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A Review of Anxiety Disorders in Chinese University Students: Prevalence, Assessment, and Culturally Specific Risk Factors

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Abstract. Anxiety disorders are globally prevalent and have been rising steadily, with Chinese university students constituting a particularly high-risk population. This systematic review synthesizes existing evidence on anxiety disorders among Chinese university students, with particular attention to culturally specific risk mechanisms and measurement practices. Drawing on studies that use standardized instruments including the GAD-7, SAS, and SCL-90, we integrate findings from epidemiological, assessment, and etiological research. The literature consistently identifies academic stress, authoritarian filial piety, and fear of negative evaluation as salient contributors to anxiety. Yet, prevalence estimates vary considerably because of methodological heterogeneity, and most studies examine these factors in isolation rather than through interactive pathways. Critical gaps include a lack of longitudinal designs, insufficient attention to within-group diversity such as rural and urban disparities, and inadequate integration of mental health stigma into etiological models. Addressing these gaps is essential for developing culturally adapted screening tools, informing university mental health services, and guiding future research toward integrative, context-sensitive frameworks that move beyond main-effect models.

Keywords: Anxiety disorder, University students, cultural specificity, filial piety

1. Introduction

1.1. Research background

Anxiety disorders are globally prevalent across distinctive groups of people. A study by Wu et al. [1] reports that in 2021, the global age-standardized prevalence rate (ASPR), incidence rate (ASIR), and DALY rate for anxiety disorders were 4421.9, 678.3, and 524.3 per 100,000 population, respectively, representing increases of 18.0%, 20.6%, and 18.2% since 1990. Importantly, anxiety disorders frequently emerge in late adolescence and early adulthood, a period that coincides with the college years. College students are therefore a high-risk group. This is particularly concerning in China, where intense academic competition, increasing employment pressure, and changing social expectations shape the higher-education context. Despite growing recognition of this issue,

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systematic research specifically addressing the cultural and social determinants of anxiety disorders in this population remains insufficient.

1.2. Research theme

This paper focuses on Chinese university students as the target group for investigating anxiety disorder etiology and manifestation. Many foundational frameworks have been developed and validated using Western, educated, industrialized, rich, and democratic (WEIRD) samples [2], which may not adequately capture culturally specific risk factors, symptom presentations, and coping mechanisms relevant to Chinese students. Stigma toward mental illness, low mental-health literacy, distrust of counseling, and service-access barriers can also impede help-seeking [3]. Accordingly, this review asks how anxiety is assessed in this population, which biological, psychological, and culturally embedded factors are implicated, and where the current evidence remains limited.

1.3. Research problem and significance

To address these questions, this review synthesizes epidemiological, assessment, and etiological research on Chinese university students. Particular attention is given to measurement practices, academic stress, authoritarian filial piety, fear of negative evaluation, stigma, and within-group diversity. The review evaluates whether existing evidence adequately captures culturally specific pathways to anxiety and identifies methodological and theoretical gaps. This approach is intended to inform culturally adapted screening and university mental health services while providing directions for future longitudinal and integrative research.

2. Epidemiological and measurement landscape

2.1. Clinical significance and prevalence

Anxiety disorders are described and defined with relevant symptoms including consistent worry, fear of performance and social activities, unexpected and triggered panic attacks, anticipatory anxiety, and avoidance behaviors [4]. In the university context, test anxiety is associated with poorer academic performance [5], while anxiety disorders are associated with elevated suicide risk [6].

A global meta-analysis shows that the detection rate of anxiety symptoms among college students is 39.0%, and there are differences in this rate across different regions and countries in terms of income levels [7]. Compared with the global detection rate of anxiety disorder, this indicator is also remarkable among Chinese college students. One meta-analysis synthesizing 20 studies with 34,672 participants reports an overall anxiety symptom detection rate of 23.46% among Chinese college students [8]. Recent research by Chen et al. [9] also indicates that the detection rate of anxiety among college students in China is around 13.7%. This figure showed a prominent upward trend from 2010 to 2020, and the detection rates for different demographic groups ranged from 10% to 20%.

2.2. Assessment instruments

Existing research has designed a series of self-report scales to provide a standardized assessment of subjective anxiety symptoms. The GAD-7 assesses generalized anxiety symptoms [10], while the Self-Rating Anxiety Scale (SAS) covers psychic and somatic dimensions of anxiety [11]. The PSS-10 measures perceived stress [12], and the Educational Stress Scale for Adolescents (ESSA)

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assesses academic stress [13]. Authoritarian filial piety can be assessed with the relevant subscale of the Dual Filial Piety Scale [14], while fear of negative evaluation is commonly measured using the Brief Fear of Negative Evaluation Scale [15].

3. Etiological pathways

3.1. Biological and psychological foundations

Anxiety disorder is consistently associated with processing patterns of maladaptive information, including hypervigilance triggered by perceived threats, bias of negative interpretation, and catastrophic thinking about future outcomes [16]. The causes of anxiety disorders are multifaceted, encompassing biological, psychological, and social dimensions. These factors interact with each other to determine an individual's risk level of mental health-related problems. Numerous studies emphasize that genetic and neurobiological susceptibility can increase the tendency towards anxiety, with heritability estimates for anxiety disorders broadly ranging from 0.32 for generalized anxiety disorder to 0.48 for panic disorder [17]. Regarding neurobiological factors, the amygdala-prefrontal cortex circuit plays a central role in threat processing and anxiety regulation. Functional neuroimaging studies have shown that exposure to threat enhances amygdala-prefrontal connectivity and increases activation in relevant brain regions, particularly between the amygdala and the inferior frontal gyrus, orbitofrontal cortex, and ventromedial prefrontal cortex [18]. While these biological vulnerabilities establish a foundational predisposition, a systematic review of genetic and environmental influences on anxiety disorders concluded that genetic predispositions and environmental triggers interact to shape the onset and development of anxiety [19]. The impact of social environment and cultural background cannot be ignored either. Accordingly, biological susceptibility should not be interpreted as a sufficient explanation for anxiety in Chinese university students. Its effects are likely expressed through exposure to academic, interpersonal, and family pressures, while cognitive patterns such as threat sensitivity and catastrophic interpretation may amplify those pressures. This interactional perspective provides a bridge between models of anxiety and culturally specific stressors discussed below.

3.2. Cultural stressors

The sociocultural environment constitutes a salient influence on Chinese university students' mental health. Among the college student population in China, their fear response to negative evaluations may be more intensely activated and is more likely to cause anxiety disorders, for example, social anxiety. This is because, in a collectivist culture that emphasizes social harmony, personal reputation, and group norms, students are more likely to magnify negative feedback from their surroundings [20], and this phenomenon is a key characteristic of social anxiety. Therefore, students in such cultural environments may be more concerned about negative evaluations and ruminate more on feedback they receive, thereby experiencing more maladaptive metacognitive beliefs. Empirical studies on Chinese adolescents support that fear of negative evaluation is positively associated with social anxiety [21].

Moreover, in the university context, anxiety may arise in response to both academic and social stressors. Specifically, academic stressors such as heavy academic workload, shifting social bonds, and unfamiliar environments are associated with mental health problems such as anxiety and depression [22]. Beyond academic demands, Chinese students may face unique social or family-related pressures rooted in traditional culture that emphasized respecting and obeying caregivers,

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known as authoritarian filial piety. This traditional culture may strengthen students' expectation for achieving better academic performance as a form of "repaying" parental investment. It is more likely to induce rumination and maladaptive beliefs when students face academic setbacks. Research on filial piety distinguishes authoritarian from reciprocal forms and links filial-piety patterns to adolescent adjustment and problem behaviors [23, 14].

3.3. The role of stigma

In addition, mental health stigma remains pervasive in China. It discourages help-seeking and leads to symptom concealment and delayed intervention, which may maintain the anxiety disorder. Based on research with Chinese adolescents, Chen et al. [24] find that the number of mental health problems does not directly influence help-seeking intentions. Instead, self-stigma and attitudes toward seeking help mediate this relationship. These findings suggest that stigma operates through internal psychological processes, and these processes inhibit disclosure even when distress is recognized, thereby exaggerating and maintaining mental health problems, such as anxiety disorders. Zhu et al. [25] further examine stigma among Chinese medical students. They find that formal medical education does not consistently reduce stigmatizing attitudes. However, individual factors are associated with less stigmatized attitudes, while these factors including interest in clinical psychiatry and having friends with mental illness. These findings suggest that reducing stigma may require experiential exposure rather than generalized education alone. Therefore, this type of exposure is largely unavailable to the general student population. As a result, self-stigma remains unaddressed and forms a negative cycle in which symptoms inhibit help-seeking and thereby exacerbate distress.

4. Knowledge gaps and future directions

4.1. Methodological limitations

However, several significant knowledge gaps persist in the existing literature. Firstly, methodological heterogeneity remains a major barrier to the accumulation of knowledge. As reviewed above, epidemiological studies have employed a variety of different assessment tools, including GAD-7, SAS, SCL-90, and other self-report scales. These tools differ significantly in item content, response formats, and scoring algorithms, which may make comparisons across studies more complicate and may limit the validity of meta-analytic findings. The substantial variation in detection rates among studies may reflect not only genuine differences in sample characteristics but also measurement biases. Due to the lack of standardized assessment protocols, the field struggles to establish reliable evidence for monitoring epidemiological trends or evaluating the effectiveness of interventions.

4.2. Interactions among risk factors

Furthermore, the interaction between culturally specific social stressors and cognitive vulnerabilities remains largely unexamined in Chinese university students. Existing studies have separately identified risk factors such as authoritarian filial piety [23, 14], academic pressure [22], and fear of negative evaluation [21]. However, few studies have systematically tested how these factors combine to produce clinically significant anxiety. For instance, does authoritarian filial piety moderate the relationship between academic stress and anxiety, such that students with high filial

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expectations exhibit disproportionately elevated anxiety when facing academic setbacks? Does fear of negative evaluation mediate this process? These questions remain unanswered because most existing research has examined main effects rather than interactive or mediated pathways.

4.3. Within-group diversity and stigma integration

Moreover, existing research has largely treated Chinese university students as a homogeneous group, overlooking substantial within-group variation. As Tuersun et al. [26] demonstrate, rural students report significantly higher anxiety prevalence (40.2%) compared to their urban counterparts (36.8%). Yet, few studies have systematically examined how regional, socioeconomic, and institutional factors moderate the relationships between cultural stressors and anxiety outcomes. First-generation college students, those attending non-elite institutions, and students from disadvantaged socioeconomic backgrounds may experience distinct stressor profiles that aggregated analyses mask. The intersection of these demographic factors with culturally specific vulnerabilities remains critically under-investigated. Finally, although mental health stigma has been recognized as a significant barrier to help-seeking among the Chinese population, it remains inadequately integrated into etiological models of anxiety disorders. As Chen et al. [24] and Zhu et al. [25] demonstrate, self-stigma operates through internal psychological processes that inhibit disclosure and perpetuate distress. However, most etiological studies of anxiety do not explicitly incorporate stigma as a maintaining factor, nor do they examine how stigma interacts with cultural values such as face consciousness and filial piety to shape the clinical course of anxiety disorders.

Addressing these gaps requires a multi-method approach that combines standardized assessment tools, culturally grounded theoretical frameworks, and attention to within-group diversity. This review contributes by synthesizing existing evidence, identifying critical gaps, and proposing directions for future research to advance both theoretical understanding and practical intervention in this population.

5. Conclusion

This review finds that anxiety disorders affect a substantial proportion of Chinese university students. Prevalence estimates range from 23% to over 32%. Academic stress, authoritarian filial piety, and fear of negative evaluation are culturally salient risk factors. However, most existing studies examine these contributors in isolation rather than testing how their interactions. Methodological heterogeneity across assessment instruments limits cross-study comparison. Reliance on cross-sectional designs prevents causal inference. Within-group diversity, such as rural-urban disparities, remains largely overlooked. Mental health stigma is recognized as a barrier to help-seeking but is rarely integrated into etiological models. Future research should employ longitudinal designs. Culturally adapted assessment tools validated in Chinese samples are urgently needed. Researchers should also systematically test how cultural values interact with cognitive vulnerabilities to shape anxiety outcomes. These efforts will inform targeted prevention and culturally responsive mental health services on Chinese campuses.

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