

# CHAPTER I

## INTRODUCTION

### A. Background of The Problem

The mental health of university students has become a growing global concern, particularly within rapidly developing higher education systems such as that of China. According to the Chinese National Health Commission, mental health disorders have become one of the leading health challenges among young adults, with anxiety, depression, and stress-related conditions showing a continuous increase over the past decade. Recent national surveys indicate that approximately 20–30% of Chinese university students experience moderate to severe symptoms of psychological distress, while nearly 25% report symptoms associated with anxiety and depression (Tang et al., 2023; Zhang et al., 2024). Furthermore, a large-scale meta-analysis involving more than 700,000 Chinese college students found that the prevalence of depression reached 24.7%, while anxiety affected approximately 21.3% of students (Luo et al., 2024). These findings suggest that mental health problems are no longer isolated cases but have become a widespread public health issue within Chinese higher education institutions. University students occupy a transitional stage between adolescence and adulthood, during which they must navigate academic expectations, social integration, personal identity development, and preparation for future employment. In China, these challenges are intensified by a highly competitive educational culture, strong family expectations, and increasing uncertainty in the labor market. According to the Ministry of Education of China, the number of university graduates exceeded 12 million in 2025, creating intense competition for employment opportunities and increasing psychological pressure among students. As a result, psychological stress has emerged as one of the most prominent mental health issues among Chinese university students, with far-reaching implications for their academic performance, physical health, and long-term well-being. Against this background, universities are increasingly expected to adopt holistic approaches that address both psychological and physical dimensions of student health.

Mental health has become one of the most important issues facing higher education in China. In recent years, Chinese universities have reported increasing numbers of students experiencing psychological difficulties such as stress, anxiety, depression, emotional exhaustion, and academic burnout. Rapid social and economic changes, intense academic competition, family expectations, and uncertainty regarding future employment have contributed to growing psychological pressure among university students. Although the Chinese government and higher education institutions have strengthened mental health services and counseling programs, psychological distress remains a significant challenge affecting students' academic performance, social relationships, and overall quality of life. Consequently, mental health promotion has become a major priority within Chinese higher education.

Recent research conducted in Chinese universities has identified several important trends related to student mental health. One of the most significant findings is the positive role of physical activity and physical fitness in promoting psychological well-being. Studies have consistently shown that students who participate regularly in physical exercise experience lower levels of stress, anxiety, and depression compared to physically inactive students. Regular exercise contributes to improved emotional regulation, increased self-confidence, and greater resilience when facing academic and social challenges. As a result, many Chinese universities are increasingly recognizing physical fitness as an important component of mental health promotion and student development.

Another emerging research trend highlights the critical relationship between sleep quality and mental health among university students. Recent studies indicate that students who experience insufficient sleep or poor sleep quality are more likely to report symptoms of anxiety, depression, and psychological stress. The widespread use of smartphones, social media platforms, and digital technologies has contributed to sleep disturbances among many students. Researchers have found that poor sleep quality negatively affects emotional stability, cognitive performance, and academic achievement, making sleep health an important factor in overall student well-being. Consequently,

universities have begun implementing educational programs aimed at improving sleep habits and encouraging healthier lifestyles.

A third major finding from recent studies concerns the influence of academic and employment pressures on student mental health. Chinese university students face intense competition for academic achievement, postgraduate education opportunities, scholarships, and future employment. The increasing number of university graduates entering the labor market has further heightened concerns about career prospects and job security. Research has shown that students who perceive higher levels of academic and career-related pressure are more likely to experience stress, anxiety, and emotional exhaustion. These findings have encouraged universities to expand career guidance services, psychological counseling programs, and stress management initiatives to support student well-being.

Taken together, these research findings demonstrate that mental health among Chinese university students is influenced by multiple interconnected factors, including physical fitness, lifestyle behaviors, and academic environments. The growing evidence linking physical fitness with psychological well-being provides a strong foundation for investigating the relationship between stress levels and physical fitness among university students. Understanding this relationship is particularly important because it may help universities develop integrated health promotion strategies that simultaneously improve physical health and mental well-being. Therefore, examining stress and physical fitness among students from different universities can contribute valuable insights for the development of more effective and sustainable student health programs within Chinese higher education institutions.

The selection of this research topic is based on the growing concern regarding the increasing prevalence of stress and mental health problems among Chinese university students and the recognition that physical fitness may serve as an effective protective factor. Although numerous studies have investigated mental health issues in higher education, fewer studies have simultaneously examined stress levels and physical fitness across different university environments. Moreover, significant differences in campus facilities, physical

education programs, and student lifestyles may contribute to variations in both mental health and fitness outcomes. Therefore, investigating the relationship between stress and physical fitness among students from three Chinese universities is important for understanding how institutional contexts influence student well-being and for developing evidence-based health promotion strategies within higher education settings.

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Stress among Chinese university students is multifactorial and deeply embedded in both institutional structures and sociocultural norms. Academic pressure remains the dominant stressor, driven by demanding curricula, frequent assessments, and intense competition for postgraduate opportunities and employment. Empirical evidence from recent large-scale studies indicates that a substantial proportion of Chinese university students report moderate to high stress levels, often accompanied by symptoms of anxiety and depression (Tang et al., 2023). These psychological challenges are not temporary responses to isolated stressors but rather persistent conditions that can negatively affect students' motivation, concentration, and interpersonal relationships. The persistence of elevated stress levels highlights a critical need to identify effective coping mechanisms that can be implemented within campus environments.

The COVID-19 pandemic has further exacerbated stress and mental health challenges among Chinese university students, leaving long-term psychological effects even after the resumption of normal campus activities. Studies conducted in the post-pandemic period suggest that students continue to experience heightened stress due to academic disruptions, concerns about academic progression, and reduced social interaction during critical developmental periods (Zhang et al., 2023). These findings suggest that stress among university students should be understood as a chronic issue rather than a situational one, requiring sustained and systematic intervention strategies. Consequently, there is growing recognition that traditional mental health services alone may be insufficient to meet the diverse needs of students.

In parallel with rising stress levels, lifestyle changes among university students have contributed to declining physical health. Sedentary behavior, prolonged screen time, irregular sleep patterns, and reduced participation in physical activity are increasingly common among Chinese undergraduates. These lifestyle factors not only undermine physical fitness but also exacerbate psychological stress, creating a bidirectional relationship between physical inactivity and poor mental health. Li et al. (2022) demonstrated that students experiencing higher stress levels were significantly more likely to engage in unhealthy behaviors, including insufficient physical activity, which in turn worsened their psychological well-being. This reciprocal relationship underscores the importance of addressing physical fitness as a central component of mental health promotion.

Physical fitness, defined as the capacity to perform daily activities with vigor and without undue fatigue, has been widely recognized as a protective factor for mental health. A growing body of evidence suggests that higher levels of physical fitness are associated with lower levels of stress, anxiety, and depressive symptoms among university students. In the Chinese context, recent Scopus-indexed studies have provided robust empirical support for this relationship. Ma et al. (2024) found that students with higher physical fitness scores exhibited significantly lower risks of psychological abnormalities, even after controlling for demographic and lifestyle variables. These findings suggest

that physical fitness may function as a buffer against stress, enhancing students' ability to cope with academic and social challenges.

The mechanisms through which physical fitness influences mental health are both physiological and psychological. From a physiological perspective, regular physical activity improves cardiovascular function, regulates stress hormones such as cortisol, and enhances neurotransmitter activity, including serotonin and dopamine, which are closely linked to mood regulation. Improved aerobic fitness has also been associated with enhanced brain plasticity and cognitive functioning, contributing to better stress management. Psychologically, engagement in physical activity fosters a sense of achievement, self-efficacy, and emotional control. Wang and Huang (2021) emphasized that exercise enhances psychological capital, which mediates the relationship between physical activity and mental health outcomes. Students with higher psychological capital demonstrate greater resilience and are better equipped to manage stressors inherent in university life.

Despite the clear benefits of physical fitness, the overall fitness status of Chinese university students has shown a concerning decline in recent years. National fitness assessments and academic studies consistently report insufficient levels of cardiorespiratory endurance, muscular strength, and flexibility among undergraduates (Chen et al., 2023). Academic workload, limited time, and a lack of intrinsic motivation for exercise are commonly cited barriers to regular physical activity. Moreover, many students engage in physical activity primarily to meet compulsory fitness assessment requirements rather than to maintain long-term health. This instrumental approach to exercise limits the sustained benefits of physical activity and reduces its potential impact on mental well-being.

Variation in physical fitness levels among Chinese university students is also influenced by institutional factors. Universities differ significantly in terms of sports facilities, physical education curricula, campus culture, and administrative support for physical activity. Zhou et al. (2024) demonstrated that students attending universities with well-developed sports infrastructure and diverse physical activity programs reported higher fitness levels and better mental health outcomes. Conversely, students in institutions with limited facilities or less

emphasis on physical education were more likely to exhibit lower fitness levels and higher stress. These findings highlight the importance of the campus environment in shaping student health behaviors and outcomes.

Given these disparities, examining stress and physical fitness across multiple universities offers valuable insights into how institutional contexts influence student well-being. A comparative approach involving three universities allows for the exploration of differences in academic pressure, fitness resources, and student lifestyles. Such an approach enables researchers to identify institution-specific stress patterns and fitness needs, thereby informing targeted interventions. Rather than viewing stress and physical fitness as isolated issues, this perspective emphasizes their interconnected nature and the role of environmental factors in shaping student experiences.

The integration of physical fitness into campus mental health strategies represents a promising direction for higher education institutions in China. Unlike traditional counseling services, physical activity-based interventions can reach a broader student population, reduce stigma associated with mental health support, and promote sustainable lifestyle changes. For students in sports-related disciplines, understanding the relationship between fitness and mental health is particularly important, as they are well-positioned to advocate for evidence-based health promotion initiatives. By examining stress levels and physical fitness concurrently, this research contributes to a more comprehensive understanding of student health and supports the development of integrated campus health models.

In summary, Chinese university students face persistent stress and mental health challenges driven by academic, social, and cultural pressures. Physical fitness has emerged as a critical protective factor that can mitigate stress and enhance psychological well-being, yet current fitness levels among students remain inadequate and uneven across institutions. A comparative examination of three universities provides a valuable framework for understanding how campus environments influence stress and fitness outcomes. This research background establishes the theoretical and empirical foundation for investigating the interplay between campus fitness and mental health, with the ultimate goal of informing

effective and sustainable health promotion strategies within Chinese higher education.

## **B. Research Focus**

The present study is guided by two primary research focuses that collectively address the interaction between campus fitness and mental health among Chinese university students. These focuses are designed to provide both descriptive and analytical insight into student well-being within higher education settings.

The first research focus is to examine the stress levels and mental health needs of university students across three Chinese universities. This focus emphasizes identifying the prevalence and intensity of psychological stress, as well as understanding the major academic, social, and environmental stressors affecting students. By comparing students from different institutional contexts, the study seeks to reveal similarities and differences in stress experiences and mental health needs, thereby contributing to a more comprehensive understanding of student psychological well-being within diverse campus environments.

The second research focus is to investigate the physical fitness status of university students and its relationship with stress and mental health outcomes. This focus involves assessing key components of physical fitness, including cardiorespiratory endurance, muscular strength, flexibility, and body composition, and analyzing how these fitness indicators are associated with students' perceived stress and psychological health. Through this integrated analysis, the study aims to clarify the role of physical fitness as a potential protective factor against stress and mental health challenges, as well as to explore how campus fitness environments may support or hinder student well-being.

## **C. Problem Formulation**

Based on the background of the problem and the defined research focus, this study formulates the research problems as follows:

1. The first research problem concerns the high prevalence of psychological stress and unmet mental health needs among Chinese university students. Despite increasing recognition of mental health issues within higher education, many students continue to experience moderate to high levels of stress arising from academic pressure, social adjustment, and future employment concerns. Existing campus mental health services are often limited in scope and primarily focused on counseling, which may not adequately address the widespread and multifaceted nature of student stress. Moreover, there is insufficient comparative evidence across different universities to clearly identify variations in stress levels and mental health needs related to institutional environments. This lack of comprehensive understanding hinders the development of targeted and context-specific mental health interventions within Chinese universities.
2. The second research problem relates to the declining physical fitness levels of university students and the unclear role of physical fitness in stress and mental health management. Although physical fitness is widely acknowledged as beneficial for mental well-being, many Chinese university students demonstrate inadequate fitness levels and low participation in regular physical activity beyond compulsory requirements. Furthermore, empirical evidence examining the relationship between physical fitness and psychological stress within Chinese university settings remains limited, particularly in studies that integrate objective fitness assessments with mental health measures. The absence of such integrated and comparative research restricts the ability of universities to effectively incorporate fitness-based strategies into campus mental health programs, thereby limiting the potential of physical fitness as a sustainable tool for stress reduction and mental health promotion.

#### **D. Research purposes**

Based on the formulation of the research problems, the purposes of this study are as follows:

1. The first purpose of this research is to examine the levels of psychological stress and the associated mental health needs of university students across three Chinese universities. This purpose involves identifying the prevalence and intensity of stress experienced by students, as well as understanding the major sources of stress within different institutional contexts. By comparing students from universities with varying academic environments and campus resources, the study aims to provide a clearer picture of how institutional factors influence student stress and mental health needs, thereby contributing to more accurate identification of at-risk student groups.
2. The second purpose of this research is to analyze the physical fitness status of university students and investigate its relationship with psychological stress and mental health outcomes. This purpose focuses on assessing key components of physical fitness, including cardiorespiratory endurance, muscular strength, flexibility, and body composition, and examining how these fitness indicators are associated with students' perceived stress levels and mental well-being. Through this analysis, the study seeks to clarify the role of physical fitness as a potential protective factor against stress and mental health challenges, and to provide empirical evidence that can inform the integration of fitness-based interventions into campus mental health promotion strategies within Chinese universities.

#### ***E. State of the Art***

| <b>Author(s) &amp; Year</b> | <b>Research Focus</b>                                                           | <b>Sample &amp; Context</b>                         | <b>Methodology</b>                | <b>Key Findings</b>                                                                                     | <b>Research Gap / Relevance to Present Study</b>                                            |
|-----------------------------|---------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Tang, Kang, & Xin (2023)    | Prevalence of stress, anxiety, and depression among Chinese university students | Systematic review of Chinese university populations | Systematic review & meta-analysis | High prevalence of stress, anxiety, and depression; stress identified as a dominant mental health issue | Focuses on prevalence only; does not integrate physical fitness or institutional comparison |
| Ma et al.                   | Relationship                                                                    | Large                                               | Cross-                            | Higher physical                                                                                         | Does not                                                                                    |

| Author(s) & Year        | Research Focus                                             | Sample & Context                            | Methodology                                      | Key Findings                                                                                 | Research Gap / Relevance to Present Study                              |
|-------------------------|------------------------------------------------------------|---------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| (2024)                  | between physical fitness and psychological health          | sample of Chinese university students       | sectional; objective physical fitness indicators | fitness associated with lower risk of psychological abnormalities                            | examine stress as a central variable or compare multiple universities  |
| Chen, Liu, & Sun (2023) | Physical fitness trends among Chinese university students  | University students across regions in China | Cross-sectional survey & fitness testing         | Declining cardiorespiratory endurance and muscular strength; fitness varies by academic year | Mental health and stress not included; lacks psychological integration |
| Wang & Huang (2021)     | Exercise habits, psychological capital, and mental health  | Chinese college students                    | Structural equation modeling                     | Psychological capital mediates the relationship between exercise and mental health           | Focuses on exercise behavior rather than objective fitness status      |
| Li, Zhang, & Li (2022)  | Physical activity, stress, and mental health               | Chinese university students                 | Quantitative survey                              | Higher physical activity linked to reduced stress and better mental health                   | Relies on self-reported activity; limited fitness assessment           |
| Zhou, Li, & Chen (2024) | Campus environment, physical activity, and health outcomes | Multiple Chinese universities               | Multivariate analysis                            | Better campus facilities linked to higher activity levels and improved mental health         | Stress measured indirectly; limited focus on fitness indicators        |

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|---------------------------|---------------------------------------------|-----------------------------|---------------------|---------------------------------------------|---------------------------------------------------------|
| Zhang, Zhou, & Xia (2023) | Long-term mental health effects of COVID-19 | Chinese university students | Longitudinal survey | Persistent stress and anxiety post-pandemic | Does not examine physical fitness as a coping mechanism |
|---------------------------|---------------------------------------------|-----------------------------|---------------------|---------------------------------------------|---------------------------------------------------------|

