches that integrate official reports with anonymous staff surveys, qualitative interviews with patients and families, and direct observational data to capture the full spectrum of workplace violence.

Conclusion and Recommendations

This study reframes workplace violence in high-security psychiatric settings not as a series of isolated behavioral incidents, but as a systemic symptom of deeper organizational and cultural failures. The exceptionally low reporting rate coupled with the identification of two distinct aggression pathways reveals how breaches in Trauma-Informed Care principles directly fuel conflict. To address this “shadow epidemic,” interventions must move

beyond reactive security measures and embrace a holistic, trauma-informed transformation of institutional culture.

At the clinical level, de-escalation training should be bifurcated to reflect the dual pathways of aggression. Physicians would benefit from specialized workshops in family crisis communication, emphasizing active listening, expectation management, and transparent information sharing to rebuild trust and strengthen the TIC principles of *trustworthiness* and *transparency*. Meanwhile, frontline staff including nurses and security personnel require training in trauma-informed behavioral support that prioritizes psychological safety and patient empowerment, recognizing aggression as a potential trauma response rather than defiance, thereby upholding the principles of *safety* and *empowerment*.

Administratively, the current “White Code” system must evolve from a bureaucratic or punitive mechanism into a learning-oriented safety reporting system. This includes offering confidential reporting channels, establishing a multidisciplinary Safety Learning Committee to review incidents within 72 hours, and ensuring timely feedback to reporters. Such reforms are essential to rebuild psychological safety among staff and reverse the culture of silence. Furthermore, research demonstrates that perceived social support serves as a key mechanism through which violence-exposed individuals can achieve post-traumatic growth and mental well-being (Öztosun et al., 2024), reinforcing the case for structured peer support and supervisory follow-up after White Code incidents.

Finally, communication must be elevated from an ancillary skill to a core institutional competency. Mandatory, ongoing training in empathetic and culturally sensitive communication should be integrated into performance evaluations for all staff, reinforcing the TIC principles of collaboration, mutuality, and transparency.

Ultimately, tackling workplace violence in forensic psychiatry requires more than incident management; it demands a fundamental reimagining of care environments as spaces of safety, dignity, and mutual respect. Only then can the shadow epidemic be brought into the light.

Limitations

This study has several limitations. First, the retrospective design relies on archived records, which led to missing demographic data (e.g., age for 31.4% of perpetrators) due to the prioritization of crisis management over documentation. Second, as a single-center study in a specialized forensic hospital, findings may not be fully generalizable to non-forensic settings. Finally, the low number of reported incidents (n=51) in a high-risk institution with a 100-year history likely reflects significant underreporting due to staff habituation. Rather than diminishing the study's value, this reinforces our core finding: the data represents the minimum confirmed prevalence, supporting the 'shadow epidemic' hypothesis. A notable limitation is the missing age data for 31.4% of the perpetrators. This gap stems from the chaotic nature of violent incidents, where immediate safety protocols and crisis management prioritize de-escalation over detailed administrative logging. Consequently, age-related risk profiling was limited to the available data.

Declarations**Ethical declaration**

Necessary institutional and ethical permissions were obtained from XXX University Faculty of Medicine Ethics Committee (08.03.2023/20.478.486/1740).

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Not applicable.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

A Study on Korean Drama Viewers in the Context of Parasocial Interaction Theory

Parasosyal Etkileşim Kuramı Bağlamında Kore Dizileri İzleyicilerine Yönelik Bir Araştırma

Zeynep Nihan Bakır¹, Ekin Bahar İlik², Ahmet Can Akgün³

Abstract:

The proliferation of digital platforms has enabled popular culture media texts to reach much wider audiences. In this context, television series have become a significant tool for communicating with viewers. While the narrative structures of dramas attract large audiences, fictional characters create strong impressions and contribute to the formation of intensive fan cultures. Korean dramas, which originated in South Korea and rapidly became a global phenomenon, have generated a broad audience and a strong fan community in Türkiye. This study examines the effects of Korean dramas on viewers, the emerging fan culture, and its position within the framework of parasocial interaction. It focuses on the forms of communication viewers establish with fictional characters, the reflections of these interactions on self-perceptions, and identification practices. In this qualitative study, in-depth interviews were conducted with 16 participants who regularly watched Korean Dramas between May 1 and June 1, 2025. Ethics committee approval was obtained, and informed consent was secured from all participants. The findings indicate that media-constructed characters foster parasocial interaction and strengthen viewers' identification processes. Participants were found to associate these characters with their own life experiences, develop emotional closeness to them, and occasionally derive motivation, inspiration, or guidance from them. The study concludes that characters fictionalized in Korean dramas are internalized through an interpretive process and that this interaction carries a massifying dynamic. The findings are discussed within the literature on parasocial interaction, contributing particularly to discussions on how digital platforms reinforce audience engagement and reshape the structure of fan culture.

Keywords: Parasocial Interaction, Korean Dramas, Fan Culture, Digital Media, Identification

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Öz:

Dijital platformların yaygınlaşması, popüler kültür aracısı olan medya metinlerinin çok daha geniş kitlelere ulaşmasını sağlamıştır. Bu çeşitlilik içinde özellikle televizyon dizileri, izleyicilerle etkili bir iletişim kurulmasında önemli bir araç haline gelmiştir. Diziler, senaryo içeriğiyle geniş izleyici kitlelerini ekrana bağlarken, kurgusal karakterler, izleyici üzerinde güçlü bir etki yaratarak yoğun bir hayran kitlesi ve kültürünün oluşumuna zemin hazırlamaktadır. Güney Kore’de ortaya çıkıp kısa sürede küresel bir fenomene dönüşen Kore dizileri, Türkiye’de de geniş bir izleyici kitlesi ve güçlü bir hayran topluluğu oluşturmuştur. Bu çalışma, Kore dizilerinin izleyiciler üzerindeki etkilerini, ortaya çıkan hayran kültürünü ve bu kültürün parasosyal etkileşim bağlamındaki konumunu incelemeyi amaçlamaktadır. İzleyicilerin dizi karakterleriyle kurdukları iletişim biçimleri, benlik algılarına yansıyan yönleri ve özdeşleşme pratikleri araştırmanın temel odak noktalarını oluşturmaktadır. Bu doğrultuda, 1 Mayıs–1 Haziran 2025 tarihleri arasında Kore dizilerini düzenli olarak izleyen 16 katılımcıyla derinlemesine görüşmeler gerçekleştirilmiştir. Çalışma için etik kurul onayı alınmış ve katılımcılardan bilgilendirilmiş onam sağlanmıştır. Elde edilen bulgular, medya üzerinden inşa edilen dizi karakterlerinin izleyici kitlesinde parasosyal bir etkileşim yaratarak karakterlerle özdeşleşmeyi güçlendirdiğini göstermektedir. Katılımcıların Kore dizilerindeki karakterleri kendi yaşam deneyimleriyle ilişkilendirdikleri, duygusal yakınlık kurdukları ve zaman zaman bu karakterlerden motivasyon, ilham ya da yönlendirme aldıkları görülmüştür. Kore dizileri üzerinden kurgulanan karakterlerin izleyiciler tarafından belirli bir anlamlandırma sürecinden geçirilerek içselleştirildiği ve bu etkileşimin kitleselleştirici bir dinamik taşıdığı sonucuna ulaşılmıştır. Bulgular, parasosyal etkileşim literatürü temelinde detaylı biçimde tartışılmış, özellikle dijital platformların bu etkileşimi nasıl pekiştirdiğine, izleyici bağını nasıl güçlendirdiğine ve hayran kültürünün dönüşen yapısına yönelik alanyazına katkı sunan öneriler geliştirilmiştir.

Anahtar Kelimeler: Parasosyal Etkileşim, Kore Dizileri, Hayran Kültürü, Dijital Medya, Özdeşleşme.

Introduction

The use of the internet has rapidly become widespread today (Koca & Eryücel, 347). Rapid developments in communication technologies have transformed the media production landscape, enabling the production and consumption of film and series content in digital environments. In this process, the content offered on digital platforms has emerged as a product of the different perception styles created by new media culture. Digital culture has contributed to the formation of popular culture by increasing the reproducibility of content. Media figures featured in series and movies are associated with real individuals to create a certain impression in viewers; thus, individuals socially interact with fictional characters. The relationship established with characters across all mass communication tools, including visual and auditory elements, is defined as a 'parasocial relationship' (Fügan & Kars, 2019: 258). In other words, the one-sided, symbolic relationship viewers establish with media characters is called parasocial interaction (Horton & Wohl, 1956). In parallel with the widespread use of the internet, access to media personalities has become easier, thereby increasing the power of parasocial interactions and deepening the sense of closeness between viewers and characters (Kim & Sintas, 2021).

This situation leads individuals to evaluate media characters over time as 'friend' (Vorderer et al., 2004). The individual who identifies with media characters in their everyday life reality reconstructs themselves through this emotional bond and begins to internalize the social attitudes of media figures.

This study examines how young adult viewers in Turkey develop parasocial relationships with characters in Korean dramas; it addresses several sub-questions to explore this fundamental issue in depth.

How much influence do the characters in TV series have on real-life individuals?

What are the emotional and behavioral dimensions of this interaction?

How are viewers using this interaction to reduce feelings of loneliness?

How does the level of admiration and social media monitoring affect the intensity of parasocial interactions?

Studies have shown that parasocial interaction is closely related to individual characteristics, identity formation, and social behaviors. Boğazkesen, Yiğit, and Bulut (2024) found in their research on K-Pop fans that personality traits and self-esteem play a determining role in the level of parasocial interaction. Conde and Casais (2023) demonstrated, in their study of social media influencers, that follower count, perceived popularity, and opinion leadership influence users' willingness to follow recommendations through parasocial bonds. From a more theoretical perspective, Fügan and Kars Tayanç (2019) emphasize that parasocial interaction takes different forms depending on variables such as media character, content type, and viewer characteristics, and that it creates distinct interaction patterns within each viewer group.

Method

In the study, a semi-structured interview method, a qualitative research method, was used to understand the impact of the series' characters on the audience. To reach participants aligned with the study's purpose, snowball sampling was employed. This method allows for identifying suitable participants by consulting knowledgeable individuals (Yılmaz and Sezgin, 2023, p. 355). By obtaining suggestions from the initial participants, other participants with similar characteristics were identified, and the sample was expanded.

In the qualitative research paradigm, the sample size is determined not by a predetermined fixed number but by the principle of data depth and data saturation (Yılmaz, 2024, p. 1381). Within this framework, interviews were

conducted with 16 participants who regularly watched Korean Dramas between May 1 and June 1, 2025. After the interviews, no new themes emerged from the data, and the existing themes began to repeat; this was considered an indication that data saturation had been reached, and the data collection process was concluded.

Her interview lasted approximately 30–40 minutes. The nine open-ended questions on the interview form aimed to understand participants' viewing habits, the level of identification they form with characters, their emotional reactions, their social media usage patterns, and the effects of TV series on their daily lives.

First, the interview recordings were transcribed into text, and then the data were thematically classified. The themes were grouped under headings such as 'emotional interaction,' 'identification,' 'relationship continuing through social media,' and 'loneliness and seeking support.'

For the research, Ethical Committee Approval was obtained from the Recep Tayyip Erdoğan University Scientific Research Ethics Committee under number 2025/450 on June 18, 2025. Additionally, informed consent was obtained from participants before the interview.

Findings

The study sample consists of 16 participants, 12 women and 4 men, aged 19 to 25. Most of the participants are undergraduate students.

The answers to 9 questions about these Korean dramas, as asked of 16 viewers, have been categorized separately. Brief responses are provided for each, and then they are summarized in a table.

Table 1. Demographic Characteristics of Participants

Participant Code	Age	Gender	Educational Status
P1	20	Female	Undergraduate Student
P2	22	Female	Undergraduate Student
P3	19	Female	High School Graduate
P4	23	Male	Undergraduate Student
P5	21	Female	Undergraduate Student
P6	25	Female	Graduate (Master's) Student
P7	24	Female	Bachelor's Degree Holder
P8	20	Female	Undergraduate Student
P9	22	Male	Undergraduate Student
P10	23	Female	Undergraduate Student
P11	19	Female	Associate Degree Student
P12	24	Male	Undergraduate Student
P13	25	Female	Bachelor's Degree Holder
P14	21	Female	Associate Degree Student
P15	22	Female	Undergraduate Student
P16	23	Male	High School Graduate

Since when have you been watching these series?

Most participants reported starting to watch Korean dramas in middle or high school. Some participants mentioned that they began watching during their university years or were influenced by their social circle. Among those who started watching at an early age, they generally said they watched dramas to distract themselves and learn about new cultures. This group has been following Korean dramas regularly for a long time. Those who started watching later mostly said they turned to Korean dramas because of their social environment or social media influence, and that their interest in them increased over time.

What is the name of your favorite Korean drama?

These dramas are described by participants not only as a form of entertainment but also as content through which they can establish emotional connections and reflect.

Viewers have stated that they are influenced by the stories of characters who pursue their dreams, do not give up despite difficulties, or experience emotional growth. For example, one mentioned being inspired by the resilient nature of the female character in the K11, When Life Gives You Tangerines series, saying, 'The ambition to have a career, courage, hope... All of these inspired me.'

Some participants expressed that they find motivation and personal development-themed series inspiring and that they review their own goals through the characters in these series. K4, who said Navillera is their favorite series, mentioned being moved by the elderly character's journey to realize their dream of becoming a ballet dancer.

Which platforms do you follow these series on?

When examining participants' habits of watching Korean dramas, it is observed that there is a high degree of

diversity in digital platforms. However, among this variety, Netflix stands out as the most preferred platform by a wide margin. In addition to Netflix, independent websites are commonly used as alternatives. These sites are often used alongside Netflix, providing easy access to a wide variety of content. According to participants, YouTube is frequently used to rewatch drama scenes, view short summaries, and access drama-related content. Social media also plays an important role in following Korean dramas. Participants reported encountering drama-related content in short clips and recent posts on platforms like Instagram and TikTok.

Do you feel a closeness to the characters in the TV shows you watch?

The majority of participants reported developing emotional closeness to characters in Korean dramas. This closeness was described in terms of 'empathy,' 'identification,' and 'emotionally reactive responses depending on the situation.' Participants reported that sharing the characters' feelings enabled them to experience the joy, sadness, and anger the characters go through. Participant K13 said they felt close to the characters and used expressions like, 'I feel a strong closeness... There are times I cry with the character, times I feel sad or angry together.' This indicates that viewers not only watch the scenes but also emotionally participate in the process. Some participants noted that this bond strengthens when they share similar life experiences with the characters. K8 explained that this closeness stems from personal similarity, saying, 'If I really relate to myself, I can establish a connection... If there's an event in the series that I have experienced or witnessed, I feel a closeness both to the series and to the actor.'

Can you give an example of a character or player who has influenced you or left a mark on your life?

Participants' responses reveal that characters in Korean dramas have emotional, cognitive, and behavioral effects on viewers. These effects are generally categorized under the headings of 'personal awareness,' 'behavioral change,' and 'life motivation.' In terms of personal awareness, participants noted that they became aware of their own feelings through the characters' internal conflicts and emotional processes. Some participants expressed that these scenes helped them develop empathy and better understand themselves. Regarding behavioral transformation, participants noted that the characters' determination, patience, and positive attitudes served as examples. They mentioned that they try to adapt these qualities into their own lives, and that this is reflected in their behaviors. In the life-motivation theme, participants indicated that they are influenced by the characters' resilience and hopeful attitudes in the face of difficulties. Some participants stated that these scenes boost their morale and inspire them to start anew.

Are you following news, social media accounts, and fan pages related to the TV character?

Participants' responses indicate that social media interactions with characters and actors from Korean dramas are generally limited, temporary, and passive. Most participants stated that

their interest in the dramas does not last long on social media and is usually confined to the period when they are watching the show. Some participants mentioned that they follow actors or pages related to the dramas only out of brief curiosity. It was noted that interest tends to increase during the drama's broadcast period and then decline afterward. Other participants said they encounter content related to dramas on social media, but do not actively follow.

How do situations like the TV characters feeling sad, happy, or achieving success affect you?

Participants' responses indicate that the emotional experiences of characters in Korean dramas strongly impact viewers. Participants stated that they especially feel a deeper empathy with the characters during dramatic scenes. They also mentioned feeling similar emotions when characters are sad, happy, or successful.

K1 expressed this situation with the words, "I feel sad when the character cries, and I am proud when they succeed. It's like I really know them." Similarly, K11 said, "I feel like I am experiencing all the emotions they go through." K14, on the other hand, described the intensity of the connection they feel as, "When they are overwhelmed with tears, I can't stand it. When they are happy, my heart feels like it's going to jump out of my chest." Some participants noted that this emotional impact depends on the character's realistic portrayal and the strength of the acting performance. It was noted that scenes with a heightened sense of realism make it easier to empathize.

How would you describe your level of admiration for a TV series or actors you watch?

The participants' responses indicate that their admiration for Korean dramas and actors is generally balanced, conscious, and maintained within personal boundaries. This approach has been examined under three categories: 'balanced admiration,' 'changing admiration over time,' and 'selective admiration.' Most participants stated that they experience their interest in actors in a moderate way and that it does not affect their daily lives. Participants reported maintaining emotional distance in their attachments. Some participants mentioned that their admiration, which was more intense in their youth, has decreased over time and has been replaced by a more moderate appreciation. Others said they do not openly express their feelings but continue to follow the projects of the actors they like.

When you watch these Korean dramas, are there moments when you feel like you're not alone?

Participants' responses indicate that Korean dramas reduce feelings of loneliness and strengthen viewers' sense of understanding, emotional sharing, and belonging. Especially in emotional scenes, participants who empathize with the characters described the shows as a kind of emotional companionship. K1 expressed this by saying, "Especially when I feel lonely, Korean dramas cheer me up. They're like friends." Similarly, K14 stated, "Sometimes there are scenes where I feel like they understand me. At those times, I think, 'Maybe I can also be understood,'" indicating that they sometimes cope with loneliness through these dramas.

Table 2: Level of Parasocial Interaction of Participants with Korean Dramas

Questions	Categories	Number of Participants	Percentage
Viewing Onset	Started between 2012 and 2015	4 participants	25%
	Started between 2017 and 2019	5 participants	31%
	Started in 2020 or later	7 participants	44%
Favorite Drama Type	Romantic–Drama	6 participants	38%
	Motivation / Personal Development themed	7 participants	44%
	School / Youth themed	3 participants	19%
Viewing Platform	Primarily Netflix	8 participants	50%
	Independent internet websites	5 participants	31%
	YouTube / social media	3 participants	19%
Closeness to Characters	Strong	11 participants	69%
	Moderate	4 participants	25%
	Weak	1 participant	6%
Impact on Life	Personal awareness	5 participants	31%
	Life motivation	6 participants	38%
	Behavioral change	3 participants	19%
	No clear impact reported	2 participants	12%
Social media Following	Followers	7 participants	44%
	Partial followers	2 participants	12%
	Non-followers	7 participants	44%
Emotional Influence	Strong	12 participants	75%
	Moderate	3 participants	19%
	Weak	1 participant	6%
Admiration Level	Balanced admiration	7 participants	44%
	Admiration that changes over time	7 participants	44%
	Selective admiration	2 participants	12%
Not Feeling Lonely	Report not feeling lonely	7 participants	44%
	The report reduced feelings of loneliness	3 participants	19%
	Report no effect	6 participants	38%

Discussion

The emotional closeness and empathy develop toward characters in Korean dramas directly support the concept of parasocial interaction developed by Horton and Wohl (1956). Participants' statements indicate that the characters in the dramas are perceived as real people, and the viewers share their sadness, happiness, and success. This situation reveals that viewers form a one-sided but intense emotional relationship with the characters.

The findings of this study also align with the relevant theoretical framework. Participants reported forming an emotional bond with characters in Korean dramas not only on a viewer-character level but also as if they were personal acquaintances. As Tukachinsky and Stever

(2018) also noted, viewers often perceive media personalities as part of their social circle and feel they are engaging in real interactions with them.

The data obtained shows that media characters influence viewers not only on an emotional level but also on a behavioral level. Some participants stated that they adopted qualities such as perseverance, determination, and a positive attitude from the characters in TV series into their own lives. This finding aligns with the study by Fügen and Kars (2019), which revealed that viewer characteristics strengthen parasocial interactions.

Finally, although a large portion of viewers develops a strong empathy for the characters, they maintain this emotional connection in a balanced way. According to

Giles (2002), parasocial relationships do not always manifest as excessive admiration or dependency; instead, in many cases, they serve as healthy social experiences conducted within a certain emotional distance. The findings of this research also support this view, showing that participants experience emotional satisfaction through TV series while simultaneously maintaining their connections to real life.

Conclusion

Many factors influence a community's cultural structure in daily life. At this point, amid changing world dynamics, it is evident that the impact of leisure and entertainment activities, commonly referred to as popular culture, in the cultural and social fields is significant.

Although the TV characters are fictional, their attitudes, perceptions, and emotional and behavioral states in daily life are portrayed in ways that can influence audiences. Indeed, in this hyper-modern era, dominated by the internet, parasocial interactions between individuals and media characters are increasingly maintained. The relational dynamics established between media figures and viewers, facilitated by digital culture, manifest in various forms.

Feelings such as admiration, identification, and the desire for recognition define the one-way communication that viewers establish with media characters, known as parasocial interaction. This interaction causes viewers to incorporate media characters into their daily lives and to experience their emotions as if they were real rather than fictional. Most of the data obtained from the interviews analyzed in this study indicate that the figures within the content of the Korean dramas watched have a significant impact on viewers. This influence shows that viewers

identify with media figures and develop a certain level of admiration. In this study, most participants stated that their closeness to media characters leads them to incorporate fan culture into their real lives and that these characters influence their social and cultural experiences. Future research could explore the effects of fan culture surrounding Korean dramas on viewers. Specifically, examining the relationship between parasocial interactions with Korean dramas through bibliometric methods could more clearly reveal academic trends and research directions in this field.

Declarations

Ethics Approval and Participation Permission

Approval for the implementation of the research has been obtained from the Recep Tayyip Erdoğan University Scientific Research Ethics Committee. (Ethics Committee Approval was granted on 06/18/2025, with the number 2025/450).

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Author Contributions

All processes in the study, conceptualization, method development, data collection, and analysis stages, have equal contributions from all authors. All authors have read and approved the final version of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

The Mediating Role of Impulsivity in the Relationship Between Excessive Food Cravings and Anxiety in Women

Kadınlarda Aşırı Besin İsteği ve Anksiyete İlişkisinde Dürtüselliğin Aracı Rolü

Dilan Malgaz Güçlü¹

Abstract:

Recently, with the increase in eating disorders, research in this field has gained importance. This study aimed to examine the role of impulsivity in the relationship between excessive food craving and anxiety in women. The study was conducted using a correlational survey model. The sample consisted of 699 female participants aged 18-65, selected using convenience sampling. Participants completed a Personal Information Form, the Excessive Food Craving Scale, the Beck Anxiety Scale, and the Barratt Impulsivity Scale. First, the suitability of the data set for analysis was examined. The missing value analysis revealed that there were no missing observations in the data set. The outlier analysis involved converting measurement tool scores to standard z-scores, excluding nine measurements outside the ± 3 Z-score range from the data set. The study found a near-normal distribution with kurtosis and skewness values within the ± 1.5 range, suitable for mediation analysis. Hayes' Process Macro Model 4 mediation model tested hypotheses, showing a positive correlation between excessive food cravings and anxiety and impulsivity in women. The study found a positive correlation between women's excessive food cravings and anxiety and impulsivity, with impulsivity partially mediating the relationship, suggesting anxiety indirectly influences cravings. The results show that both anxiety and impulsivity levels influence emotional eating behaviors in women. Therefore, we recommend developing strategies for anxiety management and impulse control in psychological counseling and psycho-education programs. The research aims to understand the psychological factors influencing women's eating behaviors and promote healthy eating habits.

Keywords: Women, Excessive food cravings, Anxiety, Impulsivity.

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Öz:

Son dönemlerde yeme bozukluklarının artmasıyla birlikte bu alanda yapılan araştırmalar önem kazanmıştır. Bu çalışmada, kadınlarda aşırı besin isteğinin anksiyete ile olan ilişkisinde dürtüsellik rolünün incelenmesi amaçlanmıştır. Araştırma, ilişkiel tarama modelinde yürütülmüştür. Çalışmanın örneklemini 18-65 yaş aralığında yer alan ve kolayda örnekleme yöntemiyle seçilen 699 kadın katılımcı oluşturmuştur. Araştırmaya katılım gösteren kadınlara Kişisel Bilgi Formu, Aşırı Besin İsteği Ölçeği, Beck Anksiyete Ölçeği ile Barratt Dürtüsellik Ölçeği uygulanmıştır. Araştırmada öncelikle veri setinin analize uygunluğu incelenmiştir. Kayıp değer analizi sonucunda veri setinde eksik gözlem bulunmadığı belirlenmiştir. Üç değer analizi kapsamında ölçme araçlarına ait puanlar standart z puanlarına dönüştürülmüş ve Z puanı ± 3 aralığı dışında kalan dokuz ölçüm veri setinden çıkarılmıştır. Ayrıca basıklık ve çarpıklık değerlerinin $\pm 1,5$ aralığında olduğu saptanarak verilerin normal dağılıma yakın bir yapıda olduğu görülmüştür. Bu bulgu, aracılık analizine uygun bir dağılım sağlandığını göstermektedir. Araştırmanın hipotezlerini test etmek üzere Hayes'in Process Macro Model 4 aracılık modeli kullanılmış ve analizler %95 güven aralığında ($p = .05$) gerçekleştirilmiştir. Analiz sonuçlarına göre kadınlarda aşırı besin isteği ile anksiyete ve dürtüsellik arasında pozitif yönlü korelasyon tespit edilmiştir. Aracılık analizi sonucunda, dürtüsellik anksiyete ile aşırı besin isteği arasındaki ilişkide kısmi aracılık rolü üstlendiği belirlenmiştir. Bu sonuç, anksiyetenin aşırı besin isteğini yalnızca doğrudan değil, aynı zamanda dürtüsel eğilimler aracılığıyla dolaylı olarak da etkilediğini göstermektedir. Bulgular, kadınlarda duygusal yeme davranışlarının hem anksiyete hem de dürtüsellik düzeylerinden etkilendiğini ortaya koymaktadır. Bu doğrultuda, psikolojik danışma ve psiko-eğitim programlarında anksiyete yönetimi ve dürtü kontrolüne yönelik stratejilerin geliştirilmesi önerilmektedir. Araştırma sonuçlarının, kadınların yeme davranışlarını etkileyen psikolojik süreçlerin anlaşılmasına ve sağlıklı beslenme alışkanlıklarının desteklenmesine katkı sağlayacaktır.

Anahtar Kelimeler: Kadın, Aşırı besin isteği, Anksiyete, Dürtüsellik.

Introduction

Although nutrition is one of the basic physiological needs, it is a complex behavior shaped by sociocultural influences. The eating habits acquired in childhood are shaped by the geographical region and cultural elements in which individuals live; this situation leads to the development of intense cravings for certain foods (Meule, Hermann, and Kübler, 2014). These cravings are too complex to be explained solely by physiological hunger and are closely related to the individual's psychological state. Especially in adulthood, an excessive desire for certain foods without a corresponding increase in energy needs is explained by the activation of hedonic appetite control mechanisms (Rogers and Brunstrom, 2016). These mechanisms cause individuals to consume foods driven by the expectation of pleasure (De Oliveira et al., 2022). Research has shown that excessive food cravings have similar mechanisms to addiction processes at the neurobiological level and are associated with dopaminergic activation in the brain's reward system (Campana, Brasiel, de Aguiar, and Dutra, 2019). This indicates that excessive food cravings should be explained not only by physiological but also by psychological processes.

It has been noted that excessive food cravings are particularly associated with foods rich in sugar and fat, and restricting such foods can further increase the desire for them (Hall et al., 2019). Additionally, excessive food cravings are reported to be more common in women compared to men, and are linked to health issues such as obesity and binge eating disorder (Reents and Pedersen, 2021). The frequent occurrence of excessive food cravings in women's eating behaviors warrants more detailed research in this area.

On the other hand, anxiety is a normal response to threats encountered in daily life, but if this response becomes persistent, it can negatively affect an individual's functionality and quality of life (Pinquart, 2019). The

chronicity of anxiety can trigger emotional eating behaviors, increasing the desire for high-calorie and unhealthy foods (Bongers, van den Akker, Havermans, and Jansen, 2015a). Indeed, research supports that anxiety, especially, triggers the consumption of energy-dense foods and that eating is used as a coping mechanism for stress (Hussenoeder et al., 2022; Nitturi et al., 2021). This situation highlights the importance of examining the impact of anxiety on eating behaviors.

The role of impulsivity as a third factor in the relationship between excessive food cravings and anxiety is noteworthy. Impulsivity is defined as an individual's tendency to exhibit sudden, uncontrolled behavior without considering the consequences, and it is associated with risk-taking, poor planning, and self-control issues (Patton, Stanford, and Barratt, 1995; Stevens, 2017). High levels of impulsivity lead to a loss of control over food consumption, especially toward energy-dense foods (Awad et al., 2021; Melby-Lervåg, Redick, and Hulme, 2016). Additionally, it is noted that impulsivity may further increase emotional eating behaviors in individuals experiencing anxiety (Akkuş et al., 2024). However, research on the relationship between anxiety and impulsivity presents conflicting findings. Some studies indicate that anxiety increases impulsivity (Eysenck and Derakshan, 2011; Xia, Gu, Zhang, and Luo, 2017), while others suggest that anxiety prompts individuals to behave more controlled (Kurien and Palanisamy, 2024; Preve, Mula, Maltini, and Pini, 2014). This suggests that the relationship between anxiety and impulsivity is complex and depends on individual differences. The sample group for this study consisted of women. The reason for selecting women as the sample group is that levels of excessive food cravings (Reents and Pedersen, 2021) and anxiety (Bongers et al., 2015a) are higher and more prevalent in women compared to men. Additionally, women are more susceptible to impulsivity and emotional eating behaviors due to hormonal (Mikhail et al., 2021) and psychosocial

factors (Annesi, Mareno, and McEwen, 2016) (Elkin and Kalabaş, 2023). This indicates that women's eating behaviors are more complexly intertwined with psychological processes.

Research has shown that the relationships between excessive food cravings, anxiety, and impulsivity in women are not yet fully understood, and there are various conflicting results (Eysenck and Derakshan, 2011; Kurien and Palanisamy, 2024; Preve, Mula, Maltini, and Pini, 2014; Xia, Gu, Zhang, and Luo, 2017). In this context, examining the role of impulsivity in the relationship between excessive food cravings and anxiety in women appears to be important. The aim of this study is to investigate the mediating role of impulsivity in the relationship between anxiety and excessive food cravings in women.

Within the scope of this general aim, the questions of whether the level of anxiety in women has a significant effect on excessive food cravings, whether the level of impulsivity in women has a significant effect on excessive food cravings, and whether impulsivity plays a mediating role in the relationship between anxiety and excessive food cravings in women will be explored. It is anticipated that the findings of this research will highlight the importance

of strategies such as impulse control and anxiety management in psychological support programs, guiding interventions aimed at promoting healthier eating behaviors in women. Additionally, it is expected that this study will contribute to understanding the interaction between psychological and nutritional processes in women, offering a unique contribution to the field.

Materials and Methods

Research Model

This study, which examines the mediating role of impulsivity in the relationship between anxiety and excessive food craving, is designed with a relational pattern. In the relational model, the aim is to determine the direction of the relationship between at least two variables (Karasar, 2009). In the current study, excessive food craving is considered the outcome (dependent) variable, while anxiety is regarded as the predictor (independent) variable. Impulsivity is added to the model as a mediating variable.

Population

The study group comprises 699 women aged 18-65 (Table 1). The study group was selected using convenience sampling.

Table 1. Demographic Characteristics (n=699)

Variables	Group	n	%
Age	18-25	358	51,2
	36-35	225	32,2
	36-45	95	13,6
	45-55	16	2,3
	55 and over	5	,7
Marital Status	Married	254	36,3
	Single	423	60,5
	Divorced	22	3,1
Education Level	Primary School	3	,4
	Secondary School	9	1,3
	High School	66	9,4
	University	552	79,0
	Master's Degree	46	6,6
	Doctorate (PhD)	23	3,3
Occupation	Student	326	46,6
	Unemployed	15	2,1
	Housewife	56	8,0
	Civil Servant	157	22,5
	Worker	8	1,1
	Self-Employed	10	1,4
	Private Sector Employee	73	10,4
	Retired	5	,7
	Other	49	7,0
Economic Status	Income Less Than Expenses	338	48,4
	Income Equal to Expenses	244	34,9
	Income More Than Expenses	117	16,7
Place of Residence	With Family	441	63,1
	Alone	31	4,4
	With Friends	9	1,3
	In a Dormitory	197	28,2
Psychiatric Diagnosis	Other	21	3,0
	Yes	95	13,6
	No	604	86,4

Data Collection Tools

A Personal Information Form, an Excessive Food Craving Scale, a Beck Anxiety Scale, and a Barratt Impulsivity Scale were administered to the women participating in the study.

Personal Information Form

The Personal Information Form has been prepared by the researcher to determine sociodemographic characteristics, including age, marital status, education level, and economic status.

Excessive Food Craving Scale

The Excessive Food Craving Scale was developed by Cepeda-Benito, Gleaves, and Williams (2001) to identify levels of excessive food craving, and its adaptation into our language was carried out by Müftüoğlu, Kızıltan, and Akçil (2017). The scale consists of 39 items, and its internal consistency coefficient was 0.97. In the current study, the internal consistency coefficient was 0.97. As scores on the scale increase, the level of excessive food craving also increases.

Beck Anxiety Inventory

The Beck Anxiety Scale was developed by Beck, Epstein, Brown, and Steer (1988) to assess anxiety, and its adaptation into our language was carried out by Güleç and colleagues (2008). The scale consists of 21 items, and its internal consistency coefficient was 0.93. For the current study, the internal consistency coefficient was 0.94. As the scores obtained from the scale increase, the level of anxiety also increases.

Barratt Impulsivity Scale

The Barratt Impulsivity Scale was developed by Barratt (1959) to assess impulsiveness, and its adaptation into Turkish was carried out by Ulusoy, Şahin, and Erkmen (1996). The scale consists of 30 items, and its internal consistency coefficient was 0.78. In the current study, the internal consistency coefficient was 0.79. As the scores obtained from the scale increase, the level of anxiety also increases.

Ethics Approval and Process

Before starting the data collection process, the necessary ethical approval for the study was obtained from the Iğdır University Social and Human Sciences Research Ethics Committee (08/01/2025; Meeting No: 2025/2). Subsequently, an Informed Consent Form was presented to the women, along with explanations of the study process and the confidentiality of the information collected. During this process, there was no guidance or intervention directed at the participants. Participation in the study was entirely voluntary, and no data requesting identifying information about the women participating in the research were collected. The data were collected online via Google Forms, and the participation link was shared with women on social media. The form was accessible for 6 weeks, and only responses received during this period were included in the analysis.

Statistical Approach

In this study, first, missing value analysis was conducted, and it was determined that there were no missing values in the data set. As a result of outlier analysis, scores related to measurement tools were converted to standard z-scores. Tabachnick and Fidell (2007) indicated that values with Z-scores between ± 3 are suitable for analysis, and in this study, measurements with Z-scores outside ± 3 ($n = 9$) were removed from the data set. Additionally, it was determined that the skewness and kurtosis values were within ± 1.5 , indicating that the data did not deviate excessively from normality (Tabachnick and Fidell, 2007) and that the data were suitable for factor analysis. To determine the relationships between the scale scores obtained from the study, Pearson product-moment correlation analysis was performed. In the analysis of demographic variables, since the group counts for age, marital status, education level, occupation, and place of residence fell below 35, the Kruskal-Wallis test was used to compare excessive food craving scores. For economic status, the One-Way ANOVA was used, while for psychiatric diagnosis status, the Independent Samples t-test was applied. To test the hypotheses of the study, a mediator variable model was created, and analysis was performed using the Process Macro Hayes with the Model 4 mediation model. In all analyses of the study, the confidence interval was set at 95% ($p = 0.05$).

Findings

In the findings section of the study, a correlation analysis between women's excessive food cravings, anxiety, and impulsivity was conducted, highlighting the mediating role of impulsivity in the relationship between anxiety and excessive food cravings.

Findings Related to Correlation Analysis

To identify the relationship between women's excessive food cravings, anxiety, and impulsivity, simple (zero-order) correlation coefficients were examined. According to the results obtained from the correlation analysis, a positive and statistically significant relationship was found between anxiety and excessive food cravings ($r = .25$, $p < .01$; 95% CI [.18, .34]). The relationship between anxiety and impulsivity was also positive and significant ($r = .28$, $p < .01$; 95% CI [.19, .38]). Similarly, a positive and significant correlation was found between impulsivity and excessive food cravings ($r = .28$, $p < .01$; 95% CI [.19, .38]). These results indicate that the variables are significantly related. The correlation coefficients were moderate. The bootstrap method ($k = 1000$) was used to calculate confidence intervals in the analyses, and since none of the confidence intervals included zero, the results were considered significant. All correlation coefficients were positive, indicating a trend of simultaneous increase among the variables. These findings are presented in Table 2.

Table 2. Correlation Analysis Results

Variables	X	SS	Kurtosis	Skewness	1	2	3
Excessive Food Craving (1)	111,44	42,66	-,34	,50	1		
Anxiety (2)	19,83	19,63	-,43	,57	,25**	1	
Impulsiveness (3)	70,76	5,57	,29	-,20	,28**	,28**	1

Note. ** $p < ,01$; $k = 1000$ (Boostrapping sample)

4.2. Findings Related to Intermediation Analysis

In the current study, the mediating model of impulsivity in the relationship between anxiety and excessive food craving was examined; therefore, Hayes' Process Model 4 (Hayes, 2022) was used.

The mediating model was tested using the Process Macro plugin in SPSS 24.0, and the resulting model is presented in Figure 1.

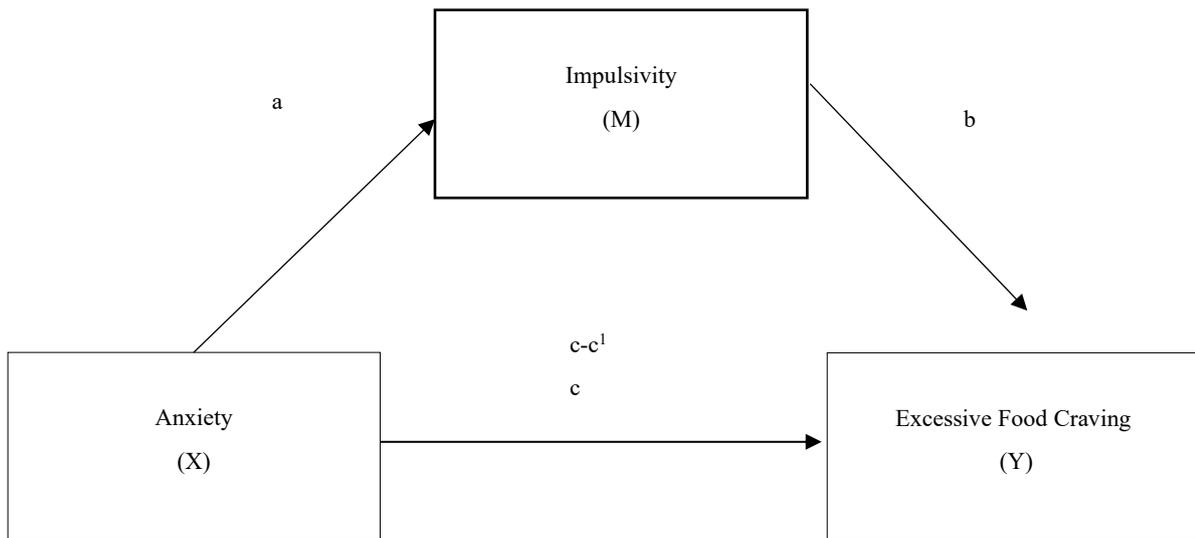


Figure 1: The Mediating Model of Impulsivity in the Relationship Between Anxiety and Excessive Food Craving

To analyze the mediating role of impulsivity in predicting excessive food craving scores from anxiety scores obtained from the study, a mediation analysis was

conducted to calculate the paths a, b, and c-c¹ shown in Figure 1. The mediation analysis results are presented in Table 3.

Table 3. The Mediating Role of Impulsivity in the Effect of Anxiety Scores on Craving for Excessive Food

	Outcome Variable Impulsivity			Excessive Food Craving		
	B	SH	p	B	SH	P
Anxiety (path c)				,025	,134	,000
R2				,063		,000
Anxiety (path a)	,114	,018	,000			
R2	,078		,000			
Anxiety (path c¹)				,186	,141	,000
Impulsivity (path b)				,232	,344	,000
R2				,113		,000
Indirect Effect				,203 (Lower= ,108 Upper: ,313)		<,01

Note, B: Standardized Regression Coefficient

In Table 3, the mediating role of impulsivity in the association between anxiety scores and excessive food craving scores was examined. The analyses showed that anxiety scores positively and significantly predicted excessive food craving scores (c path) ($B = .025, p < .001$). Similarly, anxiety scores also significantly and positively predicted impulsivity scores (a path) ($B = .114, p < .001$). These findings indicate that anxiety can influence excessive food craving both directly and indirectly.

In the model that includes both anxiety and impulsivity variables, approximately 11% of the variance in excessive food craving scores ($R^2 = .113$) is explained, with a significant effect ($F(2, N-3) = 24.91, p < .001$). In this model, the effect of anxiety scores on excessive food craving scores (path c1) was found to be positive and significant ($B = .186, p < .001$). This value indicates that even when impulsivity is controlled in the model, the effect of anxiety on excessive food craving continues.

The effect of impulsivity scores on excessive food craving scores (path b) is also positive and statistically significant ($B = .232, p < .001$). When examining the confidence intervals of the regression coefficients, it was found to be 95% CI [.061, .167] for path a, 95% CI [.142, .322] for path b, and 95% CI [.124, .248] for path c1, and since none of these intervals include zero, all relevant paths are considered statistically significant. The standard error values were calculated as 0.027 (path a), 0.046 (path b), and 0.031 (path c1). Regarding the indirect effect (path a \times b), it was determined that the indirect influence of

anxiety scores on excessive food craving scores through impulsivity is positive ($B = .203$) and statistically significant ($p < .01$). The 95% confidence interval obtained via bootstrap method ($k = 1000$) is [.108, .313], which does not include zero. This result indicates that the indirect effect is significant.

When examining the total effect of modeling (path c), it was determined that the overall effect of anxiety on excessive food craving is $B = .389$. This effect consists of both direct (path c1) and indirect (a \times b) components. Since the direct effect of anxiety (c1) remains significant in the model, it was concluded that the contribution of the impulsivity variable to the indirect effect is partial. This indicates that the effect of anxiety on excessive food craving is maintained not only through impulsivity but also via a direct pathway.

In conclusion, the mediation analysis conducted revealed that all paths (a, b, c, c1) are positive and statistically significant. It was determined that anxiety has a positive effect on impulsivity, and impulsivity significantly predicts excessive food craving. The total and direct effects of anxiety on excessive food craving remained significant, and the significance of the indirect effect confirmed that the model is a partial mediation model. The bootstrap method used in the analyses provided reliable estimates of the indirect effects, and since the confidence intervals did not include zero, all relationships are supported at the 0.05 significance level.

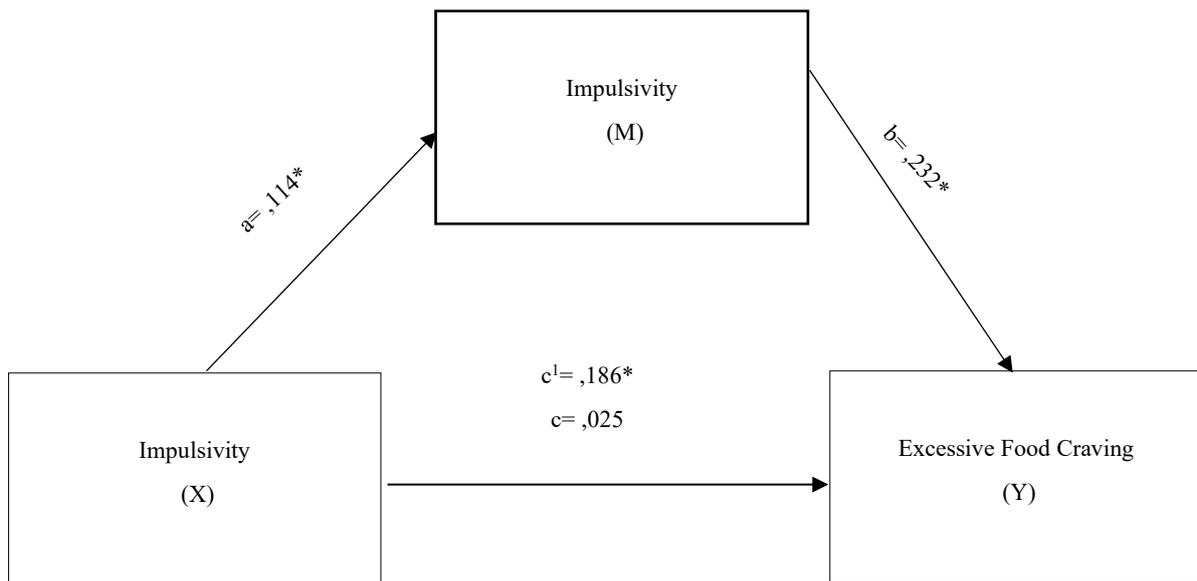


Figure 2: Summary of Findings of the Anxiety Model

Comparison of Excessive Food Craving Scores in Terms of Demographic Variables

This section of the research presents a comparison of excessive food craving scores by demographic variables in Table 4.

Table 4. Analysis Results of Demographic Variables and Excessive Food Craving

Variables	Group	n	Mean Rank	Sd.	χ^2	p
Age	18-25	358	363,99			
	36-35	225	339,69			
	36-45	95	320,07	4	7,704	,103
	45-55	16	312,72			
	55 and over	5	500,20			
Marital Status	Married	254	337,24			
	Single	423	359,26	2	2,414	,299
	Divorced	22	319,30			
Education Level	Primary School	3	422,00			
	Middle School	9	342,94			
	High School	66	335,98			
	University	552	351,04	5	6,491	,261
	Master's Degree	46	394,11			
	Doctorate	23	270,46			
Occupation	Student ^a	326	353,66			
	Unemployed	15	324,80			
	Housewife ^b	56	266,17			
	Civil Servant ^a	157	388,24			
	Worker	8	347,06	8	27,068	,001**
	Self-Employed	10	326,15			
	Private Sector Employee ^a	73	379,91			
	Retired	5	404,60			
Place of Residence	Other ^b	49	261,88			
	With family	441	343,58			
	Alone	31	393,74			
	With friends	9	438,00	4	3,685	,450
	Dormitory	197	352,47			
Economic Status	Other	21	359,33			
	Group	n	\bar{X}	SS	F	p
	Income less than expenses ^b	338	126,10	52,77		
Income equal to expenses ^a	244	138,16	56,92	3,647	,027*	
Income greater than expenses ^b	117	127,94	53,84			
Psychiatric Diagnosis	Group	n	\bar{X}	SS	t	p
	Yes ^a	95	165,52	56,89	6,918	,000***
	No ^b	604	125,13	52,24		

a>b, ***p<.001, **p<.01, *p<.05, X²(KW): Kruskal Wallis-H, F: One-Way Anova, t: Independent Samples t Test

Table 4 compares excessive food craving scores by demographic variables. Accordingly, no significant differences in mean scores of excessive food craving were found by age, marital status, education level, or place of residence ($p > 0.05$). Significant differences in mean scores for excessive food craving were observed by occupation ($\chi^2 = 27.068, p < 0.05$). Specifically, students, civil servants, and private-sector employees have significantly higher scores on the excessive food craving scale than housewives and individuals in other occupational groups.

According to economic status, mean scores on excessive food craving differ significantly ($F(2,696)=3.647, p<0.05$). Since the variances are homogeneous, the Scheffe test indicates that individuals with income equal to their expenses have higher excessive food craving scores than those with income less than or greater than their expenses.

According to the psychiatric diagnosis variable, the mean scores for excessive food craving differ significantly ($t(697)=6.918, p<.001$). The scores for excessive food craving are significantly higher in those with a psychiatric diagnosis compared to those without a psychiatric diagnosis.

Discussion

In this study, it was found that as women's anxiety levels increase, their excessive food cravings also increase, and it was demonstrated that anxiety is an important psychological factor affecting excessive food cravings in women. A strong desire for a particular food can be a common behavior observed in healthy individuals. However, pathological excessive food craving (Hill, 2007) is considered a significant risk factor for eating disorders (Ng and Davis, 2013). At this point, it is stated that excessive food craving is influenced by individuals' emotional states (Cardi, Leppanen, and Treasure, 2015; Reents, Seidel, Wiesner, and Pedersen, 2020), and it is also noted that emotional states can trigger appetite-stimulating responses (Bongers et al., 2015b). While the preference for sweet and fatty foods during excessive food craving does not reflect the individual's hunger sensation (Pelchat and Schaefer, 2000), it has been emphasized that this condition may reflect a desire for certain sensory experiences (Tiggemann and Kemp, 2005). Studies have also shown that anxiety increases individuals' food desire (Hussenoeder et al., 2022; Legget et al., 2023; Mróz, Gross, and Brytek-Matera, 2022). At this point, it is expressed that, in order to cope with negative emotions such as anxiety, individuals tend to turn to eating (Annesi, 2021; Dingemans, Danner, and Parks, 2017). Although food craving is a natural phenomenon that can be observed in healthy individuals, when it reaches excessive levels, it can pose a risk for eating disorders. Especially, the desire for high-energy and low-fiber foods occurring independently of hunger indicates that this situation is more shaped by emotional and sensory factors. The anxiety-induced increase in food craving suggests that individuals may be inclined toward unhealthy foods.

According to the research results, a positive correlation was found between impulsivity in women and excessive food cravings. Additionally, it was understood that impulsivity in women significantly predicts excessive food cravings. Impulsivity drives excessive eating without physiological hunger and leads to loss of control over high-calorie, sugary, and fatty foods (Melby et al., 2016). Studies have shown that impulsivity increases unhealthy food intake in individuals (Awad et al., 2021; Maxwell, Gardiner, and Loxton, 2020; Meule and Blechert, 2017). Atalayer (2018) reported that impulsivity plays an active role in the initiation and maintenance of overeating behavior. It has been stated that high levels of impulsivity hinder the control mechanism in individuals, triggering emotional eating, and this situation can explain excessive food cravings. Furthermore, when individuals perceive food as a reward, reward mechanisms are activated, and, in this process, the motivations of craving and liking come into play (Morales and Berridge, 2020). This can activate impulsivity, a core aspect of impulsivity, leading to unplanned actions (Carr, Wiedemann, Macdonald-Gagnon, and Potenza, 2021) and excessive food cravings (Loxton, 2018). Impulsivity can lead to overeating behaviors by increasing emotional hunger and the tendency to satisfy sudden urges. Especially because

impulsive individuals seek immediate pleasure and satisfaction, they may tend to eat more to achieve emotional and physical fulfillment. Additionally, impulsivity increases the tendency to satisfy emotional hunger and sudden urges, leading to overeating.

As a result of the mediation analysis conducted, it was determined that impulsivity partially mediates the effect of anxiety scores on excessive food craving scores. In previous studies, anxiety (Hussenoeder et al., 2022; Legget et al., 2023) and impulsivity (Awad et al., 2021; Maxwell et al., 2020) have been reported to increase the risk of excessive food craving. To cope with negative emotions, individuals tend to over-rely on sugary and fatty foods (Bongers et al., 2015b; Reents et al., 2020). At this point, with impulsivity involved, behaviors such as distractibility, inappropriate reactions, and acting without thinking, along with a tendency to seek immediate rewards, are noted as factors that increase the risk of excessive food craving (Bénard et al., 2018). This suggests that impulsivity plays a partial mediating role, contributing to the relationship between anxiety and excessive food craving, but it does not fully explain this relationship. In other words, impulsivity alone is not sufficient to explain the link between anxiety and excessive food craving, and other factors may also come into play. In conclusion, although impulsivity cannot fully explain the relationship between anxiety and excessive food craving, it appears as an important component of this dynamic.

The study group for this research, conducted on women, is limited to 699 women. Additionally, the findings are restricted to the characteristics measured by the data collection tools used in the study. The fact that a large portion of the sample group is students (%46.6) may make the results more closely related to the characteristics of young individuals in terms of impulsivity and eating behaviors. This situation may limit the generalizability of the findings to the broader population and affect the results. Therefore, future research could include women from other age groups at similar levels, as well as the young population. Programs that address the relationship between anxiety, impulsivity, and excessive food cravings in women could play a critical role in improving their quality of life. In this context, psychoeducational programs for women can clearly demonstrate how these psychological factors influence eating behaviors and help establish healthy eating habits. With emotional intelligence and psychological resilience training, women's stress management skills can be strengthened, and they can gain better control over their impulsivity. Additionally, interactive workshops can be organized to balance women's physical and emotional health, promote healthy lifestyles, and encourage the adoption of healthy habits. Such programs that improve both the psychological and physical health of women can enhance overall societal well-being and contribute to the development of healthy individuals.

Declarations

Ethical Approval and Permission to Participate

Approval has been obtained from the Iğdır University Non-Invasive Ethics Committee for the implementation of the study (Meeting No: 2025/02, Date: 01/08/2025). Informed consent has been obtained from voluntary participants who agreed to participate in the study.

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The author declares no conflict of interest.

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Author Contributions

DM prepared the entire manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

The Relationship Between Orthorexia Nervosa Tendencies, Eating Attitudes, and Obsessive Compulsive Symptoms of Nursing Students: A Cross-Sectional Study

Hemşirelik Öğrencilerinin Ortoreksia Nervosa Eğilimleri, Yeme Tutumları ve Obsesif Kompulsif Belirtiler Arasındaki İlişki: Kesitsel Bir Çalışma

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Abstract:

At the start of university education, young people tend to disregard healthy eating recommendations, overeat or eat unhealthily, follow strict diets, and skip meals. For these reasons, eating disorders are more frequently observed among university students. This study was conducted to evaluate the orthorexic tendencies of nursing students and to determine the relationship between eating attitudes and obsessive symptoms. The study sample consisted of 209 nursing students. The Personal Information Form, Orthorexia Nervosa Scale, Eating Attitudes Test, and Maudsley Obsessive-Compulsive Questionnaire were administered by the researchers. Descriptive analyses, Mann-Whitney U test, Kruskal-Wallis test, correlation, and regression analyses were used to evaluate the data. The mean scores for the ORTO-11 scale were 28.72 ± 4.84 ; the YTT-26 scale was 8.51 ± 8.20 ; and the MOKSL was 16.21 ± 7.66 . Evaluations based on the total scale scores revealed a negative, low-level, and significant correlation between ORTO-11 and YTT-26; a negative, moderate-level, and significant correlation between ORTO-11 and MOKSL; and a positive, low-level, and significant correlation between YTT-26 and MOKSL. This study, it was revealed that obsessive-compulsive habits and eating attitude disorder may affect orthorexia. Screening and early detection of eating disorders is important as it will provide an early treatment option. It is recommended to conduct screenings for students to prevent physical and psychological complications.

Keywords: Orthorexia Nervosa, Eating Attitude, Obsessive Compulsive Symptoms.

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Öz:

Üniversite eğitiminin başlamasıyla birlikte gençler sağlıklı beslenme önerilerine uymamakta, aşırı veya dengesiz beslenmekte, sıkı diyetler yapmakta ve öğün atlama davranışı göstermektedirler. Bu nedenlerden dolayı üniversite öğrencilerinde yeme davranışı bozuklukları daha sık görülebilmektedir. Bu çalışma hemşirelik öğrencilerinin ortoreksik eğilimlerini değerlendirmek ve yeme tutumları ile obsesif semptomlar arasındaki ilişkiyi belirlemek amacıyla yapılmıştır. Çalışmanın örneklemini 209 hemşirelik öğrencisi oluşturmuştur. Araştırmacılar tarafından Kişisel Bilgi Formu, Ortoreksiya Nervoza Ölçeği, Yeme Tutumu Testi ve Maudsley Obsesif Kompulsif Soru Listesi uygulanmıştır. Veriler betimsel analizler, Mann-Whitney U testi, Kruskal-Wallis testi, korelasyon ve regresyon analizi ile test edilmiştir. ORTO-11 ölçeği puan ortalaması 28.72 ± 4.84 ; YTT-26 ölçeği puan ortalaması 8.51 ± 8.20 ; MOKSL puan ortalaması 16.21 ± 7.66 olarak saptanmıştır. Ölçek toplam puanları ile yapılan değerlendirmelerde, ORTO-11 ile YTT-26 ölçekleri arasında negatif yönde, düşük düzeyde ve anlamlı; ORTO-11 ile MOKSL arasında negatif yönde, orta düzeyde ve anlamlı; ve YTT-26 ile MOKSL arasında ise pozitif yönde, düşük düzeyde ve anlamlı korelasyon bulunmuştur. Bu çalışmada obsesif-kompulsif alışkanlıkların ve yeme tutumu bozukluğunun ortoreksiyayı etkileyebileceği ortaya konmuştur. Yeme bozukluklarının taranması ve erken tespiti erken tedavi seçeneği sağlayacağı için önemlidir. Oluşabilecek fiziksel ve psikolojik komplikasyonları önlemek amacıyla öğrencilere tarama yapılması önerilmektedir.

Anahtar Kelimeler: Ortoreksiya Nervoza, Yeme Tutumu, Obsesif-Kompulsif Belirtiler.

Introduction

Orthorexia Nervosa (ON) is a concept that has not yet been included in the official classification systems expressing pathological fixation related to the consumption of healthy food and has just begun to be investigated in the literature (Donini et al. 2004). In orthorexia nervosa, the person controls everything (s)he eats in an exaggerated way. They prefer to eat at home, obsessed with the fact that food is additive-free (Şengül and Hocaoğlu, 2019). As a result, a decrease in social relations and an increase in obsessive behaviors, such as excessive worrying about food, are observed. According to research findings, individuals with eating attitudes got lower scores from the orthorexia nervosa scale (ORTO-11); that is, they may show higher orthorexic tendencies (Arusoğlu et al., 2008). Donini et al. (2004) reported the frequency of orthorexia, which they fanatically defined as healthy eating habits, in addition to obsessive-compulsive personality trait, as 6.9% of the general population. Fidan et al. (2010) found the frequency of orthorexia in medical students to be 43.6%. Women, adolescents, athletes, and dietitians are reported to be high-risk groups for orthorexia nervosa (Arslantaş et al., 2017). Students who receive health education, who give importance to proper nutrition, and who are worried about getting fat are among the groups with a higher tendency to orthorexia (Korinth et al., 2010). When overlapped with obsessive-compulsive disorder, individuals in ON show some obsessive tendencies. In these individuals, symptoms such as recurrent and intervening intrusive thoughts about food and health, intense worry about contamination and filth, and ritualistic behavior while arranging and eating food are observed. The content of the obsessions in orthorexia is compatible with the ego, and in this respect, it differs from obsessive-compulsive disorder (Koven and Abry, 2015). At the beginning of university education, young people do not follow healthy nutrition recommendations, eat excessive or unbalanced diets, follow strict diets, and exhibit behavior such as skipping meals. For these reasons, eating behavior disorders can be seen more frequently in university students (Arslan et al., 2016). Since it is a new concept, there is no universally accepted definition, and no valid diagnostic criteria exist (Şengül and Hocaoğlu, 2019). Sufficient knowledge about orthorexia has not been reached in the literature yet. This

study was conducted to evaluate the orthorexia tendencies of nursing students, one of the risk groups for orthorexia, and to determine the relationship between eating attitudes and obsessive symptoms. University students are vulnerable to nutritional issues. Because they are in a critical period where they take responsibility for their eating habits. In addition, this period is critical for body image development. Considering that the behaviors developed during this period continue into adulthood, this study is important for determining risk factors, providing early diagnosis, and guiding treatment. To date, there is no data on eating disorders in the relevant department of the university where the study was conducted. The fact that body mass index, an important indicator in eating disorders, is also addressed in this study makes the study important.

Research Questions

Is there a significant relationship between Orthorexia Nervosa and Eating Attitudes and Obsessive Compulsive Symptoms in university students?

Do students' Orthorexia Nervosa scores differ significantly according to their eating attitudes and obsessive-compulsive symptoms?

Also, do these variables show significant differences across sociodemographic groups?

Are Obsessive Compulsive Disorder, Orthorexia Nervosa, and Eating Disorders related to body mass index?

Method

The research has cross-sectional and relational characteristics. The research universe consists of nursing students. Sample size was calculated using G*Power. In the power analysis, the confidence interval was calculated as $\alpha=0.05$, the power of the test ($1-\beta$) was 0.95, and a total of 203 (Duran, 2016). The study was conducted on a voluntary basis. Volunteer students who met the study criteria were included. The study was completed with 209 students.

Data Collection

Research data was collected online between 01 April and 15 May 2023. The research was conducted with students aged 18 and over who volunteered to participate. Then, the Personal Information Form, the Orthorexia Nervosa Scale, the Eating Attitudes Test, and the Maudsley Obsessive-Compulsive Questionnaire were administered.

Personal Information Form

The Personal Information Form comprises questions to assess students' sociodemographic characteristics and nutritional habits.

Eating Attitude Test-26 (EAT-26)

The Eating Attitudes Test (EAT) is a test developed by Garner and Garfinkel (1979) to assess abnormal eating attitudes in individuals. The eating attitude test assesses predisposition and attitudes related to disordered eating behavior at the clinical level. The original scale consists of 40 items and 7 sub-dimensions, each evaluated on a 6-point Likert-type scale ranging from 0 (always) to 5 (never). The validity and reliability study of EAT-40 in Turkey was done by Savaşır and Erol (1989). The short form of the test, EAT-26, was adapted into Turkish by Ergüney-Okumuş and Sertel-Berk (2020) and was found to be a reliable scale for use in the general population. Cronbach's Alpha 0.84 of EAT-26. In this study, the alpha value was 0.82.

Orthorexia Nervosa Scale (ORTO-11)

Donini et al. (2004) developed ORTO-15, a brief 10-item orthorexia questionnaire based on Bratman's (2000) brief 10-item orthorexia questionnaire (Arusoğlu et al., 2008). The original version of the scale was developed in Italy. The ORTO-15 test, adapted into Turkish by Arusoğlu et al. (2008), was updated to ORTO-11. On the scale in which the individuals were rated both emotionally and rationally, the "cognitive rational domain," "clinical

domain," and "emotional domain" are examined. Low scores from the scale indicate orthorexic tendency. The Cronbach Alpha of the scale was 0.62 (Arusoğlu et al., 2008), and in this study, the alpha is 0.82.

Maudsley Obsessive Compulsive Question List (MOCQL)

Scale created by Hodgson and Rachman (1977) to investigate the level and type of obsessive-compulsive symptoms; it consists of the following subscales: cleanliness, doubt, control, and slowness. Adaptation to Turkish was made by Erol and Savaşır (1988). Items are evaluated as true and false, and the correct option is scored as 1 and the wrong option as 0. Only item 11 is reverse-scored. The maximum values are 37 for obsession, 9 for controlling, 11 for cleanliness, and 7 for slowness and doubt. Items related to control: 2, 6, 8, 14, 15, 20, 22, 26, 28; cleaning-related items: 1, 4, 5, 9, 13, 17, 19, 21, 24, 26, 27; articles about slowness: 2, 4, 8, 16, 23, 25, 29; doubt-related items: 3, 7, 10, 11, 12, 18, 30; Items related to rumination are as follows: 2, 8, 31, 32, 33-37. The Cronbach Alpha coefficient is .86 for the whole scale (Erol and Savaşır, 1988; Aydemir and Köroğlu, 2009). In this study, the Cronbach's Alpha was 0.88.

Analysis of Data

IBM SPSS Statistics 22.0 (New York) program was used in the analysis of the data. The Shapiro-Wilk test was used to assess normality. Number, percentage, arithmetic mean, Kruskal-Wallis test, Mann-Whitney U test, correlation, and regression analysis were used to analyze the data.

Ethics of The Research

Before starting the research, written permission was obtained from the local clinical research ethics committee (Decision date: 18.01.2023; Decision no: 2023/16) and the institution where the research was conducted.

Table 1. Distribution of Students' Introductory Characteristics

		n	%
Age	18-21 age	130	62.2
	22 and over	79	37.8
Grade	1.	36	17.2
	2.	58	27.8
	3.	92	44.0
	4	23	11.0
Gender	Female	145	69.4
	Male	64	30.6
Kaldığı yer	Home	108	51.7
	Dormitory	101	48.3
Smoking	Yes	37	17.7
	No	172	82.3
Alcohol use	Yes	12	5.7
	No	197	94.3
Chronic disease	Yes	14	6.7
	No	195	93.3

Meal order	Regular	62	29.7
	Partly regular	84	40.2
	Irregular	63	30.1
Doing regular exercise	Yes	26	12.4
	No	183	87.6
Status of taking nutritional supplements	Using	14	6.7
	Used in the past	40	19.1
	Never used	155	74.2
Dieting status	Yes	30	14.4
	No	179	85.6
Healthy nutrition information	Yes	178	85.2
	No	31	14.8
Weight assessment status	I am overweight	32	15.3
	I am of normal weight	140	67.0
	I am underweight	37	17.7
Body Mass Index (BMI)	18.5 above underweight	19	9.1
	18.5-24.9 Normal	151	72.3
	25-29.9 overweight	35	16.7
Total		209	100,0

Table 1 includes the introductory characteristics of the students. The mean age of the students is 21.23±2.5 (min: 18, max: 43), and 62.2% of them are between the ages of 18 and 21. 3rd-grade students constitute 44% of the participants, and females constitute 69.4%. 51.7% of the students stay at home with their family or friends, and 48.3% stay in the dormitory. In addition, alcohol (5.7%) and cigarette (17.7%) use rates are low. 6.7% of the students have a conical disease (4 students with mental illness, 3 with Diabetes Mellitus, 3 with Multiple Sclerosis, 2 with Asthma, 2 with Gastrointestinal Ulcer). 40.2% of the students reported that their meals were partially regular, and mostly (87.6%) they did not exercise

regularly. 74.2% of the students did not take any nutritional supplements, and 85.6% did not diet at all. 85.2% of the students had knowledge about healthy nutrition. When asked to evaluate their weight, 67% stated they were of normal weight, and 72.3% had a BMI within normal limits. In the statistical analysis, the data were not normally distributed ($p < 0.05$).

Results

ORTO-11 mean score was 28.72±4.84; EAT-26 scale mean score was 8.51±8.20; The mean MOCQL score was found to be 16.21±7.66 (Table 2).

Table 2. Distribution of ORTO-11, EAT- 26, and MOCQL Scales Score Averages

	n	Min.	Max	Mean±SD
ORTO-11 Total	209	16	41	28.72±4.84
EAT-26 Total		0	38	8.51±8.20
Diet	209	0	23	4.40±5.04
Bulimia/eating obsession		0	13	1.55±2.42
Oral controls		0	13	2.55±2.81
MOCQL Total		1	33	16.21±7.66
Controlling		0	9	3.07±2.30
Cleaning		0	10	4.89±2.38
Slowness	209	0	7	2.43±1.79
Doubt		0	7	3.42±1.71
Rumination		0	9	4.33±2.72

Correlations between the scales are given in Table 3. In the evaluations made with the scale total scores, there was a negative, low, and significant difference between the ORTO-11 and EAT-26 scales ($r=-.261$; $p=.000$); Negative, moderate, and significant difference between ORTO-11 and MOCQL ($r=-.324$; $p=.000$); A positive, low and significant ($r=.216$; $p=.002$) relationship was found

between EAT-26 and MOCQL. As a result of the statistical analysis, a low-level, positive, and significant relationship was found between BMI and mean EAT-26 scores ($p < 0.05$). There was no significant difference in mean scores between ORTO-11 and MOCQL according to BMI values ($p>0.05$).

Table 3. Correlations Between ORTO-11, EAT- 26 and MOCQL Scales Scores

	Test and P value	ORTO-11 Total	EAT-26 Total	MOCQL Total	BMI
ORTO Total	r	1			
	p				
EAT Total	r	-.261*	1		
	p	.000			
MOCQL Total	r	-.324*	.216*	1	
	p	.000	.002		
BMI	r	-.031	.187*	.048	1
	p	.658	.007	.489	

Table 4. Comparison of Scale Score Means and Some Variables

Charecteristics	ORTO-11	EAT-26	MOCQL
Doing regular exercise			
Yes	29.50±4.13	8.76±8.81	12.76±6.77
No	28.28±4.81	8.47±8.14	16.69±7.67
	Z=-0.485	Z=-0.035	Z=-2.633
	p=0.628	p=0.972	p=0.008
Healthy nutrition information			
Yes	28.45±4.80	8.61±8.40	19.09±6.85
No	28.32±4.48	7.90±7.06	15.70±7.70
	Z=-1.185	Z=-0.056	Z=-2.379
	p=0.236	p=0.955	p=0.017
Meal order			
Regular	28.37±4.38	8.50±8.68	13.87±7.26
Partly regular	29.00±3.77	8.04±7.90	16.26±6.47
Irregular	28.69±6.36	9.14±8.20	18.44±8.85
	X ² =1.302	X ² =1.338	X ² =11.561
	p=0.521	p=0.512	p=0.003
Weight assessment status:			
Overweight	27.65±5.03	12.84±11.5	16.06±7.44
Normal weight	28.80±4.70	7.67±7.66	16.33±7.70
Underweight	27.70±4.61	7.91±5.21	15.86±7.88
	X ² =0.207	X ² =6.313	X ² =0.193
	p=0.902	p=0.043	p=0.908

Table 4 shows a comparison of some student features and their scale mean scores. Since it was determined that homogeneity was not achieved in the study group ($p < 0.05$), nonparametric analyses were used. The analyses were performed with all student characteristics, but they were not shown in the table because the results were insignificant ($p > 0.05$). Considering the variables in the

table, no significant difference was found between the ORTO-11 scale and students' characteristics ($p > 0.05$). The difference between students' self-assessments of weight and the EAT-26 scale was significant ($p < 0.05$). The differences between regular exercise, knowledge of healthy nutrition, meal order, and the MOCQL scale were significant ($p < 0.05$).

Table 5. The Effect of Eating Attitude Level and Obsessive Compulsive Symptoms on Orthorexia Nervosa Tendency

Model*	Unstandardized Coefficients		Standardized Coefficients	R	R ²	t	p
	B	Std.Error	Beta				
Constant	29.142	.796	-			36.604	.001
EAT	-.016	.041	-.028	.068	.005	-.392	.695
MOCQL	-.035	.044	-.057			-.796	.427

*Multivariate Regression Analysis

In the study, it was determined that each score obtained from scales changed orthorexia scores by EAT: -.016 and MOCQL: -.035, respectively. As a result, it can be said that eating attitude level and obsessive-compulsive symptom level do not affect the students' Orthorexia Nervosa levels (Table 5).

Discussion

Although Orthorexia Nervosa is not defined as a psychiatric disorder, it is usually associated with a significant deterioration (Duran, 2016). In fact, it can be considered a disorder when non-pathological healthy eating habits become overwork, are long-term, and cause negative effects on daily life (Donini et al., 2004). While individuals in orthorexia initially aim to improve health, treat disease, or lose weight, diet becomes the most important part of their lives (Chaki et al., 2013). Risk groups for orthorexic behaviors include women, adolescents, athletes, medical students, health workers, and dietitians. Nursing students studying in the health field are also at risk. From this perspective, this study was conducted with nursing students, who will represent an important health group. Almost half of the participating students were 3rd graders. In a study, a low negative correlation was found between Orthorexia Nervosa and eating attitude. As the scores on the ORTO-11 scale decreased, the disorder's susceptibility increased; although the correlation coefficient was negative, it was interpreted as positive. This situation is based on the evaluations. In this study, it was found that as deterioration in eating attitudes increased, the level of orthorexic symptoms also increased. Both eating disorders and orthorexia are characterized by a lack of pleasure associated with eating. Individuals exhibit a need to control food intake to improve their self-esteem, which, in turn, gives them a sense of control over their own lives (Segura-Garcia et al., 2014). The same results are noteworthy in studies examining the relationship between eating attitude and orthorexic symptoms (Arusoğlu et al., 2008; Duran et al., 2016; Varga et al., 2013; Arslantaş et al., 2017; Demir and Savucu, 2022). It has been reported in the literature that a high level of obsessive-compulsive symptoms can predict orthorexic tendencies (Arusoğlu, 2008). As a result of the research, it was found that there was a statistically significant relationship between the students' obsessive-compulsive symptom mean scores and Orthorexia Nervosa scores, and as the severity of obsessive-

compulsive symptoms increased, the students' tendency towards Orthorexia Nervosa also increased. These results were found to be compatible with the literature (Evcimen et al., 2020; Yazkan and Uğurlu, 2022; İnce Palamutoğlu and İnce Yenilmez, 2021). Orthorexia Nervosa has some similarities to obsessive-compulsive disorder, such as spending most of the time following rigid rules and preoccupations, having intrusive thoughts about food and health, and engaging in compulsive behaviors when preparing and eating food (Plichta et al., 2020; Koven and Abry, 2015). In one study, Orthorexia Nervosa was classified as a manifestation of obsessive-compulsive disorder (Lucka et al., 2019). It has been suggested by Dunn and Bratman (2016) that orthorexic individuals may exhibit compulsive behaviors and mental preoccupations towards restrictive dietary strategies that they believe will maximize their health. These findings support the literature. In the study, the relationship between obsessive-compulsive symptoms and eating attitude was found to be positive and significant. It was determined that as the deterioration in the eating attitude of the students increased, there would be an increase in the level of obsessive-compulsive disorder symptoms. 14.4% of the students in this study reported being on a diet. It is thought that individuals who pay attention to their diets show a more prescriptive behavior over time, which may cause an increase in obsessive symptom tendencies. These findings are consistent with the literature (Duran, 2016; Çelikel et al., 2009) and support the link between obsessive-compulsive symptoms and eating attitudes. When we predicted the Orthorexia Nervosa variable, which we accepted as the dependent variable in the regression model we established, no significance was found. This situation may be due to the small number of our samples. BMI is an important variable associated with eating disorders. It was determined that 72.3% of students were within the normal range according to the BMI variable. In addition, a positive and significant relationship was found between students' BMI values and their eating attitude scores, indicating that as students' BMI increased, their eating problems also increased. 87.6% of the students in this study reported not exercising regularly. Regarding BMI, our results failed to find a significant correlation for Orthorexia Nervosa with obsessive-compulsive symptoms, a finding that supports most previous studies performed in different populations (Parra-Fernández et al., 2018; Brytek-Matera et al., 2014).

Obsessive-compulsive symptom scores for students who reported not exercising were significantly higher. Considering the positive contribution of exercise in coping with anxiety, the result is not surprising. In this context, it would be useful to plan training sessions that emphasize the importance of relaxation and exercise in reducing anxiety for students. The majority of the students in this study (85.2%) have received nutrition education and have healthy nutrition knowledge. When healthy nutrition knowledge and scale comparisons were made, it was found that students' obsessive-compulsive symptoms were significantly higher in those who received education. It has been reported that nutrition obsessions can develop among individuals who receive nutrition education (Duran, 2016; Alvarenga et al., 2012). This finding is consistent with the literature. Regular meals, meal frequency, and skipping meals are observable factors of healthy nutrition. Adequate and balanced nutrition can be achieved with regular meal habits (Mattson et al., 2014). 40.2% of the students in this study reported having partially regular meal habits, and 30.1% reported irregular meal habits. Only 29.2% of the students reported regular meal habits. Mean scores on obsessive-compulsive symptoms for students reporting irregular eating habits were higher and statistically significant. These results may be an indication that involuntary eating behaviors may develop to suppress negative emotions, reduce anxiety, and cope. The mean eating attitude scores of students who evaluated their weight as overweight were significantly higher. In order for this situation not to cause eating disorders, students' weight concerns should be addressed, and students should be supported with flexible diet programs.

Conclusion

Being obsessed with healthy eating can become a disorder that affects personality and behavioral dimensions after a certain period of time. This study showed that obsessive-compulsive habits and eating disorders may influence orthorexia. Similarly, a higher risk of orthorexia nervosa may be associated with a higher risk of obsessive-compulsive disorder and eating problems. The existence of a relationship between eating behavior problems, obsessive symptoms, and ON reveals the need to take precautions in this regard. A higher risk of orthorexia nervosa may be associated with a higher risk of obsessive-compulsive disorder and eating problems. For this reason, screening and early detection of eating disorders are important as they provide an early treatment option. It is

recommended that screenings be conducted to prevent physical and psychological problems among students. In addition, it would be appropriate to conduct conferences and seminars for students on orthorexia so that healthy eating does not turn into an obsession. Cultural differences should be taken into consideration when planning individual or community training. There is a need for comprehensive studies using various sample groups on Orthorexia Nervosa, a concept that is just beginning to gain ground in the literature. In the future, more studies should be conducted to evaluate the points that require resolution in clinical treatment for individuals thought to have orthorexic characteristics. It may also be important to reveal the factors that may cause individuals with orthorexia to need to eat natural foods and teach them how to cope.

Limitations

This study encountered some limitations. First, this sample consisted mainly of female students. Secondly, due to the cross-sectional nature of the study, causality of the relationships could not be evaluated. Third, current results are based on self-reports, which may be subject to potential bias.

Declarations

Ethical Approval

The research protocol was submitted to the Gaziantep University Ethics Committee and approved (Approval number 18.01.2023/16). Patients who agreed to participate in the study gave written consent. All procedures were carried out in accordance with ethical principles and the Declaration of Helsinki.

Permission to Publish

Not Applicable.

Availability of Data and Materials

Not Applicable.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Author Contributions

Study design: AB, DÇ; Data collection: AB; Data analysis: AB; Manuscript writing: DÇ, AB. All authors have read and approved the final version of the article.

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RESEARCH ARTICLE / ARAŞTIRMA YAZISI

Readability of Online Patient Education Materials on Autism: An Invisible Barrier to Information Access

Otizmle İlgili Çevrimiçi Hasta Eğitimi Materyallerinin Okunabilirliği: Bilgiye Erişimde Görünmez Bir Engel

Pınar Algedik¹, Orhan Kocaman²

Abstract:

This study aimed to evaluate the readability of online patient education materials related to Autism Spectrum Disorder (ASD) and determine how comprehensible these resources are for parents. On January 26, 2025, English-language materials were identified using the Google search engine with the keywords “autism,” “atypical autism,” “Asperger syndrome,” “pervasive developmental disorder,” and “autism spectrum disorder.” According to predefined inclusion criteria, 132 websites were selected and categorized into three groups: Professional Society, Clinical Practice, and General Health Information. Readability was assessed using six standardized metrics: Flesch Reading Ease (FRE), Flesch–Kincaid Grade Level (FKGL), Gunning Fog Index (GFI), Simple Measure of Gobbledygook (SMOG), Coleman–Liau Index (CLI), and Automated Readability Index (ARI). Of the 132 analyzed materials, 67.4% were from General Health Information sources, 17.4% from Professional Societies, and 15.2% from Clinical Practices. The mean FRE score was 30.2 ± 16.2 , FKGL was 14.3 ± 3.7 , GFI was 17.0 ± 3.8 , SMOG was 13.0 ± 2.6 , CLI was 15.7 ± 2.4 , and ARI was 14.3 ± 4.1 . No statistically significant differences were found between the three website categories ($p > 0.05$). These findings indicate that online autism education materials are generally written at an academic level that exceeds the reading ability of the general public, creating a gap between available information and its practical usability. This gap may hinder parents from making informed decisions and accessing timely support for their children. Therefore, developing clearer, more accessible, and health-literacy-appropriate resources is essential to improve understanding, early diagnosis, and intervention outcomes for individuals with autism.

Keywords: Autism spectrum disorder; Readability, Patient education materials, Health literacy, Online health information.

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Öz:

Bu çalışma, Otizm Spektrum Bozukluğu (OSB) ile ilgili çevrimiçi hasta eğitimi materyallerinin okunabilirliğini değerlendirmeyi ve bu kaynakların ebeveynler tarafından ne ölçüde anlaşılabilirliğini belirlemeyi amaçlamıştır. 26 Ocak 2025 tarihinde, Google arama motoru kullanılarak “otizm”, “atipik otizm”, “Asperger sendromu”, “yaygın gelişimsel bozukluk” ve “otizm spektrum bozukluğu” anahtar kelimeleriyle İngilizce dilinde hasta eğitimi materyalleri belirlenmiştir. Önceden tanımlanmış dahil edilme kriterlerine göre 132 web sitesi seçilmiş ve Profesyonel Dernek, Klinik Uygulama ve Genel Sağlık Bilgisi olmak üzere üç gruba ayrılmıştır. Okunabilirlik, Flesch Okunabilirlik Kolaylığı (FRE), Flesch-Kincaid Sınıf Düzeyi (FKGL), Gunning Sis İndeksi (GFI), Gobbledygook Basit Ölçümü (SMOG), Coleman-Liau İndeksi (CLI) ve Otomatik Okunabilirlik İndeksi (ARI) olmak üzere altı standart ölçüt kullanılarak değerlendirilmiştir. Analiz edilen 132 materyalin %67,4’ü Genel Sağlık Bilgisi kaynaklarından, %17,4’ü Profesyonel Derneklerden ve %15,2’si Klinik Uygulamalardan elde edilmiştir. Ortalama FRE skoru $30,2 \pm 16,2$, FKGL $14,3 \pm 3,7$, GFI $17,0 \pm 3,8$, SMOG $13,0 \pm 2,6$, CLI $15,7 \pm 2,4$ ve ARI $14,3 \pm 4,1$ olarak bulunmuştur. Üç web sitesi kategorisi arasında istatistiksel olarak anlamlı fark saptanmamıştır ($p > 0,05$). Bu bulgular, otizmle ilgili çevrimiçi eğitim materyallerinin genel okuyucu kitesinin okuma düzeyinin oldukça üzerinde bir akademik dilde yazıldığını ve bu durumun mevcut bilgiyle pratik kullanım arasında bir boşluk yarattığını göstermektedir. Bu boşluk, ebeveynlerin çocukları için bilinçli kararlar almasını ve zamanında destek kaynaklarına ulaşmasını zorlaştırabilir. Bu nedenle, daha açık, erişilebilir ve sağlık okuryazarlığına uygun materyallerin geliştirilmesi, otizmlili bireylerde anlayışı, erken tanıyı ve müdahale süreçlerini iyileştirmek açısından büyük önem taşımaktadır.

Anahtar Kelimeler: Otizm spektrum bozukluğu, Okunabilirlik, Hasta eğitimi materyalleri, Sağlık okuryazarlığı, Çevrimiçi sağlık bilgisi.

Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that begins in early childhood and is marked by difficulties in social communication, repetitive behaviors, and restricted interests (Hodges et al., 2020). Approximately 1 in every 36 children worldwide is diagnosed with ASD, and the prevalence has been rising in recent years (Maenner et al., 2023). This rise is believed to result from heightened awareness, changes in diagnostic criteria, and environmental influences (Neggers, 2014). Early diagnosis and intervention can support language, cognitive, and social development in individuals with ASD. Yet, developmental progress is not limited to early intervention; individualized education programs and continuous support also play a crucial role. Intensive and long-term approaches may yield lasting benefits in language and cognition. For this reason, parents and caregivers need access to clear information not only during the diagnostic phase but also throughout the child’s educational and therapeutic journey.

The Internet has increasingly become one of the main sources for accessing health-related information (Kummervold et al., 2008). Reliable information is crucial for individuals to adopt healthy lifestyles, prevent illnesses, and utilize healthcare services effectively. Parents and individuals seeking health information often use the Internet as a primary tool to learn about their medical conditions and available treatment options (Andreassen et al., 2007). After professional advice, the Internet ranks as the second most preferred source of health information (Couper et al., 2010). For conditions associated with stigma, people and their families are even more likely to rely on online resources (Berger et al., 2005). ASD is considered a neurodevelopmental disorder frequently misunderstood in society and linked with stigma (Turnock et al., 2022). This increases the probability that parents of children with ASD will seek

online information as their primary source. In fact, studies have shown that online media can influence parental health-related decisions, such as childhood vaccination, highlighting the critical importance of evaluating both the accessibility and quality of such content (Yılmaz & Sezgin, 2023). The rapid spread of digital technologies and easier Internet access has further broadened the availability of autism-related information, but also raised concerns about its quality. In recent years, the COVID-19 pandemic has accelerated the adoption of digital tools in healthcare, with physicians increasingly using online resources to inform patients, conduct initial assessments, and offer teleconsultations (Marinelli et al., 2022). The developmental progress of individuals with ASD depends not only on early diagnosis and intervention but also on individualized education programs and long-term support. Therefore, parents must obtain accurate, understandable, and accessible information about autism spectrum disorder. Although the Internet enables fast and wide access, the scientific reliability and readability of online content are not always sufficient. Expanding high-quality online educational materials can support earlier diagnosis and more effective planning for children with autism. Still, mere access is not enough; both the quality of the material and its suitability for the target audience are critical to how effectively the information is used.

When assessing the overall quality and usefulness of an online resource for patients and caregivers, a key factor is how easily the information can be read, understood, and processed by the intended audience. Therefore, the health literacy level of the target group must be considered. Several methods have been developed to evaluate the readability of texts and websites. In the U.S. academic context, readability refers to the level of education needed to comprehend a given text. The average American adult reads at approximately an 8th-grade level. The American Medical Association (AMA) and the National Institutes of

Health (NIH) recommend that patient education materials be written at about a 6th-grade level (Affairs, 1999; The National Library of Medicine (MedlinePlus), 2022). However, limited knowledge about diseases can impair health-related decision-making and lower adherence to treatment (Dempster et al., 2015). Thus, patient education resources should not only provide information but also be presented clearly and understandably to patients and their parents.

In the literature, six widely used readability tools are commonly applied to evaluate patient education materials. The Flesch Reading Ease (FRE), developed in 1948, measures the overall comprehensibility of a text. (Flesch, 1948). The Flesch–Kincaid Grade Level (FKGL) indicates the education level required to understand a text and converts it into a U.S. grade level. (Flesch, 1948). The Gunning–Fog Index (GFI) assesses readability based on sentence length and the number of polysyllabic words. (Gunning Ralph, 1952). The Simple Measure of Gobbledygook (SMOG) analyzes the entire text and is often used specifically for health-related information. (GH, 1969). The Coleman–Liau Index (CLI) focuses on word length and sentence structure. (Coleman & Liau, 1975), while the Automatic Readability Index (ARI) calculates readability from the number of characters, words, and sentences (Smith & Senter, 1967).

The readability of online patient education materials on ASD is crucial, since many parents use the Internet to learn about their children's diagnosis and treatment. However, some health-related websites contain medical terminology that makes the information more complicated to understand. In particular, when discussing complex and multidimensional neurodevelopmental disorders such as ASD, topics like genetic and environmental factors, the diagnostic process, early intervention, individualized education plans, and behavioral therapies are frequently included. This range of content can affect readability and make comprehension difficult for some parents. Materials that are difficult to read and understand may lead parents toward unscientific sources or prevent them from accessing adequate support. As a result, missed opportunities for early intervention might arise, leading to delays in children's language, cognitive, and social development. Therefore, patient education materials on autism should be both accessible and easy to understand.

This research aimed to evaluate the readability standards of online educational materials about autism and to assess how comprehensible these resources are to both parents and patients. In doing so, it seeks to contribute to the development of more accessible and comprehensible resources for these audiences.

Methods

On January 26, 2025, online patient education materials related to autism were identified using the Google search engine. The search terms used were “autism,” “atypical autism,” “Asperger syndrome,” “pervasive developmental

disorder,” and “autism spectrum disorder.” During the refined search process, only results set to ‘full sentence’ and ‘English language’ were included. For each keyword, the first 50 eligible websites were systematically gathered, yielding a total sample of 250 sites for evaluation. Any repeated entries, scholarly journals, multimedia content (such as videos), or sites that display solely tables or images were deliberately excluded. The final set of websites was organized into three distinct categories: (1) Professional Society, (2) Clinical Practice, and (3) General Health Information websites. A Professional Society refers to professional associations, research foundations, and advocacy groups aiming to advance knowledge, research, and practice in the field of autism. “Clinical Practice” included healthcare institutions such as hospitals, private clinics, genetic laboratories, and imaging centers that provide diagnostic, treatment, or medical services for individuals with ASD. “General Health Information Website” referred to non-clinical and non-professional organizations providing general public health information about autism.

All selected autism-related texts were individually transferred into separate Microsoft Word documents (version 2010; Microsoft, Redmond, WA, USA). To prevent any distortion of the readability assessments, non-instructional components such as navigation menus, copyright details, disclaimers, author credits, feedback sections, hyperlinks, web addresses, citations, images, tables, footnotes, contact details, and phone numbers were carefully excluded. After this cleaning process, the readability metrics were automatically determined by entering the cleaned texts into the online tool at <https://www.webfx.com/tools/read-able/>. As this study analyzed only publicly available online materials and did not involve human participants or personal data, ethics committee approval was not required.

Statistical Methods

Descriptive statistical analyses included calculations of mean, standard deviation, median, minimum and maximum values, frequencies, and percentages. To assess the distribution characteristics of the variables, the Kolmogorov-Smirnov and Shapiro-Wilk tests were applied. For normally distributed independent quantitative data, ANOVA accompanied by Tukey's post-hoc test was conducted, whereas the Kruskal-Wallis and Mann-Whitney U tests were employed for non-normally distributed data. Qualitative data comparisons were performed using the Chi-Square test. All statistical evaluations were executed using SPSS software, version 28.0.

Results

A total of 132 online patient education materials related to ASD were evaluated. Of these, 89 (67.4%) were obtained from General Health Information websites, 23 (17.4%) from Professional Society websites, and 20 (15.2%) from Clinical Practice websites (Table 1).

Table 1. Readability Metrics and Difficulty Classification of ASD-Related Online Patient Education Material

		Min-Max	Median	Mean±sd/n-%
Flesch Reading Ease		0,0-73,8	29,2	30,2 ± 16,2
	Fairly Easy		2	1,5%
	Standard		3	2,3%
Flesch Reading Ease	Average Diffucult		11	8,3%
	Fairly Diffucult		17	12,9%
	Diffucult		31	23,5%
	Very Diffucult		68	51,5%
Flesch-Kincaid Grade Level		6,6-35,5	14,3	14,3 ± 3,7
	East To Read		3	2,3%
	Fairly Easy		2	1,5%
Flesch–Kincaid Grade Level	Standard		8	6,1%
	Fairly Diffucult		28	21,2%
	Diffucult		71	53,8%
	Very Diffucult		20	15,2%
Gunning-Fog Index		9,1-37,7	17,0	17,0 ± 3,8
	Standard		2	1,5%
Gunning- Fog Index	Fairly Diffucult		15	11,4%
	Diffucult		49	37,1%
	Very Diffucult		66	50,0%
SMOG Grading		7,3-27,3	13,0	13,0 ± 2,6
	Fairly Easy		5	3,8%
	Standard		10	7,6%
SMOG Grading	Fairly Diffucult		51	38,6%
	Diffucult		64	48,5%
	Very Diffucult		2	1,5%
Coleman-Liau Index		10,0-21,1	15,4	15,7 ± 2,4
	Fairly Diffucult		12	9,1%
Coleman-Liau Index	Diffucult		81	61,4%
	Very Diffucult		39	29,5%
Automated Readability Index		5,3-39,8	14,1	14,3 ± 4,1
	East To Read		3	2,3%
	Fairly Easy		2	1,5%
	Standard		10	7,6%
Automated Readability Index	Fairly Diffucult		29	22,0%
	Diffucult		67	50,8%
	Very Diffucult		21	15,9%
	Professional		23	17,4%
Group	General		89	67,4%
	Clinical Practice		20	15,2%

The FRE scores ranged from 0.0 to 73.8, with a mean of 30.2 ± 16.2 and a median of 29.2. According to the FRE classification, 2 materials (1.5%) were rated as fairly easy, 3 (2.3%) as standard, 11 (8.3%) as average difficult, 17 (12.9%) as fairly difficult, 31 (23.5%) as difficult, and 68 (51.5%) as very difficult.

The FKGL values ranged between 6.6 and 35.5, with a mean of 14.3 ± 3.7 and a median of 14.3. Based on the FKGL classification, 3 materials (2.3%) were rated as easy to read, 2 (1.5%) as fairly easy, 8 (6.1%) as standard, 28 (21.2%) as fairly difficult, 71 (53.8%) as difficult, and 20 (15.2%) as very difficult.

The GFI ranged from 9.1 to 37.7, with a mean of 17.0 ± 3.8 and a median of 17.0. According to GFI categorization, 2 materials (1.5%) were classified as standard, 15 (11.4%) as fairly difficult, 49 (37.1%) as difficult, and 66 (50.0%) as very difficult.

The SMOG results ranged between 7.3 and 27.3, with a mean of 13.0 ± 2.6 and a median of 13.0. In this classification, 5 materials (3.8%) were identified as fairly easy, 10 (7.6%) as standard, 51 (38.6%) as fairly difficult, 64 (48.5%) as difficult, and 2 (1.5%) as very difficult.

The CLI values varied between 10.0 and 21.1, with a mean of 15.7 ± 2.4 and a median of 15.4. According to CLI categories, 12 materials (9.1%) were categorized as fairly difficult, 81 (61.4%) as difficult, and 39 (29.5%) as very difficult.

The ARI ranged between 5.3 and 39.8, with a mean of 14.3 ± 4.1 and a median of 14.1. According to ARI classification, 3 materials (2.3%) were easy to read, 2 (1.5%) fairly easy, 10 (7.6%) standard, 29 (22.0%) fairly difficult, 67 (50.8%) difficult, and 21 (15.9%) very difficult (Table 1).

In the FRE comparison, 9 materials (39.1%) from Professional Society websites, 49 materials (55.1%) from General Health Information websites, and 10 materials (50.0%) from Clinical Practice websites were classified as very difficult. Materials rated as difficult included 4 (17.4%) in the Professional Society group, 21 (23.6%) in the General Health Information group, and 6 (30.0%) in the Clinical Practice group. The proportion of fairly difficult texts was 6 (26.1%), 8 (9.0%), and 3 (15.0%) in the respective categories, while average difficult texts were identified in 2 (8.7%) Professional, 9 (10.1%) General, and none in Clinical Practice websites. "Standard" texts were observed in 2 (8.7%) Professional Society and 1 (5.0%) Clinical Practice materials, whereas "fairly easy" materials were present only in 2 (2.2%) General Health Information websites. There was no statistically significant difference in FRE scores among the three website categories ($p = 0.079$).

In the FKGL results, 12 materials (52.2%) from Professional Society websites, 46 (51.7%) from General Health Information websites, and 13 (65.0%) from Clinical Practice websites were classified as difficult. "Very difficult" materials were recorded in 0 (0.0%) Professional, 18 (20.2%) General, and 2 (10.0%) Clinical websites. "Fairly difficult" texts included 6 (26.1%) in Professional, 19 (21.3%) in General, and 3 (15.0%) in Clinical Practice groups. "Standard" readability was

observed in 3 (13.0%), 4 (4.5%), and 1 (5.0%) of the same categories, while "fairly easy" texts were present only in 2 (8.7%) Professional Society materials, and "easy to read" materials were found in 2 (2.2%) General and 1 (5.0%) Clinical Practice websites. No statistically significant difference was found between website categories for the FKGL index ($p = 0.155$).

For the GFI, 8 materials (34.8%) from Professional Society websites, 49 (55.1%) from General Health Information websites, and 9 (45.0%) from Clinical Practice websites were categorized as very difficult. The number of difficult materials was 9 (39.1%) in Professional Society, 30 (33.7%) in General Health Information, and 10 (50.0%) in Clinical Practice groups. "Fairly difficult" texts included 6 (26.1%) in Professional, 8 (9.0%) in General, and 1 (5.0%) in Clinical websites, while "standard" readability was identified in 2 (2.2%) General Health Information materials only. Statistical analysis revealed no significant difference in GFI values across the three website categories ($p = 0.086$).

In the SMOG results, 9 materials (39.1%) from Professional Society websites, 47 (52.8%) from General Health Information websites, and 8 (40.0%) from Clinical Practice websites were classified as difficult. The proportion of fairly difficult materials was 8 (34.8%), 33 (37.1%), and 10 (50.0%) in the respective groups. Standard readability was recorded in 4 (17.4%) Professional Society, 5 (5.6%) General Health Information, and 1 (5.0%) Clinical Practice materials. Fairly easy materials were found in 2 (8.7%) Professional, 2 (2.2%) General, and 1 (5.0%) Clinical websites, and very difficult materials were observed only in 2 (2.2%) General Health Information sources. No statistically significant difference was observed in SMOG scores among website categories ($p = 0.247$).

In the CLI comparison, 14 materials (60.9%) from Professional Society websites, 52 (58.4%) from General Health Information websites, and 15 (75.0%) from Clinical Practice websites were classified as difficult. "Very difficult" materials were recorded in 6 (26.1%), 29 (32.6%), and 4 (20.0%) of the same groups, respectively. "Fairly difficult" materials accounted for 3 (13.0%) in Professional, 8 (9.0%) in General, and 1 (5.0%) in Clinical Practice websites. There was no statistically significant difference between the three categories for CLI values ($p > 0.05$).

For the ARI, 12 materials (52.2%) from Professional Society websites, 45 (50.6%) from General Health Information websites, and 10 (50.0%) from Clinical Practice websites were categorized as difficult. "Very difficult" texts were found in 0 (0.0%), 19 (21.3%), and 2 (10.0%) of the respective groups. "Fairly difficult" materials were identified in 6 (26.1%) Professional, 17 (19.1%) General, and 6 (30.0%) Clinical websites. "Standard" readability was observed in 3 (13.0%), 6 (6.7%), and 1 (5.0%) of the same groups, while "fairly easy" materials were present in 2 (8.7%) Professional Society websites, and "easy to read" materials in 2 (2.2%) General and 1 (5.0%) Clinical Practice websites. No statistically significant difference in ARI scores was found among the website categories ($p = 0.159$) (Table 2)

Table 2. Distribution of Readability Score Categories Across Website Types

			¹ Professional (n:23)	² General (n:89)	³ Clinical Practice (n:20)		P	
Flesch Reading Ease	Fairly Easy	n-%	0	0,0%	2	2,2%	0	0,0%
	Standard	n-%	2	8,7%	0	0,0%	1	5,0%
	Average Difficult	n-%	2	8,7%	9	10,1%	0	0,0%
	Fairly Difficult	n-%	6	26,1%	8	9,0%	3	15,0%
	Difficult	n-%	4	17,4%	21	23,6%	6	30,0%
	Very Difficult	n-%	9	39,1%	49	55,1%	10	50,0%
Flesch-Kincaid Grade Level	East To Read	n-%	0	0,0%	2	2,2%	1	5,0%
	Fairly Easy	n-%	2	8,7%	0	0,0%	0	0,0%
	Standard	n-%	3	13,0%	4	4,5%	1	5,0%
	Fairly Difficult	n-%	6	26,1%	19	21,3%	3	15,0%
	Difficult	n-%	1/2	52,2%	46	51,7%	13	65,0%
	Very Difficult	n-%	0	0,0%	18	20,2%	2	10,0%
Gunning- Fog Index	Standard	n-%	0	0,0%	2	2,2%	0	0,0%
	Fairly Difficult	n-%	6	26,1%	8	9,0%	1	5,0%
	Difficult	n-%	9	39,1%	30	33,7%	10	50,0%
	Very Difficult	n-%	8	34,8%	49	55,1%	9	45,0%
SMOG Grading	Fairly Easy	n-%	2	8,7%	2	2,2%	1	5,0%
	Standard	n-%	4	17,4%	5	5,6%	1	5,0%
	Fairly Difficult	n-%	8	34,8%	33	37,1%	10	50,0%
	Difficult	n-%	9	39,1%	47	52,8%	8	40,0%
	Very Difficult	n-%	0	0,0%	2	2,2%	0	0,0%
Coleman-Liau Index	Fairly Difficult	n-%	3	13,0%	8	9,0%	1	5,0%
	Difficult	n-%	1/4	60,9%	52	58,4%	15	75,0%
	Very Difficult	n-%	6	26,1%	29	32,6%	4	20,0%
Automated Readability Index	East To Read	n-%	0	0,0%	2	2,2%	1	5,0%
	Fairly Easy	n-%	2	8,7%	0	0,0%	0	0,0%
	Standard	n-%	3	13,0%	6	6,7%	1	5,0%
	Fairly Difficult	n-%	6	26,1%	17	19,1%	6	30,0%
	Difficult	n-%	1/2	52,2%	45	50,6%	10	50,0%
	Very Difficult	n-%	0	0,0%	19	21,3%	2	10,0%

^K Kruskal-wallis (Mann-whitney u test) / ^{X²} Chi-square test (Fischer test), Difference with ² General Group p<0.05

Discussion

The readability level of PEMs should be adjusted so that patients and parents can easily understand them. Just as clinical experts carefully choose the language they use in communication, these materials should likewise be presented in a way that is easy for parents to grasp. The

AMA recommends that patient education texts be written at a sixth-grade reading level. (Affairs, 1999).

Parents who suspect health problems in their children often turn to the Internet for information. (Kubb & Foran, 2020). However, most of these parents' lack experience with scientific databases, such as PubMed, and instead prefer more accessible platforms like Google. Therefore, we

assessed the readability of the most frequently accessed patient education resources using Google search results (Pehora et al., 2015). The analyzed texts were divided into three categories: Professional Society, Clinical Practice, and General Health Information websites. The findings showed that most of these websites were written at a level above the sixth-grade level recommended by the AMA.

The results of our study showed that most of the analyzed patient education materials required high reading levels and clearly exceeded the recommended sixth-grade level. No significant differences in readability were found among the Professional Society, Clinical Practice, and General Health Information categories. The literature review reveals a similar trend. King and colleagues assessed seven mental health brochures on cognitive, emotional, and behavioral disorders in children from the website <http://www.mentalhealth.org> and found that all were written well above the recommended level (King et al., 2003). Singh et al. reported that materials for parents of children with ADHD also exceeded the recommended level, concluding that healthcare materials should be written in a way that the target audience can easily read and understand (Singh, 1995). A study of 74 patient education materials by the American Academy of Pediatrics found that more than half were above the recommended readability level. The authors suggested that professional organizations should conduct readability assessments and publish readability levels for each material, enabling healthcare providers to determine whether the material is suitable for their patients (Freda, 2005). Ballonoff Suleiman et al. evaluated materials designed to support parents in sexual health communication with their children and adolescents, finding that most had scores exceeding the comprehension levels of many parents, which emphasizes the need for improvement (Ballonoff Suleiman et al., 2016). Similarly, Dickerson and Sajeesh Kumar showed that online resources on childhood depression exceeded the recommended readability level by a wide margin (Dickerson & Sajeesh Kumar, 2016). Together, these studies suggest that patient education materials in child and adolescent psychiatry frequently exceed recommended readability standards, consistent with our findings.

Similar to findings in child and adolescent psychiatry, studies in otolaryngology, orthopedics, neurology, ophthalmology, and radiology have also shown that the readability of patient education materials is above the recommended standards (Duymaz et al., 2023; Ghanem et al., 2024; Hansberry et al., 2014; Huang et al., 2015; Sharma et al., 2014).

Parents of children with autism spectrum disorder (ASD) need to have access to accurate and understandable information about their child's condition to make informed decisions and seek appropriate resources. However, both our study and previous research show that online patient education materials often exceed the recommended sixth-grade level. Since many parents are not familiar with medical terminology, they may struggle with texts written in complex academic language. This can lead to misinterpretation, misinformation, and poor decision-making. For parents searching for information on complex developmental disorders such as autism, access to reliable and clear resources is even more critical. Therefore, the readability of online patient education materials must

match the comprehension levels of patients and their caregivers. In this regard, healthcare professionals carry significant responsibility.

Relying solely on readability scores is insufficient when evaluating the suitability of a website for patient education. These scores are not exact measures of comprehension; instead, they provide approximate estimates of comprehension. Shorter sentences and simpler words do not necessarily guarantee that patients will understand or remember the content better. Other factors, such as grammar, syntax, page layout, graphics, videos, and audio elements, strongly influence the reading experience and information processing. For example, analyses of health-related videos on platforms such as YouTube have shown that the emotional framing of messages significantly shapes how audiences perceive and react to the content (Duğan, 2024). Readability scores also do not reflect the scientific accuracy or overall quality of the content. Moreover, analyses of health-related news reports have demonstrated that biased or unbalanced presentation can shape public perception, further emphasizing the need for both linguistic simplicity and content accuracy in patient education materials. (Yegen et al., 2025). Therefore, a high readability score alone does not ensure that the material provides reliable and accurate information. In addition, individual differences such as attention level and reading speed in children can substantially influence how texts are actually processed and understood, indicating that readability scores should always be interpreted with caution. (Kumrulu & Bal, 2024).

Limitations

This study had several limitations. First, only readability scores were assessed, and the scientific accuracy, quality, and timeliness of the websites were not evaluated. Second, the search terms, such as 'autism,' 'atypical autism,' 'Asperger syndrome,' 'pervasive developmental disorder,' and 'autism spectrum disorder,' included medical terminology. The frequent use of these technical terms may have inflated readability scores and exaggerated the difficulty of the texts. Third, the evaluation did not consider the overall quality of the websites, and only the top 50 sites per search term that met the inclusion criteria were analyzed. Fourth, the study was limited to materials published in English, so that no conclusions can be drawn about resources in other languages. Fifth, only the Google search engine was used, and materials from other search engines or social media platforms were not included. In addition, although readability tools provide objective metrics based solely on text, this study did not evaluate the potential impact of graphics, visuals, videos, interactive features, or page layout on readability. Finally, the research was conducted within a specific timeframe. Since website content can change over time, future studies should adopt a more dynamic design that accounts for long-term variations.

Conclusion

This study found that the readability levels of online patient education materials on autism exceed the recommended standards. To help parents better understand these resources, the content should be simplified and made more accessible. Healthcare professionals and content developers are encouraged to use more precise language and apply strategies that promote health literacy, thereby

improving the comprehensibility of patient education materials.

Future research should not only evaluate readability but also examine the accuracy and scientific reliability of the content, including resources published in other languages, and explore their impact on health literacy. Producing more accessible and comprehensible patient education materials will enable individuals with autism and their families to engage more effectively and with greater confidence with healthcare services.

Declaration

Ethical Approval and Consent to Participate

As this study analyzed only publicly available online materials and did not involve human participants or personal data, ethics committee approval was not required.

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Author Contributions

PA made substantial contributions to the writing of the introduction, methods, discussion sections, and abstract. She also contributed to the overall writing and proofreading of the manuscript. OK contributed to the analysis and interpretation of the research data, as well as to the overall writing and proofreading of the manuscript. All authors have read and approved the final version of the manuscript.

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The Influence of Resilience on Flourishing in the Health Context: A Meta-Analysis

Dayanıklılığın Sağlık Bağlamında Gelişmeye Etkisi: Bir Meta Analiz

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Abstract:

Internal psychological factors play a significant role in individual flourishing, particularly for those facing health challenges, where resilience becomes crucial for promoting sustained well-being. Resilience, the capability to endure and adapt in the face of adversity, is the central focus of this research. The study was purposed to explore the impact of resilience on flourishing by examining effect sizes through meta-analysis. This research analyzed seven selected studies conducted globally. Research topics were identified using the PICO framework. A Boolean-based keyword strategy was used to systematically retrieve studies that met the inclusion criteria: those that addressed the correlation between resilience and flourishing in health contexts and were published between 2008 and 2024. A total of 3,172 studies were initially identified across seven databases, and seven were selected based on the inclusion criteria. Quality appraisal and data extraction were conducted to ensure the studies' validity. The analysis revealed a correlation effect size of 0.513 between resilience and flourishing, indicating a moderately strong effect. However, the heterogeneity test indicated variability across studies, highlighting the need further to explore the validity and interpretability of the meta-analysis. Nevertheless, a significant positive link between resilience and flourishing was identified within the health domain.

Keywords: Flourishing, Health, Meta-analysis, Resilience.

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Öz:

İçsel psikolojik faktörler, sağlık sorunları yaşayan bireylerde ruhsal iyilik hâli ve bireysel gelişim üzerinde belirleyici bir etkiye sahiptir. Bu bağlamda dayanıklılık, stresli yaşam olayları ve sağlıkla ilişkili zorluklar karşısında uyumu destekleyen temel bir psikolojik kaynak olarak değerlendirilmektedir. Zorluklara karşı direnme ve uyum sağlama kapasitesi olarak tanımlanan dayanıklılık, bu çalışmanın temel odak noktasını oluşturmaktadır. Bu çalışmanın amacı, sağlık bağlamında dayanıklılık ile gelişme arasındaki ilişkinin meta-analiz yöntemiyle incelenmesidir. Araştırma kapsamında, PICO çerçevesine dayalı olarak oluşturulan arama stratejisi kullanılarak 2008–2024 yılları arasında yayımlanan çalışmalar sistematik biçimde taranmıştır. Boolean tabanlı anahtar kelime stratejisi aracılığıyla yedi veritabanından toplam 3.172 çalışma belirlenmiş; dahil edilme kriterlerini karşılayan yedi çalışma meta-analize dahil edilmiştir. Çalışmaların metodolojik kalitesini değerlendirmek ve veri bütünlüğünü sağlamak amacıyla kalite değerlendirmesi ve veri çıkarımı yapılmıştır. Meta-analiz bulguları, dayanıklılık ile gelişme arasında orta düzeyde güçlü ve pozitif bir ilişki olduğunu göstermektedir (etki büyüklüğü = 0,513). Bununla birlikte, heterojenlik analizi çalışmalar arasında anlamlı düzeyde değişkenlik bulunduğunu ortaya koymuştur. Bu durum, elde edilen bulguların genellenebilirliği ve yorumlanabilirliği açısından dikkatle ele alınması gerektiğine işaret etmektedir. Sonuç olarak, dayanıklılığın sağlık psikolojisi bağlamında bireysel gelişimle anlamlı ve pozitif bir ilişkiye sahip olduğu sonucuna varılmıştır.

Anahtar Kelimeler: Flourishing, Sağlık, Meta analiz, Dayanıklılık.

Introduction

In 2023, 26.27% of Indonesia's population reported experiencing health-related complaints. (Badan Pusat Statistik, 2023). Individuals experiencing health issues are often vulnerable on psychological, physical, and social levels. One significant psychological factor influencing emotional health is an individual's belief in their health perceptions (Greimel et al., 2016). Unstable emotions can lead to stress, which, over time, may affect gene expression, resulting in unhealthy behaviors (Effendy, 2016). This alteration in gene expression can contribute to various health problems, such as infections, allergies, autoimmune reactions, and inflammation (Effendy, 2016). It is hypothesized that psychological factors play a crucial role in influencing genetic activity. As such, both physical and mental health are vital aspects of human life, with well-being being characterized by overall good health (Vanderweele & Lomas, 2022).

Individuals who navigate health challenges and use their illness experiences to evaluate how they cope with vulnerability are more likely to achieve well-being and flourishing (Edgar, 2017). Flourishing is a relative state in which all aspects of a human life are in good condition, extending to their relationships and social interactions (Huppert et al, 2021; Vanderweele, 2017). Individuals who flourish tend to experience positive emotions and life satisfaction, confidently assess their mental and physical health, find meaning in their activities, act as agents of goodness in their environment, maintain high-quality relationships, and achieve relative financial and material success (Vanderweele, 2017).

Resilience is one of the key characteristics of flourishing individuals, emphasizing their ability to recover and adapt (Huppert and So, 2011). When individuals effectively manage anxiety, worries, and emotions in the face of challenges, such as health issues, they can recover swiftly and continue their lives. Resilience refers to an individual's capacity to recover from difficulties and challenges, including those related to health (Connor & Davidson, 2003). Additionally, several studies have highlighted a significant positive correlation between resilience and flourishing in various contexts, such as education among students (Amelasasih et al., 2019), entrepreneurship (Choirunnisa, 2022), families with

special needs children (Puwanti & Kustanti, 2018), and during the COVID-19 pandemic (Karomah et al., 2022). These findings demonstrate that, in the context of health, resilience plays a critical role in enabling individuals to achieve flourishing.

Conversely, research by Rink et al. (2021) determines a positive interaction between well-being (flourishing) and resilience in the behavior of healthcare professionals during service delivery. Meta-analyses of resilience interventions in healthcare settings, such as those by Cheng et al., suggest that the tools used to measure resilience during interventions influence healthcare professionals' resilience levels (Cheng et al., 2022). However, these studies do not explore other potential associations with flourishing. Furthermore, research gaps exist regarding resilience as a determinant of flourishing, with some studies indicating no significant relationship between the two. For instance, resilience was found not to influence flourishing among respondents during the COVID-19 pandemic (Cusinato et al., 2020). Based on earlier studies, it can be concluded that much of the research on resilience and flourishing has focused primarily on healthcare professionals, highlighting the need for further investigation into patients with chronic diseases who require healthcare services. This study aims to assess the effect size of the correlation between resilience and flourishing in the healthcare context, among both healthcare professionals and patients with chronic illnesses.

Materials and Methods

The primary objective of meta-analysis is to achieve objective scientific validity that can serve as a foundation for description, theory development, prediction, and control. The process of conducting a meta-analysis follows the PRISMA 2020 guidelines for systematic reviews and meta-analyses. In general, after defining the problem statement and research objectives, the next step is to formulate the research question using the PICO framework. This step is essential for guiding and assisting in classifying research themes during the search process (Page et al., 2021). The participants in this study will focus on patients with health conditions; the focal point of the

intervention or exposure is the correlation between resilience and flourishing; and the study's output must focus on the patient's flourishing state.

A literature review was conducted to find some relevant studies. In broad terms, Table 1 of this study focuses on resilience and flourishing in the context of health. The research questions, formulated according to the PICO framework, are as follows:

1. Does resilience affect flourishing in patients and healthcare professionals?
2. What is the magnitude of the effect of resilience on flourishing?

After formulating the research questions, the next step is to establish inclusion and exclusion criteria to selectively review study results using the PICO framework (see Table 1).

Table 1. The Inclusion & Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
<p>Studies will be considered if they provide more information about:</p> <ul style="list-style-type: none"> ● Resilience ● Resiliency ● Resilient ● Flourishing ● Well-being ● Happiness 	<p>Studies will be excluded if they describe more about:</p> <ul style="list-style-type: none"> ● Buoyancy ● Subjective Well Being ● Life Satisfaction ● Quality of Life ● Psychological Well Being ● Emotional Well Being
<p>Studies will be considered that produce output on flourishing.</p>	<p>Studies that measure other than flourishing.</p>
<p>Priority will be given to studies that focus on general health, both mental and physical.</p>	<p>Studies in broad industrial, organizational and educational contexts.</p>
<p>Available in English, either as an original publication or a translated version.</p>	<p>The work remains untranslated into English.</p>
<p>Published after January 2008</p>	<p>Published before January 2008</p>

Next, a search strategy must be developed, specifying six databases and the timeframes for each search. Additionally, a method for retrieving relevant studies from these databases is required. Following the guidelines of

Boolean keywords was developed based on the research framework (Aromataris and Riitano, 2014) outlined in Table 2.

Table 2. Result of Keywords Used in Several Databases

Database	Keywords	Articles Found
IEEE Xplore, Emerald Insight, Springer Link, Science Direct	(flourishing OR happiness OR "well-being") AND resilienc* AND health	2,844
Sage Journals	(flourishing OR happiness OR "well-being") AND resilienc* AND chronic AND health	669

The next step is to select the studies identified during the search process. Study selection is performed using Rayyan, with several steps including filtering duplicate studies, automatic filtering based on keywords aligned with the inclusion criteria, further filtering based on relevant titles, and subsequent filtering based on the abstracts of selected titles. This process is conducted independently by the researcher, with the assistance of two

reviewers. A summary of the screening and selection process will be presented in the PRISMA flow diagram (Figure 1).

Data extraction occurs after determining the final number of relevant studies. The extracted data items include the study label, article type, country, sample characteristics, resilience and flourishing scales used, Cronbach's alpha

values for each scale, valid sample size, correlation coefficient (r) scores, and other necessary data for analysis. Additionally, relevant studies will be content-reviewed, focusing on population, data collection methods, study design, and reported outcomes. Quality assessment is based on Evidence-Based Librarianship (EBL) by Glynn, using four responses: 'Yes' (Y), 'No' (N), 'Unclear' (U), and 'Not Applicable' (NA), with the overall assessment norm calculated as $(T=Y/T)$ ($T=Y+N+U$) ($<75\%$) (Glynn, 2006).

Data analysis will be performed using Jamovi for Windows to review the correlation between resilience and flourishing. The analysis will report variable significance, the direction of variable relationships, effect size estimates, and results from the heterogeneity test. These will be displayed in data tables, funnel plots, and scatter plots.

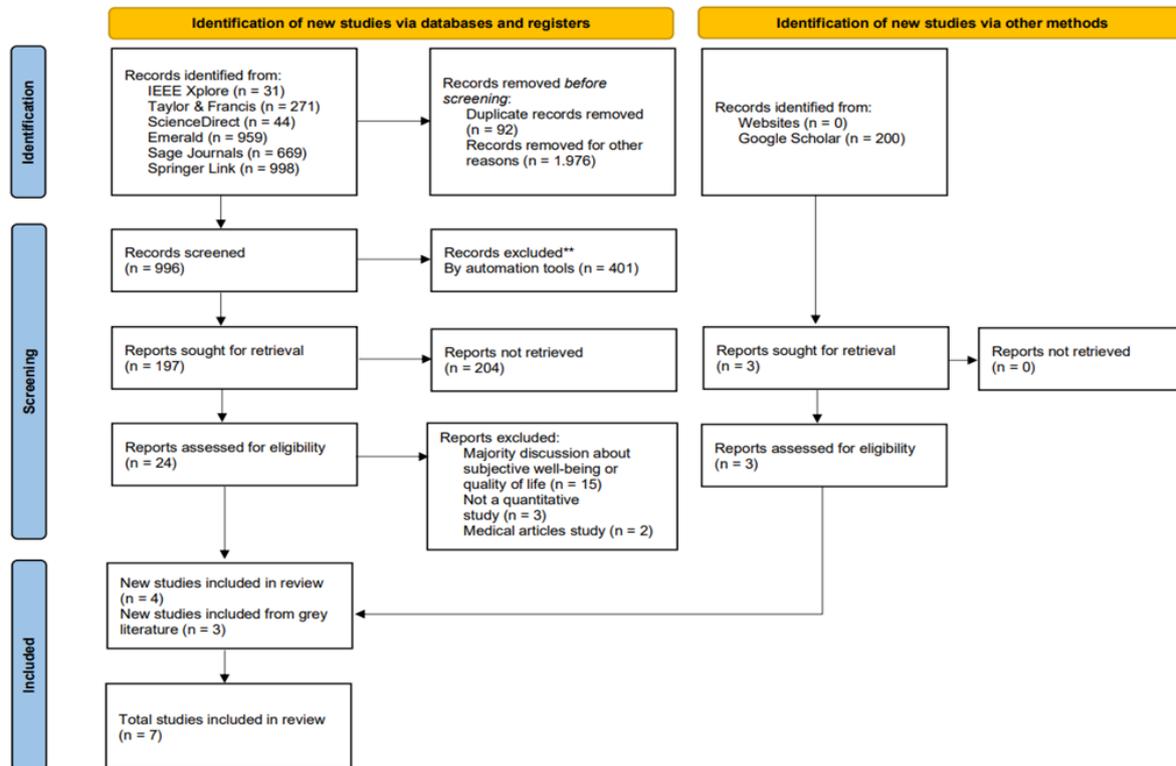


Figure 1. Prisma Diagram Flow

Result

Based on the process undertaken, 3,172 studies were identified across six databases. Using an artificial intelligence tool (Rayyan), 996 studies were identified after filtering out 92 duplicates. Automatic keyword-based selection, according to the inclusion criteria (health, healthcare, chronic, patient, resilience, resilient, COVID, well-being, happiness, flourishing), yielded 595 relevant studies. Subsequently, 197 studies were identified as relevant after screening titles against the inclusion criteria, and two reviewers reviewed 24 conflicting studies. Further selection based on comprehensive abstract review, along with consensus resolution of conflicts, yielded 16 studies. The researcher then conducted a brief content review, excluding 9 studies due to major discussions focused on subjective well-being or quality of life (outside the scope of inclusion), non-quantitative studies, or those primarily addressing major medical health issues. Ultimately, 7 studies were included (see Figure 1).

The characteristics of the seven studies showed consistency in the use of resilience measurement scales: Brief Resilience Scale (57.1%) and CD-RISC (42.9%). For flourishing scales, several tools were used: the Flourishing Scale (28.6%), the Satisfaction with Life Scale (28.6%), the WHO Well-Being Index (28.6%), and

the Subjective Happiness Scale (14.3%). Each Cronbach's alpha coefficient indicated that the scale possessed good internal consistency, with an average of >0.70 . Sample characteristics included individuals with health issues (28.6%), healthcare professionals (28.6%), and adults in general (42.8%). The majority of articles were published in journals (85.7%), with the remainder from conference proceedings (14.3%). Scholarly research on the connection between resilience and flourishing was primarily conducted in Asia (85.7%), with the remaining studies conducted in Australia (14.3%), as presented in Table 3.

Quality assessment was conducted for all included articles using the selection criteria. As shown in Table 4, the validity scores of the studies indicated generally good quality, although one article, Widyorini et al. (2023), scored below 75%, suggesting lower quality. This study had average scores below 75% for most aspects, except for study design (80%). Other articles scored above 75%, indicating comprehensive content quality. Notably, the studies by Yildirim and Belen (2019), Gayton and Lovell (2012), Yildirim and Arslan (2020), and Chow et al. (2018) scored 84%, 88%, 88%, and 88%, respectively.

Table 3. Study Characteristic

Author	Title	Article Type	Country	Sample Characteristic	Resilience Scale	Flourishing Scale	Cronbach's Alpha	Total Sample	M Age	SD Age	r	F
Widyorini, dkk 2023	The Relation Between Resilience and Subjective Happiness among COVID-19 Survivors with Comorbidities: The Mediating Role of Fear of COVID-19	Conference	Indonesia	Deaf people	BRS (Brief Resilience Scale)	Subjective Happiness Scale	na	25	na	na	0,280	na
Yildirim & Belen 2019	The Role of Resilience in the Relationships between Externality of Happiness and Subjective Well-being and Flourishing: A Structural Equation Model Approach	Journal	Turki	Turkish adult	BRS (Brief Resilience Scale)	Flourishing Scale (FS)	BRS = 0,86 FS = 0,83	243	37,1	na	0,450	na
Yildirim 2019	Mediating Role of Resilience in the Relationships Between Fear of Happiness and Affect Balance, Satisfaction With Life, and Flourishing	Journal	Turki	Turkish adult	BRS (Brief Resilience Scale)	Flourishing Scale (FS)	BRS = 0,86 FS = 0,85	256	36,9	9,02	0,430	na
Gayton & Lovell 2012	Resilience in Ambulance Service Paramedics and Its Relationships With Well-Being and General Health	Journal	Australia	Paramedics in Queensland	CD-RISC	The Satisfaction With Life Scale (SWLS)	CD-RISC = 0,80 SWLS = 0,83	219	33,5	6,8	0,369	3,53
Novak & Ari 2023	Resilience, Stress, Well-Being, and Sleep Quality in Multiple Sclerosis	Journal	Israel	Multiple Sclerosis Patients	CD-RISC	The Satisfaction With Life Scale (SWLS)	CD-RISC = 0,82 SWLS = 0,82	259	41,7	12,5	0,699	0,631
Yildirim & Arslan 2020	Exploring the associations between resilience, dispositional hope, preventive behaviours, subjective well-being, and psychological health among adults during the early stages of COVID-19	Journal	Turki	Turkish adult	BRS (Brief Resilience Scale)	The WHO Well-Being Index (WHO-5)	BRS = 0,78 WHO-5 = 0,88	220	39,5	8,2	0,53	na
Chow, dkk 2018	Resilience and well-being of university nursing students in Hong Kong: a cross-sectional study	Journal	Hongkong	Nursing student	CD-RISC	The WHO Well-Being Index (WHO-5)	na	678	na	na	0,378	na

*na= not applicable

Table 4. EBL Checklist

Section A: Population	Study 1	Study 2	Study 3	Study 4	Study 5	Study 6	Study 7
Does the study population accurately represent all potential and eligible participants who could be included in the research?	Y	Y	Y	Y	Y	Y	Y
Are the inclusion and exclusion criteria clearly defined and explicitly described?	U	U	U	Y	Y	U	Y
Is the sample size adequate to yield statistically precise and reliable estimates?	N	Y	Y	Y	Y	Y	Y
Is the response rate sufficient to ensure accurate and precise statistical estimates?	U	Y	Y	Y	Y	Y	Y
Was the selection of the study population conducted without introducing sampling bias?	Y	Y	Y	Y	Y	Y	Y
Were issues of incomparability or confounding adequately addressed during the data analysis?	Y	Y	Y	Y	Y	Y	Y
Did the study obtain informed consent from all participants before data collection?	Y	Y	Y	Y	Y	Y	Y
SCORE	57,1%	85,7%	85,7%	100%	100%	85,7%	100%
Section B: Data Collection							
Are the procedures for data collection clearly and comprehensively described?	Y	Y	Y	Y	Y	Y	Y
Was data gathered through direct, face-to-face interviews or surveys?	N	N	N	N	N	N	N

Has the instrument used for data collection been validated for reliability and accuracy?	Y	Y	Y	Y	U	Y	Y
Is the analysis grounded in routinely collected statistical data, and are those statistics objective and free from researcher bias?	Y	Y	Y	Y	Y	Y	Y
Is the data collection tool or questionnaire presented within the publication or its supplementary materials?	Y	Y	Y	Y	Y	Y	Y
Are the survey or interview questions formulated with sufficient clarity to obtain accurate and meaningful responses?	U	Y	Y	Y	Y	Y	N
Were data collectors independent from individuals responsible for providing services to the study population, ensuring the absence of potential bias?	U	Y	Y	Y	Y	Y	Y
SCORE	57,1%	85,7%	85,7%	85,7%	71,4%	85,7%	71,4%
Section C: Research Design							
Is the chosen study design or methodology suitable for addressing the research objectives?	Y	Y	Y	Y	Y	Y	Y
Does the study demonstrate adequate face validity based on expert or participant evaluation?	N	N	N	N	N	N	N
Is the research methodology described in sufficient detail to permit replication by other researchers?	Y	Y	Y	Y	Y	Y	Y
Did the researchers obtain ethical approval from a recognized ethics committee or institutional review board?	Y	U	U	Y	Y	Y	Y
Are the study outcomes explicitly defined and appropriately linked to the data collection procedures?	Y	Y	Y	Y	Y	Y	Y
SCORE	80%	60%	60%	80%	80%	80%	80%
Section D: Result							
Are the study findings presented clearly and comprehensively?	Y	Y	Y	Y	Y	Y	Y
Have potential confounding variables been identified and adequately controlled in the analysis?	N	Y	Y	Y	U	Y	Y
Do the study's conclusions align appropriately with the data analysis and reported findings?	Y	Y	U	Y	Y	Y	Y
Is the subset analysis presented as a supplementary component rather than the primary focus of the study?	N	Y	Y	N	Y	Y	Y
Does the article offer recommendations or directions for future research?	U	Y	Y	Y	Y	Y	Y
Does the study demonstrate external validity, indicating that its findings can be generalized to broader populations or settings?	U	Y	U	Y	Y	Y	Y
SCORE	33,3%	100%	66,7%	83,3%	83,3%	100%	100%
OVERALL SCORE	56%	84%	76%	88%	84%	88%	88%

*Y=yes; N=no; U=unclear; NA= not applicable

**Study 1. Widyorini, dkk., 2023; Study 2. Yildirim & Belen, 2019; Study 3. Yildirim, 2019; Study 4. Gayton & Lovell, 2012; Study 5. Novak & Ari, 2023; Study 6. Yildirim & Arslan, 2020; Study 7. Chow, dkk, 2018

The analysis of 7 studies using the Sidik-Jonkman estimator, based on correlation scores and valid sample sizes, showed a significant relationship between resilience and flourishing in the context of health ($p < 0.001$).

Resilience was associated with flourishing, with an effect size estimate of 0.513 ($p < 0.001$; 95% CI = 0.376-0.650), indicating a strong effect (see Table 5).

Table 5. Result of Bias Calculation

	Estimate	se	Z	p	CI Lower Bound	CI Upper Bound
Intercept	0.513	0.0697	7.36	<.001	0.377	0.650

Heterogeneity analysis was conducted using Fisher's r-to-z transformed correlation coefficient as the outcome measure. The heterogeneity parameter (Tau²) was estimated using the restricted maximum-likelihood estimator (Viechtbauer, 2005). The Q test for heterogeneity was performed using Cochran's (1954) test, and the I² statistic was also reported. Seven studies were included in the analysis, and the observed Fisher's r-to-z transformed correlation coefficients ranged from 0.2877 to

0.8653, with most estimates being positive (100%). The average results differed significantly from zero ($z = 7.3393$, $p < 0.001$). Based on the Q test, the actual results appeared heterogeneous ($Q = 47.1929$, $p < 0.001$, $\tau^2 = 0.0277$, $I^2 = 87.2807\%$). The 95% prediction interval for the actual results ranged from 0.1595 to 0.8670. Therefore, although there may be some heterogeneity, the actual results of this study generally align with the estimated average results, as presented in Table 6.

Table 6. Heterogeneity Statistics

Tau	Tau ²	I ²	H ²	R ²	df	Q	p
0.166	0.0277 (SE= 0.0195)	87.28%	7.862	.	6.000	47.193	<.001

Based on an effect size of 0.513 ($p < 0.001$; 95% CI = 0.376-0.650), studies on resilience and flourishing provide strong, significant evidence. This aligns with the finding of $r > 0$ from these seven studies. All analyzed studies yielded positive results and demonstrated good effect sizes, particularly in three studies (Yildirim & Belen, 2019; Yildirim, 2019; and Yildirim & Arslan, 2020).

Examination of studentized residuals, as presented in Figure 2, revealed that the study by Novak and Ari (2023) had values greater than ± 2.6901 and may be an outlier in this model. According to Cook's distance theory, the study by Novak and Ari (2023) could be considered overly influential.

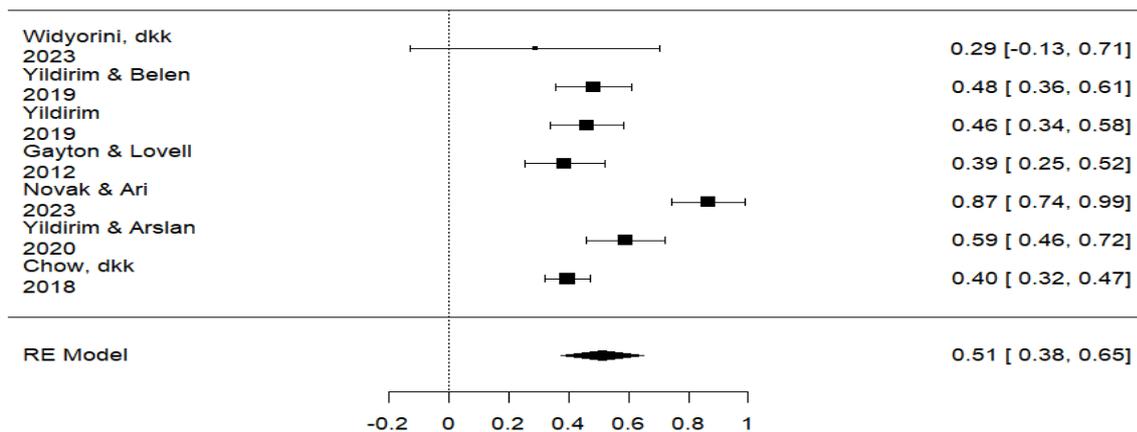


Figure 2. Forest Plot

Based on Figure 2, both the rank correlation and regression tests show no evidence of funnel plot asymmetry ($p = 1.00$ and 0.5028, respectively). This suggests that biases may

still persist in the research, possibly due to differences in data, collection procedures, standards, study design quality, or unpublished results.

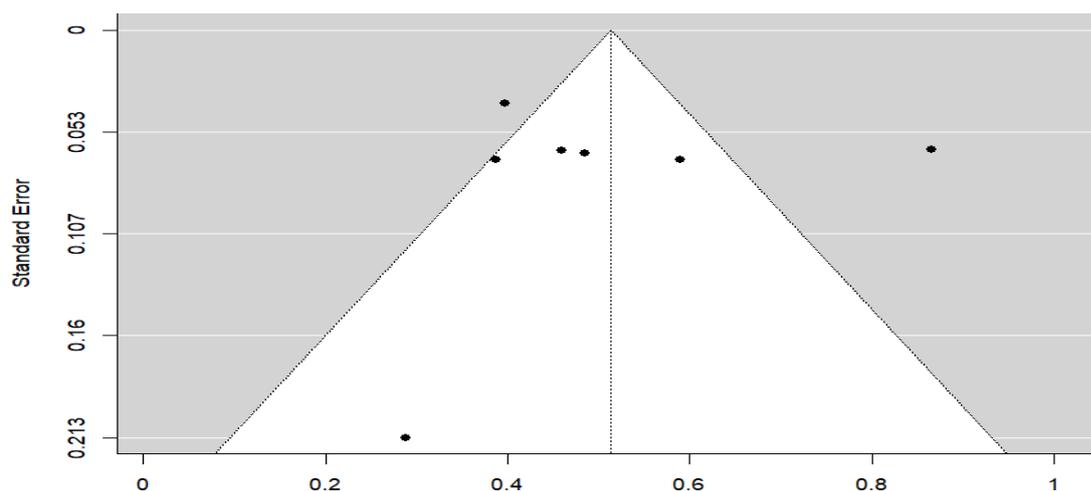


Figure 3. Funnel Plot

Discussion

The results of this study answered the hypotheses formulated beforehand, namely that resilience affects flourishing among patients and healthcare professionals. This study also assesses the consistency and magnitude of the effect between resilience and flourishing within the context of health. The findings from the seven analyzed studies can be qualitatively explained based on their quality assessments. One study, in particular, stands out with the lowest quality score of 56%, characterized by a wide confidence interval (CI) and a broad effect size: the study by Widyorini et al. (2023). This study focused on measuring the relationship between resilience and flourishing, both directly and indirectly through the mediator of fear, among 96 COVID-19 survivors with comorbidities aged 17 to 60 years. The study should consider refining the sample population specifications to reduce the excessively wide CI range. Furthermore, a larger sample size is necessary to generalize the results to a specific population. However, the relationship between these two variables is not entirely consistent across studies, as indicated by the forest and funnel plots, which exhibit heterogeneous and asymmetric patterns.

In contrast, three studies were identified as high-quality, with consistent findings across them: Yildirim and Belen (2019), Yildirim and Arslan (2020), and Chow et al. (2018). These studies received high scores across all assessed aspects—population, data collection, study design, and results—each with a total score exceeding 80%. However, Yildirim and Belen (2019) failed to provide clear inclusion criteria for their sample population and did not report ethical approval for the study. Similarly, Yildirim and Arslan (2020) did not offer detailed information regarding the population and sample criteria. Additionally, Chow et al. (2018) did not include the scale questions or responses used in their study.

The findings also indicate that one study, by Novak and Ari (2023), exhibits extreme data, with an effect size estimate approaching 1. This suggests that the study may be highly influential but could potentially contain invalid data. Despite this, the study scored well across population, data collection, study design, and results, with a total score of 84%. However, this study should specify the scale's validity and provide scores for the common variable.

According to the findings of the analyzed studies, two report effect size estimates within the moderate range: Yildirim (2019) and Gayton and Lovell (2012). Both studies also received high-quality scores, exceeding 75% in population, data collection, study design, and results. However, Yildirim's study (2019) lacks clear explanations regarding the sample criteria, does not provide clear ethical approval, presents conclusions that do not fully reflect the analysis results, and suffers from limited external validity. In contrast, Gayton and Lovell (2012) adequately describe the necessary components, though their analysis is primarily restricted to broad discussions and lacks detailed insights.

In general, resilience is positively and significantly associated with flourishing, although the study results still show non-homogeneous and asymmetric patterns. Three studies that exhibit minimal bias and can be considered reliable reference points are those by Yildirim and Belen (2019), Yildirim and Arslan (2020), and Chow et al. (2018). Conversely, three other studies—those by Yildirim (2019), Gayton and Lovell (2012), and Widyorini et al. (2023)—may exhibit significant biases in their analyses and quality, including factors such as the population, study design, data collection, and reported outcomes. Additionally, the meta-analysis results indicate that one study may contain outliers, suggesting unusual extreme data compared to the other studies.

An individual's health is influenced not only by biological factors but also by psychological and social factors (Engel, 1977). One psychological factor that promotes psychological well-being is resilience. According to Huppert and So (2011), individuals who demonstrate resilience in overcoming obstacles and moving forward without dwelling on the past are characteristic of flourishing individuals. Moreover, the resilience mechanism in fostering flourishing plays a significant role in supporting subjective well-being and psychological health, both directly and as a mediator of positive factors, such as hope and preventive behaviors. Resilience is also identified as a key promoter of positive aspects that sustain individuals' mental and physical health, particularly in relation to self-functioning, positive adaptation, autonomy, environmental mastery, and self-growth—all of which are associated with flourishing. Based on the meta-analysis, resilience was found to have a strong,

positive relationship with flourishing in the context of health. These findings provide a solid foundation for further research on growth and resilience in the health context, offering valid, unbiased evidence.

Recommendation

In conclusion, flourishing is closely linked to an individual's ability to bounce back from adversity, a characteristic that aligns with resilience. Individuals who can overcome challenges and continue with their lives are often described as resilient. This study highlights a strong positive relationship between resilience and flourishing within the context of health. However, several challenges were encountered during the research process, including a limited time frame and issues with data readability when utilizing artificial intelligence tools during the article selection phase. These challenges resulted in a less targeted search, which did not exclusively identify studies focused on patients with health-related issues. Given these limitations, future research could further explore resilience

and flourishing among individuals with health problems, while considering the inclusion of mediator or moderator variables to provide a more nuanced understanding of these relationships in the context of health.

Declarations

Conflict of Interest

The authors have declared that no competing interests exist.

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INSTRUCTION FOR AUTHORS

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The aim of the Cyprus Turkish Journal of Psychiatry and Psychology, Cyprus, Turkey and in the world, mainly Psychiatry and Psychology, to provide the scientific level of theoretical knowledge and clinical experience to create and promote a forum. In the Cyprus Turkish Journal of Psychiatry and Psychology, original research articles, review articles, case reports, letters / debates, books and dissertations will be published. The Turkish Cypriot Journal of Psychiatry and Psychology, whose short name is Cyp Turk J of Psychiatry and Psychol, is published both in print (ISSN: 1302-7840) and online (E-ISSN: 2667-8225).

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Evaluation Result:

Comments from referees are reviewed by the field editor within two (2) weeks at the latest. As a result of this review, the editor of the field transmits its final decision regarding the study to the editors.

Editorial Board Decision:

Editors prepare editorial board opinions on the study based on the opinions of the field editor and referees. The opinions prepared are forwarded to the author (s) by the editor together with the field editor and referee recommendations within 1 week at the latest. In this process, the works that are given negative opinions are returned without requesting a plagiarism check. The final decision is made according to the results of the plagiarism audit reports for the studies with positive opinions.

Publication Evaluation Process:

It is envisaged that the publication evaluation process of the studies submitted to the Cyprus Turkish Journal of Psychiatry and Psychology will be completed within approximately 3 months. However, the period between the date when the referees or editors request a correction from the author (s) and the date when the author (s) complete the corrections are not included in this 3-month period.

Citation and Reference Control:

According to the publication ethics of the Cyprus Turkish Journal of Psychiatry and Psychology, it is mandatory to cite the articles accurately and completely. Authors must ensure that they have written entirely original works and that if authors have used the works and / or words of others, it is properly quoted or quoted. This audit is done first by the referees during the evaluation and then by the editors according to the result of the similarity-plagiarism (iThenticate) program. All works plagiarism report is also checked over intihal.net.

Early View and Publishing of the Article:

The articles that are edited in the Cyprus Turkish Journal of Psychiatry and Psychology are published in electronic media under the title of "Early View" by giving a Digital Object Identifier (DOI). Minor adjustments can be made, if necessary, while early view articles are published in the journal. Articles in early view are published in volumes and numbers determined by the Editorial Board, by removing the "EARLY VIEW" watermark on it. After the electronic journal is published, the printed version of the Cyprus Turkish Journal of Psychiatry and Psychology, which includes the same articles, is also published in the same month.

Archiving:

The data and full texts of the articles published in the Cyprus Turkish Journal of Psychiatry and Psychology are published as .pdf on the server of TÜBİTAK ULAKBİM DERGİPARK.

OCLC WorldCat and EBSCOhost digital archiving (<https://dergipark.org.tr/en/pub/ktpdgergisi/archive>), (<https://www.worldcat.org/>) stored and archived in a closed way. (LOCKSS; <https://dergipark.org.tr/en/pub/ktpdgergisi/lockss-manifest>).

EASE Statement on Quality Standards

The European Association of Science Editors encourages all editors to ensure that reports of research on COVID-19 meet required standards and comply with agreed guidelines, and that any limitations are clearly stated. Members of EASE have noted poor standards of reporting in many studies related to the COVID-19 pandemic. Medical and public health measures to treat infected patients and to limit the spread of the coronavirus have to be based on high quality evidence if they are to succeed. EASE urges all involved in collecting and publishing data related to the pandemic to adhere to ethical guidelines, and to follow standard reporting guidelines (see www.equator-network.org), for example CONSORT for clinical trials and STROBE for epidemiological studies. Demographic data should include age and sex of all individuals and follow the SAGER guidelines to ensure that data on sex and gender are fully and correctly reported. We encourage full and open sharing of data where possible.

We recognise that in times of crisis it may not always be possible to obtain all required data, and that reporting may – of necessity – be curtailed. To avoid misinterpretation, but also to facilitate the rapid sharing of information, we encourage editors to ensure that authors include a statement of limitations on their research. This will inform readers and strengthen the usefulness of any published research.

In addition, whilst always advocating high language standards, we acknowledge that to facilitate rapid dissemination of important research it may be necessary to limit editorial involvement to ensuring that the published research is understandable, and not to enforce stringent language requirements on authors.

The relevant statement can be found at the website <https://ease.org.uk/publications/ease-statements-resources/ease-statement-on-quality-standards/>.

YAZARLARA BİLGİLER

GENEL BİLGİLER

Amaçlar ve Kapsam:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin amacı, Kıbrıs Türkiye ve Dünya'da Psikiyatri ve Psikoloji başta olmak üzere kuramsal bilgileri ve klinik deneyimleri bilimsel düzeyde sunmak, yayımlaştırmak bir forum oluşturmaktır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde Psikiyatri ve Psikoloji ile ilgili alanlardaki araştırma, gözden geçirme/ derleme, olgu sunumu, eğitimde/ uygulamada ve psikiyatride yeni ufuklar açacak özgün yazılar/görüşler, çeviri yazılar, mektup/tartışma, kitap ve tez tanıtımı yayımlanır. Kısa Adı KTPP Dergisi olan Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi hem basılı (ISSN: 1302-7840) hem de online (E-ISSN: 2667-8225) olarak yayımlanmaktadır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, yazarların International Committee of Medical Journal Editors (ICMJE) tarafından formüle edilen Tıbbi Dergilerde Bilimsel Çalışmanın Yürütülmesi, Raporlanması, Düzenlenmesi ve Yayınlanması için Önerilere uymalarını önermektedir. Link: <http://www.icmje.org/icmje-recommendations.pdf>

Yayın Sıklığı:

Dergi Mart, Haziran, Eylül ve Aralık olmak üzere üç ayda bir, dört sayı olarak yayımlanır. Dergiye gönderilen yazılar yayın kurulu ve en az iki danışmanın incelemesinden ve gerekli düzeltmeler yapıldıktan sonra yayımlanır.

Yayın Dili:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin yayın dili Türkçe ve İngilizce'dir. Türkçe tam metin yayımlanan makalelerde İngilizce başlık, öz ve anahtar sözcükler de yer alır. Yine İngilizce Yayınlanan Makalelerde Türkçe başlık, öz ve anahtar sözcükler yer alır.. Makalelerin yazımı ve dil bilgisi kurallarına uygun olması, Editörleri Kurulunun önem verdiği bir politikadır. Makalelerin dil bilgisi, yazım kuralları ve alan yazına uygun, anlaşılır, açık ve yalın bir dil ile yazılması beklenir.

Editörler Kurulu'nca yayına kabul edilen makaleler, dil (Türkçe, İngilizce) editörlerince okunur. Yazarlara, makalelerin değerlendirme sürecinde editörler kurulu, hakemler ya da dil editörlerince makalenin yazımına ilişkin düzeltmeler önerilebilir. Bu düzeltmelerin yapılması, yazarların sorumluluğundadır.

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi herhangi bir çeviri hizmeti vermemektedir. Derginin beklentilerine uyması için İngilizce düzenleme, çeviri veya şekil ve makale biçimlendirme konusunda yardım arayan yazarlar, Kıbrıs Ruh Sağlığı Enstitüsü Dil Hizmetlerini kullanmayı düşünebilirler. Kıbrıs Ruh Sağlığı Enstitüsü'ndeki dil hizmetleri için enstitünün web sitesi <http://ruhsagligienstitusu.com>'u ziyaret edebilirler.

Açık Erişim Politikası:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, açık erişimli, çift kör hakemli bir dergidir. Hakem değerlendirmesi sonrasında kabul edilen her makale, yayımlandıktan hemen sonra çevrimiçi olarak ücretsiz olarak bir Creative Commons lisansı altında yayımlanır ve sürekli olarak çevrimiçi olarak barındırılır. Dergiye makale göndermenin herhangi bir bedeli yoktur.

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, yayıncılıkta saydamlık, açık erişim sağlama ve bilginin paylaşılması politikasıyla yayımlanmaktadır. Dergimiz, Budapeşte Açık Erişim Girişimi'ni desteklemektedir. Bu amaçla <http://www.budapestopenaccessinitiative.org/boai-10-translations/turkish-translation> web adresinde bulunan açık erişim politikaları, Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi Editörler Kurulu'nca benimsenmektedir. Ayrıca, açık erişim sağlama politikaları kapsamında Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makaleler "Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License" ile lisanslanmıştır.

(<https://dergipark.org.tr/en/pub/ktppdergisi/archive>)

Dergi yazım içeriği:

Gönderim aşamasında, başvuru mektubu, başlık, yazarlar ve kurumları, iletişim adresi, Türkçe özet ve yazının İngilizce başlığı ve özeti ilgili aşamalarda yazılmalıdır. İngilizce yazılan çalışmalara da Türkçe özet eklenmesi gerekmektedir. Yazının ana metnindeyse şu sıra kullanılacaktır: Giriş, Gereç ve Yöntem, Bulgular, Tartışma, Teşekkür, Kaynaklar. Yazıların daha önce

yayımlanmamış ya da yayımlanmak üzere başka dergiye gönderilmemiş olması gerekir.

Yazı Cesitleri:

Dergi aşağıdaki yazı türlerini yayın için kabul eder:a)Özgün Makaleler: Bunlar sadece deneysel tasarımlar gibi yüksek kaliteli planlanmış araştırma çalışmalarından orijinal bulgular içeren sonuç çalışmaları, vaka-kontrol serileri, yüksek yanıt oranlarına sahip anketler, randomize kontrollü çalışmalar, müdahale çalışmaları, tarama ve teşhis testleri çalışmaları ile maliyet-etkinlik analizleri.

b)Derleme makaleleri: Bunlar, literatürün sistematik ve eleştirel değerlendirmeleridir.

c)Vaka Serileri: Bu bölümde belirli bir tanıya / klinik özelliğe / tedaviye ait birden fazla yeni, ilginç ve nadir vaka rapor edilebilir.

d)Bakış Açılırları: Bu yazılar, mesleği etkileyen tartışmalı veya tartışmalı konulara ilişkin deneyime dayalı görüş ve görüşler olmalıdır. Yazar konu hakkında yeterli ve güvenilir deneyime sahip olmalıdır.

e)Pratik Psikoterapi: Tek vakada veya bir dizi vakada psikoterapinin kullanımını anlatan yazılar bu bölüme gönderilebilir. Esas olarak psikoterapi uygulamasındaki pratiklikleri, karşılaşılan engelleri, nasıl aşıldıklarını vb. Açıklayan makaleler arıyoruz.

f)Yorumlar: Bunlar önemli konuları ele almalıdır ve Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yakın zamanda yayımlanan birden fazla veya belirli bir makaleye bağlanabilir.

g)Editöre Mektup: Bu bölümde yazarlar ruh sağlığı alanı ile ilgili kısa gözlemlerini bu bölümde yayımlarlar.

Yazarlık:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, Uluslararası Tıp Dergisi Editörleri Komitesi tarafından yazarlık için önerilen gereksinimlerini takip etmektedir. Makaleler, yalnızca katkıda bulunan tüm yazarlar tarafından onaylandıktan sonra değerlendirilmek üzere sunulmalıdır. Makale gönderim aşamasında Yazar Formu da birlikte gönderilmelidir. Makaleyi gönderenler, makaleye katkıda bulunan herkesin katkıda bulunan yazarlar olarak kabul edildiğini dikkatlice kontrol etmelidir.

Yazar listesi, yasal olarak yazarlık iddia edebilecek herkesi içermelidir. Buna göre, her yazar aşağıdaki kriterlerin tümünü karşılamalıdır:

Çalışmanın ana fikir veya tasarımına önemli katkılar veya çalışma için verilerin toplanması, analizi veya yorumlanması; VE Çalışmanın taslağını hazırlamak veya önemli entelektüel içerik için eleştirel olarak yeniden gözden geçirmek; VE Yayınlanacak versiyonun son onayı; VE

İşin herhangi bir kısmının doğruluğu veya bütünlüğü ile ilgili soruların uygun şekilde araştırılıp çözülmesini sağlamada çalışmanın tüm yönlerinden sorumlu olmayı kabul etmek

Yazarlık kriterlerini karşılamayan tüm katkıda bulunanların Teşekkür bölümünde belirtilmelidir. Yazarlık hakkında daha fazla bilgi için lütfen International Committee of Medical Journal Editors (ICMJE) yazarlık kılavuzuna bakın.

Telif Hakkı Devir Formu:

Yazarlar makalelerinin telif haklarını, makale başvurusu sırasında Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'ne devretmek zorundadır. Bunun için "Telif Hakları Devir Formu" doldurularak yazıların yayın hakları dergiye devredilir. Formu tüm yazarlar imzalar, tarayıcıda tarar ve elektronik olarak makaleyle birlikte TÜBİTAK ULAKBİM DERGİPARK sistemine (<https://dergipark.org.tr/en/pub/ktppdergisi>) yükler. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi Editörler Kurulu, makalenin yayımlanmasında yetkilidir.

Ayrıca yazarların telif hakkı dışında kalan patent hakları, dersleri, sunumları ve kitap çalışmalarında makaleyi ücret ödemeksizin kullanabilme hakkı, satmamak koşuluyla kendi amaçları için makaleyi çoğaltma hakkı, postayla veya elektronik yolla dağıtma hakkı saklıdır. Ayrıca makalenin herhangi bir bölümünün başka bir yayında kullanılmasına Dergiye yollamada (atıfta) bulunulması koşuluyla yazarına izin verilir. Telif Hakları Devir Formu'nu makale başvurusu ile sisteme yüklemeyen yazarların makalelerine işlem yapılmaz. Telif hakkı devri yalnız Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makaleler için geçerlidir.

Finansman:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, tüm yazarların fonlarını tutarlı bir şekilde ayrı bir başlık altında belirtmelerini talep etmektedir. Finansman bulunmaması durumunda teşekkür metninde sonra ve kaynaklar bölümünden önce şu ifadelerin bulunması gerekir: "Bu araştırma, kamu, ticari veya kar amacı gütmeyen sektörlerdeki herhangi bir finansman kuruluşundan özel bir hibe almadı."

Çatışan Çıkarların Beyanı:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin politikası, tüm yazarlardan çatışan çıkar beyanını yazılarında belirtmeleridir. Çatışma yoksa lütfen 'Yazar (lar) çıkar çatışması olmadığını beyan eder' ifadesinin kullanılması gerekir. Çıkar çatışması bildirimleri hakkında rehberlik için lütfen ICMJE önerilerine bakın.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/author-responsibilities-conflicts-of-interest.html#two>

Tüm başvurulara ICMJE Çıkar Çatışması Formları eşlik etmelidir.

Etik Kurul:

Araştırmalar için yerel etik kurul onayı alınmalıdır. Deneysel çalışmaların sonuçlarını bildiren yazılarda, çalışmanın yapıldığı gönüllü ya da hastalara uygulanacak prosedür(ler)in özelliği tümüyle anlatıldıktan sonra, onaylarının alındığını gösterir bir cümle bulunmalıdır. Yazarlar, bu tür bir çalışma söz konusu olduğunda, uluslararası alanda kabul edilen kılavuzlara ve T.C ve/veya K.K.T.C. Sağlık Bakanlığı tarafından getirilen yönetmelik ve yazılarda belirtilen hükümlere uyulduğunu belirtmeli ve kurumdan aldıkları Etik Komitesi onayını göndermelidir.

İnsan denekleri içeren tıbbi araştırmalar Dünya Tıp Birliği Helsinki Deklarasyonu'na göre yapılmalıdır.

<https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>

Gönderilen makaleler, Tıbbi Dergilerde Bilimsel Çalışmanın Yürütülmesi, Raporlanması, Düzenlenmesi ve Yayınlanması için ICMJE Tavsiyelerine uygun olmalıdır.

<http://www.icmje.org/icmje-recommendations.pdf>

Hayvan ve / veya insan çalışmalarını bildiren tüm makaleler ile ilgili Etik Kurul veya Kurumsal İnceleme Kurulunun verdiği onay yöntemler bölümünde belirtilmiştir.

Tüm başvurulara bir başlık sayfası eşlik etmelidir.

Makalenin başlığı olmalı.

Onay numarasına ek olarak inceleme komitesinin tam adı ve kurumu belirtilmeli.

Editöre, gönderilen makalenin basılmadığına, eşzamanlı olarak gönderilmediğine veya başka bir yerde yayınlanmak üzere kabul edilmediğine dair bir açıklama eklenmeli.

Yazının tüm yazarlar tarafından okunduğuna ve onaylandığına, bu belgede daha önce belirtildiği gibi yazarlık gereksinimlerinin karşılandığına ve her yazarın yazının dürüst çalışmayı temsil ettiğine inandığına dair bir açıklama eklenmeli.

Yazar, yazının bilgisi dahilinde, herhangi bir üçüncü şahsın telif hakkını veya mülkiyet hakkını ihlal etmediğini beyan etmeli

Bireysel vakaları veya vaka serilerini bildirmek için bilgilendirilmiş onam hakkındaki bilgiler makale metnine dahil edilmelidir. Yayınlanacak hasta bilgileri ve görüntüleri için yazılı bilgilendirilmiş onamın hasta (lar) tarafından mı yoksa yasal olarak yetkili bir temsilci tarafından mı sağlandığına dair bir açıklama gereklidir. Kendi başına hastanın gizliliğini ihlal ettiği için, lütfen makale ile hastanın gerçek yazılı bilgilendirilmiş onayı gönderilmemelidir. Dergi, yazılı bilgilendirilmiş onay aldığı yazılı olarak onaylamazı talep etmektedir. Ancak yazılı izin kendisi, örneğin bir hastanın hastane kaydında yazarlar / araştırmacılar tarafından tutulması gerekmektedir. Onay mektubu ayrı bir dosya olarak yüklenebilir. Lütfen ayrıca Araştırma Katılımcılarının Korunması için ICMJE Önerilerine bakın.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/protection-of-research-participants.html>

Yayınlanmak üzere gönderilen hayvanları içeren tüm araştırmalar, çalışmaların yürütüldüğü tesisin gözetiminde bir etik komite tarafından onaylanmalıdır. Hayvanlar üzerinde yapılan çalışmalarda ağrı, acı ve rahatsızlık verilmesi için neler yapıldığı açık bir şekilde belirtilmelidir.

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, International Association of Veterinary Editors tarafından yayınlanan Veterinerlik Dergileri için Hayvan Etiği ve Refahına İlişkin Mutabakat Yazım Kılavuzunu benimsemiştir.

<http://www.veteditors.org/consensus-author-guidelines-on-animal-ethics-and-welfare-for-editors/>

Klinik Araştırmalar:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, ICMJE'nin , klinik araştırmaların DSÖ onaylı bir kamu araştırmaları kayıt defterine ilk hasta kaydı sırasında veya öncesinde, yayın için bir değerlendirme koşulu olarak kaydedilmesi şartına uyar. Özetin sonunda deneme kayıt adı ve URL'si ve kayıt numarası yer almalıdır.

Raporlama Yönergeleri:

İlgili EQUATOR Ağı raporlama kılavuzları, çalışmanın türüne bağlı olarak takip edilmelidir. Örneğin, yayınlanmak üzere gönderilen tüm randomize kontrollü çalışmalar , şekil olarak tamamlanmış bir CONSORT akış şemasını içermelidir. Sistematik incelemeler ve meta-analizler, tamamlanmış PRISMA akış şemasına göre düzenlenmelidir. EQUATOR sihirbazı uygun kılavuz belirlemenize yardımcı olabilir.

Diğer kaynaklar, NLM'nin Araştırma Raporlama Yönergeleri ve Girişimlerinde bulunabilir.

Araştırma Verileri:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi olarak, araştırmaların açıklığının, şeffaflığının ve tekrarlanabilirliğinin kolaylaştırılması gerektiği düşüncesindeyiz. Konuyla ilgili olarak yazarları, araştırma verilerini etik değerlendirmelere tabi olarak uygun bir kamuya açık depoda paylaşmaya ve makale dosyalarına bir veri erişilebilirliği beyanı eklemeye teşvik ederiz.

MAKALE YAZIM KURALLARI VE ÖZELLİKLERİ

Genel Bilgileri:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin dili Türkçe ve İngilizcedir. Yazılar anlaşılır, akıcı, yalın bir dille yazılmalı ve uzun anlatımlardan kaçınılmalıdır. Yabancı sözcüklerin ve kısaltmaların Türkçe karşılıkları ilk geçtikleri yerde parantez içinde tam olarak yazılmalıdır. İlaçların jenerik adları kullanılmalıdır. Yazılarda dipnot kullanılmamalıdır.

Yazarların adları makale başlığının bir satır sağ altında yer almalı ve yıldız (*) dipnotla unvanı, kurumu, adresi, telefonu, e-posta adresi verilmelidir. Yazara/metne özgü terminoloji ve/veya kısaltmalar ilk kullanımlarında dipnotla açıklanmalıdır. Yazar(lar) doğrudan çalışmayı yapan ve yazan kişi(ler) olmalıdır. Araştırma herhangi bir kuruluş tarafından maddi bir destek görmüşse veya bir kongrede tebliğ edilmişse makalenin başlığının son kelimesi üzerine (*) konularak dip not olarak belirtilmelidir. Makaleler A4 kağıt boyutunun bir yüzüne, tüm kenarlardan 2,5 cm. boşluk bırakılarak, Times New Roman yazı karakteriyle, 12 punto ve 1,5 satır aralığıyla iki yana yaslı olarak yazılmalıdır. Alt başlıklar ve başlık sonrası paragraflar arasında boşluk olmamalı ve hiçbir paragraf girintili yazılmamalıdır. Dipnotlar kaynak gösterimi için değil ek bilgi vermek için kullanılmalı, sayfa altında numaralandırılmalı, 10 punto ve 1 satır aralığı ile iki yana yaslı olarak yazılmalıdır. Sayfa numaraları da 11 puntoyla, sağ altta yer almalıdır. Kabul edilen yazılar sıraya alınarak yayımlanır.

Makalelerin hazırlanması:

Başlık sayfası

Yazının Türkçe ve İngilizce başlığı 19 kelimeyi geçmemelidir. Başlıkta kısaltma kullanılmamalıdır. Yazıda sadece çalışmaya doğrudan katkısı bulunan yazarların ad ve soyadları, unvanları, çalıştıkları kurumlar açık olarak yazılmalıdır. Çalışmayı destekleyen fon ve kuruluşlar başlık sayfasında belirtilmelidir. Başlık sayfasının en altına iletişim kurulacak yazarın iletişim bilgileri yazılmalıdır (Yazarın adı, soyadı, açık adresi, posta kodu, telefon numarası, faks numarası ve e-posta adresi yazılmalıdır).

Özetler:

Özetler Türkçe ve İngilizce olarak yazılmalı ve en fazla 250 kelime içermelidir. Özet, amaç-yöntem-sonuçlar-tartışma bölümlerine göre düzenlenmelidir. Makale için verilecek Türkçe ve İngilizce anahtar sözcükler (3-8 adet) özetlerden hemen sonra verilmelidir. İngilizce anahtar kelimeler "Medical Subject Headings (MESH)"e uygun olarak verilmelidir (<http://www.nlm.nih.gov/mesh/MBrowser.html>). Türkçe anahtar kelimeler Türkiye Bilim Terimleri (TBT)'ne uygun olarak verilmelidir (<http://www.bilimterimleri.com>). Özetlerde kısaltma kullanılmasından mümkün olduğunca kaçınılmalıdır. Kısaltma

kullanılması mutlaka gerektiğinde, ilk geçtiği yerde parantez içinde tanımlandıktan sonra kullanılmalıdır.

Makale Metni Gövdesi:

Araştırma yazıları: Özetten sonra giriş-yöntem ve gereç-sonuçlar tartışma-kaynaklar alt başlıklarını taşımalı, konuyla ilgili en son bilgiler yer almalı, yöntem açık olarak yazılmalı, kullanılan ölçüm araçlarının geçerlilik ve güvenilirlik çalışmaları ile değerlendirme için kullanılan testler, standart sapma, test değerleri belirtilmelidir. Tartışmada sonuçların klinik ve kuramsal yönlerden yararları, uygulanma alanları, getirdiği yenilikler vurgulanmalıdır. Yazılar 3500 kelimeyi geçmemelidir. Yazıda en çok 6 tablo veya figür olmalıdır. Kaynak sayısının 50 kaynağı aşmamasına dikkat edilmelidir.

Derleme yazıları: Amacı, kullanılan yöntem, yararlanılan kaynaklar, çıkarılan sonuçlar belirtilmelidir. Yazılar 3500 kelimeyi geçmemelidir. Yazıda en çok 6 tablo veya figür olmalıdır. Kaynak sayısının 50 kaynağı aşmamasına dikkat edilmelidir.

Olgu sunumu: Olgu sunumlarında giriş bölümü, olguların tanımı, tartışma ve kaynaklar bölümü yer almalıdır. Yazı 3000 kelimeyi geçmemelidir. Klinik veya kuramsal eğitim yönünden yararlı görülen tipik veya az görülen olguların kaynak sayısının 30 kaynağı aşmamasına dikkat edilmelidir. Tablo veya figür sayısı en fazla 2 olmalıdır.

Bakış Açıları: Bu yazılarda giriş bölümü ile mesleği etkileyen tartışmalı veya tartışılmalı konulara ilişkin deneyime dayalı görüşler literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Pratik Psikoterapi: Bu yazılarda giriş bölümü ile psikoterapi uygulaması ile ilgili bilgiler literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Yorumlar: Giriş bölümü ile tartışılan makalenin özellikleri literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Mektup: Dergide yer alan değişik konularda tartışma forumu oluşturulabilecek görüşler mektup bölümünde yer almaktadır. Yazı 500 kelimeyi geçmemelidir.

Çeviri, kitap ve tez tanıtımı: Çeviri, kitap ve tez tanıtımları kısa olmalı, çeviri yazılarının ve tezin bir özgün kopyası gönderilmelidir. Yazı 500 kelimeyi geçmemelidir.

Teşekkür: Teşekkür yazısı katkı koyan bireylere veya çalışmayı destekleyen fon ve kuruluşlara varsa eklenebilir.

Kaynaklar: Dergide makale içi atıflar ve kaynakça uluslararası APA formatına göre gösterilmelidir. Ayrıntılı bilgi için web sayfasında Kaynaklar bölümüne bakınız.

Metin İçinde Kaynak Gösterme

Kaynaklar metinde parantez içinde yazarların soyadı ve yayın tarihi yazılarak belirtilmelidir. Birden fazla kaynak gösterilecekse kaynaklar arasında (;) işareti kullanılmalıdır. Kaynaklar alfabetik olarak sıralanmalıdır.

Tek yazarlı kaynak;

(Akyolcu, 2007)

İki yazarlı kaynak;

(Sayiner ve Demirci, 2007, s. 72)

Üç, dört ve beş yazarlı kaynak;

Metin içinde ilk kullanımda: (Ailen, Ciambri ve Welch 2000, s. 12-13) Metin içinde tekrarlayan kullanımlarda: (Ailen ve ark., 2000)

Altı ve daha çok yazarlı kaynak;

(Çavdar ve ark., 2003)

Kaynaklar Bölümünde Kaynak Gösterme

Kullanılan tüm kaynaklar metnin sonunda ayrı bir bölüm halinde yazar soyadlarına göre alfabetik olarak numaralandırılmadan verilmelidir.

Kaynak yazımı ile ilgili örnekler aşağıda verilmiştir.

Kitap

a) Kitap Örneği

Karasar, N. (1995). Araştırmalarda rapor hazırlama (8.bs). Ankara: 3A Eğitim Danışmanlık Ltd.

b) Kitap Çevirisi

Mucchielli, A. (1991). Zihniyetler (A. Kotil, Çev.). İstanbul: İletişim Yayınları.

c) Çok Yazarlı Türkçe Kitap

Tonta, Y., Bitirim, Y. ve Sever, H. (2002). Türkçe arama motorlarında performans değerlendirme. Ankara: Total Bilişim.

d) İngilizce Kitap

Kamien R., & Kamien, A. (2014). Music: An appreciation. New York, NY: McGraw-Hill Education.

e) İngilizce Kitap İçerisinde Bölüm

Bassett, C. (2006). Cultural studies and new media. In G. Hall & C. Birchall (Eds.), New cultural studies: Adventures in theory (pp. 220-237). Edinburgh, UK: Edinburgh University Press.

f) Türkçe Kitap İçerisinde Bölüm

Erkmen, T. (2012). Örgüt kültürü: Fonksiyonları, öğeleri, işletme yönetimi ve liderlikteki önemi. M. Zencirkıran (Ed.), Örgüt sosyolojisi kitabı içinde (s. 233-263). Bursa: Dora Basım Yayın.

Makale

a) Makale

Granqvist, P. ve Kirkpatrick, L. A. (2004). Religious conversation and perceived childhood attachment: a meta-analysis, The International Journal for the Psychology of Religion, 14(4), 223-250.

b) Yediden Fazla Yazarlı Makale

Rodriguez, E.M., Dunn, M.J., Zuckerman, T., Hughart, L., Vannatta, K., Gerhardt, C.A., Saylor, M., Schuele, C.M. ve Compas, B.E. (2011). Mother-child communication and maternal depressive symptoms in families of children with cancer: integrating macro and micro levels of analysis. Journal of Pediatric Psychology, 38 (7), 732-743

Tez, Sunum, Bildiri

a) Tezler

Karaaziz, M. (2017). Kıbrıs ve Türkiye Doğumlu Kumar Bağımlılarının Kumar Oynama Nedenlerinin ve Kültürlenme Tutum Farklılıklarının Karşılaştırılması. (Yayınlanmamış Doktora Tezi). Yakın Doğu Üniversitesi, Sosyal Bilimler Enstitüsü, Lefkoşa-KKTC.

b) Kongre Bildirisi

Çepni, S., Bacanak A. ve Özsevgeç T. (2001, Haziran). Fen bilgisi öğretmen adaylarının fen branşlarına karşı tutumları ile fen branşlarındaki başarılarının ilişkisi. X. Ulusal Eğitim Bilimleri Kongresi'nde sunulan bildiri, Abant İzzet Baysal Üniversitesi, Bolu.

Tablolar ve Şekiller:

Tablolar tek satır aralıklı olarak ayrı bir sayfaya yazılmalıdır. Her tablonun üstünde numarası ve açıklayıcı bilgi olmalıdır. Tabloda kısaltmalara yer verilmişse bu kısaltmaların açılımı alt yazı şeklinde tablonun altında ve alfabetik sıraya göre yer almalıdır. Daha önce basılmış veya elektronik olarak yayınlanmış tablolardan yararlanıldığında hem yazarı hem de basım evinden yazılı izin alınmalıdır ve bu, dergi editörlüğüne faks veya posta ile gönderilmelidir.

Tablo içerisinde enlemesine ve boylamasına çizgiler kullanılmamalı, sadece üst ve altına düz çizgi çizilmelidir.

Makalelerde yer alan görseller ve nota örnekleri kısa açıklamalarıyla birlikte ortalananmış olarak Şekil/Tablo 1. ... şeklinde numaralandırılmalıdır. Tüm görseller, baskıda çözünürlük problemi olmaması için minimum 300 dpi çözünürlükte ve JPG formatında ayrıca gönderilmelidir. Metin içerisindeki yerleştirmeler, gerektiğinde sayfa düzenine göre değiştirilebilirler.

Tablo, grafik, şekil ve fotoğraflar altıdan çok olmamalı, ayrı bir sayfaya konmalı, yazıdaki yeri belirtilmelidir. Arabik rakamlar ve ondalıklarda nokta kullanılmamalıdır.

Makale Gönderme:

Makale gönderimleri dergi park sistemi üzerinden olup aşağıda verilmiştir;

Link: <https://dergipark.org.tr/tr/>

KÖR HAKEMLİK VE DEĞERLENDİRME SÜRECİ

Kör hakemlik, bilimsel yayınların en yüksek kalite ile yayınlanması için uygulanan bir yöntemdir. Bu yöntem, bilimsel çalışmaların nesnel (objektif) bir şekilde değerlendirilme sürecinin temelini oluşturmaktadır ve birçok bilimsel dergi tarafından tercih edilmektedir. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi gönderilen tüm çalışmalar aşağıda belirtilen aşamalara göre körleme yoluyla değerlendirilmektedir.

Körleme Hakemlik Türü:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, tüm çalışmalarında değerlendirme sürecinde çifte körleme yöntemini kullanmaktadır.

Çift körleme yönteminde çalışmaların yazar ve hakem kimlikleri gizlenmektedir.

İlk Değerlendirme Süreci:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi gönderilen çalışmalar ilk olarak editörler tarafından değerlendirilir. Bu aşamada, derginin amaç ve kapsamına uymayan, Türkçe ve İngilizce olarak dil ve anlatım kuralları açısından zayıf, bilimsel açıdan kritik hatalar içeren, özgün değeri olmayan ve yayın politikalarını karşılamayan çalışmalar reddedilir. Reddedilen çalışmaların yazarları, gönderim tarihinden itibaren en geç bir ay içinde bilgilendirilir. Uygun bulunan çalışmalar ise ön değerlendirme için çalışmanın ilgili olduğu alana yönelik bir alan editörüne gönderilir.

Ön Değerlendirme Süreci:

Ön değerlendirme sürecinde alan editörleri çalışmaların, giriş ve alan yazın, yöntem, bulgular, sonuç, değerlendirme ve tartışma bölümlerini dergi yayın politikaları ve kapsamı ile özgünlük açısından ayrıntılı bir şekilde inceler. Bu inceleme sonucunda uygun bulunmayan çalışmalar en geç dört hafta içerisinde alan editörü değerlendirme raporu ile iade edilir. Uygun bulunan çalışmalar ise hakemlendirme sürecine alınır.

Hakemlendirme Süreci:

Çalışmalar içeriğine ve hakemlerin uzmanlık alanlarına göre hakemlendirilir. Çalışmayı inceleyen alan editörü, Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi hakem havuzundan uzmanlık alanlarına göre en az iki hakem önerisinde bulunur veya çalışmanın alanına uygun yeni hakem önerir. Alan editöründen gelen hakem önerileri editörler tarafından değerlendirilir ve çalışmalar editörler tarafından hakemlere iletilir. Hakemler değerlendirdikleri çalışmalar hakkındaki hiçbir süreci ve belgeyi paylaşmayacakları hakkında garanti vermek zorundadır.

Hakem Raporları:

Hakem değerlendirmeleri genel olarak çalışmaların; özgünlük, kullanılan yöntem, etik kurallara uygunluk, bulguların ve sonuçların tutarlı bir şekilde sunumu ve literatür açısından incelenmesine dayanmaktadır. Bu inceleme aşağıdaki unsurlara göre yapılır:

Giriş ve literatür: değerlendirme raporu çalışmada ele alınan problemin sunumu ve amaçları, konunun önemi, konuyla ilgili literatür kapsamı, güncelliği ve çalışmanın özgünlüğü hakkında görüş içerir.

Yöntem: değerlendirme raporu, kullanılan yöntemin uygunluğu, araştırma grubunun seçimi ve özellikleri, geçerlik ve güvenilirlik ile ilgili bilgilerin yanı sıra veri toplama ve analiz süreci hakkında görüş içerir.

Bulgular: değerlendirme raporu, yöntem çerçevesinde elde edilen bulguların sunumu, analiz yöntemlerinin doğruluğu, araştırmanın amaçları ile erişilen bulguların tutarlılığı, ihtiyaç duyulan tablo, şekil ve görsellerin verilmesi, kullanılan testlerin kavramsal açıdan değerlendirilmesine yönelik görüşler içerir.

Değerlendirme ve tartışma: değerlendirme raporu, bulgulara dayalı olarak konunun tartışılması, araştırma sorusuna/larına ve hipoteze/lerere uygunluk, genellenebilirlik ve uygulanabilirlik ile ilgili görüş içerir.

Sonuç ve öneriler: değerlendirme raporu literatüre katkı, gelecekte yapılabilecek çalışmalara ve alandaki uygulamalara yönelik öneriler hakkında görüş içerir.

Stil ve anlatım: değerlendirme raporu, çalışma başlığının içeriği kapsamı, Türkçe'nin kurallara uygun kullanımı, gönderme ve referansların dergi yayın ilkeleri başlığı altındaki örneklere doğrultusunda tam metnin diline uygun verilmesi ile ilgili görüş içerir.

Genel değerlendirme: değerlendirme raporu çalışmanın bir bütün olarak özgünlüğü, literatüre ve alandaki uygulamalara sağladığı katkı hakkında görüş içerir.

Değerlendirme sürecinde hakemlerin çalışmanın tipografik özelliklerine göre düzeltme yapmaları beklenmemektedir.

Hakem Değerlendirme Süreci:

Hakem değerlendirme süreci için hakemlere verilen süre 3 haftadır. Hakemlerden veya uzman yayın kurulu üyesinden gelen düzeltme önerilerinin yazarlar tarafından 3 hafta içerisinde tamamlanması zorunludur. Hakemler bir çalışmanın düzeltmelerini inceleyerek uygunluğuna karar verebilecekleri gibi gerekliyse birden çok defa düzeltme talep edebilir.

Değerlendirme Sonucu:

Hakemlerden gelen görüşler, alan editörü tarafından en geç iki (2) hafta içerisinde incelenir. Bu inceleme sonucunda alan editörü çalışmaya ilişkin nihai kararını editörlere iletir.

Yayın Kurulu Kararı:

Editörler, alan editörü ve hakem görüşlerine dayanarak çalışma ile ilgili yayın kurulu görüşlerini hazırlar. Hazırlanan görüşler editör tarafından alan editörü ve hakem önerileri ile birlikte en geç 1 hafta içerisinde yazar(lar)a iletilir. Bu süreçte olumsuz görüş verilen çalışmalar intihal denetimi talep edilmeksizin iade edilir. Olumlu görüş verilen çalışmalar için son karar, intihal denetim raporları sonuçlarına göre verilir.

Yayın Değerlendirme Süreci:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'ne gönderilen çalışmaların yayın değerlendirme sürecinin yaklaşık 3 ay içerisinde sonuçlandırılması öngörülmektedir. Ancak, hakem ya da editörlerin yazar(lar)dan düzeltme istedikleri tarih ile yazar (lar)ın düzeltmeleri tamamladıkları tarih arasındaki süre, bu 3 aylık süreye dahil edilmemektedir.

Değerlendirme Sonucuna İtiraz Etme:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde değerlendirme sonucuna, yazar (lar)ın itiraz etme hakkı saklıdır. Yazar(lar), çalışmalarını için yapılan değerlendirme sonucu görüş ve yorumlara ilişkin itiraz gerekçelerini bilimsel bir dille ve dayanaklarını referans göstererek "mehmet.cakici@neu.edu.tr" adresine e-postayla iletmelidir. Yapılan itirazlar editörler tarafından en geç bir ay içerisinde incelenerek (Çalışmanın hakemlerine yapılan itirazlar hakkında görüş talep edilebilir) yazar (lar)a olumlu veya olumsuz dönüş sağlanır. Yazar (lar)ın değerlendirme sonucuna itirazları olumlu bulunması durumunda, yayın kurulu çalışmanın konu alanına uygun yeni hakemlendirme yaparak değerlendirme sürecini yeniden başlatır.

Atf ve Kaynakça Denetimi:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi yayın etiğine göre, makalelere atıfların doğru ve eksiksiz verilmesi zorunludur. Yazarlar tamamen orijinal eserler yazdıklarından ve yazarlar başkalarının eserlerini ve / veya sözlerini kullanmışlarsa, bunun uygun şekilde alıntılanmış olduğundan veya alıntı yapıldığından emin olmalıdırlar. Bu denetim, önce değerlendirme sırasında hakemlerce, sonra benzerlik-intihal (iThenticate) programı sonucuna göre editörlerce yapılır. Tüm çalışmalar intihal raporu intihal.net üzerinden de kontrol edilmektedir.

Makalenin Erken Görünümü ve Yayınlanması:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde sayfa düzenlemesi yapılan makaleler elektronik ortamda "Erken Görünüm" başlığı altında Dijital Nesne Kimlik Numarası (Digital Object Identifier, DOI) verilerek yayınlanır. Erken görünümdeki makaleler dergide yayınlanırken gerekli olduğunda küçük düzenlemeler yapılabilir. Erken görünümdeki makaleler sırası geldiğinde Editörler Kurulu'nun belirlediği cilt ve sayıda, üzerindeki "ERKEN GÖRÜNÜM" filigranı kaldırılarak yayınlanır. Elektronik dergi yayımlandıktan sonra, aynı ay içerisinde aynı makalelerin yer aldığı Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin basılı hali de yayınlanır.

Arşivleme:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makalelere ilişkin veriler ve tam metinler .pdf olarak TÜBİTAK ULAKBİM DERGİPARK, OCLC WorldCat ve EBSCOhost dijital arşivleme sunucusunda yayımlanmaktadır (<https://dergipark.org.tr/en/pub/ktppdergisi/archive>), (<https://www.worldcat.org/>) erişime kapalı bir şekilde saklanır ve arşivlenir (LOCKSS; <https://dergipark.org.tr/en/pub/ktppdergisi/lockss-manifest>).

Kalite Standartları Hakkında EASE Açıklaması

Avrupa Bilim Editörleri Birliği, tüm editörleri COVID-19 hakkındaki araştırma raporlarının gerekli standartları karşılaması ve üzerinde anlaşılacak yönergelerle uyumunu ve tüm sınırlılıkların açıkça belirtilmesini sağlamaya teşvik eder. EASE üyeleri COVID-19 pandemisi ile ilgili birçok çalışmada kötü raporlama standartlarına dikkat çekmiştir. Enfekte hastaları tedavi etmek ve koronavirüsün yayılmasını sınırlamak için tıbbi ve halk sağlığı önlemlerinin başarılı olması, yüksek kaliteli kanıtlara bağlıdır. EASE, pandemi ile ilgili verilerin toplanmasına ve yayımlanmasına dahil olan herkesi etik yönergelerle uyumuna ve standart raporlama yönergelerine (bkz. www.equator-

network.org), örneğin klinik arařtırmalar için CONSORT'a ve epidemiyolojik çalıřmalar için STROBE'ye baęlı kalmaya davet etmektedir.

Demografik veriler tüm bireylerin yař ve cinsiyetini içermeli ve cinsiyet ve toplumsal cinsiyet hakkındaki verilerin tam ve doęru bir şekilde raporlanmasını saęlamak için SAGER yönergelerini takip etmelidir. Mümkmün olduęunda verilerin tam ve açık olarak paylařılmasını teřvik ediyoruz.

Kriz zamanlarında, gerekli tüm verilerin elde edilmesinin her zaman mümkmün olmayabileceęini ve zorunlu olarak raporlamanın kısıtlanabileceęini kabul ediyoruz. Yanlıř yorumlardan kaçınmak ve aynı zamanda bilgilerin hızlı bir şekilde paylařılmasını kolaylařtırmak için, editörleri yazarların arařtırmalarına bir sınırlama bildirimini eklemeye teřvik ediyoruz. Bu, okuyucuları bilgilendirecek ve yayınlanan herhangi arařtırmaların kullanılıřlıęını güçlendirecektir.

Buna ek olarak, her zaman yüksek dil standartlarını savunurken, önemli arařtırmaların hızlı bir şekilde yayılmasını kolaylařtırmak amacıyla, yayınlanmış arařtırmanın anlaşılabilir olmasını saęlamak ve yazarlar üzerinde katı dil gereklilikleri uygulamamak için, editöryal katılımı sınırlamanın gerekli olabileceęini kabul ediyoruz.

İlgili bildiriye <https://ease.org.uk/publications/ease-statements-resources/ease-statement-on-quality-standards/web> adresinden ulařılabilir.



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