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The Relative Contribution of Anxiety and Depression in Predicting Quality of Life among Alfaisal University Students

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Abstract

University students are often overwhelmed in numerous academic, social, and personal tasks leading to numerous negative psychological outcomes such as anxiety and depression. It has shown to impact students' academic performance, social functioning, and quality of life (QoL). In the current study, differences in relative importance of anxiety and depression in relation to students' QoL was investigated in the population of Alfaisal University students. Quantitative cross-sectional survey was performed on representative sample of students. Anxiety was measured by the Arabic version of Taylor Manifest Anxiety Scale (TMAS), a self-reported questionnaire designed to identify the symptoms of overt anxiety. Depression was measured by an MCQ Arabic version of Beck Depression Inventory (BDI); a self-report inventory for measuring emotional, behavioral, and physical symptoms of depression. QoL was evaluated by a researcher-made QoL scale for students, which included such subscales as physical health, psychological health, social relationships, and academic satisfaction. Depression predicted QoL with a higher effect size than anxiety. There were no statistically significant moderating effects of students' gender and the level of education on the anxiety-depression-QoL relationship (p > 0.05). Both anxiety and depression negatively impact students' quality of life, however, depression does it with a slightly higher effect size.

Keywords: anxiety; depression; quality of life; students; mental health; university

1. Introduction of the Study

The most important event in the lifetime of a student is the college or university entry period (58). Usually full of emerging responsibilities marking the onset of adulthood. University life generally revolves around balancing important factors, such as academic performance, extracurricular activities, personal relationships, finances, and part-time work sometimes (74).

These defining features of university and college life require flexibility and the achievement of an optimal balance between work and life so that the daily stress exerted by escalating demands and expectations can be dealt with effectively (33). Unfortunately, the period of student life is all too often characterized by common mental health problems such as anxiety, depression, eating disorders, and sleeping disorders, among others (81).

Anxiety and depression are among the most frequent psychiatric conditions among university students worldwide. Today, they have reached the stage whereby recent research suggests that one in three students' experiences severe symptoms of either anxiety or depression (89).

Anxiety is typically characterized by excessive, unwarranted worry and heightened fears (75), while depression is typically marked by feeling unrelentingly sad and unmotivated (23). Both have

been evidenced to cause significant disturbances in a student's academics, social life, and well-being (37). These represent some of the comorbid mental health issues that can also be responsible for added onsets of poor academic performance, social isolation, and a reduced quality of life (51). Research carried out in many countries has been able to establish that the percentage of students suffering from anxiety and depression is on the increase (31).

In students at the university level, depression and anxiety have considerable impacts on early adult development during the college years (50), disruption in daily life, poor emotional experiences, poor academic performance, insomnia, dropping out of school, and even suicidal tendencies (37). These conditions form a critical pillar for future economic and social development. Identifying factors that predict anxiety and depression in university students to support prevention and treatment efforts. (20).

It is worth mentioning that quality of life is a multidimensional concept that generally refers to aspects related to an individual's well-being and that comprehend physical health, psychological state, and level of independence, social relationships, personal beliefs, and their relationship to salient features of the environment (85). According to the WHO, QoL is defined as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns" (90).

Quality of life is a comprehensive concept encompassing social, psychological, physical, and environmental aspects (85), serving as a fundamental indicator of university students' overall well-being. Research consistently shows that university students reporting higher levels of anxiety and depression score significantly poorer on QoL across a range of areas, including academic satisfaction, social relationships, and physical health (48). Whereas sadness may lead to social disengagement and a reduced motivation to pursue goals in academic and personal life, anxiety tends to cause more fatigue and sleep disturbances (44). In improving students' QoL, which is closely related to their academic performance and outlook, the mentioned mental health issues should be addressed. While these are big challenges, overcoming them can bring good results, since this is very important for general well-being (48).

While much research has investigated the relationship between university students' mental health and quality of life (69), few have examined the independent predictive roles that anxiety and depression play regarding QoL. Many make those adjustments simultaneously, rejecting the ways in which they may have unique implications for different aspects of students' lives. Understanding the distinct contributions of anxiety and depression enables us to assess their specific impacts on quality of life, paving the way for tailored interventions that address the unique challenges posed by each condition. This distinction is crucial, as anxiety and depression can differently influence students' academic performance, social connections, and overall satisfaction with university life (the researcher).

1.1. Problem Statement

Globally, anxiety and depression are among the most common mental health disorders, affecting an estimated 264 million for anxiety and 280 million people for depression, respectively (WHO, 2023). In Saudi Arabia, findings from the Saudi National Mental Health Survey (SNMHS), conducted between 2014 and 2016 as part of the WHO's World Mental Health Survey Initiative, revealed that 34% of Saudi citizens aged 15-65 reported experiencing at least one mental disorder in their lifetime, with 24.7% reporting a mental disorder within 2021. Anxiety disorders were the most frequently reported, with a 12-month prevalence of 13.1%, followed by mood disorders (9.3%), impulse-control disorders (4.0%), and substance use disorders (1.4%). Many of these disorders begin during childhood or adolescence, underscoring the need for early detection and intervention (WHO, 2022).

University students fall into the most vulnerable age demographic bracket for both anxiety and depression, presenting unique academic and social pressures that can compromise their QoL (25). These conditions are highly prevalent while having a significant treatment gap, given that only a minority receive care. There is also a general lack of knowledge about the relative contributions of

anxiety and depression to QoL outcomes in the academic setting (36). Current research does not provide enough information on which one of those conditions has a bigger negative impact on QoL; hence, universities are not able to prioritize one over the other in their mental health initiatives (51).

This study examined the specific roles of anxiety and depression in predicting quality of life (QoL) among Alfaisal University students. By identifying the mental health factor that serves as a stronger predictor of QoL, the findings informed the development of targeted interventions and resources to enhance students' academic experiences and overall well-being. To establish a supportive learning environment aiming at reinforcing mental health and quality of life, this gap in research needs urgent filling (62). So, to fill the gap, the study answered the following questions:

- To what extent do anxiety and depression contribute to predicting quality of life among students?
- Which of the two factors, anxiety or depression, has a more significant effect on the quality of life of Alfaisal University students?
- What are the differences in the impact of anxiety and depression on the quality of life of university students across demographic variables (gender and academic level)?

1.2. The Hypothesis

- H1: There is a correlation between anxiety and quality of life among university students.
- H2: There is a correlation between depression and quality of life among Alfaisal University students.
- H3: There is a correlation between the impact of anxiety and depression on the quality of life of university students across demographic variables (gender and academic level).

1.3. Objective:

The primary objective of this study is to explore the relative contribution of anxiety and depression in predicting quality of life among Alfaisal University students. By identifying which of the two conditions exerts the stronger influence on quality of life, this study offered targeted interventions and support services that would serve to strengthen students' academic experiences and overall lives.

1.4. Significance

This study aids in understanding the different effects of anxiety and depression on the quality of life among university students. Identifying which condition is the stronger predictor of the various aspects of students' well-being will help shape the nature of tailored mental health programs and interventions. This will enable institutes to understand the students' needs and introduce a healthy and productive learning environment, which will be conducive to better achievement of academic success and personal growth.

2. Literature Review

Daily activities and individual attitudes depend much on their psychic condition. An important question about the state of health is the criterion of whether students ask or not. The growth in anxiety and depression is reported among university students; the negative influence on their lives is not ignored. Anxiety and depression are the two major mental health issues that directly relate to the students' lives concerning academic performance, social interaction, and personal relationships. These may reduce progress, prevent social interactions, and further exacerbate anxiety and depression, creating a vicious circle.

The consequence may be lower achievement and a negative impact on the level of students' confidence and motivation. Understanding the relationship between mental health and academic performance itself is vital; poor research can only inform colleges and individuals who may confront these challenges. This interlink must be researched. It also explains how anxiety and depression

influence the experiences and choices made by students. This research is conducted to identify the specific difficulties that Alfaisal University students face. Why this approach? Because the findings have to give supportive programs and resources to improve mental health and well-being among students (50).

2.1. Anxiety

2.1.1. Definition of Anxiety

Anxiety is a mental disorder characterized by excessive fear, worry, or unease. It represents one of the most common psychiatric conditions and generally shares a common comorbidity with major depression in internalizing disorders. Anxiety disorders have generally included alterations in prefrontal-limbic neural circuits that are engaged in emotion regulation. The origin of anxiety disorders is usually associated with genetic predisposition, early-life adversity, stress, and environmental factors. Most anxiety disorders start in preadolescence or adolescence and tend to antedate the development of major depression (42).

Moreover, anxiety disorders tend to have their origins during preadolescence or adolescence and presage major depressive disorders in a large number of cases. Childhood traits, such as extreme anxious temperament or behavioral inhibition, have been found to strongly increase risk for the development of anxiety disorders and subsequent depression (30).

Anxiety disorders are divided into a number of disorders, including generalized anxiety disorder, panic disorder, social anxiety disorder, and specific phobias. The general characteristic symptoms of generalized anxiety disorder are excessive and uncontrollable worry across various aspects of life, even without a clear cause (84).

Additionally, anxiety disorders are symptoms that can be mental and bodily. People are sometimes mentally distraught, cannot focus on something, or fear defeat. Anxiety may exhibit physical manifestations such as a racing heart, sweating, trembling, and stomach problems. These symptoms are combined into issues that get in the way of living, such as relationships, work, and quality of life (82).

Anxiety can also be depicted as a condition of the psyche that has to do with the feelings of one being worried, apprehensive, and fearful because of some anticipated events or uncertainty. It can occur in different ways, from an overall feeling of nervousness or fear to more serious conditions like generalized anxiety disorder, social anxiety, and panic disorder, among others (9).

People tend to overestimate any threats they perceive in their environment. Anxiety is the condition of apprehension, different from stress, and is caused by the habit of enhancing perceived risks. The fear of imminent danger and harm, real or imaginary, induces anxiety in a person. While stress usually is caused by specific demands or pressures in life, such as pressing deadlines at work or significant changes in life, anxiety may be present without an identifiable cause that precipitates the condition (73).

The difference affects the way of treatment of one's emotions and responses. The very feeling of fear makes one imagine the worst scenario.' Such a spiraling of thoughts makes one feel more fearful and concerned. The threats used within such a condition may be extended and bring their impact to real life. Rather, stress is an opportunity for action that may lead to productive outcomes in response to actual challenges. Then, stressors can create anxiety and affect one's mental health in a great way. Why? Distinguishing both of these responses will therefore be essential in addressing emotional health and finding appropriate coping strategies (38).

So, being human includes a wide array of emotions, which greatly help in the responses that a human being makes to events and situations. However, when these emotions get too strong and start influencing day-to-day activities, then something is seriously wrong. When this influence is there, then it affects life on the whole, especially in relationships, performance at work, and life generally. When emotions disrupt judgment or heighten stress, the ability to function effectively may be compromised. For example, individuals who feel sad, anxious, or angry may find their productivity

and concentration decreased. These feelings could also strain social relationships, making connecting and maintaining interactions with others difficult. It is important to recognize it and take adequate pain to the coping strategies when the emotions become overwhelming or start striking one's routine life. While it has to do with being human, their interference with routines and functioning sometimes carries a challenge that has not so easily been curbed (13).

2.1.2. Symptoms of Anxiety

Anxiety can be said to be mainly physical or cognitive in nature depending on the person and the condition. The manifestations of physical turmoil are rapid heartbeat, sweating, trembling, lightheadedness, and inability to breathe properly. In some instances, anxiety can stimulate a "fight or flight" response, with its resultant muscular tension and headache as well as gastrointestinal disturbances (53).

In contrast, negative thinking, constant worry, and difficulty concentrating are cognitive symptoms. These thoughts can be catastrophic or destructive. People may become overly preoccupied with perceived risks, leading to irrational thinking and hypervigilance (56).

Furthermore, anxiety can be presented in a wide range of manifestations and may heavily affect one's life. Cognitive symptoms include rumination about problems, inability to focus, and overwhelming fear. Physical symptoms include palpitations, sweating or trembling, and tiredness. Sometimes anxiety can lead to panic attacks, whereupon sudden episodes of intense fear can be experienced along with physical symptoms such as chest pain or difficulty breathing (36).

2.1.3. Prevalence of Anxiety in University Students

Studies have indicated that a majority of the students from colleges and universities suffer from anxiety during college. For instance, in the United States alone, 32.2% of students showed moderate to severe anxiety levels (24). University can cause anxiety levels to rise due to academic pressure, social expectations, financial concerns, and other stressors (12). Additionally, anxiety often co-occurs with other forms of mental illness like depression (76).

Anxiety is most prevalent in university students. Studies have shown that high school grades, coupled with financial constraints and social pressures, in addition to the transition from adolescence to adulthood, make them more prone to anxiety. According to a study by ACHA, close to 63% of college students reported having overwhelming anxiety in the past year. This being the case, given the few studies compared to other countries in the Saudi context, it is thereby reasonable to assume that university students would further experience similar prevalence rates due to universal identified stressors in educational settings (64).

2.1.4. Theoretical Perspectives on Anxiety

Anxiety has been conceptualized using a number of theoretical models that explain its origin and perpetuation in different ways. Among them, the two most prominent models are the cognitive-behavioral model and biological perspectives. Cognitive-behavioral model: This model proposes that anxiety results from dysfunctional thinking patterns where an individual either overestimates any given threat or catastrophizes negative experiences (13). These cognitive distortions increase the chance of anxious reactions to everyday life. This model epitomizes how cognitive restructuring deals with the treatment of anxiety by overcoming irrational thoughts.

Biological theories propose that anxiety is caused by genetic predispositions, neurotransmitter imbalances, and abnormal brain structures (63). However, some biological models do not support this notion. Serotonin and GABA are two neurotransmitters that have been shown to play a significant role in regulating mood and anxiety (40). The regulation of mood is largely dependent on two chemicals. These chemicals are frequently connected to emotional state. Mood disorders have been studied through genetic studies. Studies have revealed that there is a significant correlation between family history and mental health problems. A family member with anxiety disorders is more

prone to experiencing anxiety independently. The inheritance of anxiety is influenced by genetic factors.'" A family history and the chemical presence may play a role in elevating the risk of anxiety disorders. By analyzing these correlations, it becomes apparent that mood control and mental health are complex processes (72).

Theoretical perspectives offer insight into the root cause of anxiety. In the biological perspective, genetic predisposition and neurochemical imbalances are emphasized. In the cognitive-behavioral perspective, anxiety is thought to be a result of maladaptive thinking patterns and behaviors. The sociocultural outlook posits that anxiety is caused by social and cultural factors, such as academic and social expectations. Every technique offers useful data regarding the emergence and persistence of anxiety, emphasizing its intricate nature and urgent need for multifaceted therapies (26).

2.1.5. Impact of Anxiety on Quality of Life

Anxiety is a psychological condition often characterized by excessive worry, fear, and tension. The impact of this disorder on the QoL is huge and involves physical condition and academic performance, social relationships, and emotions. Anxiety may be a big barrier to achieving goals in personal and professional life for university students.

This section discusses the physical, psychological, social, and academic aspects of anxiety-related QoL regarding university students.

2.1.6. Physical Health

Sleep disorders are one of the common physical symptoms of anxiety. Research has indeed established a strong link between anxiety disorders and insomnia, poor maintenance of sleep, and generally poor quality of sleep (39). Sleep anxiety associated with university and other life activities may contribute to deteriorated health conditions and low energy, which may result in poor performance among university students (92). Furthermore, physical symptoms of anxiety often correlate with emotional anguish as the individual becomes more and more fixated on their bodily features, leading to increased worry and fear-related behavior (32).

2.1.7. Academic Performance

Anxiety exerts a substantial influence on academic performance, particularly among university students who face intense academic pressures. The cognitive symptoms of anxiety, such as difficulty concentrating, memory impairments, and intrusive thoughts, interfere with effective learning and task completion (2). Due to these factors, student performance may suffer from poor grades, late deadlines, and reduced participation in school (46).

Test anxiety, a specific form of performance anxiety, is common among students and can significantly hinder academic performance. This type of anxiety is often triggered by physiological arousal, such as an increased heart rate and muscle tension, along with negative self-evaluation duᵣing exams (65). Furthermore, anxiety may result in procrastination and avoidance behaviors, where students delay completing assignments or skip classes to avoid stressful situations. These behaviors can exacerbate academic challenges and further impair performance (46).

2.1.8. Social Relationships

The disruption of social relationships is a significant aspect of QoL but is also affected by anxiety. Social anxiety disorder (SAD) is primarily caused by an intense fear of social situations and attention from others. Often this condition causes social withdrawal, loneliness, and difficulty in making meaningful friends (49). University students may experience social anxiety, which can interfere with their participation in group activities, extracurricular events, and networking opportunities, hindering their social and professional growth.

2.1.9. Emotional Well-Being

QoL is most directly affected by the emotional consequences of anxiety. To experience continuous worry, fear, and apprehension is related to anxiety disorders, which can lead to less happiness and satisfaction with life. Moreover, anxiety that causes a general feeling of uncertainty and control over one's life can lead to less self-efficacy and confidence (18).

Furthermore, anxiety experience leads to comorbid mental illness, like depression in severe conditions. In fact, research has confirmed that depression and anxiety are more likely to co-occur, increasing symptoms of ill emotional health (2020). As a result, university students are capable of experiencing significant impairment in the ability to attend to academic, social, and personal tasks. This, in turn, might be especially unfortunate.

Additionally, the negative labeling of anxiety can also impact a person's mood. In many cases, the majority of people, particularly in cultures that have plenty of stigma surrounding mental illnesses, feel embarrassed about what they have and do not want to come in for treatment. (19).

2.1.10. Coping Mechanisms and Resilience

While anxiety has a negative impact on QoL, the level of impact anxiety has is generally decided by the individual's coping mechanism and resilience. Emotional intelligence may be utilized to manage anxiety-based stress, and other adaptive coping mechanisms like problem-solving, social interaction with peers, or mindfulness practice may also buffer the effects on QoL (34). Participation in mindfulness or stress-reduction training can lead to improved cognitive functioning and lower anxiety levels among college students.

But avoidance (a chemical or biological agent is the preferred agent), use of drugs, and ruminating are some of the common unhealthy coping mechanisms that can cause worsening of anxiety-related QoL. Students who follow avoidance behaviors can get temporary reprieve but end up with severe repercussions (43). Creating mental health interventions and supportive environments is crucial to neutralizing the impact of anxiety on QoL.

2.1.11. Implications for Interventions

As anxiety is such a pervasive determinant of QoL, it is necessary to put focus on accurate measures to cover it entirely. Cognitive-behavioral therapy (CBT) is established as an effective treatment for anxiety disorders. By examining negative thought patterns, CBT can enable better self-management and increased resilience in patients (34). The implementation of CBT in campus mental health care can offer college students accessible and handy care for anxiety management.

Mindfulness-based interventions were effective in anxiety reduction and QoL improvement. Meditation and yoga, among others, can enable individuals to cultivate a greater level of awareness and acceptance of their feelings and thoughts (93). Evidence indicates that MBIs can be beneficial for anxious university students since they manage their emotions, reduce stress, and improve general health (91).

At the macro level, universities have a part to play in minimizing the impact of anxiety on the quality of life for students. These environments comprise supportive environments, awareness, and resources for mental health, like counseling services or stress management workshops. Also, education and promotion of mental health issues may lead to students' greater inclination to seek help for their own well-being (94).

Such anxiety can have extremely deep impacts throughout a broad spectrum of one's life, especially in the case of university students who are under the burden of very high academic stress and social pressure. The general physical health of individuals with chronic anxiety is generally found to be linked to a broad spectrum of medical conditions, including hypertension, insomnia, and gastrointestinal problems (17).

Moreover, repeated activation of the stress response may worsen such medical conditions and negatively impact quality of life. Among the cognitive functions that are negatively impacted by anxiety are decision-making, concentration, and memory, with poor performance having the potential to lead to poor academic performance. Anxious learners may fail to complete tasks or

perform badly on tests, leading to deteriorating academic performance (70). Beyond academic challenges, anxiety can also have an impact on social interactions. What are the consequences? Social events and social interaction may be avoided because the person feels inferior or will be judged. Isolation can get progressively worse to have a detrimental effect on mental health and decrease quality of life further (61).

Overall, anxiety plays a major role in affecting QoL, resulting in negative effects on social, physical, and emotional functioning. The incidence of over-anxiety will bar one from carrying out academic activities, attending social activities, and going into avoidance behaviors that render them solitary. Anxiety may be long-standing and also somatic and a cause of hypertension and gastrointestinal conditions. It will emotionally result in lower satisfaction and contentment, eventually leading to a lower quality of life. Unaddressed anxiety may be injurious to students at the university, compromising their career and education future, therefore requiring intervention and treatment in an early manner (87).

2.2. Depression

2.2.1. Definition of Depression

Anxiety, hopelessness, and a lack of interest or enjoyment in activities are typical symptoms associated with depression. Sleep pattern changes, appetite loss, and energy levels are among the other symptoms that depression is frequently associated with, as stated in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (86).

Major depressive disorder and persistent depressive disorder (dysthymia) are two types of it, with major depression being the most extreme. A common and serious medical condition is depression, which affects how you feel, think, and act. Those with major depressive disorder (MDD) often experience sadness and loss of interest in activities. This condition causes depression (21).

2.2.2. Symptoms of Depression

Individuals with depression frequently exhibit a wide range of emotional symptoms. The most frequent feelings are depression, irritation, and guilt, as well as feeling hopeless. The intensity of these emotions can be intense and endure for some time. Many people describe an almost constant feeling of emptiness that doesn't seem to be lifted. Why? The absence of interest in activities that once brought happiness can be accompanied by this feeling. Daily tasks that are simple can feel like work, and relationships with others tend to become tense. Emotional stress can also cause concentration issues and difficulty in decision-making (13).

Furthermore, depression symptoms can have a profound impact on an individual's daily life and social interactions. The occurrence of social withdrawal is frequent. Distracted attention from friends, family, and social activities may result. This is often due to isolation, which can be caused by feelings of sadness and hopelessness or a lack of energy, making socializing overwhelming. An additional noticeable alteration is the decline in activity. It can be hard for people to maintain their regular activities or hobbies. Activities that once brought happiness or a sense of satisfaction can now seem unattainable. Consequently, the individual may spend more time sleeping or engaging in sedentary activities, which can lead to increased lethargy. Depression can also have a negative impact on personal responsibility. Work, household tasks, or personal care can be overlooked. An inability to meet demands or fulfill tasks can lead directly to neglect. With the passage of time, these behavioral changes can lead to an increase in guilt or inadequate behavior and perpetuate a cycle that intensifies depression (47).

Moreover, depression is characterized by physical symptoms such as fatigue, sleep disturbances, changes in appetite, and unexplained physical pain. These symptoms can significantly impact daily life, causing decreased productivity and quality of life. Sleep disturbances can be a result of insomnia or irregular sleep patterns, while changes in appetite can lead to weight loss or gain. Physical pain, such as headaches, muscle pain, or joint discomfort, can also contribute to the emotional burden of

depression. Understanding these physical manifestations is crucial for understanding the impact of depression on one's health (15).

Finally, a change in functioning is observed in depression, which manifests as a continuous pattern of symptoms that persist for at least two weeks. Symptoms may manifest as ongoing feelings of sadness, hopelessness, tiredness, changes in appetite and weight, loss of interest in most activities, sleep disturbances, and thoughts of suicide or death (55).

2.2.3. Prevalence of Depression in University Students

University students are at risk of developing depression in the majority of regions. In certain research, it has been reported that almost 30% of university students were significantly affected by depression. Academic success, social integration, economic stress, and identity formation are determinants contributing to the high prevalence (16).

2.2.4. Theoretical Perspectives on Depression

Theories of depression have been established. Some of the central positions are cognitive theories, such as those of Aaron Beck, which focus on negative thought content, such as cognitive distortions and automatic thoughts that trigger depression by gradually emerging and persisting (13). They are self-blame and hopelessness oriented and lead to bad thinking about oneself and the future. Depression is caused by environmental and biological factors responsible for explaining depression in terms of portrayal of neurotransmitter imbalance and neurostructural changes, according to several biological hypotheses (14). Multiple environmental influences like trauma, stress, and family history contribute to the etiology of depressive disorders.

Furthermore, the psychological theories are able to explain the etiology of depression. Freud's psychodynamic theory hypothesizes depression arises due to perceived loss and unconsciously unresolved issues. Aaron Beck's cognitive theory assumes that depression is brought about by pessimistic thoughts and ideas regarding oneself, the world, and the future. While biology school emphasizes genetic susceptibility and neurochemical imbalance as etiologies, the sociocultural perspective is interested in the role played by social factors and cultural context. Both schools emphasize the heterogeneity of depression's impact, necessitating an array of treatment approaches (27).

2.2.5. Beck's Cognitive Theory of Depression

Beck's Cognitive Theory of Depression is one of the most influential psychological models applied in the explanation of the development and occurrence of depressive disorder. Beck advanced that depression is primarily caused by pessimistic and distorted thinking processes. Based on this theory, depressed individuals tend to interpret experience in a dysfunctional and pessimistic fashion and, in the process, gain extended emotional suffering. This psychological susceptibility is believed to be established early in life through aversive experiences such as rejection or loss and subsequently triggered in adulthood through stress or failure (13).

The cognitive triangle of automatic negative self-thoughts about oneself, the world, and the future is another principle of Beck's theory. This automatic negative believing fuels depressed symptoms and supports their development and maintenance. "I am worthless" (self), "The world is unfair" (world), and "Nothing will ever get better" (future) are among the things that one may say to oneself. These negative automatic thoughts are a part of a negative cycle that makes people feel depressed all the time. Beck argues that these cognitive distortions lead to depression as well as to its recurrence and onset (18).

Beck has listed some cognitive distortions that depressed people share beyond the cognitive triad. They include personalizing, all-or-nothing thinking, catastrophizing, and overgeneralization. Such fallacies lead people to interpret the world negatively, which increases their level of melancholy. Cognitive behavioral therapy (CBT), a popular and evidence-based treatment for depression, was

implemented as a direct result of Beck's emphasis on the central aspect of recognizing and opposing such defective cognitive processes in therapy. Beck's cognitive theory has always been supported by empirical evidence. (13).

Research has demonstrated that depressed patients in comparison to non-depressed controls tend to show maladaptive schemas, pessimistic attitudes, and automatic negative thoughts. There is also a clear correlation with improvement in treatment and change in these thought patterns. The correlation has also been of significant relevance in the development of early intervention approaches and psychoeducational interventions aimed at delaying the onset of depression, particularly in high-risk individuals and adolescents (98).

2.2.6. Impact of Depression on Quality of Life

Depression has a great bearing on many aspects of one's life, having long-term consequences on the body and mind. The consequences are multifaceted. Depression greatly affects psychological well-being, resulting in sadness, hopelessness, and low confidence. That is, it can be detrimental. Such affective states directly influence a person's ability to feel positive emotions, leading to a decline in their overall life quality (22). Withdrawal and social isolation are typical symptoms of depression. How best can this be addressed? Because of the circular relationship between loneliness and depression, it creates a decline in social relationships that can be damaging to one's general health (47).

Heightened concentration, memory retrieval, and motivation are a few of the cognitive processes 'depression can affect. Academic motivation and frustration are typical among depressed university students (10). Depression significantly impacts the quality of life of a person. It impinges on mental functioning, physical health, and social relationships, resulting in withdrawal and decreased engagement in life. The risk of chronic disease development is increased since depression exacerbates the physical health crisis. Depression among students can have severe implications for their performance, motivation, and future. Depression can create a cycle of inactivity and psychological harm since it makes an individual feel worthless and without self-esteem.

2.3. Quality of Life (QoL)

2.3.1. Definition of Quality of Life

The quality of life (QoL) of the individual encompasses a range of dimensions such as physical, psychological, social, and environmental health. The World Health Organization (WHO) defines QoL as the personal perception of the individual of his or her place in life, which is influenced by culture and values (29). This definition highlights that QoL is an individual one, where people assess their quality of life in terms of what they feel as well as what society admires as norms and values (88).

QoL is an extremely broad and multi-dimensional concept that typically consists of subjective ratings of favorable and unfavorable characteristics. This perspective is termed Quality of Life (QoS). It includes physical health, mental well-being, autonomy, social relationships, and personalities.

Etiology of QoL is not a single factor but a sum of various domains. Physical domains involve both physical function and symptom management. Psychological domains involve emotional, cognitive, and self-conceptual domains. Social domains involve relationships, social support programs, and community activities. Environmental factors involve financial stability, living conditions, availability of services, and opportunities for personal growth and recreation. All of these influence the quality and amount of life after that. QoL has been described by the WHO as the way in which people perceive their condition in life within the culture and values that circumscribe their lives, as well as relative to goals, expectations (i.e., goal-state targets) set, norms, and concerns (29).

2.3.2. Dimensions of Quality of Life in University Students

University students' quality of life (QoL) is measured in terms of physical health, psychological state, social relationships, and environmental domains (67).

1. Somatic Health: Maximum physical health, which is free from long-term disease and is able to sustain energy and fitness levels, improves the quality of life among students. Research has revealed that individuals with normal body weight and moderate physical activity have high physical health quality of life scores.
2. Psychological Well-being and Mental Happiness: Happiness, emotional stability, and resilience are all significant factors of psychological well-being that contribute to the quality of life. Better self-esteem and satisfaction with school have a positive correlation with improved psychological well-being among university students.
3. Social relations: Positive interactions with peers and family play an important role in improving quality of life among students. Negative relations and loneliness reduce well-being, however. Scientific evidence confirms that high ratings for the social interactions category are correlated with improved quality of life in students.
4. Environmental Factors: The quality of the learning environment, which involves accommodation, economic status, and access to learning resources, determines the students' experience and quality of life. An accommodative and resourceful environment enhances students' overall quality of life.

By and large, student quality of life at universities fluctuates and encompasses physical health, psychological functioning, social functioning, and environment. Support and services aimed at such areas can accelerate children's scholarly and personal achievement.

2.3.3. Factors Influencing QoL in University Students

University students' quality of life (QoL) is determined by various factors, including mental well-being, university workload, friendships, poverty, and the support provided by the university. University life is predominantly stressful because students have to adapt to added academic pressure, social interaction, and living on their own. Further academic pressure and financial problems may exacerbate stress during the adjustment phase, with implications for the overall well-being of the students. Positive peer relationships, availability of mental health services, and high-quality institutional support all work to counteract such problems and promote improved quality of life in the students. Mental health also affects the lives of students. Anxiety, depression, and inner conflict can significantly influence academic performance, social relationships, and general health. Scientific studies have shown that undiagnosed mental disorders among college students are common, resulting in increased stress and reduced life satisfaction. Research indicates that adolescents with mental illnesses are lacking in concentration, motivation, and time management, eventually influencing academic performance [54]. Student workload is among the factors of quality of life for students in higher education levels.

Stress, burnout, and sleep loss may be a consequence of exam stress, homework, and expectations of quality academic performance. Excessive workload at college has been proven through research to be the reason behind massive psychological distress in students with weaker coping skills and time management. A published study in Frontiers in Psychology showed that students who were experiencing extreme academic pressure had high stress levels, which negatively affected their general mental health [12].

Friendships also make excellent predictions of children's well-being. Positive social relationships with family, peers, and friends offer a channel for emotional support, reduced loneliness, and contentment with university life. Negative mental health status, including depression and anxiety, is caused by social isolation and negative social relationships. In a recent survey, students with positive social support indicated increased happiness with life and increased academic involvement compared to their isolated peers [80].

Financial hardships are one of the most fundamental needs that affect the lives of students. They encompass living costs, school fees, and housing, which are some of the costs that impose financial burdens on students and cause stress and poor performance. Most students strain to study and work

part-time jobs, which also adds to the levels of stress. Financial struggle has been demonstrated to lead directly to mental illness, and that contributes to poor grades and general health (12).

Institutional support in the form of mental health services, educational advising, and scholarship programs plays an important role in enhancing students' quality of life. Such institutions that have counseling services, stress management services, and well-being centers support students in transcending problems experienced in their academics. Availability of educational assistance and scholarships can work significantly in reducing stress and enhancing the study involvement of students. Studies have indicated that student support services at high-level institutions have greater student retention and enhanced academic success (41).

College students' quality of life is characterized by a combination of mental well-being, academic load, social life, economic condition, and facilities on campus. Alterations in these aspects through institutional support systems and student-centered programs are the most important aspects in creating a healthier and productive college life. Through enhanced mental well-being, alleviated academic pressure, formation of social relationships, and acquisition of economic security, colleges can indeed have a significant influence on the overall quality of life of students.

2.3.4. Relationship between Mental Health and QoL

Excessive depression and anxiety negatively impact the quality of life (QoL) of university students, leading to poor academic performance, social withdrawal, and isolation. These conditions can potentially interfere with concentration, lower motivation, and hinder the capacity to form a feeling of close relationships, resulting in an endless cycle of dissatisfaction that needs appropriate interventions. Studies have revealed that students who have higher scores of depression, anxiety, and stress tend to have lower degrees of life satisfaction, which then affects their academic and social adjustment (57).

Moreover, early intervention and counseling services play an important role in the management of these mental health problems among students. School-based mental health interventions have been proven to improve mental health outcomes, academic achievement, and social relationships. Research has indicated that these programs can dramatically decrease symptoms of depression and anxiety, leading to improved student well-being and academic performance (78).

Furthermore, the relationship between QoL and mental health is evident since good mental health enables students to manage life challenges, maintain effective relationships, and achieve academic and personal goals. Conversely, poor mental health worsens QoL by inducing less social contact, physical deterioration, and lesser functioning in activities of daily life. Issues related to mental illnesses treated through intervention and counseling are not only advantageous for individual pupils but also for building a broader classroom through nurturing resilience and school development within school communities (77).

2.4. Saudi University Students: Anxiety, Depression, and QoL

2.4.1. Mental Health Challenges among Saudi University Students

Anxiety and depression are two of the most prevalent mental illnesses among university students globally, and Saudi Arabia is no exception. Saudi university students have some shared problems that can exacerbate mental illness. For instance, academic pressure such as exams, assignments, and the need to get good grades can cause depression and anxiety. Research with first-year students at King Abdulaziz University found elevated depression (80.4%), anxiety (71.8%), and stress (69.3%), revealing the powerful impact of academic pressures on student wellness (3).

Moreover, Saudi university students also tend to confront both cultural and social problems that are causative of their distress. Specifically, cultural expectations regarding academic achievement, family honor, and gender roles have been linked to increased stress, which can lead to anxiety and depression as well. One study of stress among Saudi students identified academic competition, pressure of family expectations, and adaptation to new social environments as major stressors (68).

Moreover, the mental health stigma in Saudi Arabia discourages individuals from seeking help from professionals, leading to unmet mental health needs. A scoping review on the mental health stigma in Saudi Arabia determined that social stigma is a significant hindrance to mental health service access and also influences the type of care individuals receive (1). Therefore, the majority of students are embarrassed or scared to confess their mental illness, and this stigma continues, not enabling them to undergo therapy.

Moreover, the cultural stigma of mental illness as a failing or personal weakness also dissuades students from expressing their concerns. Such reticence can worsen their conditions and make them experience more intense symptoms of depression and anxiety. These hidden struggles, meanwhile, negatively affect academic performance and well-being. Research shows that silence regarding mental health issues eventually harms individuals and society and that it is critical to question such cultural beliefs and promote open talk and support groups (1).

Finally, Saudi university students have special mental health problems due to academic pressure, social pressures, and cultural expectations. Excessive academic pressure and poor mental health awareness put the students at greater risk of depression and anxiety. In addition, the transition from a family setting to an independent university setting can be stressful, affecting students' mental health and quality of life. In response to these concerns, universities need to place center stage mental health awareness campaigns, readily available counseling services, and culturally responsive interventions that promote student well-being.

2.4.2. The Interplay between Anxiety, Depression, and QoL in Saudi Students

Anxiety and stress have also been found to have a serious impact on QoL for Saudi university students. These are psychological problems that affect various aspects of their life, including their studies, relationships, and mood. Failure at school is most commonly linked to anxiety and depression for Saudi students. Psychological pressures like anxiety and depression affect patterns of thinking, concentration, and memory. These are widely underrated in such studies (8). Fewer social contacts and social isolation among Saudi students are a result of mental illness problems.

Moreover, low social contacts or social isolation will contribute to a low quality of life, considering the influence of society and family in Saudi Arabia (5). Sad and fearful Saudi students experience heightened emotional pain, influencing their happiness and welfare negatively. This explains why student prevalence of reporting being hopeless, helpless, and unsatisfied with life is high (11).

Furthermore, the interconnection between depression, anxiety, and QoL is particularly important among Saudi university students. Why? The interference of daily functioning by heightened levels of anxiety can have a detrimental impact on learning and social interaction, and thus quality of life is lost. Depression also results in a loss of QoL by causing hopelessness and a reduced activity level of life. For improved QoL in students, depression and anxiety need to be treated concurrently because of the synergistic effect of the two disorders.

2.4.3. Cultural and Societal Factors in Saudi Arabia

The mental health experiences of university students in Saudi Arabia are largely determined by their cultural and societal background. To begin with, societal and cultural factors: achievement and family togetherness in Saudi Arabia are highly valued, which results in high scholarly and social expectations placed on students. Increased stress, anxiety, and depression can result from pressure on students to satisfy such expectations. The study of gender differences in the impact of childhood traumatic experience in Saudi Arabia demonstrates how social and family expectations differentially affect mental health status for women and men (6).

Moreover, gender-specific issues: Saudi women are at risk of some of the issues in managing academic ambitions and gender roles and hence their susceptibility to psychological afflictions. It has been proved that Saudi Arabian women can report higher levels of psychological distress in the event of crises such as the COVID-19 pandemic. A psychological distress study of Saudi women during the

epidemic reported that 44% were experiencing distress, with women and younger women and female health workers being particularly at risk (66).

Additionally, cultural stigma within Saudi society around mental illness keeps individuals from receiving professional assistance, and, as a result, there are untreated mental illnesses. Research on Saudi Arabian barriers to mental health service access determined public stigma, lack of knowledge, and insufficient availability of services as the primary barriers to seeking help (5).

2.4.4. Importance of Addressing Mental Health in Saudi Universities

Because of the global burden of depression and anxiety on students' QoL, academic achievement, and social functioning, Saudi universities' mental health is also critical. Mental health programs have been added by some of the Saudi Arabian universities to increase awareness and reduce stigma and improve access to services for students. Existing mental illness programs: These include services such as counseling, peer support groups, and mental health student workshops. The programs seek to decrease stigma, offer psychological support, and enhance awareness (45).

The experts recommend the bolstering of mental health services, increasing access to counseling, and developing peer support programs that have the capacity to provide emotional support to students (1). Colleges are also asked to develop policies involving mental health care as an integral aspect of the overall student experience, appreciating its impact on learning and all-around well-being.

To enhance the well-being of better students, Saudi universities are compelled to deal with mental illness. Mental health provision, stigma awareness reduction programs, and a student-supportive academic environment are all critical measures. Universities must place priority on access to mental health by establishing counseling centers, peer advising programs, and stress management workshops. Encouraging open conversation about mental health can reduce stigma and build a more positive campus culture that promotes students' healthy feelings of respect and support.

2.4.5. Summary of the Research Gap

Research on the impact of anxiety and depression on quality of life (QoL) in Saudi Arabia has been lacking. Existing research has overlooked, to a great extent, the ways in which these mental states affect students in the Saudi Arabian context. This gap in literature is a problem since an understanding of the implications of anxiety and depression is essential in planning effective interventions.

More importantly, there should be studies on how these conditions impact various aspects of life, such as academic performance, social performance, and mood. Depressed and anxious students tend to be poor learners in school, with low marks and a lack of interest in schoolwork. Such students may also have their interpersonal relationships affected because individuals who are depressed or anxious withdraw from family and friends due to feelings of fear or sadness.

The psychological weight of these disorders also impacts the general QoL of students. Excessive anxiety may discourage them from going out to events or activities, whereas depression reduces their interest and enthusiasm in life. From these arguments, it is evident that additional research must be conducted to determine the level to which anxiety and depression impact Saudi Arabian students' lives. It is comprehending this connection that can guide policymakers, educators, and mental health practitioners on how to address the mental health needs of students. This research is vital in creating healthier learning environments and improving the overall well-being of students in the area (52).

2.4.6. Need for Culturally Adapted Mental Health Interventions in Saudi Universities

Mental challenges that Saudi Arabian students must deal with are not common. Cultural and societal influences are crucial to their well-being. Cultural values are respected and appropriate for the mental health interventions required due to these influences. These factors must be considered in university contexts, where students may encounter academic and social pressures.

Such students frequently experience stigma while addressing mental health issues. Their inability to seek help or acknowledge their difficulties can be attributed to the negative stigma. Saudi universities must implement culturally sensitive mental health interventions to address this issue. Such programs should therefore be tailored to the unique Saudi culture.

The perception of mental health in society should be considered when implementing interventions that are culturally sensitive. The comprehension of traditional beliefs and practices concerning health is part of it. Open dialogue on mental health is crucial to universities. Why? The staff that will have to undergo training is the one that can tackle the students' personalized needs. Through this training program, the staff will be better equipped to assist their students who might face mental challenges (7).

The school is able to bridge the cultural gap with the use of specially designed strategies. It can assist in the identification and comprehension of mental health issues. The students are free to approach for assistance without any judgment. Moreover, ultimately, even though that plan is culturally designed, it will improve the mental health facilities for the Saudi Arabian students and improve their outcomes.

2.4.7. Importance of Addressing University-Specific Challenges in Saudi Arabia

It is the responsibility of universities to recognize and work towards the numerous sources of stress impacting students.' Is educational stress a common cause? Too many students are stressed about their assignments and grades. This type of stress can create anxiety and other psychological problems. The importance of peer relationships extends beyond educational stress to other parts of life for students. It can be a daunting experience to establish and maintain friendships. Loneliness, bullying, and social anxiety can prove too much for most students. It is probable that their academic and personal lives could be affected by their friendships. Personal life issues also shape the demands of student mental health. Family relationships, poverty, and adjusting to being away from home could be factors contributing to stress. Although every student has a unique situation, their own conditions determine mental health. Determination of such various problems is crucial. Mental health for students needs to be the aim of support frameworks within universities. This includes provision of counseling, mental health, and support groups (4).

Identification of Saudi Arabia university-specific issues is critical to improve students' quality of life. It entails the recognition of the particular pressures that Saudi students encounter, such as academic pressures, financial pressures, and cultural pressures. To combat these issues, universities must establish support mechanisms such as academic advisory programs, financial aid programs, and campus community programs. Better mental well-being and mental health within university environments are crucial to QoL and academic outcomes in students. Saudi university students may be aided with culturally adapted, university-focused interventions that address research requirements and foster academic well-being with an increased productive and satisfactory experience.

2.5. Conclusion

Depression and anxiety are the most significant predictors of lower quality of life among university students, particularly in Saudi Arabia. Anxiety and depression are the causes of complications in most areas of a student's life. Issues that relate to students must be valued. A student's focus on studies may be disturbed by persistent worry, which is typically the cause of anxiety. Exams and other academic challenges may be affected by this worry. Group discussions or projects may be challenging for anxious students, which can disrupt their capacity to communicate with others.

Depressive attacks can lead to sadness, fatigue, and despair. Lack of motivation will make it difficult for students to attend class or complete coursework due to these feelings. In addition, the loneliness that results from depression can cause students to pull away from social gatherings and friends. Their mental illness can be compounded by loneliness. Effective interventions only come

with a correct understanding of theories that describe anxiety and depression.' These theories provide information about the prevalence and symptoms of such mental disorders. Information regarding the prevalence of anxiety and depression among students will aid universities in crafting helpful programs.

There is a need to understand the influence of these conditions on the student's learning as well as their social life. Mental well-being is in most instances directly influenced by academic success. The well-being of the student can interfere with their grade and academic achievement negatively. The student should enjoy good support from their environment since good relationship-building can be a way they manage their obstacles. An integrated approach is necessary in order to create successful interventions. Knowing the campus resources and encouraging mental health are crucial.

3. Study Procedures

3.1. Methodology:

The study adopted the quantitative descriptive approach, as it is appropriate for achieving the objectives of the study. This is one of the scientific methods commonly used in various research studies. It aims to collect facts and data about a specific phenomenon, then describe and analyze these facts and data in a precise and detailed manner in order to derive conclusions and reach specific generalizations about the studied phenomenon (97).

3.2. Population and Sample:

The study population consisted of 4,800 male and female students from Alfaisal University. The study sample included two sub-samples: a pilot sample, used to verify the psychometric properties (validity and reliability of the instruments), and the main study sample, used to test the study hypotheses, as follows:

1. **Pilot Sample:** The pilot sample consisted of 100 male and female students from Alfaisal University, selected randomly.
2. **Main Study Sample:** The main sample consisted of 360 male and female students from Alfaisal University, also selected randomly. The following table presents the characteristics of the study sample according to the gender variable.

It is evident from Table 1 that the number of male participants in the sample was 160, representing 55.6%, while the number of female .participants was 200, representing 44.4%.

Table 1. Characteristics of the study sample according to the gender variable

Variable	Category	Frequency	Percentage
Gender	Male	160	44.4%
	Female	200	55.6%

3.3. Inclusion Criteria:

- Students are currently enrolled at Alfaisal University in Riyadh.
- Those students who would voluntarily participate in the research and provide a written informed consent form.
- Symptoms of anxiety or depression that students have experienced or are currently experiencing should be included, regardless of severity, to capture a broad spectrum of mental health conditions within the sample.
- Students from different academic levels and faculties are included so that a wide representation of the university's student population will be ensured.

3.4. Exclusion criteria:

- All those students who are not currently enrolled at Alfaisal University.
- Students who are unable or shall refuse to give consent for the study or withdraw at any time during the process.
- Serious psychiatric problems other than anxiety and depression might also exclude students from participation since such problems may introduce variables other than what the study intends to focus on.
- Currently undergoing intensive therapy or treatment for psychiatric conditions that might affect the quality-of-life assessment or their response to the mental health measures.

3.5. Sample Size:

The sample size assessment was done via statistical power analysis to make sure this study was appropriately matched for the target population of students at Alfaisal University and has an adequate level of precision**.**

3.6. Data Collection

3.6.1. Anxiety Measurement:

Taylor Manifest Anxiety Scale TMAS

Anxiety Measurement: Taylor Manifest Anxiety Scale TMAS the Taylor Manifest Anxiety Scale is one of the earliest and most used self-report questionnaires developed to assess the severity of manifest anxiety symptoms. Developed in 1953, Janet Taylor developed the TMAS to measure overt or conscious anxiety, consequently emphasizing the emotional and physiological component of the condition.

The scale is a unidimensional scale consisting of 50 true-false items reflecting more observable manifestations of anxiety, such as restlessness, excess tension, worry, and fear. Scoring is in the form of 1 (true) and 0 (false); the higher the score, the greater the respondent's anxiety manifests. The higher the score, therefore, the greater the anxiety; hence, the severity of anxiety is quantified (83). So, for this research, the researcher used the Arabic version of the Taylor Manifest Anxiety Scale (TMAS). The Arabic version of the TMAS has been validated in various studies, ensuring its reliability and cultural appropriateness for assessing anxiety symptoms in Arabic-speaking populations. This scale addresses the emotional and physiological features of anxiety, allowing for a thorough evaluation of the participants' manifest anxiety levels.

Taylor Manifest Anxiety Scale (TMAS A)

I. Psychometric Properties of the Original Version
A. Reliability:
Internal Consistency: To assess the stability of anxiety scores over time, groups of individuals were retested using the scale after different time intervals. Results from retesting 59 individuals after three weeks yielded a Pearson correlation coefficient of 0.89, indicating strong temporal stability.
B. Validity:
1. **Construct Validity:** The scale demonstrated strong construct validity, as it correlated well with other recognized anxiety measures (such as physiological measures or clinical diagnoses).
2. **Predictive Validity:** The scale was found to predict anxiety-related behaviors, such as increased stress levels or certain psychological responses in clinical settings.
3. **Factorial Validity:** The original version contained 50 items grouped to assess anxiety symptoms. Factorial validity indicated a unidimensional construct of manifest anxiety, meaning the scale primarily measures one factor of anxiety.
II. Psychometric Properties of the Arabic Version (Aweida, 1995)

A   **Reliability**

In Table 2, reliability was calculated for both the patient group and the non-patient group, and then for the combined sample, using the split-half method. Pearson's correlation coefficient was calculated for raw values between the even-numbered and odd-numbered items, and the correlation coefficient was then corrected using the Spearman-Brown formula.

Table 1. Split-Half Reliability Coefficients for the Taylor Manifest Anxiety Scale.

Statement	Patient Group	Healthy Group	Total Sample
Sample size	180	60	240
Reliability Coefficient	0.82	0.79	0.81

B. Criterion Validity: The significance of differences between the patient group and the healthy group was determined, and the following table shows these differences.

Table 3 indicates that the scale can differentiate between anxiety patients and healthy individuals across various levels of anxiety severity.

Table 3. Comparison between the Patient Group and the Healthy Group.

Statement	Patients		Healthy		T	Significance
	Mean	SD	Mean	SD		
Mild Anxiety Group	18.25	1.13	11.58	3.66	13.38	0.001
Moderate Anxiety Group	23.57	1.66	11.58	3.66	22.92	0.001
Severe Anxiety Group	32.52	3.88	11.58	3.66	30.16	0.001
Total Sample	24.78	6.41	11.58	3.66	15.09	0.001

3.6.2. Psychometric Properties of the Anxiety Scale in the Current Study:

Internal Consistency Validity:

The correlation coefficient between each item score and the total score of the scale was calculated. Table 4 presents the correlation coefficients between the item scores and the total score of the scale.

Table 4. Correlation coefficients between the item score and the total score on the Anxiety Scale (N = 100).

Item Number	Correlation Coefficient with the Total Score	Item Number	Correlation Coefficient with the Total Score
1.	0.634**	26.	0.659**
2.	0.721**	27.	0.741**
3.	0.693**	28.	0.708**
4.	0.708**	29.	0.618**
5.	0.645**	30.	0.688**
6.	0.736**	31.	0.603**
7.	0.611**	32.	0.712**
8.	0.649**	33.	0.666**
9.	0.729**	34.	0.735**
10.	0.682**	35.	0.709**
11.	0.652**	36.	0.662**
12.	0.743**	37.	0.737**
13.	0.613**	38.	0.627**
14.	0.705**	39.	0.699**
15.	0.668**	40.	0.642**
16.	0.714**	41.	0.704**
17.	0.628**	42.	0.610**

18.	0.738**	43.	0.667**
19.	0.685**	44.	0.739**
20.	0.702**	45.	0.689**
21.	0.717**	46.	0.653**
22.	0.676**	47.	0.721**
23.	0.634**	48.	0.675**
24.	0.601**	49.	0.745**
25.	0.726**	50.	0.624**

(**) = Correlation coefficients are significant at the 0.01 level.

It is observed from the results in Table (4) that the correlation coefficients between the items and the total score of the scale ranged from 0.601 to 0.745, all of which were statistically significant at the 0.01 level. This supports the internal consistency validity of the scale items.

Reliability:

The reliability of the scale was verified by calculating Cronbach's alpha coefficient for the entire scale in the case of deleting each individual item. Table (5) presents the Cronbach's alpha reliability coefficients for the overall scale when each item is removed.

Table 5. Cronbach's Alpha Coefficients for Overall Scale in Case of Deleting. Each Item from Scale (N = 100).

Item Number	Cronbach's Alpha	Item Number	Cronbach's Alpha
1.	0.743	26.	0.862
2.	0.858	27.	0.749
3.	0.721	28.	0.731
4.	0.815	29.	0.791
5.	0.742	30.	0.826
6.	0.779	31.	0.727
7.	0.729	32.	0.799
8.	0.853	33.	0.850
9.	0.768	34.	0.712
10.	0.787	35.	0.837
11.	0.822	36.	0.779
12.	0.735	37.	0.823
13.	0.757	38.	0.752
14.	0.848	39.	0.829
15.	0.738	40.	0.744
16.	0.860	41.	0.719
17.	0.746	42.	0.833
18.	0.774	43.	0.761
19.	0.812	44.	0.756
20.	0.733	45.	0.740
21.	0.798	46.	0.824
22.	0.717	47.	0.773
23.	0.784	48.	0.749
24.	0.845	49.	0.810
25.	0.741	50.	0.830
Total			**0.825**

It is evident from Table (5) that the Cronbach's alpha reliability coefficients after deleting each item ranged between 0.712 and 0.862. This indicates that removing any individual item did not lead to an increase in the overall Cronbach's alpha coefficient of the scale. These results demonstrate that the scale is reliable and can be used with the study sample.

3.6.3. **Depression Measurement:**

Beck's Depression Inventory

The Beck Depression Inventory is a 1961 self-report questionnaire published by Dr. Aaron T. Beck and designed to measure the presence and severity of depressive symptoms. This is one of the best-known questionnaires used for assessing depression both clinically and in research. This inventory consists of 21 multiple-choice questions that evaluate several dimensions of depression, including mood, pessimism, and sense of failure, lack of satisfaction, guilt, self-dislike, suicidal thoughts, and physical symptoms such as fatigue and loss of appetite.

Answers indicate an increasing severity for each symptom, and each item is scored on a four-point scale, from 0 through 3. Scores therefore range from 0 to 63.

The scores can be interpreted as follows:

- 0–13: Not at all depressed.
- 14–19: Mild depression.
- 20–28: Moderately depressed.
- 29–63: Severe depression.

BDI is a very useful instrument to determine and measure the level of depression in varied populations, since it can analyze emotional and physical facets of depression. Good psychometric properties support its validity across a range from clinical to non-clinical populations. Revised and improved over time, the purpose is to enhance its accuracy and reliability. The BDI has played a very important role in both the initial assessments and the continuing treatment planning among depressive individuals, given that it has been used by mental health professionals to diagnose, follow, and research treatment outcomes (71).

For this research, the researcher used the Arabic version of the Beck Depression Inventory (BDI). The Arabic version of the BDI has been widely validated in both clinical and research contexts, making it a reliable tool for measuring symptoms of depression in Arabic-speaking populations. This inventory encompasses the emotional, behavioral, and physiological aspects of depression, enabling a comprehensive understanding of the depressive state of each participant.

Psychometric Properties of the Foreign Version

A. Reliability of the Scale:
1. Reliability of Psychiatric Evaluations:

Agreement between psychiatrists regarding the major diagnostic categories (psychotic disorder, neurotic disorder, and personality disorder) was 73% in 100 cases reviewed by two psychiatrists. The level of agreement was much higher in the evaluation of "depression severity." Using a 4-point scale (none, mild, moderate, severe) to determine depression severity, the psychiatrists showed the following agreement rates:

- Perfect agreement: 56%
- One-point difference: 41%
- Two-point difference: 2%
- Three-point difference: 1%

This indicates an agreement within one point on the 4-point scale in 97% of cases.

2. Internal Consistency Reliability:

Protocols for 200 consecutive cases were analyzed. The scores for each of the 21 items were compared to the total depression score for each individual. Using the nonparametric Kruskal-Wallis test, it was found that all items showed a significant correlation with the total depression score. The level of significance was less than 0.001 for all categories except the "weight loss" item, which was significant at the 0.01 level.

3. Split-Half Reliability:

A sample of 97 cases was selected for this analysis. Pearson's correlation was calculated between individual and paired items, resulting in a reliability coefficient of 0.86. Using the Spearman-Brown correction, this coefficient increased to 0.93.

B. Validity of the Scale:

- Averages and standard deviations for each category of depression (none, mild, moderate, severe) were calculated, and the differences between the means were as expected, with the average score increasing progressively with each increase in depression severity. The Kruskal-Wallis test was used to analyze the one-way rank variance to assess the statistical significance of these differences.

- Pearson's rank correlation coefficient was calculated to determine the degree of correlation between depression scores and clinical judgments regarding the depth of depression. For this correlation, the normative evaluations were reduced from 4 to 2 categories (none and mild, moderate and severe). The correlation coefficients obtained were highly statistically significant.

- The scale's ability to reflect changes over a certain period was evaluated by examining a group of 38 hospitalized patients who underwent a complete procedure, including the depression inventory and clinical diagnostic assessment, on their first full day in the hospital. They were re-examined by the same psychiatrist and received the same set of tests. The period between the two tests ranged from 2 to 5 weeks. In 33 cases, there was a significant enough change in the clinical picture to warrant a shift from one depression depth category to another. Depression scores changed in all cases, which was consistent with the expectation that the depression inventory would reflect subtle changes, given that its range is much larger than the clinical assessment scale.

Psychometric Properties of the Arabic Version (28)

Dr. Ghareeb Abdel Fattah (2000) translated this scale into Arabic and published it. It consists of 21 multiple-choice items, each addressing a symptom of depression, with four statements graded by severity. The respondent circles the score they feel best reflects their condition, ranging from 0-3 points. The items in the inventory are: (sadness, pessimism, past failure, loss of enjoyment, feelings of guilt, feelings of punishment, self-hatred, self-criticism, suicidal tendencies, crying, irritability or agitation, loss of interest, indecision, worthlessness, loss of energy, changes in sleep patterns, irritability, changes in appetite, difficulty concentrating, fatigue or exhaustion, and loss of interest in sex). The respondent must select the statements that most accurately describe their condition over the past two weeks, including the current day.

Validity

1. **Factorial Validity**

The intercorrelation coefficients between the items of the second Beck Depression Inventory were calculated for a sample of 380 male university students and 454 female university students. The data were factor analyzed using orthogonal rotation, and three factors were extracted from the inventory, as shown in Table (6).

Table 6. Factor Loadings for the Extracted Factors from the Beck Depression Inventory.

| Item	Non-smokers			Smokers		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Sadness	-	0.46	-	0.65	-	-
Pessimism	0.56	-	-	0.65	-	-
Past Failure	0.65	-	-	-	-	0.43
Loss of Enjoyment	0.37	-	-	0.51	-	-
Feelings of Guilt	-	-	0.58	-	-	0.66
Feelings of Punishment	-	-	0.73	-	--	0.63
Self-Loathing	0.50	-	-	-	-	0.42
Self-Criticism	-	-	0.70	-	-	0.64
Suicidal Thoughts or Wishes	0.80	-	-	-	-	0.45
Crying	-	-	0.36	-	-	0.58
Irritability or Agitation	0.47	-	-	0.35	-	-
Loss of Interest	0.60	-	-	0.68	-	-
Indecision	0.42	-	-	0.51	-	-
Worthlessness	0.71	-	-	0.46	-	-
Loss of Energy	0.60	-	-	0.76	-	-
Changes in Sleep Patterns	-	0.64	-	-	0.62	-
Irritability or Anger	0.63	-	-	0.70	-	-
Changes in Appetite	-	0.57	-	-	0.57	-
Difficulty Concentrating	0.67	-	-	0.66	-	-
Fatigue or Exhaustion	0.48	-	-	0.52	-	-
Loss of Interest in Sex	0.68	-	-	0.44	-	-
Factor Root	7.266	1.273	1.187	6.421	1.320	1.173
Factor Variance Percentage	34.601	6.064	5.650	30.577	6.286	5.585
Total Variance	**46.3**			**42.4**		

It is clear from Table (6) that the three factors extracted from the Beck Depression Inventory indicate the construct validity of the Beck Depression Inventory, as each item in the list shows significant loadings on one of the factors. Additionally, they account for 45% of the total variance, a percentage that suggests the extracted factors are sufficient to explain a reasonable amount of the variance.

1. Discriminant Validity:

The correlations between the Beck Depression Inventory and several personality measures were calculated, as shown in table (7).

Table 7. Intercorrelations between Beck Depression Inventory and Personality Variables in University Students.

Variables	Correlation Coefficient with Beck Depression Inventory
Anxiety	0.54**
Pessimism	0.66**
Hopelessness	0.34**
Neuroticism	0.51**
Anger	0.45**
Apathy	0.13**
Health Concerns	0.43**
Conversion	0.53**
Self-Harm	0.41**
Psychopathy	0.23**
Hostility	0.44**
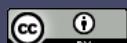
Irritability	0.48**
Suicidal Thoughts	0.56**
Self-Centeredness	0.38**

The results of Table (7) indicate the discriminant validity of the Beck Depression Inventory.

B. Reliability

1.   Internal Consistency Reliability:

Cronbach's alpha coefficients were used to assess the consistency of responses across all items of the scale. The alpha coefficient indicates the degree of internal consistency among the items. Additionally, the split-half reliability method (Spearman-Brown coefficient) was employed, along with the correlation coefficients between each individual item and the total score, as shown in table (8)

Table 8. Item-Total Score Correlation Coefficients.

Item	Correlation Coefficients
Sadness	0.58
Pessimism	0.56
Past Failures	0.56
Loss of Pleasure	0.55
Feelings of Guilt	0.47
Punishment Feelings	0.47
Self-Dislike	0.55
Self-Criticism	0.41
Suicidal Thoughts or Wishes	0.43
Crying	0.45
Irritability	0.52
Loss of Interest	0.51
Indecisiveness	0.52
Worthlessness	0.59
Loss of Energy	0.58
Sleep Pattern Changes	0.24
Irritability and Agitation	0.57
Appetite Changes	0.26
Difficulty Concentrating	0.64
Fatigue or Exhaustion	0.61
Loss of Interest in Sex	0.41

It is evident from Table (8) that the correlation coefficients between individual items and the total score ranged between 0.24 and 0.59, which confirms the consistency of the inventory items.

2. Split-Half Reliability:

In table (9), the corrected split-half reliability values were high across groups indicating strong internal consistency

Table 9. Correlation Coefficients Between Items and Total Score.

Correlation Coefficients	Split-Half Reliability (Corrected)	Sample
Males	0.89	0.82
Females	0.84	0.80
Combined (Total)	0.86	0.81

3. Test-Retest Reliability

The test-retest reliability of the Beck Depression Inventory was assessed after one week using a sample of 49 university students. The test-retest coefficient was found to be **0.74** for female students and **0.76** for male students.

Psychometric Properties of the Beck Depression Inventory in the Current Study:

A. Internal Consistency Validity:

The correlation coefficients between each item and the total score of the scale were calculated. Table (10) presents the results of this analysis.

Table 10. Correlation coefficients between item score and the total score on Beck Depression Inventory (N = 100).

Item Number	Correlation Coefficient with the Total Score
1.	0.813**
2.	0.667**
3.	0.792**
4.	0.731**
5.	0.820**
6.	0.654**
7.	0.777**
8.	0.804**
9.	0.691**
10.	0.836**
11.	0.758**
12.	0.700**
13.	0.745**
14.	0.810**
15.	0.722**
16.	0.679**
17.	0.828**
18.	0.685**
19.	0.795**
20.	0.710**
21.	0.759**

It is evident from Table (10) that the correlation coefficients between the items and the total score of the scale ranged from 0.654 to 0.836. All values were positive and statistically significant at the 0.01 level, which supports the internal consistency validity of the scale items.

B. Reliability:

The reliability of the scale was verified by calculating Cronbach's alpha coefficient for the entire scale in the case of deleting each individual item. Table (11) presents the Cronbach's alpha reliability coefficients for the overall scale when each item is removed.

Table 11. Cronbach's Alpha Coefficients for the Overall Scale in Case of Deleting Each Item from Scale (N = 100).

Item Number	Cronbach's Alpha
1.	0.829
2.	0.912
3.	0.763
4.	0.880
5.	0.754

6.	0.899
7.	0.810
8.	0.921
9.	0.873
10.	0.766
11.	0.803
12.	0.892
13.	0.750
14.	0.887
15.	0.915
16.	0.781
17.	0.839
18.	0.860
19.	0.899
20.	0.827
21.	0.931
Total	**0.932**

It is evident from Table (11) that the Cronbach's alpha reliability coefficients after deleting each item ranged between 0.750 and 0.931. This indicates that removing any individual item did not lead to an increase in the overall Cronbach's alpha coefficient of the scale. These results demonstrate that the scale is reliable and suitable for use with the study sample.

Measuring Quality of Life

The researcher developed a comprehensive Quality-of-Life Scale tailored specifically to university students. This scale encompassed key dimensions that significantly impact students' lives, including:

- **Physical Health**: Examining factors such as fitness levels, nutrition, sleep quality, and overall physical well-being.
- **Psychological Well-Being**: Assessing aspects like stress levels, emotional resilience, mental health, and coping mechanisms.
- **Social Relationships**: Evaluating the quality and extent of students' interactions with peers, faculty, and their social support networks.
- **Academic Satisfaction**: Measuring students' contentment with their academic environment, achievements, and learning experiences.

Before full implementation, the scale underwent a rigorous piloting process. This phase tested its reliability and validity. Feedback and data collected during the pilot analysis to refine the scale, ensuring its effectiveness and applicability. After validation, the finalized scale employed for broader use, providing valuable insights into the quality of life experienced by university students.

Psychometric Properties of the Quality-of-Life Scale in the Current Study:

A. Content Validity:

The initial version of the scale was reviewed by five expert judges specialized in psychology and mental health to assess the content validity of the scale. They evaluated the quality of the items, the relevance of each item to its corresponding dimension, the appropriateness of the items for the study sample, and the linguistic clarity of each item. They also suggested modifications or deletions for any item they deemed inappropriate.

All experts indicated that all items were appropriate. The agreement rate among the experts on the suitability of the items ranged from 95% to 100%. The Lawshe's Content Validity Ratio (CVR) formula was used to estimate the content validity of each item based on the expert evaluations: CVR = (ne − N/2)/(N/2). where ne is the number of experts who agreed that the item is "essential," and N is the total number of experts.

It is evident from table (12) that the experts' agreement rates on the scale items reached 0.60 or higher, which indicates that the scale possesses content validity.

Table 12. Lawshe's CVR Values for Each Item in the Quality-of-Life Scale.

Dimension	Items	Validity Percentage
Physical Health	1.	1.00
	2.	0.60
	3.	1.00
	4.	1.00
	5.	0.60
	6.	0.60
	7.	1.00
Psychological Well-being	8.	1.00
	9.	0.60
	10.	1.00
	11.	1.00
	12.	0.60
	13.	1.00
	14.	0.60
	15.	1.00
Social Relationship	16.	0.60
	17.	1.00
	18.	0.60
	19.	1.00
	20.	1.00
	21.	0.60
	22.	1.00
	23.	0.60
Academic Satisfaction	24.	1.00
	25.	1.00
	26.	0.60
	27.	1.00
	28.	0.60
	29.	1.00
	30.	0.60

B. Internal Consistency Validity:

The correlation coefficient between each item score and the total score of its corresponding factor on the scale was calculated. Table (13) presents the correlation coefficients between item scores and the total score of each factor on the scale.

Table 13. Correlation coefficient between the item score and the total score for each factor on the Quality-of-Life scale (N = 100).

Dimension	Items	Correlation Coefficient with the Total Score for Each Factor
Physical Health	1.	0.783**
	2.	0.665**
	3.	0.751**
	4.	0.676**
	5.	0.790**
	6.	0.701**

	7.	0.735**
	8.	0.687**
	9.	0.774**
	10.	0.663**
Psychological Well-being	11.	0.758**
	12.	0.671**
	13.	0.745**
	14.	0.685**
	15.	0.761**
	16.	0.697**
	17.	0.770**
	18.	0.659**
Social Relationship	19.	0.726**
	20.	0.682**
	21.	0.791**
	22.	0.705**
	23.	0.739**
	24.	0.667**
	25.	0.778**
	26.	0.688**
Academic Satisfaction	27.	0.720**
	28.	0.650**
	29.	0.773**
	30.	0.713**

The correlation coefficient between each item score and the total score of the entire scale was also calculated. Table (14) presents the correlation coefficients between item scores and the total score of the scale.

Table 14. Correlation coefficients between the item score and the total score on the Quality-of-Life Scale (N = 100).

Item Number	Correlation Coefficient with the Total Score
1.	0.773**
2.	0.701**
3.	0.799**
4.	0.715**
5.	0.784**
6.	0.690**
7.	0.765**
8.	0.801**
9.	0.742**
10.	0.727**
11.	0.776**
12.	0.698**
13.	0.790**
14.	0.732**
15.	0.709**
16.	0.796**
17.	0.747**
18.	0.705**
19.	0.775**
20.	0.718**

21.	0.791**
22.	0.752**
23.	0.736**
24.	0.694**
25.	0.759**
26.	0.708**
27.	0.782**
28.	0.722**
29.	0.770**
30.	0.693**

It is observed from the results in Tables (13) and (14) that the correlation coefficients between the items and the total scores of the dimensions and the overall scale were all statistically significant at the 0.01 level. This supports the internal consistency validity of the items in the Quality-of-Life Scale.

C. Reliability:

The reliability of the scale was verified by calculating Cronbach's alpha coefficient for the overall scale in the case of deleting each individual item. Table (15) presents the Cronbach's alpha reliability coefficients for the total scale when each item is removed.

Table 2. Cronbach's Alpha Coefficients for Overall Scale in Case of Deleting Each Item from the Scale (N = 100).

Item Number	Cronbach's Alpha	Item Number	Cronbach's Alpha
1.	0.936	16.	0.854
2.	0.853	17.	0.967
3.	0.887	18.	0.905
4.	0.961	19.	0.847
5.	0.834	20.	0.995
6.	0.974	21.	0.829
7.	0.899	22.	0.950
8.	0.845	23.	0.862
9.	0.983	24.	0.892
10.	0.825	25.	0.838
11.	0.941	26.	0.976
12.	0.918	27.	0.913
13.	0.865	28.	0.886
14.	0.993	29.	0.841
15.	0.879	30.	0.958
Total			**0.924**

It is evident from Table (15) that the Cronbach's alpha reliability coefficients after deleting each item ranged between 0.825 and 0.995. This indicates that removing any individual item did not result in an increase in the overall Cronbach's alpha coefficient of the scale. These results demonstrate that the scale is reliable and can be appropriately used with the study sample.

3.7. Validity and reliability:

3.7.1. Validity:

- *Taylor Manifest Anxiety Scale (TMAS):* The TMAS represents very strong construct validity in that it effectively differentiates anxiety from depression because of its specific focus on physical and cognitive symptoms of anxiety. It has been validated across multiple demographics and settings and has shown high concurrent validity with other established anxiety measures.

- **Beck Depression Inventory:** The BDI represents high content validity since it covers a wide range of symptoms featuring depression—emotional, behavioral, and physical. It also covers high criterion validity in that there is good agreement between the instrument scores and clinical diagnoses of depression, as well as other BDI-validated scales measuring depression.
- **Quality of Life Scale:** For the present study, the QoL scale was adopted and tested for its content and construct validity to ensure that it is a true measurement of the dimensions relevant to university students in relation to quality of life with regard to physical health, psychological well-being, social relationships, and academic satisfaction.

3.7.2. Reliability:

- **TMAS and BDI**: both inventories have high reliability, and their test-retest reliability has also been confirmed, showing stability over time.
- **QoL scale:** The reliability of this QoL scale was examined using pilot studies computing internal consistency by Cronbach's alpha and the test-retest reliabilities to make certain that this scale is measuring the quality of life in a consistent manner across repeated administrations.

3.7.3. Procedures:

- Reviewing the theoretical framework and previous studies that addressed the study variables.
- Preparing the study instruments by drawing on relevant literature and theoretical perspectives on the study variables, as well as reviewing and utilizing tools developed by previous researchers.
- Administering the study instruments to a pilot sample to ensure their validity and reliability.
- After completing the pilot application, analyzing students' responses to each instrument separately to verify their psychometric adequacy.
- Administering the study instruments to the main sample, then analyzing students' responses to each instrument separately to test the study hypotheses.
- Conducting statistical analysis to verify the validity of the study hypotheses.
- Presenting, discussing, and interpreting the results by linking them to the theoretical framework and previous studies.
- Writing the study's recommendations and suggestions for future research.

3.8. Statistical Methods:

The present study employed the Statistical Package for the Social Sciences (SPSS) version 28 software tool to analyze the collected data. The data analyses will be quantitative in nature, and the following statistical software is proposed to analyze data for patterns and relationships.

- **Descriptive Statistics:** The first step in data analysis will include the calculation of mean scores, standard deviations, and frequency distributions on participant characteristics and scores on each scale.
- **Inferential Statistics:** Multiple regression analysis will be conducted to ascertain how much anxiety and depression predict the subjects' quality of life. Regression analysis will also be helpful in determining the relative contribution of each mental health factor to quality of life. Of course, correlation analysis will also be conducted with a view to examining the strength and direction of the relationship between anxiety, depression, and quality of life.

3.8.1. Ethical considerations:

- **Informed Consent:** The participants in this study were clearly informed about the purpose of the study, the procedures involved, the potential risks, and the benefits. Electronically informed consent was obtained from respondents. Participants were informed that they could withdraw from the study at any time without any adverse consequences.

- **Confidentiality and Anonymity:** The responses were anonymous by ensuring that all personal information was de-identified. Responses were coded, and all records were kept securely with restricted access to the research team. Identifying information did not appear in reports or publications.
- **Minimize Psychological Harm:** Anxiety and depression were sensitive issues to address; therefore, participants might have refrained from answering questions that made them feel uneasy. Support services at the university were made available in case any participant became distressed.
- **Data Security:** Electronic data were stored in encrypted, password-protected files. Physical copies, if any, were kept in locked facilities and were accessible only to research team members.
- **Ethics Approval**: The research was approved by the Alfaisal University Institutional Review Board (IRB) or Ethics Committee to ensure that the study met all ethical standards and considerations.
- **Debriefing:** After the experiment, participants were given a debriefing session. The purpose of the experiment was explained, and an information packet on anxiety and depression was distributed. Participants who needed further support were encouraged to seek assistance through campus mental health resources.

4. Study Results and Discussion

The researcher recorded the raw scores of the study's scales (anxiety, depression, and quality of life), then calculated the descriptive statistics (mean and standard deviation) for these three variables. Subsequently, the study hypotheses were tested by analyzing the data collected through the study tools, and the results were presented and discussed according to the sequence of the study hypotheses.

4.1. Descriptive statistics and verification of regression analysis assumptions:

Before using regression analysis to test the research hypotheses, its basic assumptions and a set of descriptive statistics were examined. The mean, standard deviation, normality test, intercorrelations among the study variables, multicollinearity test, and the Durbin-Watson statistics were all calculated.

It is evident from Table (16) that:

1. The mean scores for anxiety and depression were relatively high.
2. The mean score for quality of life was relatively low.
3. The data related to the three study variables were approximately normally distributed, in light of the results of the Kolmogorov-Smirnov test, as the significance levels for this test were non-significant for all three variables.
4. All Variance Inflation Factor (VIF) values were below the reference thresholds of "5," "10," or even "2.5," as noted by Craney & Surles (95). These results indicate that the data do not suffer from multicollinearity issues. The same applies to the Tolerance values.
5. Since the assumptions of path analysis are the same as those of linear regression—given that path analysis represents a sequence of successive regression steps—the assumption of error independence was assessed, as violating this assumption can lead to analytical issues. This assumption refers to the absence of serial correlation (meaning that the error of one case does not influence the error magnitude of the subsequent case). Errors here refer to residuals—the differences between the actual value of a case and the predicted value using the regression equation. When no serial correlation exists, it means that the size of the residuals for one case does not affect those of the next. The Durbin-Watson statistic is used to test for serial correlation among residuals. This statistic ranges between 0 and 4. As a general rule, residuals are considered uncorrelated if the Durbin-Watson value is approximately 2, and the acceptable range lies between 1.50 and 2.50. As shown in the previous table, the Durbin-Watson value falls

within the acceptable range, indicating that the data do not suffer from serial correlation issues. Accordingly, the analysis can proceed to the next step.

Table 16. Means, standard deviations, normal distribution, and regression analysis assumptions for the study variables (N = 360).

Variable	Mean	Standard Deviation	Kolmogorov-Smirnov Test	P-value	VIF	Tolerance	Durbin-Watson
Anxiety	36.56	0.754	2.432	0.102	1.271	0.823	
Depression	24.76	0.657	1.321	0.212	1.216	0.915	1.763
Quality of Life	50.12	1.987	1.437	0.143	-	-	

4.2. Study Results

4.2.1. Testing the First Hypothesis:

The first hypothesis states: There is a correlational relationship between anxiety and quality of life among students at Alfaisal University. To test the validity of this hypothesis, regression analysis was used, considering anxiety as the predictor variable and quality of life as the criterion variable. Table (17) presents the values of the coefficient of determination (R^2), unstandardized regression coefficient (B), the t-value and its significance, as well as the F-value and its significance.

Table 17. Values of the coefficient of determination, unstandardized regression coefficient (B), t-value and its significance, and F-value and its significance (N = 360).

Model	Variable	(B)	(S.E)	(Beta)	t	p-value	(R^2)	f	t-value
1	Constant	48.2	2.3	-	15.453	0.001	0.41	6.55	0.01
	Anxiety	-0.407	0.251	-0.094	-1.622	0.032			

Simple linear regression analysis results revealed that anxiety was a statistically significant although low intensity predictor of the quality of life in students of Alfaisal University (β = 0.094, p < .001). This standardized effect size was low, but the model explained roughly 41 per cent of the variance in quality of life (R^2 = 0.41), indicating other factors that may contribute or confound with other variables.

Likewise, depression turned out to be another critical predictor (β = -0.076, p < .05), with the model reporting 45 percent of the variance in QoL (R^2 = 0.45). The findings suggest a negative correlation in both situations, but the overall explanatory strength can contain either common or confounding effects not estimated directly by Beta.

Discussion of the First Hypothesis Result:

The results of the simple linear regression analysis revealed a statistically significant correlation between anxiety and quality of life among students at Alfaisal University. The findings indicated that anxiety is a statistically significant predictor of quality of life. This suggests that as students' anxiety levels increase, their quality of life decreases, and vice versa—highlighting an inverse relationship between the two variables. Psychologically and educationally, this finding is logical and can be explained by the fact that students experiencing anxiety may avoid interacting with others and may feel fear or embarrassment in social situations. This limits their participation in academic and community activities and affects their sense of belonging and social support—both of which are components of quality of life.

Moreover, anxiety is generally associated with negative emotions such as tension, fear, and persistent discomfort. These feelings reduce an individual's overall life satisfaction, a key component of quality of life. Additionally, anxious students may struggle to speak in class, participate in

discussions, or work in groups, which negatively impacts their academic performance and self-confidence and in turn influences their overall outlook on life.

This interpretation aligns with theoretical literature, which suggests that anxiety—whether manifested physically or cognitively—is one of the most prevalent psychological disorders among university students due to academic, social, and financial pressures, along with the difficult transition from adolescence to adulthood (12; 64).

Anxiety affects quality of life through physical symptoms such as increased heart rate, trembling, shortness of breath, and fatigue, as well as through cognitive symptoms such as negative thinking, constant preoccupation with potential risks, and difficulty concentrating (53; 36). These symptoms undermine an individual's ability to adapt psychologically and socially, which negatively impacts their overall quality of life—particularly in university environments that sometimes lack adequate psychological support services.

According to the cognitive-behavioral model, anxiety stems from distorted thinking patterns, where individuals tend to exaggerate threats or interpret negative situations catastrophically (13). This leads to excessive anxiety reactions even in everyday life situations. Such patterns may limit a student's ability to cope with the pressures of university life, negatively affect their self-esteem and sense of well-being, and thus lower their quality of life.

From a neurobiological perspective, disruptions in neurotransmitters such as serotonin and GABA, or a genetic predisposition due to a family history of anxiety disorders, are considered explanatory factors for the emergence of anxiety in some individuals (40; 72). These biological factors may increase sensitivity to stress, exacerbating anxiety symptoms and negatively affecting psychological well-being, which in turn diminishes quality of life.

From a sociocultural perspective, the university environment itself—with its academic expectations, social pressures, and financial challenges—may contribute to heightened anxiety among students (26). This is particularly true in the Saudi context, which is undergoing rapid cultural and educational transformations that may amplify such pressures.

Based on the above, the result of this study reflects the complex nature of anxiety as a combination of cognitive, biological, and contextual factors. It underscores the importance of adopting multidimensional approaches to prevention and treatment in order to enhance the quality of life of university students.

4.2.2. Testing the Second Hypothesis

The second hypothesis states: There is a correlational relationship between depression and quality of life among students at Alfaisal University. To examine the validity of this hypothesis, regression analysis was used, with depression considered as the predictor variable and quality of life as the criterion variable.

Table (18) presents the values of the coefficient of determination (R^2), the unstandardized regression coefficient (B), the t-value and its significance and the F-value and its significance.

Table 18. Values of the coefficient of determination, unstandardized regression coefficient (B), t-value and its significance, and F-value and its significance (N = 360).

Model	Variable	(B)	(S.E)	(Beta)	t	p-Value	(R^2)	f	t-Value
1	**Constant**	36.56	3.12	-	12.321	0.005	0.45	5.32	0.03
	Depression	-0.534	0.435	-0.076	-2.231	0.021			

The results of the simple linear regression analysis showed that the variable depression is a statistically significant predictor of quality of life among Alfaisal University students. The unstandardized regression coefficient (B) was -0.534, which is statistically significant at the level of ($p < 0.05$). The standardized regression coefficient (beta) was -0.076, indicating a negative relationship between depression and quality of life.

The F-statistic value was (F = 5.32), which is statistically significant at the level of ($p < 0.05$). Therefore, the predictor variable depression in the model is significant in predicting the criterion variable (quality of life). Additionally, the coefficient of determination (R^2) was 0.45, meaning that depression explains 45% of the variance in quality of life among the sample participants.

Based on the above results, and given that the constant value was 36.56, the prediction equation can be formulated as follows: Quality of Life = 36.56 − 0.534 (Depression).

Discussion of the Second Hypothesis Result:

The results of the simple linear regression analysis revealed that depression is a statistically significant predictor of quality of life among students at Alfaisal University. The regression coefficient indicated an inverse relationship between the two variables. This result suggests that as students' levels of depression increase, their quality-of-life decreases.

This finding can be interpreted in light of theoretical literature that highlights the profound impact of depressive symptoms on various aspects of an individual's life. According to Beck (2020), depression is characterized by a range of emotional symptoms such as deep sadness, inner emptiness, guilt, and hopelessness—feelings that can be persistent and intense, leading to a loss of interest in daily activities and withdrawal from social relationships. This, in turn, negatively affects general life satisfaction and psychological well-being, which are core indicators of quality of life.

Moreover, social withdrawal—a common symptom of depression—leads to the student becoming isolated from their academic and social environment, thus reducing opportunities for social support and meaningful interaction with others (47). This can lead to a decreased sense of belonging and participation, both of which are vital elements of quality of life among university students.

Additionally, the physical symptoms accompanying depression—such as persistent fatigue, sleep disturbances, changes in appetite, and unexplained physical pain—contribute to reduced academic achievement, lower energy levels, and diminished ability to carry out daily activities (15), all of which further decrease the level of quality of life.

Monroe and Harkness emphasized that the persistent pattern of depressive symptoms—which includes loss of interest, fatigue, changes in appetite and sleep, and thoughts of death—represents a significant shift in an individual's functioning and impairs their ability to interact with their environment, directly impacting their quality of life (55).

The finding that depression is a significant predictor of quality of life is consistent with psychological, biological, and social theories on the nature of depression and its widespread effects on the individual. From a cognitive theory perspective, according to Beck (2020), depression does not arise solely from external or biological factors but is largely attributed to distorted and negative patterns of thinking that become ingrained in the individual's mind from an early stage in life. A depressed person tends to view themselves negatively ("I am worthless"), perceive the world as unjust or threatening ("The world is unfair"), and expect a bleak future ("Nothing will ever get better"). This pattern of thinking is known as the "cognitive triad," which lies at the core of Beck's theory.

These automatic negative thoughts, which occur repeatedly, have a direct impact on the individual's sense of quality of life. When a person sees themselves as worthless, feels that their environment is hostile, and views the future as hopeless, it is natural for them to lose their sense of satisfaction, purpose, and optimism—key components of quality of life.

Accordingly, the negative relationship revealed in the current study between depression and quality of life reflects the theoretical link proposed by Beck, where cognitive distortions lead to psychological deterioration and, consequently, a decline in quality of life. This finding also explains why modifying such thinking patterns (through cognitive behavioral therapy) is considered an effective approach to improving quality of life and reducing the severity of depression, as supported by studies backing Beck's theory.

From a biological perspective, modern explanations attribute depression to imbalances in brain chemistry, such as disrupted levels of neurotransmitters (like serotonin and dopamine), as well as structural changes in the nervous system (14). These factors adversely affect an individual's psychological and physical condition, including energy, motivation, and concentration, thereby negatively impacting everyday quality of life.

Psychoanalytic theory, as explained by Freud, views depression as the result of real or symbolic losses tied to unresolved childhood experiences or internal conflicts. This framework helps explain how unaddressed emotional stress in some students can lead to depressive states that affect their outlook on life and reduce their ability to adapt positively to university demands.

From a socio-cultural perspective, the context surrounding the student—including academic pressures, family expectations, and economic challenges—can significantly contribute to the development or worsening of depression. This perspective emphasizes that quality of life is not only affected by internal personal factors but also by the social and cultural environment, which makes students more vulnerable to psychological disorders in the absence of adequate social support.

Accordingly, this result reflects the cumulative and complex influence of cognitive, emotional, biological, and social factors that explain how depression negatively impacts quality of life. It underscores the importance of adopting comprehensive interventions that consider psychological, social, and biological dimensions to reduce the severity of depression and improve the quality of life among university students.

4.2.3. Testing the Third Hypothesis

The third hypothesis states: There is a correlational relationship between the impact of anxiety and depression on the quality of life of university students, depending on demographic variables (gender and academic level). To test the validity of this hypothesis, moderation analysis was used by applying Hayes' PROCESS Macro (Model 1) in SPSS.

Moderation analysis is employed when the research aims to determine whether a particular variable moderates the strength of the effect of one variable on another. In other words, the effect of variable (X) on (Y) is said to be moderated by variable (M) if the size, direction, or strength of this effect depends on (M). In such cases, variable (M) is considered a moderator of the effect of (X) on (Y) (96).

It is evident from Table (19) that the moderating role of gender and academic level is not statistically significant in the relationship between anxiety or depression and quality of life. In other words, gender and academic level do not serve as moderators in determining the direction or strength of the relationship between anxiety, depression, and quality of life.

Table 19. The moderating effect of gender and academic level on the relationship between anxiety and depression and the quality of life of university students (N = 360).

Variable	R^2	F	P-value	coefficient	SE	t	P-value
Gender	-	-	-	0.10	1.09	0.09	0.92
Anxiety	-	-	-	-0.01	0.16	-0.09	0.92
Anxiety* Gender	0.001	0.422	0.51	0.02	0.03	0.65	0.51
academic level	-	-	-	-0.18	0.53	-0.34	0.73
Anxiety	-	-	-	0.01	0.10	0.15	0.88
Anxiety* academic level	0.001	0.716	0.39	0.01	0.01	0.84	0.39
Gender	-	-	-	-0.49	0.62	-0.78	0.43
Depression	-	-	-	-0.03	0.11	-0.34	0.72
Depression * Gender	0.005	2.07	0.15	0.02	0.02	1.43	0.15
academic level	-	-	-	1.13		1.18	0.23
Depression	-	-	-	0.11	0.11	1.01	0.30
Depression * academic level	0.000	0.071	0.78	-0.007	0.02	-0.26	0.78

Specifically, when testing the interaction between gender and anxiety in the regression model, the model accounted for a non-significant portion of the variance in quality of life, with $R^2 = 0.001$, F $= 0.422$, $P > 0.05$ (p = 0.51), and t = 0.65, $P > 0.05$ (p = 0.51).

Likewise, the interaction between academic level and anxiety in the regression model explained a non-significant variance in quality of life, with $R^2 = 0.001$, F = 0.716, $P > 0.05$ (p = 0.39), and t = 0.84, $P > 0.05$ (p = 0.39).

As for the interaction between gender and depression, the regression model also explained a non-significant proportion of the variance in quality of life, with $R^2 = 0.005$, F = 2.07, $P > 0.05$ (p = 0.15), and t = 1.43, $P > 0.05$ (p = 0.15).

Finally, when testing the interaction between academic level and depression, the regression model explained a non-significant variance in quality of life as well, with $R^2 = 0.000$, F = 0.071, $P > 0.05$ (p = 0.78), and t = -0.26, $P > 0.05$ (p = 0.78).

Discussion of the Third Hypothesis Result:

The findings indicate that gender and academic level do not serve as moderating variables in the relationship between anxiety or depression and the quality of life among university students. In other words, the impact of anxiety and depression on quality of life appears to be consistent and does not vary based on gender or academic stage.

The absence of a moderating effect of gender may reflect the fact that male and female university students face similar psychological pressures and life challenges that affect their quality of life. This may be particularly evident in university environments that promote gender equality and equal opportunities.

Furthermore, cultural and social perspectives in certain contexts may contribute to similar emotional responses to anxiety and depression across genders. As a result, the impact of these psychological states on quality of life may not differ significantly between males and females, weakening any potential moderating effect of gender.

Additionally, some studies suggest that while qualitative differences may exist in how anxiety or depression is experienced by each gender, these differences do not necessarily translate into differences in how these feelings affect quality of life. The degree of impact might remain comparable, even if the expression of anxiety or depression varies.

Regarding the moderating effect of academic level, it is possible that the psychological stressors associated with university life remain relatively constant throughout the years of study—from freshman to senior year. Students across all academic levels often face similar academic, social, and professional challenges, such as adapting to academic demands, uncertainty about future careers, and navigating social relationships. This could explain the stable effect of anxiety and depression on quality of life, regardless of year level.

Moreover, the availability of psychological awareness and support services might be limited or not tailored to students based on their year of study. This means that students at all levels may be similarly vulnerable to the negative effects of psychological distress. On the other hand, students may develop personal coping mechanisms over time that reduce variations in the impact of anxiety or depression, contributing to the relative stability of their relationship with quality of life across academic years.

5. Conclusion of the Study

5.1. Summary of Findings:

The results of the study were as follows:

1. Variable anxiety is a statistically significant predictor of quality of life among students at Alfaisal University. The unstandardized regression coefficient (B) was -0.407, which is statistically significant at the level of (p < 0.001). Additionally, the standardized regression coefficient (Beta) was -0.094, indicating a negative relationship between anxiety and quality of life.

2. Variable depression is a statistically significant predictor of quality of life among Alfaisal University students. The unstandardized regression coefficient (B) was -0.534, which is statistically significant at the level of ($p < 0.05$). The standardized regression coefficient (Beta) was -0.076, indicating a negative relationship between depression and quality of life.

3. Moderating role of gender and academic level is not statistically significant in the relationship between anxiety or depression and quality of life. In other words, gender and academic level do not serve as moderators in determining the direction or strength of the relationship between anxiety, depression, and quality of life.

5.2. Study Recommendations:

In light of the study's findings, the following recommendations are proposed:

1. Develop targeted psychological support programs within university settings that focus on reducing anxiety and depression levels among students, given their significant negative impact on quality of life.

2. Incorporate mental health education into student orientation programs and academic advising to enhance awareness of emotional well-being and coping strategies.

3. Establish accessible counseling services that are well-promoted and culturally sensitive, to encourage students—regardless of gender or academic level—to seek help when experiencing psychological distress.

4. Encourage faculty and staff training to recognize signs of psychological distress among students and refer them appropriately to support services.

5. Promote a campus-wide environment that fosters emotional resilience, social support, and mental health destigmatization, especially during periods of academic pressure such as exams or graduation.

5.3. Suggestions for Future Research:

1. Expand the sample to include multiple universities and diverse academic environments to examine the generalizability of the current findings across different student populations.

2. Explore other potential moderating variables, such as socioeconomic status, living arrangements, or personality traits, that may influence the relationship between anxiety, depression, and quality of life.

3. Conduct longitudinal studies to investigate how anxiety and depression levels change over time and their long-term effects on students' academic and personal outcomes.

4. Use mixed-method approaches to gain deeper qualitative insights into how students perceive and cope with anxiety and depression in the university context.

5. Assess the effectiveness of mental health interventions or university-based wellness programs in improving quality of life and reducing psychological distress among students.

number IRB20364. Informed consent was obtained from all participants prior to their involvement in the study, and their confidentiality and privacy were maintained throughout the research process.

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