

Original

Does Meaning in Life Buffer the Link Between Anxiety and Depression? Evidence From Young Adults

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ARTICLE INFO

Article history:

Received 5 April 2025

Accepted 2 September 2025

Keywords:

Meaning in life
Depression
Anxiety
Young adults
Mental health

Palabras clave:

Sentido de la vida
Depresión
Ansiedad
Adultos jóvenes
Salud mental

A B S T R A C T

Mental health problems, including depression and anxiety, are increasing among young individuals and have become a public health concern. From this perspective, searching for meaning and purpose is an innate impulse contributing to a young adult's psychological well-being and plays a crucial role in mental health. This study examined whether meaning in life, gender and age moderate the relationship between anxiety and depression in a large sample of young adults. A total of 2338 participants, 1546 women and 792 men, with an average age of 24.41 were included in the study. The study examined the moderating effects of gender, age, and meaning in life on the relationship between anxiety and depression in participants. The data collected from the study was evaluated for the moderator effect and subjected to regression analysis. According to the results, meaning in life is negatively correlated with both anxiety and depression and moderates the relationship between them by reducing the strength of the association. In addition, gender has a moderating role in the relationship between anxiety and depression. However, age did not show a significant moderating effect. In summary, meaning in life has a protective role against psychological disorders in young adults, and high meaning in life protects individuals against other psychological disorders. Therefore, it is essential for mental health professionals – including psychologists, counselors, nurses, and others – to take an active role in supporting young adults in coping with depression and anxiety.

¿El sentido de la vida atenúa la relación entre la ansiedad y la depresión? Evidencia en adultos jóvenes

R E S U M E N

Los problemas de salud mental, incluyendo la depresión y la ansiedad, están aumentando entre los jóvenes y se han convertido en un problema de salud pública. Desde esta perspectiva, la búsqueda de sentido y propósito es un impulso innato que contribuye al bienestar psicológico de los adultos jóvenes y desempeña un papel crucial en la salud mental. Este estudio examinó si el sentido de la vida, el género y la edad moderan la relación entre la ansiedad y la depresión en una amplia muestra de adultos jóvenes. En el estudio participaron un total de 2338 personas, 1546 mujeres y 792 hombres, con una edad promedio de 24,41 años. El estudio analizó los efectos moderadores del género, la edad y el sentido de la vida en la relación entre la ansiedad y la depresión de los participantes. Los datos recogidos se evaluaron para determinar el efecto moderador y se sometieron a un análisis de regresión. Según los resultados, el sentido de la vida se correlaciona negativamente tanto con la ansiedad como con la depresión, y modera la relación entre ambas al reducir la fuerza de la asociación. Además, el género tiene un papel moderador en la relación entre la ansiedad y la depresión. Sin embargo, la edad no mostró un efecto moderador significativo. En resumen, el sentido de la vida tiene un papel protector frente a los trastornos psicológicos en los adultos jóvenes, y un alto sentido de la vida protege a los individuos de otros trastornos psicológicos. Por lo tanto, es fundamental que los profesionales de la salud mental –incluidos psicólogos, consejeros, enfermeros y otros– desempeñen un papel activo en el apoyo a los adultos jóvenes para afrontar la depresión y la ansiedad.

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Introduction

In the intricate landscape of mental health, the co-occurrence of depression and anxiety among young adults stands as a significant concern, warranting thorough investigation. The interplay between these two debilitating conditions often presents challenges for individuals striving to navigate the complexities of their daily lives. While research has delved into the separate realms of depression and anxiety, understanding their intertwined relationship and potential moderators is paramount for effective intervention and support. The association between depression and anxiety in young adults is a topic of significant interest due to its implications for mental health and well-being on both international and national levels, including cultural sensitivities and nuances. Several studies have explored this relationship, shedding light on various factors that may moderate or mediate the association. For instance, higher self-esteem was associated with fewer symptoms of anxiety and depression among young adults who had experienced the loss of a parent to cancer (Lundberg et al., 2021).

Additionally, the moderating role of resilience in stress, anxiety, and depression among civil servants indicates that resilience can play a crucial role in mitigating the impact of these mental health issues (Song et al., 2020). Furthermore, a systematic review and meta-analysis, revealed a high prevalence of anxiety and depression among children, adolescents, and young adults with life-limiting conditions, emphasizing the need for increased psychological assessment and monitoring in this population (Barker et al., 2019). Moreover, the COVID-19 pandemic has also been a significant area of focus in understanding the impact of depression and anxiety on young adults. The study investigated how the pandemic impacted depression and anxiety symptoms among adolescents and young adults in Germany, taking into account any pre-existing mental health issues. It emphasized the importance of contextual factors in shaping mental health outcomes (Kleine et al., 2023). Similarly, it was a decline in anxiety and depression after the initial weeks of the COVID-19 pandemic in the United States, indicating the dynamic nature of mental health responses during crises (Shuster et al., 2020).

The concept of *meaning in life* is a multifaceted construct that has gained considerable attention in psychological research due to its strong associations with mental health and well-being. It is commonly defined as the sense of purpose, coherence, and significance that individuals derive from their lives, which can profoundly influence their psychological functioning (Czyżowska, 2021). Meaning in life is often conceptualized in two complementary dimensions: the *presence of meaning*, referring to the perception that one's life has coherence and purpose, and the *search for meaning*, which reflects the active pursuit of significance and direction in life. Both dimensions play a crucial role in shaping adaptive psychological processes and resilience.

The pursuit of meaning has been a fundamental drive throughout human history, underpinning individuals' quest for purpose, understanding, and significance in their lives. Therefore, there is a close relationship between people's goals and their meaningful lives (Arslan, 2020). Meaning in life is an important component of an individual's psychological functioning for mental health and well-being. People's efforts to seek meaning and significance in their lives are recognized as an innate natural impulse (Frankl, 2000). These attempts to search for meaning may not always be positive. The failures experienced by individuals as a result of their efforts to achieve meaning in life can cause them

to experience many psychological problems (Arslan & Yildirim, 2021). There is empirical evidence that meaning in life contributes to individuals' mental health and well-being (Arslan & Yildirim, 2021). In a study conducted by Glaw et al. (2017), it was stated that a lack of meaning in life or feeling of existential crisis can lead to many psychological disorders such as depression, anxiety, addiction, aggression, apathy, physical illness, and suicidal crisis. The search for meaning in life has been found to reduce suicidal ideation in people over time and to reduce the likelihood of lifelong suicide attempts (Kleiman & Beaver, 2013). In a study of university students, meaning in life was negatively associated with depression and anxiety (Feldman & Snyder, 2005). Therefore, one's level of meaning in life may influence our willingness to pursue and achieve worthwhile goals, which facilitates the reduction of depressive symptoms and stress in crises. In other words, promoting meaningful living for individuals experiencing a meaninglessness crisis not only improves psychosocial health, well-being, coping, and meaningful living but also reduces symptoms and meaninglessness during difficult times (Arslan & Yildirim, 2021; Glaw et al., 2017).

A growing body of evidence indicates that meaning in life functions as a protective factor against adverse psychological outcomes, particularly anxiety and depression. Individuals who perceive their lives as meaningful are less likely to develop depressive symptoms and tend to experience lower levels of anxiety (Grau et al., 2023; Shub et al., 2024; Szcześniak et al., 2022; Seidel et al., 2022). For example, longitudinal studies during the COVID-19 pandemic demonstrated that higher levels of meaning in life predicted lower levels of depression and anxiety, underscoring its protective function in times of crisis (Seidel et al., 2022). These findings suggest that meaning in life serves as a buffer, mitigating the psychological consequences of stress and enhancing resilience.

Importantly, meaning in life has also been identified as a moderator in the relationship between anxiety and depression, especially among young adults, who are at a critical developmental stage characterized by identity exploration and heightened vulnerability to mental distress. Evidence shows that meaning in life can attenuate the negative effects of emotional dysregulation and experiential avoidance, thereby reducing the strength of the association between anxiety and depression (Kelso et al., 2020). Moreover, the presence of meaning has been shown to mediate the impact of adverse childhood experiences on later mental health outcomes, further highlighting its relevance in young populations (Kwok et al., 2023). Gender-specific patterns have also emerged, with studies suggesting that women may particularly benefit from the protective and moderating functions of meaning in life.

The escalating prevalence of mental health disorders, notably depression and anxiety, among young individuals has emerged as a pressing public health concern, with profound implications for global well-being and healthcare systems. Depression and anxiety among young people are on the rise, and these mental disorders have become a growing public health problem affecting 10% to 20% of children and adolescents worldwide (Kieling et al., 2011). National surveys in the United States have found that 3% of children and adolescents have a diagnosis of anxiety, while the prevalence of depression ranges from 2.1% to 8.1%. It was also found that for three-quarters of adults with long-term mental disorders, the age of onset was before 24 (Barker et al., 2019).

Depression is a mental disorder with prominent symptoms such as depressed mood, apathy, and lack of pleasure; slowing

of behavior, pessimism in the cognitive domain, thoughts of worthlessness and regret (Cohen & DeRubeis, 2018). In light of these alarming trends, concerted efforts are warranted to address the root causes of depression and anxiety in young populations, bolstering mental health initiatives and support systems to mitigate the enduring impact of these pervasive disorders. Depression, with its staggering prevalence affecting approximately 1 in 20 individuals globally and 1 in 6 over a lifetime, represents a pervasive mental health concern that transcends geographical boundaries and demographic distinctions (Gold et al., 2020). In depressed individuals, problems such as sadness, loss of interest, lack of motivation, guilt, difficulty concentrating, appetite, and sleeping disorders are very common. (World Health Organization, 2017). Given the profound impact of depression on individuals' well-being, particularly among young adults, concerted efforts are imperative to address its multifaceted challenges and to enhance mental health support systems on a global scale. Therefore, we can say that depression has become a crucial problem for all people, especially young adults.

Anxiety and depressive disorders are common and debilitating mental disorders that affect approximately 10% of the world's population each year (WHO, 2017). In Türkiye, these disorders also pose a significant public health concern, with a substantial portion of the population experiencing their detrimental effects. According to recent studies (Hosgören et al., 2023; Şahin, 2019; Şanlı et al., 2023), anxiety and depressive disorders affect a significant proportion of the Turkish population, underscoring the need for effective interventions and support systems tailored to the unique cultural and contextual factors within Türkiye. Anxiety is defined as a disturbing feeling or irrational fear which its cause cannot be precisely defined (Şahin, 2019). Anxiety is among the most basic emotions of people in their existence. It is considered that anxiety is intertwined with emotions such as fear, anger, and distress, and that it is a very difficult concept to understand and describe. A high level of anxiety causes the individual to be more rigid, to regress even in simpler behaviors, and to be anxious (Şanlı et al., 2023). Anxiety that begins in adolescence and young adulthood can continue later in life and affect mental health. Research shows that anxiety is a symptom of adolescence and young adulthood and can lead to mental disorders such as depression and suicide in the adulthood (Hosgören et al., 2023). For the purpose of comparison, considering an international illustration that a large-scale study conducted in the United States found that anxiety is increasing among adults under the age of 50, but this rapid increase is greater among young adults. Among respondents between the ages of 18 and 25, 14.66% reported significant increases in anxiety levels in 2018 compared to 7.97% in 2008 (Goodwin et al., 2020).

Understanding the intricate relationship between depression, anxiety, and meaning in life among young adults is crucial given its complexity and implications for mental health. Previous research has provided insights into this area, shedding light on various factors that influence mental health outcomes.

The relationship between depression, anxiety, and meaning in life among young adults is a complex area of study. Schnell & Krampe (2020) explored the moderating and mediating effects of meaning in life and self-control in buffering stress during the COVID-19 pandemic, highlighting the potential role of meaning in life in mitigating mental distress. Szcześniak et al. (2022) investigated the presence of meaning in life as a mediator of anxiety and depression in a non-clinical sample of young Polish adults, emphasizing the potential role of meaning in life in influencing mental health outcomes. Wang et al. (2022) examined the moderating role of

meaning in life on the association between workplace violence and depressive symptoms among primary healthcare professionals in Shandong, China, highlighting the potential moderating effects of meaning in life on mental health outcomes. Tamarit et al. (2022) explored the role of resilience and life satisfaction as mediators of the impact of COVID-19 worries on mental health, underscoring the potential mediating effects of these factors on mental health outcomes. Additionally, Johnson et al. (2018) conducted a systematic review, finding a significant association between adolescent depression and adult anxiety disorders, indicating the potential long-term impact of depression on anxiety in adulthood.

Building upon these studies, our research seeks to further explore the interplay between depression, anxiety, and meaning in life among young adults in Turkish context. By considering the complex dynamics between these factors, we aim to contribute to a deeper understanding of mental health and inform interventions aimed at promoting well-being among young adults.

These studies collectively underscore the intricate interplay between depression, anxiety, and meaning in life among young adults, emphasizing the potential moderating and mediating roles of factors such as meaning in life, resilience, and life satisfaction. In this context, given the high prevalence of anxiety and depressive disorders in young adults, it can be said that early intervention for young adults is extremely important.

Taken together, findings on studies of meaning in life underline the theoretical and practical significance of it as a central construct in understanding the association between anxiety and depression in young adults. Positioning meaning in life at the forefront of inquiry not only deepens our comprehension of mental health dynamics but also provides a promising direction for interventions aimed at strengthening psychological resilience and well-being in this population.

Current Study

The current study on the association between depression and anxiety in young adults, with a focus on the moderating role of meaning in life, holds significant importance in the field of mental health research. This study aims to contribute to the existing body of knowledge by exploring the intricate interplay between depression, anxiety, and the presence of meaning in life among young adults. The relevance of this study is underscored by the findings of previous research in related areas (Ashraf et al., 2021; Çeri & Çiçek, 2021).

For instance, investigated the moderating and mediating effects of meaning in life and self-control in buffering stress during the COVID-19 pandemic, highlighting the potential role of meaning in life in mitigating mental distress. Additionally, anxiety symptoms mediated the relationship between childhood maltreatment and suicide attempts among adolescents and young adults with first depressive episodes, emphasizing the complex interrelationships between anxiety, depression, and adverse experiences (Chen et al., 2021). Furthermore, the high prevalence of anxiety and depression among children, adolescents, and young adults with life-limiting conditions, emphasizing the vulnerability of this population to psychological distress (Barker et al., 2019).

Moreover, the sequential mediating effects of social support and resilience on the relationship between stress related to difficulties due to social distancing and mental health (depression and anxiety) among young adults during the COVID-19 pandemic, underscoring the relevance of factors that may moderate the impact of stress on mental health outcomes (Noh & Park, 2022).

These findings collectively emphasize the multifaceted nature of the association between depression, anxiety, and meaning in life among young adults, highlighting the need for further exploration of the potential moderating and mediating roles of factors such as meaning in life, resilience, and social support.

Our decision to focus on the Turkish context and involve Turkish participants stems from a recognition of the importance of cultural nuances in understanding mental health phenomena such as depression and anxiety. While there exists a wealth of international literature on this topic, it is essential to acknowledge that psychological processes are influenced by cultural, social, and contextual factors.

Türkiye, with its unique cultural heritage, societal norms, and historical background, presents a distinct context within which mental health experiences unfold. Factors such as collectivism, family dynamics, and socio-economic conditions play pivotal roles in shaping individuals' experiences of depression and anxiety. Therefore, conducting research within this specific cultural context allows for a deeper exploration of these factors and their interplay with mental health outcomes.

Research Hypotheses

Considering the existing research, the current study aims to advance our understanding of the complex interplay between depression, anxiety, and meaning in life among young adults, thereby contributing to the development of targeted interventions and support mechanisms to promote mental well-being in this population. In line with this purpose, meaning in life is positioned as the primary focus of the study.

H1 (Primary Hypothesis): Meaning in life has a moderator effect on the relationship between anxiety and depression (Figure 1).

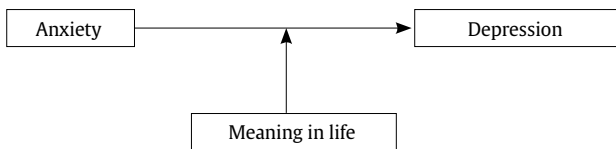


Figure 1. Theoretical model of research by moderator effect of meaning in life.

H2 (Secondary Hypothesis): Gender has a moderator effect on the relationship between anxiety and depression (Figure 2).

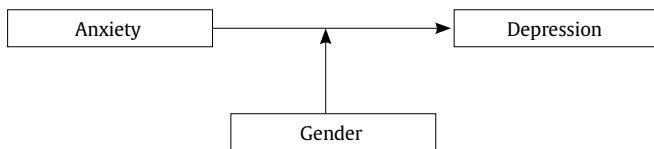


Figure 2. Theoretical model of research by moderator effect of gender

H3 (Secondary Hypothesis): Age has a moderator effect on the relationship between anxiety and depression (Figure 3).

Relating to the research hypotheses, the study emphasizes the moderating role of meaning in life as the central construct, particularly in the context of Turkish young adults. This primary focus directly addresses the need to examine how meaning in life functions as a protective factor against anxiety and depression within a specific cultural setting.

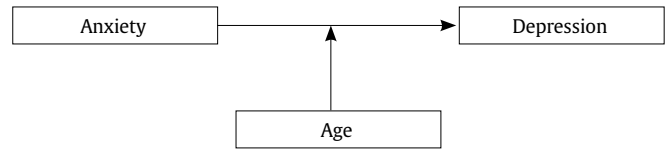


Figure 3. Theoretical model of research by moderator effect of age.

Gender and age are included as secondary hypotheses to provide additional insights into potential demographic differences. Prior research suggests that women may experience higher levels of anxiety and depression than men, indicating the possibility of gender disparities in these associations. Similarly, developmental studies point out that the prevalence and manifestation of mental health difficulties may vary across different stages of young adulthood. By examining these demographic factors, the study seeks to enrich its primary focus on meaning in life with a broader understanding of the interaction between individual differences and mental health outcomes.

Method

Research Design

Cross-sectional correlational design in which all variables were measured at a single point in time, was employed to investigate the moderating effect of meaning in life perception on the relationship between anxiety and depression. The study initially analyzed the correlation between anxiety and depression according to the primary hypotheses, followed by the examination of the moderating role played by meaning in life in the relationship.

Participants and Procedure

A total of 2338 participants, comprising 1546 women and 792 men, with an average age of 24.41 were recruited for the study, and the ages of participants ranged from 18 to 41. convenient sampling was used to select the participants. The study data were collected online through social media platforms (WhatsApp, Instagram, etc.) between 15 April and 30 May 2023 in Türkiye. While the data collection approach allowed the inclusion of many participants from different backgrounds, its reliance on online platforms may have affected representativeness, given that individuals with better access or higher personal interest were more prone to participate. Moreover, covariates such as educational level, socioeconomic status, or mental health history were not included in the data collection, which constitutes a limitation of the study. The instruments have been implemented in Turkish so that the participants were representative of the Turkish population. Online questionnaires often incorporate methods for quality control to ensure the reliability and validity of the data collected. One common approach is the inclusion of lie-detection questions or validity checks within the survey instrument. Lie detection questions are typically interspersed throughout the questionnaire and were designed to gauge the respondent's level of engagement and attentiveness. They included statements such as "Please select 'Strongly Agree' for this question" or "Please choose option '3' for this item." Lie detection questions were added to the online questionnaire in this study to ensure the reliability and validity of the data. Information regarding the data collection period, the authorization granted by the ethics committee (Ethics code: 2023/01-30), the security and confidentiality of the data, and the voluntary

nature of participation in the study were imparted to the participants in writing online.

Measures

Beck Anxiety Inventory

The scale developed by Beck et al. (1988) was used to determine the level of anxiety that individuals experience in their daily lives. There were 21 items on the scale showing the symptoms of anxiety experienced in the last week and scored between 0-63 on a four-point scale consisting of none (0) - mild (1) - moderate (2) - severe (3). It was stated that as the scores obtained from the scale increase, the level of anxiety experienced by the individual increases. As a result of the psychometric analysis of the original form of the scale, it was concluded that it is a valid and reliable scale that measures the anxiety experienced by the individual. The Turkish psychometric studies of the inventory were applied by Ulusoy et al. (1998). The items of the scale were scored by self-report evaluation of conditions such as "inability to relax, hot and hot flushes, irritability, trembling in the hands, fear, heart palpitations", and are applied to determine the symptoms experienced in the last week. In this study, Cronbach's alpha coefficient was found to be 0.94 for the anxiety scale.

Beck Depression Inventory

The inventory was developed by Beck and Steer (1984) to measure the level of depression. There were 21 items on the scale and the response consists of (0) - (1) - (2) - (3) options according to the intensity of the symptoms. The total score that can be obtained from the scale varies between 0-63. High scores indicate higher levels of depression. The original form of the scale is widely used internationally and validity and reliability analyses have been made in various languages. The Turkish form of the scale was adapted by Hisli (1989). As a result of the reliability analysis, the internal consistency coefficient was calculated as $\alpha = .78$. Total 21 items are formed similar to the item "I am not sad and distressed (0), I feel sad and distressed (1), I am always sad and distressed, I cannot get rid of it (2), I am so sad and distressed that I cannot stand it anymore (3). In this study, Cronbach's alpha coefficient was found to be 0.92 for the depression scale.

Meaning in Life Scale

The scale, which is structured over the meaning that individuals attribute to life, consists of 6 items (Hill et al., 2019). The scale was answered on a scale of never (1) - always (5), and the total score that can be obtained from the scale varies between 7 and 35. An increase in the scores obtained from the scale indicates that the meaning attributed to or taken from life also increases. Explanatory and confirmatory factor analysis was performed within the scope of the validity studies of the scale. The results of the exploratory factor analysis showed a single-factor structure in which 46% of the total variance of the scale was explained. The standard factor loads of the scale items ranged from .47 to .80. Within reliability analysis, latent construct reliability ($H = .83$) and internal consistency (0.83) values were examined. With the analyses made, it was concluded that the scale was valid and reliable to use. In addition, in the Turkish adaptation study conducted by Yıldırım et al. (2021) on university students, the Cronbach's alpha value of

the scale was 0.86. In this study, Cronbach's alpha coefficient was found to be 0.88 for meaning in life scale.

Data Analysis Procedure

Throughout the study, the moderator effect of gender, mean age, and meaning in life on the relationship between anxiety and depression of the participants was examined. Since the data obtained in the study would be evaluated in terms of moderator effect and basically regression analysis would be performed, normal distribution, multicollinearity, linearity, homoscedasticity, and autocorrelation assumptions were examined to determine that the assumptions of the regression analysis were met (Field, 2013; Tabachnick & Fidell, 2013). However, although a Durbin-Watson value of 1.179 was obtained, as noted by Field (2013), this test is only meaningful when the data have a temporal or sequential order (e.g., time series). Since the present study did not involve ordered data, the independence of errors was not assessed using the Durbin-Watson test, and this point was acknowledged as a methodological limitation. The correlation between the independent variables must have a tolerance value above 0.1 and a VIF value below 10. In addition, the values of kurtosis and skewness between -2 and +2 indicate a normal distribution. In line with the data obtained, it was concluded that the distribution was normal and the tolerance and VIF values provided the collinearity statistics.

Based on the hypotheses of the research, the moderator role of gender in the relationship between anxiety and depression and the moderator role of age in the same relationship were examined. Since gender is a categorical variable, no standardization was made. The age variable was converted into z scores over the mean and included in the analysis.

Whether the meaning in life has a moderator effect on the relationship between anxiety and depression was examined by moderator effect analysis. The meaning in life level of the participants was converted into z scores as -1, 0, 1 in line with the scores obtained from the scale, and the scale scores corresponding to these values are given in the findings section. The choice to convert the meaning in life levels of the participants into z-scores as -1, 0, 1 aligns with standard practices in statistical analysis, particularly when dealing with Likert-type scale data. Converting the raw scores into z-scores allows for a clearer comparison of participants' responses relative to the mean and standard deviation of the sample (Field, 2013; Tabachnick & Fidell, 2013). By standardizing the scores in this manner, it becomes easier to interpret the data and draw meaningful conclusions about the participants' levels of meaning in life. The decision to assign values of -1, 0, and 1 to the z-scores likely reflects a categorization of participants' meaning in life levels as low, average, and high, respectively. This approach simplifies the interpretation of the data by grouping participants into distinct categories based on their relative scores on the meaning in life scale (Warner, 2016). SPSS Process script was used in moderator effect models between variables.

Results

Correlation Coefficients

The data obtained from the participants regarding the anxiety symptoms, depression levels and meaning in life perceptions are presented in Table 1. Anxiety symptoms ($X = 18.47$, $SD = 13.56$) are positively correlated with depression level ($X = 17.40$, $SD = 12.26$),

and the correlation coefficient is calculated as .59. On the other hand, meaning in life ($X = 29.89, SD = 8.74$) is negatively correlated with both anxiety symptoms and depression level ($r_1 = -.26, r_2 = -.49$ respectively).

Table 1. Descriptive statistics and correlation coefficients of variables

	M	SD	Anxiety	Depression	Meaning in Life
Anxiety	18.47	13.56	-	.59*	-.26*
Depression	17.40	12.26		-	-.49*
Meaning in Life	29.89	8.74			-

* $p < .01$

Multiple Regression Coefficients

Firstly, multiple regression coefficients were calculated to determine the level of explanation of depression scores in terms of anxiety and meaning in life. The independent variables, anxiety symptoms and meaning in life, significantly predicted the depression level of participants separately and combined. Hereby, it was determined that the 68% change in depression level was explained by anxiety and meaning in life.

Theoretical Model: Moderator Effect Analysis

The moderator role of meaning in life in the relationship between anxiety and depression, which is the main hypothesis of the research (H_1), was examined with regression analysis with interaction in moderation model. The results showed that anxiety has a positive and significant effect on depression. When meaning in life was included in the model as a moderator, the relationship between anxiety and depression decreased to a significant level (Table 2).

Table 2. Moderator effect of a meaning in life in the relationship between anxiety and depression

Depression	coefficient	Se	t	p	LLCI	ULCI
(constant)	18.36	1.13	<.001		16.15	20.56
Anxiety	.74	.04	<.001		.65	.83
Meaning in Life	-.31	.04	<.001		-.38	-.24
Interaction	-.01	.001	<.001		-.01	-.01

$R = .69, R^2 = .48, F = 705.25, p < .001$

The moderator role of gender in the relationship between anxiety and depression was examined for H_2 analysis (Table 3). The findings pertaining to the moderator effect reveal that women exhibiting symptoms of anxiety tend to demonstrate higher levels of depression compared to men. Consequently, these results suggest a greater vulnerability among women in relation to anxiety and depression, indicating a potential gender disparity in mental health outcomes.

Table 3. Moderator effect of gender in the relationship between anxiety and depression

Depression	coefficient	Se	t	p	LLCI	ULCI
(constant)	9.90	1.05	9.44	<.001	7.85	11.96
Anxiety	.44	.05	9.66	<.001	.35	.53
Gender	-1.68	.70	-2.38	.017	-3.06	-.29
Interaction	.07	.03	2.06	.039	.003	.13

$R = .59, R^2 = .35, F = 418.04, p < .001$

In line with the H_3 hypothesis of the research, the mean age was converted into z scores. Then, the moderator effect of anxiety was examined in the regression analysis conducted in line with its explanatory power of depression. Since there was no moderator effect of age on the interaction, the hypothesis that anxiety and depression levels increase in young adulthood as the mean age increases has not been confirmed (Table 4).

Table 4. Moderator effect of age in the relationship between anxiety and depression

Depression	coefficient	Se	t	p	LLCI	ULCI
(constant)	7.58	.35	21.90	<.001	6.90	8.26
Anxiety	.53	.02	35.22	<.001	.50	.56
Age	-.70	.35	-2.03	.04	-1.37	-.02
Interaction	.02	.02	1.23	.22	-.01	.05

$R = .59, R^2 = .35, F = 417.42, p < .001$

Eventually, the values showed that meaning in life has a negative moderator effect on the prediction of depression by anxiety. As the level of meaning in life increases, the regression coefficient between anxiety and depression decreases. Thus, when meaning in life is included in the high anxiety level of individuals, the level of depression decreases. Besides gender was a moderator variable in the prediction of depression by anxiety. Women had a potential disadvantage rather to men being anxious and depressed. Finally, there was no moderator effect of age in the relationship between anxiety and depression.

Randomization Tests

Analyzes in the study were performed using data obtained from a non-random sample. Randomization tests were performed to support the generalizability of the findings beyond the study sample. It involves randomly shuffling or reassigning data points within the sample to create multiple simulated datasets. By analyzing these simulated datasets, we can assess the robustness of our findings and evaluate whether similar results would emerge in different samples or populations. 5000 bootstrap replicates were run to test the effects in the theoretical model. When means, standard errors, 95% CIs, significance levels, and the direction of the relationships were examined, it was seen that similar results were close to each other (Davison & Hinkley, 2020). This consistency suggests that the study's findings are robust and reliable, increasing confidence in their validity and generalizability beyond the specific sample used in the study.

Discussion

The findings of the current study contribute to the understanding of the significant interaction between depression, anxiety, and the moderating role of meaning in life among young adults. The literature provides valuable insights into the potential moderators of the relationship between anxiety and depression, shedding light on the multifaceted nature of these mental health outcomes.

Our decision to conduct the study within the Turkish context and with Turkish participants was driven by a commitment to capturing the intricacies of mental health experiences within a specific cultural environment. By adopting a culturally sensitive approach, we aimed to contribute not only to the international

discourse on depression and anxiety but also to the understanding of these phenomena within the Turkish cultural context.

This study aims to examine the moderating role of meaning in life in the relationship between anxiety and depression. The findings indicate a negative and significant association between meaning in life and both anxiety and depression among young adults in the Turkish population. Although the interaction effect of meaning in life was statistically significant, the coefficient was relatively small, which may suggest a limited practical impact despite its theoretical relevance. The effect size of meaning in life as a moderator in the relationship between anxiety and depression is statistically significant but practically small, as indicated by the regression analysis results in this study ($R^2 = .48$, $\beta = -.01$, $p < .001$, $N = 2338$). According to Cohen's benchmarks, an effect size (β) of $-.01$ is considered very small. Cohen (1988) suggests that effect sizes of .10, .30, and .50 represent small, medium, and large effects, respectively. However, even small effect sizes can be practically meaningful and worthy of consideration, particularly when derived from large samples and supported by consistent findings. Therefore, while the effect size is statistically small, meaning in life can still be regarded as an important variable with a potential protective role in reducing anxiety and depression. This distinction between statistical significance and practical relevance is crucial for understanding the implications of these findings in mental health prevention and intervention strategies for young adults. Nevertheless, it was observed that higher levels of meaning in life were associated with lower levels of anxiety and depression in this large sample. These results are consistent with previous research showing that meaning in life is negatively and significantly related to anxiety and depression. (Chen et al., 2021; Szcześniak et al., 2022). Furthermore, the study by Jansson & Linton (2006) proposed that anxiety and depression share a significant but non-specific component of generalized distress termed negative affect, providing a potential explanation for the interconnectedness of anxiety and depression. This supports the notion that the relationship between anxiety and depression is complex and may be influenced by shared underlying factors. For example, Arslan & Yıldırım (2021) highlighted the role of optimism in influencing anxiety and depression, indicating the potential moderating effects of individual traits on mental health outcomes in Türkiye. This suggests that individual characteristics such as optimism may play a role in moderating the relationship between anxiety and depression.

Although the effect size of meaning in life as a moderator was small, the findings nevertheless support its protective role against psychological disorders, including anxiety and depression (Szcześniak et al., 2022). This suggests that, despite its limited direct impact, meaning in life may still contribute to psychological resilience and overall well-being. From an applied perspective, interventions designed to enhance meaning in life could be valuable when integrated into broader therapeutic frameworks. For example, combining meaning-centered approaches with established techniques such as cognitive-behavioral therapy may provide more substantial benefits (Boreham & Schutte, 2023; Shin, 2022). Such integrative strategies appear particularly relevant for young adults, a population navigating critical developmental transitions and heightened vulnerability to mental health challenges (Szcześniak et al., 2022; Tuttle, 2006).

While the statistical significance of meaning in life as a moderator is clear, its practical impact is modest, indicating that it should be considered as one component within a multifaceted

approach to mental health interventions. The small effect size highlights the importance of developing comprehensive strategies that target multiple aspects of psychological well-being, rather than relying solely on strengthening meaning in life. Such an approach may be especially effective in supporting young adults by fostering resilience through holistic and context-sensitive support systems.

Building on this perspective, previous research further illustrates the broader implications of meaning in life for mental health. Pennant et al. (2015) emphasize the significant public health burden of anxiety disorders and depression in children and young people, highlighting the importance of access to effective treatment. This underscores the relevance of understanding the factors that may moderate the relationship between anxiety and depression, such as the presence of meaning in life. Additionally, the study by Schnell & Krampe (2020) documents levels of acute COVID-19 stress and general mental distress in Germany and Austria during the lockdown and in the weeks thereafter, highlighting the potential moderating and mediating effects of meaning in life and self-control in buffering stress. This underscores the relevance of exploring the role of meaning in life as a potential moderator of mental distress, particularly in the context of significant stressors such as the COVID-19 pandemic. Moreover, Szcześniak et al. (2022) explore the presence of meaning in life as a mediator of anxiety and depression in a non-clinical sample of young Polish adults, emphasizing the potential role of meaning in life in influencing mental health outcomes. This aligns with the current study's focus on the moderating role of meaning in life in the relationship between anxiety and depression among young adults.

In a similar vein, research conducted in diverse cultural and clinical contexts reinforces the protective role of meaning in life. The study by Tamarit et al. (2022) investigates the mediating effects of resilience and life satisfaction on the impact of COVID-19 worries on mental health, underscoring the potential mediating effects of these factors on mental health outcomes. This highlights the relevance of considering multiple factors, including meaning in life, resilience, and life satisfaction, in understanding the relationship between anxiety, depression, and overall mental well-being.

Korkmaz and Güloğlu (2021) conducted a study on adults during the Covid-19 period. They found that there was a negative relationship between meaning in life and anxiety and depression in the Turkish cultural context. Similarly, Vehling et al. (2011) conducted a study on cancer patients. They found that there was a negative relationship between meaning in life and anxiety and depression and that meaning in life had a protective feature against psychiatric symptoms.

Taken together, these studies provide an important backdrop for interpreting the findings of the present research. The results of this study show that meaning in life has a moderating effect on the relationship between anxiety and depression. In our research, when meaning in life was included as a moderator in the model, the relationship between anxiety and depression decreased significantly, although the effect size was small. Previous studies show that meaning in life is an important predictor and a protective factor against depression and anxiety (Ashraf et al., 2021; Chen et al., 2021; Cohen & Cairns, 2012). Szcześniak et al. (2022) found that meaning in life mediates between depression and anxiety and has a protective function related to negative events. Chen et al. (2021) conducted a study on Chinese adolescents and found

that the high presence of meaning in life has a reducing effect on anxiety and depression.

Another result of our study is that gender has a moderating role in the relationship between anxiety and depression. Here, we can say that our second hypothesis (H2) in our study was confirmed. Women have higher levels of anxiety and depression and are more vulnerable than men. Similarly, when we look at previous studies, it is seen that gender has a moderating role between variables such as loneliness and depression (Chang, 2018), and depression and disability (Keogh et al. 2006), although not directly between anxiety and depression. The result obtained from the study shows that age is not a moderator in the relationship between anxiety and depression. This result does not confirm the third hypothesis (H3) of our study. On the other hand, Simning et al. (2014) found that age has a moderating role in the relationship between anxiety and depression in their study on cancer patients. In the study, it was found that young adult cancer patients were more vulnerable to anxiety and depression than older cancer patients.

In conclusion, the current study's findings, in conjunction with the existing literature, emphasize the multifaceted nature of the relationship between anxiety, depression, and meaning in life among young adults. These insights contribute to a more comprehensive understanding of the factors that may influence the experience of anxiety and depression, underscoring the potential moderating role of meaning in life in mental health outcomes. While knowing participants' clinical histories would provide additional context, our study aimed to contribute to the broader understanding of mental health phenomena among young adults in a research context. Our findings can inform future research and interventions aimed at promoting mental well-being in non-clinical populations.

Limitations and Implications

This study has some limitations that should be acknowledged. First, data were collected through an online survey using convenience sampling. While this method enabled us to reach a large and diverse sample efficiently, it may have introduced sampling bias and limits the generalizability of the findings. Participants who voluntarily chose to participate online may differ systematically from those who did not, in terms of internet access, education level, or interest in mental health topics. Future research should aim to replicate the findings using more representative or randomized sampling methods.

Second, all data were self-reported, which may have led to response biases such as social desirability or inattentive responding. Although attention checks were embedded to minimize random responding, this remains a limitation of the online format.

Third, the study focused exclusively on young adults within the Turkish context. While this focus allowed for a culturally grounded understanding of mental health among Turkish youth, the results cannot be generalized to other age groups or cultural contexts. Cross-cultural comparative studies are needed to explore whether the moderating role of meaning in life operates similarly across diverse populations.

Another limitation concerns the relatively small magnitude of the interaction effect observed in the moderation analysis. Although the moderating role of meaning in life in the relationship between anxiety and depression was statistically significant, the interaction coefficient was modest. This suggests that while the

finding supports theoretical expectations, its practical impact may be limited. Therefore, caution should be exercised when interpreting the strength of this moderating effect in applied contexts. Future research may further investigate this relationship using alternative statistical models, additional moderating variables, or longitudinal designs to better capture the practical relevance of meaning in life in relation to mental health outcomes.

Lastly, although the inventories used (e.g., depression and anxiety scales) are often applied in clinical contexts, our study employed them to assess symptom severity in a non-clinical sample. These tools are widely used in psychological research to track subclinical symptoms and psychological tendencies.

Although our results are derived from a non-clinical sample of young adults, the findings have meaningful implications for clinical and preventive mental health interventions. Identifying meaning in life as a significant protective factor suggests that therapeutic approaches aimed at enhancing existential meaning, such as logotherapy or acceptance and commitment therapy, may reduce vulnerability to depression and anxiety, even among individuals without formal diagnoses. Furthermore, gender-specific patterns observed in this study could inform tailored intervention strategies that consider the differential mental health needs of women and men. While clinical histories were not assessed, the current findings provide an important basis for designing preventive programs that foster psychological resilience and well-being in both general and at-risk youth populations. Future studies may also explore how meaning in life interacts with other psychological traits (e.g., self-efficacy, coping styles) in shaping mental health outcomes across clinical and non-clinical settings.

Conclusion

Having a sense of meaning in life appears to play a beneficial role in reducing levels of anxiety and depression and also acts as a moderator between these two psychological states. However, it is important to note that while the moderating effect was statistically significant, the effect size was small, indicating that the practical impact of meaning in life is modest. Nonetheless, even a small effect may be meaningful in public health and clinical contexts, particularly when considered alongside other protective factors. Furthermore, the relationship between anxiety and depression is influenced by gender.

While the moderating role of meaning in life has been explored in international contexts, this study provides a culturally grounded contribution by examining these dynamics among young adults in Türkiye. Given the unique sociocultural values, rapid societal changes, and mental health stigma within the Turkish context, our findings offer important insights into how meaning in life functions as a protective factor in a non-Western, collectivist culture. This localized perspective contributes to the cross-cultural understanding of psychological well-being and highlights the need for culturally tailored mental health interventions.

In summary, although the effect size of meaning in life as a moderator is small, it remains statistically significant and practically relevant as part of a multifaceted approach to mental health promotion. Having a meaningful existence provides a protective function against psychological disorders such as anxiety and depression, and higher levels of meaning in life may support resilience across diverse cultural settings.

Conflict of interest

The authors declare no competing interest.

Informed Consent

Consent was obtained from all participants included in the study.

Data Availability

The data set will be sent by the responsible author if requested.

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