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Experiences of mental health factors among domestic and international health professions students: a qualitative study at universities in China

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Abstract

Health professions students at Chinese universities experience a higher prevalence of mental illness than their peers in other professions, but few studies have qualitatively assessed students' perceptions of their mental health risks. This study describes domestic and international health professions students' experiences of risk factors to their mental wellness at Chinese universities. A total of 22 semi-structured interviews were conducted at 7 universities throughout China from April to July 2016. The 40 students interviewed identified academic stressors, work environment concerns, demographic disparities, relationships with peers, independent living, family expectations, and stigma toward mental illness as factors that were associated with their mental health in university. International students also experienced difficulties with learning Chinese and living in a new country. In China, health professions students' experiences of mental health involve a complex combination of factors relating to competition, gaining independence, building relationships, and diverse identities, some of which are unique to their training and others which reflect the university environment or challenges for their generation. Institutional and societal changes that address these factors could benefit the mental wellness of China's future healthcare workforce.

Key words: global mental health, health professions students, Chinese universities, mental health experiences, qualitative study.

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Introduction

Mental health is an increasingly prominent issue in China, with more than 215 million Chinese estimated to suffer from diagnosable mental disabilities.[1] Suicide is the leading cause of death among 15-to-34-year-olds in China, accounting for 19% of deaths in this age group.[2] University students, a subset of this age group, may experience particular career, social, and academic pressures that contribute to depression, anxiety, and/or other mental health issues.[3]

Students in health professions programs at universities are at even greater risk of adverse mental health effects. Globally, the prevalence of depressive symptoms among medical students is 27.2%, and that of suicidal ideation is 11.1%, about 2 to 5 times greater than similar-age individuals in the general population.[4] Anxiety is also common: globally, 1 in 3 medical students have anxiety, a prevalence 10-30% higher than the general population.[5]

Previous studies of medical students in China have found high prevalence rates of depression and anxiety, often higher than those of other university students and of the general population. The prevalence of depression among Chinese medical students is estimated to be 27.5-32.74%,[6-9] compared to 22.4% among non-medical students,[6] and 28.4% among all university students.[10] Anxiety among medical students is estimated to be 19.9-21%, compared to 4.3% among 18-34-year-olds in China overall.[1,8,11] The prevalence of suicidal ideation is also higher among medical students (12.58%) than in non-medical students (9.61%) or college students overall (10.72%),[2] and suicide attempts are 3 times more common among medical students (2.8%) than the general population (1%).[12] The evidence thus suggests that medical students are a particularly high-risk group in a country with a rising prevalence of mental disorders.

Promoting the mental wellness of health professions students may therefore be an important priority for Chinese universities and public health interventions. The challenge, as in all contexts, is that mental health is multifactorial, and factors found to increase the risk of anxiety and depression among Chinese medical students include poor relationships with family, substance use, and physical illness.[11] Depression, rural family background, academic stress, dissatisfaction with one's major, and female gender have been found to be risk factors for suicidal ideation or attempts.[2,12-14] Additionally, increasing rates of violence against healthcare workers, with 17,243 cases in 2010 and multiple high-profile murders each year,[15] have been a source of fear and stress for health professions students and may contribute to the declining number of stu-

dents enrolling in medical programs and a high attrition rate of new professionals.[16] Students may also be discouraged by the prospect of being overworked and underpaid after the lengthy, arduous process of obtaining their degrees, as 80% of doctors report experiencing.[17]

Although many quantitative studies have investigated the prevalence of psychiatric disorders or symptoms among medical or health professions students in China and their associations with demographic and behavioral factors, few qualitative studies have explored these questions. This study aimed to use in-depth, semi-structured interviews with students to illuminate the framework *via* which students themselves construct the idea of mental health. We hoped to understand the constituents and significance of this framework, how they play out as lived experiences, and how the conceptualization and attainability of mental wellness are informed by social, economic, and political forces. Given the increasing acknowledgement of student mental health and ongoing efforts to address these needs, a narrative understanding of students' experiences may point the way to clearer goals and framing of interventions. For example, numerous quantitative studies identify factors that influence student mental health.[14] This paper aims to tease apart this idea, looking at what "influence" looks like and what students consider to be within the scope of mental health.

Previous ethnographic work has analyzed how social factors and cultural mediators of these factors contribute to mental health, such as in Kirmayer's 2022 study of suicide.[18] Though suicide as a discrete act can be varyingly interpreted as a symptom or sequelae of psychological distress or a voluntary action undertaken on logic or principle, the same model of social factors and cultural mediators is compelling for psychiatric diagnoses or mental health states. Another conceptualization of mental health contexts is the idea of social suffering, described by Kleinman *et al.* in 1997.[19] Various negatively experienced mental health states can be viewed as the products of social, political, and economic powers shaping the lives and sometimes directly the emotional experiences of individuals and communities. This study aims to build on this theoretical foundation by describing the emotional ecosystem of health professions students, a population that also represents a subset of the larger communities of university students and young adults in China, and identifying the external, internal, interpersonal, and institutional forces that feed into and shape the contours of these communities' lived emotional realms.

Materials and Methods

Study design

We conducted an exploratory qualitative study using in-depth, semi-structured interviews with health professions students, including both one-on-one interviews and focus groups of 3 to 5 individuals. The interviews were then transcribed, and coded, and thematic analysis was used to interpret the data. This study was approved by the ethics committee of the hospital site.

Study site

This study was conducted among students enrolled at 7 Chinese public universities: (i) Central South University is well-known for its psychiatry program and is located in Changsha, Hunan, a provincial capital and a clinical and research hub for psychiatry; (ii) Wenzhou Medical University, also known for its strong psychiatry program, is located in the economically and academically significant eastern coastal province of Zhejiang; (iii) Jishou University is located in Western Hunan, where many students are ethnic minorities and come from rural communities; (iv) Guilin Medical University is located in the Zhuang Autonomous Region of Guangxi in southern China, another region with a significant ethnic minority population; (v) Guangzhou University of Chinese Medicine and (vi) Southern Medical University are two universities in Guangzhou, one of the largest cities in China; (vii) Fudan University is one of the most prestigious universities in China and is located in Shanghai, the most populous city in China.

These 7 universities represent multiple regions and settings in China, including rural and urban settings, different geographical regions, different tiers of universities, and varying institutional emphases on psychiatry.

Population

Our population included any undergraduate and graduate students pursuing a health professions major at a Chinese medical university or medical college in a comprehensive university, including both domestic and international students. Although studies often focus on "medical students", we decided to include all health professions students in this study for multiple reasons. First, the most accurate equivalent of the term "medical student" in the Chinese context is unclear. The most direct term would be "clinical medicine" majors. However, majors such as psychiatry and physical medicine and rehabilitation, which are included under the medical student umbrella in many countries, are considered separate majors from clinical medicine. Alternatively, "medical students" may be interpreted in the Chinese context as all students studying majors in medical fields, including nutrition, preventive medicine, and nursing. Ultimately, all health professions majors in Chinese universities ultimately face similar academic and professional challenges that can affect mental health.

Sampling

Participants were recruited from April to July 2016. From each university, we recruited at least 2 students, aiming for a total sample size of 30-40 individuals representing the following categories: male, female, domestic, international, undergraduate preclinical, undergraduate clinical, and graduate. The participants were recruited through convenience sampling and snowball sampling. Of the participants, 3 directly volunteered for the study after direct invitations or public announcements, 28 were recruited as referrals from other students, and 9 were referrals from university professors.

Data collection

Interviews were scheduled at the convenience of the participants. Individuals were given the choice to be interviewed one-on-one or in a group. Focus groups were formed when students wished to be interviewed together due to time constraints or comfort preferences. Participants were given the choice to conduct their interview in either Mandarin Chinese or English.

Before the interview, participants were given information sheets in both English and Mandarin Chinese containing contact information for the researchers. The interviewer then asked for verbal informed consent and obtained permission to record the conversation. Verbal rather than written consent was obtained to make the participants feel more secure in the confidentiality of their answers, given the sensitive topics of the interviews. All interviews were conducted by the first researcher.

Table 1. Interview guide. The exact wording and order of questions and prompts varied depending on the flow of the interview. Interviewees were asked additional questions not listed if we were interested in their elaboration on an answer.

Question	Prompts
What do you think are the main challenges to student mental wellness at university?	Examples? Why are these the main challenges?
What specific challenges do medical students face for mental wellness?	How are these similar to or different from those of other majors or students in general?
Are there challenges to mental wellness for certain students based on their background?	Minority status? Socioeconomic background? Rural/urban family? Regional background? Gender?
What unique challenges do you think your generation faces?	What are the biggest social influences on mental wellness? Generational differences? Unique challenges in China?

Interviews were conducted using a semi-structured format, based on the interview guide and accompanying prompts (Table 1). Individualized follow-up questions outside of the guide structure were asked to clarify and deepen content and avoid constraining data to the initial framework. One-on-one interviews lasted approximately 30-60 minutes, while focus groups lasted one to two hours. Personally identifiable information was removed from interview materials.

Data saturation was determined when at least two interviews did not yield new significant subthemes or expand the depth of existing themes.

Data management and analysis

Interview recordings were stored as MP3 files on a secure computer. Interviews conducted in Chinese were transcribed by the first researcher and transcribing assistants, and interviews conducted in English were transcribed by the first researcher. All 22 interviews were then coded inductively by the first researcher in English. A total of 5 interviews, representing both Chinese and English language interviews, were randomly selected and coded inductively by two other researchers for cross-verification of the coding structure and identified themes, with instructions to use the interview guide as an organizing skeleton and then self-generating codes and labeling and grouping themes. These codes were then discussed with the first researcher to directly resolve any discrepancies.

The codes were grouped into categories based on the interview guide. As the interview guide questions were designed to be broad, no significant relevant themes appeared to emerge outside its framework. Major themes were extracted and analyzed. Thematic analysis was used to explore the examples of and factors affecting mental health in students' narratives. Quotations and/or phrases in their entirety were translated into English as needed for inclusion in the manuscript.

Results

Sample characteristics

A total of 22 interviews were conducted with 40 individuals from 7 universities in 6 cities. Of these interviews, 15 were one-on-one and 7 were focus groups. The characteristics of the participants are described in Table 2.

Main themes

We identified the following themes and sub-themes in our discussions with health professions students about factors that influence their mental health (*Supplementary Table 1*). These descriptions are based directly on student responses and accounts of their personal experiences.

Competition and social status

Academic pressure and stress

In nearly every interview, Chinese educational culture and practices in childhood were identified as a major influence on student mental health. Primary and secondary education in China is extremely stressful and time-intensive. Interviewees felt that education is viewed as a "way out" or the key to a good life, so pressure is placed on children from a young age. The strategy, as experienced by interviewees, is to mold students so that they "single-mindedly concentrate on school" and get into the best primary school and then the best secondary school, and then eventually succeed in the national college entrance exam, the *gaokao,* which determines the college that they will attend. Nearly all hours outside school are booked for tutors or extra classes. Interviewees felt they were taught that the purpose of education is to outcompete other people, as parents routinely compared their children to others. Children also want their parents to be pleased with them and to "not bring them shame".

Interviewees also felt that Chinese education focuses mainly on exams and grades and that teachers only care about academic performance, to the neglect of creative, social, and emotional skills. Interviewees described this education as "boring, rote learning", "discouraging creativity and innovation", with "all fun classes eliminated by 6th grade". One interviewee remarked that the education focuses on tools needed for "outer engineering: a beautiful car, house, clothes, but what about inner engineering?" As adults, interviewees feel that that their "only skill is taking exams" and regret that "their parents did not nurture other skills in them".

Once at university, the large number of students at many Chinese universities continues to foster an intense sense of competition, especially when students feel that they are in "an environment in which everyone is very talented" and it is "inevitable to compare oneself with others". Grades and rankings are publicly displayed after exams, fueling a competitive atmosphere. University can be more academically relaxed for many majors in comparison to high school, but health professions students feel torn between an enjoyable college experience that most of their peers are participating in and the more isolated pursuit of their long-term goals ("we knew that when we chose medicine, it's going to be difficult, but…knowing that it's going to be stressful doesn't lessen the stress any bit"). Medical majors also have a longer course of study than others (5+ years instead of 4), making students feel that they acquire status and receive a return on investment far later than their non-medical peers.

Table 2. Characteristics of health professions interviewees at Chinese universities.

	Characteristic	Number	Percentage
Sex	Male	17	42.5
	Female	23	57.5
Grade	Undergraduate, year 1-2	8	20.0
	Undergraduate, year 3-5	23	57.5
	Graduate	9	22.5
City	Shanghai	3	7.5
	Guangzhou	20	50.0
	Changsha	8	20.0
	Guilin	2	5.0
	Wenzhou	2	5.0
	Zhangjiajie	5	12.5
School	Fudan University	3	7.5
	Guangzhou University of Chinese Medicine	5	12.5
	Southern Medical University	15	37.5
	Central South University	8	20.0
	Guilin Medical University	2	5.0
	Wenzhou Medical University	2	5.0
	Jishou University	5	12.5
Nationality	Domestic	28	70.0
	International	12	30.0
Major	Clinical medicine and subspecialties (excl. psychiatry)	25	62.5
	Psychiatry	6	15.0
	Health promotion and prevention	4	10.0
	Nursing	5	12.5

Domestic refers to students of Chinese nationality. International refers to students of non-Chinese nationality; South Asian, West African, Central African, and East African nationalities were represented in this study. Clinical medicine and subspecialties included general clinical medicine, physical medicine and rehabilitation, traditional Chinese clinical medicine, radiology, and dermatology majors. Psychiatry and nursing are individual majors. Health promotion and prevention majors include preventive medicine and nutrition.

Many interviewees were concerned about the lack of a guaranteed payoff: there may be fewer employers and poor job options for disciplines that are currently less developed, with low salaries and little opportunity for career advancement, causing these students to feel that their studies were wasted. Psychiatry majors in particular also feel that their job is stigmatized and disrespected ("people say, 'Psychiatrists…there's a career like that? Don't they just see crazy people? Can mental illness even be treated?'"). Interviewees have noticed that hospitals are often oversaturated with staff, senior physicians cannot be fired, and patients often do not want to be treated by younger doctors, all leading to reduced job opportunities for new graduates.

Work environment for health professionals

Interviewees described a lack of trust and mutual empathy between doctors and their patients in China, pointing out that doctors have large volumes of patients and may lack the time or patience to communicate thoroughly with them, while patients often have poor adherence and contribute to tensions by making public statements denouncing doctors. Patient-doctor conflict and violence have become a significant issue. Health professionals fear being harmed and even killed by patients in the hospital, where there is little protection for employees, or even being followed to their homes and attacked. This anxiety was especially strong for psychiatry majors, who felt that "psychiatric patients aren't held responsible for harm they cause, it's a symptom of their disease". This has resulted in a shift in the nature of doctors' jobs; they now "think about self-protection instead of saving lives of others". This has further contributed to the emotional burnout that students experience as they train for a high-pressure job in which they frequently encounter death.

Family pressures

Interviewees reported that many students have experienced pressure from their families since childhood, especially if they were only children. They noted that children tend to be scolded instead of comforted for bad grades, with subsequent negative effects on their mood and self-esteem. Interviewees also remarked that Chinese parents often demand obedience from their children, as they "want to be able to brag about you to other people", sometimes choosing their majors for them and requiring approval for all decisions. Interviewees commented that many students feel that they will never be able to achieve enough to make their parents proud and fear letting down their family ("our parents have invested so much in us, as our parents' children we also want a dignified job to make them happy"). They also feel unable to communicate honestly with their parents about their lives, resulting in the observation that "many Chinese people feel lonely".

Challenges for marginalized students

Socioeconomic and rural/urban disparities

Interviewees described significant differences in the backgrounds of students from rural and urban areas, as rural areas tend to be associated with lower income and poorer education quality. Interviewees also noted that rural students have less social support in university and often feel that they have to work harder than city kids. Additionally, their families also often

depend on them for help. Rural students may feel less culturally savvy and have fewer connections, which are important to finding a good job ("if two people have the same capabilities, the one whose family has more money has connections and can use those to secure the job, and the one from a rural background who loses this opportunity will realize this and feel that it's unfair"). Students who are from ethnic minority groups, many of which are also associated with rural areas, may have to adjust to different lifestyles and food at universities and experience microaggressions ("in microbiology class…the teacher made a comment that suggested the dining habits in a region were unsanitary"). Interviewees remarked that in contrast, urban students tend to have had more learning opportunities and their parents tend to be more socially savvy and able to guide their children in society.

Sexual minorities

Two interviewees described additional challenges faced by LGBTQ+ students, noting that Chinese traditional cultural views do not support LGBTQ+ lifestyles. LGBTQ+ students therefore must often hide their identities, which contributes to a sense of isolation. Sometimes, they are forced to come out, leading to distress about their perception by classmates, especially if classmates had expressed prejudiced views in the past ("many people knew about me, but I didn't know what people thought of me").

Challenges for international health professions students at Chinese universities

In addition to the academic difficulty of medical training, international students are challenged with a language barrier and requirements, as courses are taught in Chinese. Interviewees commented that this makes training more difficult and time-consuming, and international students often find the emphasis on Chinese unhelpful as most of them return to work in their home countries ("we came to study medicine, not Chinese, but the teachers are putting emphasis on the Chinese language… they make it like a major"). Interviewees also expressed dissatisfaction with the quality of teaching due to the language barrier ("there's no consideration to the foreigners who don't understand the language and the Chinese who are masters of their language").

Finances, while a stressor for many students, is particularly so for international students, who must pay out of pocket. Interviewees noted that their universities send students home if they do not pay their fees in time ("school fees haven't been paid, school office is on you, you can't really call home because of the situation at home, they are trying but it's not coming soon enough").

An obvious additional stressor is that of moving to a new country. International student interviewees described themselves as being in an unfamiliar country with limited social support. Adjustment to a new culture and food can also be a challenge ("they don't allow us to cook here. When you eat others' food you get tired because it's not the food you grew up with").

Interviewees reported that international students, particularly African students, may also experience racism and discrimination. This discrimination can affect their daily social interactions; access to basic services, such as a bank account; or access to opportunities, such as a job ("it can actually dampen your entire spirit… you don't know 'will I be accepted?'").

Transitioning to young adulthood

Living independently

Living independently away from family with the powers and responsibilities of an adult is a source of many new stressors. Interviewees commented that for many Chinese students, college is the first time they leave their hometown, or the first time they do so for an extended period of time. The transition from high school to college is also inherently challenging. In high school, particularly the "grey" and "colorless" year before the *gaokao,* students are constantly given instructions and plans are made for them. In college, students suddenly have to take initiative and responsibility for their learning and make their own plans. Interviewees observed that many students feel lost in university without an external structure and do not know what to do with their time. The sudden release from a regimented lifestyle can result in boredom and the lack of self-discipline ("after being repressed during high school, students feel like it's time to let go and be decadent, try everything, and finally be oneself, but this can drive them to excess or unproductive activities, not necessarily better self-knowledge").

Peer and romantic relationships

Peer relationships can also play a strong role in mental health. Nearly half of the interviewees mentioned feeling that they lack social or communication skills for responding to conflict and interacting with others. Roommate-specific conflicts can be especially influential ("if there are six people in a dorm room, you have to adjust to the lives and routines of six people…On top of this everyone is 18 or 19 years old, so they will often be stubborn"). Interviewees brought up that multiple cases of assault and even murder between roommates have been reported in China.

College is also the phase when many youth in China begin dating. Interviewees commented that before college, they are taught by parents and teachers that dating is inappropriate and interferes with school. Interviewees reported experiences such as dating being banned in their schools, boys and girls in high school being required to sit at separate desks, and education on sex and relationships being excluded from the curriculum. As a result, "once everyone is free in college, they all want to date".

Interviewees reported that the widespread emphasis on relationships in university can also be a source of stress for students who feel pressured to be in a relationship. As students approach graduation, their families often begin to pressure them toward marriage as well. As one focus group described, it is stressful for students to be forbidden to date all their youth and then urged to quickly get married once they reach a certain age. Health professions students, with their longer courses of study, feel a heightened version of this pressure, for while other college students can finish their studies "in 3 or 4 years and are still in the full bloom of youth, [medical students] spend the entirety of our youth studying" and find themselves immediately confronted with pressures to get married when they finish. Female students also experience these pressures intensely due to the societal belief that "a woman's value decreases with age". Additionally, many college-educated women are no longer interested in traditional marriages in which they are an "obedient housewife" or "accessories" to their husband, even though this makes it more difficult for them to get married. Meanwhile, interviewees reported that as the population of men in China is currently greater than the population of women, heterosexual men feel pressured to meet a high financial standard in order to find a spouse.

Discussion

To our knowledge, this is one of the first qualitative studies to investigate mental health experiences of health professions students in China in narrative detail.

Many interviewees used "yali" to describe factors contributing to their experience of mental health, a term that can be translated as "pressure" or "burden" and in an abstract emotional sense denotes a feeling of overwhelming, oppressive expectations. The concept of "yali" as a proxy for psychological distress was so natural and unifying in our interviews that students who struggled to answer the question of "mental health factors" were replete with ideas once they were prompted to think of "yali". Interviewees also rarely used psychiatric or psychologic terminology, such as depression or anxiety, when describing mental health experiences or consequences. Instead, impacts were described *via* emotional states ("lonely", "sad", "numb") or more commonly as a failure to meet extrinsic and intrinsic expectations.

Issues such as the increased academic pressure for medical majors and the fear of patient-doctor violence are unique to or enhanced for health professions students. These added pressures may contribute to the higher rates of depression and anxiety found among health professions students globally and in China in previous quantitative studies.[4-12] Many other experiences, such as roommate conflicts, childhood education, and familial pressures, are shared by students in other majors or by Chinese young adults in general. However, the intensity and time-consuming nature of health professions majors, particularly in comparison to the reputed relaxed nature of university for the general student body, may result in less access to supports or resources.

Competition and social status

Stressors unique to health professions students included the rigor of medical majors and patient-doctor violence. Consistent with this description, a study of Chinese students' quality of life found that medical training negatively impacts the physical and mental health of students due to its length, academic pressure, challenges of finding post-graduation employment in a narrow field, and inherent exposure to illness and death.[20] Students' narrative reports of their academic pressures as a significant negative influence on mental health also corroborate previous findings that academic stress can be a risk factor for suicidal ideation or attempts among Chinese medical students.[2,12-14]

Students' fear regarding the safety of their future work environment is also justified: violence towards healthcare professionals from patients has been increasing over the past few decades, with 66% of physicians in China reporting experiences of conflicts with patients.[15,21] There were 345 incidents from 2000-2020 in China, including 54 murders.[15] The degree of fear among the health professions students interviewed in this study due to work conditions echoes concerns reported in previous studies, and the sentiments of reluctance to practice align with the high attrition rates that have been found.[16] These trends have created an atmosphere of trepidation and negativity among both clinicians and trainees, affecting their mental health, stress, and job satisfaction, as many students remarked in this study.[21]

Students reported that their primary and secondary education was extremely difficult and high pressure, largely due to its exclusive focus on grades and exams. Previous studies have corroborated the stresses of the Chinese education system.[22,23] Studies including thousands of primary and secondary Chinese students have found that upward of 70-80% of students experience negative effects of academic pressure on their mood, with suicide risk increased among older adolescents as academic pressure increases.[22] The *gaokao* in particular is known to cause immense stress; one student in these studies reported that "I had the darkest and blandest time of my life of 17 years when preparing for the *gaokao*",[22] a sentiment that was echoed directly by an interviewee in this study. That many interviewees highlighted their childhood education as a detractor from mental wellness, even in university and graduate school, reflects the intense and enduring negative effects of these educational demands. Students also reported regret that they were not given opportunities as children to explore and pursue their real interests, particularly creative endeavors, or to cultivate personal qualities and skills beyond academic achievement. This continued frustration suggests that the lack of attention to these areas of development during childhood education can affect individuals' self-actualization and life satisfaction into adulthood. Furthermore, while students pursuing other majors can experience some relief from intense educational demands during college, this pressure only compounds for health services majors.

Parental control and pressure were another significant source of stress, especially for only children. Parenting in China is traditionally seen as an investment for oneself, and parents are therefore motivated to ensure that their children grow up to have sufficient material wealth and respect to support themselves and their parents. The health professions, especially clinical medicine, remain a privileged career in China that is offered only to those who can consistently achieve the highest grades and who have the family support and financial resources to enable them to do so and are thus viewed as an attractive option for all stakeholders in a child's future. A study on parenting style in China supports this finding, noting parents retain a significantly influential role for a prolonged period of time.[24] Thus, experiences such as parental rejection, lack of warmth, or overprotection and the avoidance of these experiences could be motivators and have a strong effect on student mental health.[24] The effects that these parenting styles then have on specific factors such as academic stressors and marriage pressures can compound the influence of these factors on their adult children's mental health.

Interviewees, as university students in strenuous degree programs while coming of age as young adults, were situated at a unique temporal and positional crossroads of "yali". They are participants in China's highly regimented and demanding educational system, inheritors of a 2000-year meritocratic cultural context, and objects of the academic pressures these contexts produce. These pressures are in turn mediated by sociopolitical dynamics, including state educational and senior welfare policies and the tension between traditional values regarding the family and individual and modern negotiations in these relationships as values shift with development and globalization. The pavement of this crossroads is perhaps formed by the expectations of one's parents or families for a return on their substantial investments in children whom they want to be proud of (thereby gaining social power and mobility) and hope to rely on (thereby securing material safety).[25]

The miasma of "yali" is also both creator and product of a binary of success and failure, in which the myriad of towering expectations are either met or they are not, which presumably leads to a lifetime of opportunities or the absence of such, respectively.[25] Young people find that they are either winners or losers: they are top of the class or they are not; they have found a romantic partner or spouse by the expected age or they have not; they are a source of pride and social

status for their parents or they are not. This winner-loser binary may have roots in China's history, traditions, and values of meritocracy, in which those who succeeded on the civil service exams were guaranteed opportunities, respect, and material fulfillment for themselves and generations to come, while those who did not achieve the required threshold anchored themselves, their families, and their progeny in social stagnancy and poverty.[25] This binary, however, is undeniably also compounded by the modern-day capitalistic policies, practices, and attitudes that shape China's economic growth and political influence and promote a spirit of competition for limited resources and ever-growing yet increasingly elusive rewards.[25]

Challenges for marginalized students

Disparities between urban and rural backgrounds were also identified as a source of mental health struggles. Rural adolescents are found to have poorer mental health than their urban counterparts,[26] a trend that continues in medical school along with a greater prevalence of suicide.[20,27] Several explanations for this pattern have been proposed, which were echoed by interviewees: living far from their homes, sociocultural gaps between urban and rural environments, significant income disparity and financial limitations,[27,28] and poorer self-esteem.[27] Although China has several measures that attempt to reduce the effect of rural-urban and socioeconomic disparities on access to education and opportunities, including lower *gaokao* cutoffs for ethnic and linguistic minority students and a recently introduced ban on private tutoring, the overall priorities of the educational system in China and the centrality of social connections continue to favor those who already come from more privileged backgrounds and make those students who are able to access these opportunities against the odds feel out of place or unprepared. Students from underprivileged backgrounds may feel the pressure of academic competition even more acutely, as they lack a familial safety net and may also bear the pressure of being viewed as keys to social mobility for their families.

LGBTQ+ students face particular challenges in both peer and romantic relationships, notably because they must often hide their sexual orientation. Previous studies have also found that schools are seldom inclusive for and supportive of LGBTQ+ students, and that Chinese LGBTQ+ students are at increased risk of discrimination, mental illness, and suicide.[29,30] The marginalization of LGBTQ+ identities at a time when young adults are urged by both peers and families to enter romantic relationships can be especially distressing. Similar to how female students felt particularly pathologized if they were not in a serious romantic relationship by a certain age, this expectation to follow a certain timeline places LGBTQ+ students in the difficult predicament of dating someone solely to fit social expectations, outing themselves before they are ready, or not following their age-appropriate role – thus becoming or feeling pathologized in all scenarios.

Main challenges faced by international students identified in this study were learning Chinese, finances, and living in a new country. Nearly half of the international students interviewed were from an African country. Other studies on African students in China, which have increased in number from 4 in 1956 to 81,562 in 2018, have also found that they experience struggles with social isolation, discrimination, and the language barrier in both daily life and academic courses, resulting in increased stress.[31] The racism that interviewees reported experiencing suggests a continuation of anti-Black sentiment on university campuses in China that has been documented since the 1970s.[32] Both Asian and African international interviewees mentioned that learning Chinese was a significant source of stress. Previous research is consistent with the students' critiques of their Chinese language education,[33] including that professors are not accommodating of international students' Chinese skill level and most students are unable to attain Chinese proficiency.[32] International students, already lacking baseline institutional comforts that domestic students receive, likely feel even less institutional support for personal and academic stressors.

For minority students, the success/failure binary also applies to the marginalized aspects of their identities and how well they can align with the expectations of the numerical or ideological majority and fulfill one's appropriate social role as dictated by these normative expectations. In this way, success/failure is also extended into a normal/abnormal binary. Students who are foreigners, ethnic minorities, or sexual minorities or who come from rural backgrounds do not "fit in" at baseline and require additional efforts to be accepted by their communities or to gain social currency.

Transitioning to young adulthood

Interviewees remarked that for Chinese students, as in many countries, college is the first time that many students are living independently with suddenly increased freedom. This change is especially pronounced in China when first-year students transition from a year of grueling, all-consuming studying for the *gaokao* to a far more relaxed, less structured, and more independent environment that requires increased self-discipline.[34] This transition period also coincides with the age of onset for many mental illnesses.[21]

Social relationships, with peers, roommates, and romantic interests or partners, were a large and significant source of mental health stressors. Students reported fear at the increased incidence of violent crimes between roommates, including murders reported by the news. Romantic relationships were considered especially important, as many students date for the first time in college and have especially intense relationships. Previous research supports the assertion that students are discouraged or even forbidden from dating during adolescence by both parents and schools,[35] leading students to view college as an era of opportunities for dating and sexual activity. Attitudes of young Chinese people toward traditional expectations of romantic relationships, gender roles, and marriage are changing, especially as a sex imbalance skewing toward men has developed as a result of the one-child policy,[35] leading to increasing marriage financial pressures for men and increasing selectivity of women that interviewees identified. However, there remains strong familial pressure to get married, particularly for women, who are encouraged to marry at their supposed physical and fertile peak,[35] a valuation system of which students are still keenly aware.

For health professions students, the increased attention needed for their academic programs may hinder them from developing independence and interpersonal skills for adulthood at the same rate as their peers. Health professions students expressed that they tend to follow a delayed timeline for dating seriously and getting married, as their studies take much of their time and attention while in school and they also finish school and get a job later. As parents want to see their children achieve success in both their careers and expected personal life milestones, and effort in one often detracts from or stalls progress in the other, this can further strain relationships with families or make students feel like they are laboring to fulfill impossible expectations. Dating also shifts very quickly from an exploratory activity for students into an obligatory competition as students aim to find partners that their families and society find respectable by societally dictated deadlines while trying to meet appearance and financial standards that allow them to secure such partners.

Interviewees are in a realm of transition between an often structured, sheltered, and constrained childhood and a young adulthood

filled with the freedom, burden, and terror of autonomy, choice, and exploration. They face expectations of becoming self-sufficient, responsible, and disciplined adults who are also socially fluent and well-adjusted with flourishing peer and romantic relationships. This intersection of expectations, shaped by history and modernization, culture and economics, and the family and the state, produces the atmosphere of "yali" that infuses and becomes near-synonymous with students' lived psychological and emotional states.

Limitations

This study had a number of limitations. The sample was overall broad, gathering a representation of the Chinese health professions student body but not capturing the full range of demographics. For example, we were unable to recruit participants from every health professions major or from every geographic region in China. However, because we reached saturation in the interviews on the major themes, the limitations of the sample likely did not result in missed coverage of significant themes.

The individual or focus group interview format was determined largely by participant preference, with the aim of increasing participant comfort and thus the quality and accuracy of responses. As these interview formats can yield different types of information, this represents a methodological contribution to possible incomplete capturing of themes.

Snowball sampling was used to recruit many of the interviewees, which could have introduced selection bias. However, because mental health is a sensitive topic, we were also able to obtain more honest and comprehensive answers through this method, as we found most of the participants through referrals from classmates they trusted. We noticed that participants who were randomly recruited rather than referred seemed more guarded in their responses.

Another limitation is that our study design does not allow us to confirm causal relationships between students' reported factors that influence their mental health and the actual causes of poor mental health. It is possible that students identified correlative or downstream factors related to their mental health or even unrelated factors. This may be especially true if students have limited awareness of their mental health dynamics due to lack of psychotherapy experience or even opportunities to reflect on these issues in casual contexts, which is possible due to the stigmatization of this topic in Chinese society.

Additionally, we did not ask students about specific mental health diagnoses during interviews, as we wanted to prioritize narrative experiences and student comfort in discussing these experiences *in lieu* of clinical diagnoses. However, it is possible that students who have significant mental health diagnoses may experience different stressors or common stressors differently from those who do not. Our analysis of student responses is therefore unable to account for the impact of existing diagnoses on mental health experiences.

The interviewer's demographics and positionality (including age, nationality, ethnicity, and occupation) may have affected what participants felt comfortable or interested in disclosing, particularly regarding more sensitive social issues. Variable use of Mandarin and English in interviews, particularly as these languages were not always participants' native languages, may also have affected how and what content was expressed.

As the data is from 2016, it may not completely capture present-day themes, particularly social changes that have newly arisen or become more salient since the COVID-19 pandemic. The question regarding specific challenges of the participants' generation may have yielded particularly different results if asked post-pandemic.

Conclusions

Health professions students at Chinese universities report experiences of mental health that involve a complex combination of factors, some of which are unique to their majors and others of which are shared by their classmates in other majors and by their generation. The additional stressors experienced by health professions students can potentiate the effects of baseline risk factors in university and make students more susceptible to their influences. Narrative experiences of these factors are largely consistent with existing research on variables associated with mental health and on demographic factors that present challenges to young adults in China. These factors create an atmosphere of overwhelming expectations that posit health professions students in the success/failure (and as an overlay for marginalized students, the normal/abnormal) binary that is generated by both traditional meritocracy and modern capitalism and pervades the social and economic goals and structures of modern China. With the increasing prevalence of mental illnesses, most of which remain untreated, among Chinese youth, and their increased rate compared to young adults in many other countries, greater understanding, attention, prevention, and treatment of students' mental welfare are crucial.

Institutional practices and wider policies could focus on effective strategies for promoting student mental wellness by incorporating school mental health services throughout the education timeline (including primary and secondary school), providing life and relational skills training to adolescents and young adults, improving workplace safety in medical settings, implementing measures to support minority students through education, advocacy, and demographic-specific mental health resources, and advocating for improved mental health awareness on a broader population-level that would reach families and parents.

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Online supplementary material:

Supplementary Table 1. Interviewees' main themes and sub-themes and associated quotes regarding mental health risk factors.

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