



# Quality of life among college students and its associated factors: a narrative review

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**Background and Objective:** Quality of life (QoL) is a comprehensive indicator for assessing the health and well-being of individuals. The QoL of university students can be affected by a variety of factors. Here we reviewed the QoL of college students and its associated factors.

**Methods:** PubMed and CNKI were searched and 73 related studies were finally included.

**Key Content and Findings:** The QoL score of college students was low in the “mental health” domain. Factors that may affect the QoL of college students included demographic factors (including gender, age, religion, ethnicity, urban/rural origin, family income, only child status, family type, and parent-child relationship), physiological factors (including musculoskeletal pain and chronic diseases), psychological factors (including anxiety/depression, social phobia, attention deficit disorder, and neglect/abuse during childhood), social factors (including left-behind experiences), lifestyle and behavioural factors (physical activity, sedentary behaviour, and exercise), and academically relevant factors (including major, interest in learning, academic stress, and academic performance). However, most of the currently available studies on the QoL were conducted on medical students and therefore their findings could not be generalized to college students in other majors. Furthermore, most of them were cross-sectional studies, and the causal relationships between the above-mentioned factors and QoL need to be further explored in longitudinal studies.

**Conclusions:** The QoL of non-medical college students and the “mental health” QoL of college students warrant further investigations. The QoL of college students is the result of a combination of demographic, psychological, physiological, behavioral, and academically relevant factors and should be improved by the adoption of multidisciplinary interventions.

**Keywords:** Quality of life (QoL); college student; narrative review

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## Introduction

The term “quality of life” (QoL) was proposed decades ago. As an elusive concept, QoL has more than a dozen definitions and models. The World Health Organization (WHO) defines QoL as “individuals’ perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals,

expectations, standards, and concerns” (1). According to David Felce and Jonathan Perry (2), QoL has three elements: objective living conditions, subjective perceptions of well-being (subjective evaluations of physical, material, social and emotional health), and personal values and aspirations, which dynamically interact with each other to affect people’s QoL.

QoL has been increasingly linked to health, and the

**Table 1** The search strategy summary

Items	Specification
Date of search	1 <sup>st</sup> November 2022
Databases and other sources searched	PubMed and CNKI
Search terms used	Quality of life, college students
Timeframe	From 1 <sup>st</sup> January 1980 to 1 <sup>st</sup> November 2022
Inclusion criteria	Observational studies on the quality of life of college students
Selection process	The first and second authors retrieved eligible studies independently and they discussed solving any discrepancies

latter is defined by WHO as “a state of complete physical, mental and social well-being and not merely absence of disease or infirmity” (3). The concept of Health-Related Quality of Life (HRQOL) has also been proposed, which measures the “complete state” of health within 1 year (4). According to Milad Karimi and John Brazier (5), at least four definitions of HRQOL were created, and the terms “health”, “QoL”, and “HRQoL” are often used interchangeably; in fact, HRQOL tends to describe health in terms of function and well-being. QoL can also be affected by factors other than health, such as environment and socioeconomic status (6). QoL is affected by health status, which, however, explains only a small fraction of the outcomes for QoL (5). Compared to health, QoL is a more comprehensive measure for individuals.

According to the 2021 China Statistical Bulletin, China had 34.96 million college students, accounting for 2.4% of the total population (7). The vast majority of college students have to leave their hometowns to seek a college education in other cities, resulting in the loss of their first line of protection—their family. Some college classmates can only meet each other during classes, and the lack of communication makes it difficult to establish intimate relationships among college students. The student management systems also notably differ between universities/colleges and high schools: in a high school, classroom lessons and supervised learning are the main teaching modes; in contrast, universities or colleges emphasize the autonomy of learning, and many college students may be difficult to adapt to changes in the campus environment and policies (8). Meanwhile, college life represents a socialization process and a critical stage for psychological maturity. Leaving home for the first time, facing challenges from peers, having to manage their finances, and managing interpersonal relationships may

be difficult experiences for a student (9). Up to 16.0% to 25.4% of college students have mental problems, and suicide is the most common cause of death among college students in China (10). In the past few years, about 3,000 new cases of HIV infection had been reported among young students aged 15 to 24 in China every year (11). The number of university students is large, and these students are experiencing a variety of challenges; thus, special attention should be paid to the physical and mental health of college students. In particular, research on QoL will help us to learn the status of college students in a more comprehensive manner. We present the following article in accordance with the Narrative Review reporting checklist (available at <https://amj.amegroups.com/article/view/10.21037/amj-22-96/rc>).

## Methods

Relevant literature was searched in the PubMed and CNKI databases. The Boolean operator AND was used to combine all the possible search terms “QoL + college students” (Table 1). Finally, 42 articles were retrieved from PubMed and 31 from CNKI.

## Results

Tan *et al.* analyzed the standard scores of each dimension of the 36-Item Short Form Survey (SF-36) in a survey carried out on college students in a college town in Shanxi Province and compared them with the scores of residents in the urban and rural areas of Sichuan Province; except for the physiological function and vitality dimensions, significant differences in SF-36 scores were found between college students in Shanxi Province and residents in Sichuan Province, especially in mental health (12). Compared with

the general population aged 18 to 34 years in the United States, the general undergraduate college students had a higher physical component score (PCS) and a lower mental component score (MCS) (13). Qiu *et al.* found that, compared with the general populations in Taiwan, Hong Kong, Sichuan, Hangzhou, and Shanghai, the QoL of medical students was relatively poor (14). However, a Brazilian study of college students at a private medical college revealed that the QoL of medical students at this institution was better than that of the general population in the country (15), which might be related to the higher socio-economic level of the families of students in private medical colleges in Brazil.

## Factors affecting QoL of college students

### Demographic factors

#### Gender

Gender was not significantly correlated with the QoL of college students (14,16,17). Tan *et al.* (18) used the SF-36 scale to evaluate the QoL of undergraduate students majoring in rehabilitation therapy and found that the QoL was not significantly different between males and females, although the scores of mental health and its four dimensions were slightly higher in females than in males, which may be explained by the fact that far more female students enrolled in this major. Although females scored slightly higher than males in environmental, mental, and overall QoL dimensions, nonparametric tests showed no statistically significant differences in the scores of specific QoL aspects between males and females (19). However, a study at a university in Croatia found that females scored lower on general health, vitality, and social functioning, while males scored lower on mental health, which may be related to higher incidence (87.3%) of musculoskeletal pain symptoms in females and more high-intensity physical activity (PA) in males (20). Studies have demonstrated that females scored higher than males in the dimension of social relations (21,22), possibly because females have higher social skills and tend to be more emotionally expressive and sensitive, which makes females better at dealing with complicated social relationships (23).

#### Age

A study in Macao also explored the effect of age on QoL and found that college students aged 25 and above scored higher physically and psychologically than those in the 18–24 age group, possibly because when college students

become older than or equal to 25 years, their physical and physiological functions and mental status gradually mature and their living conditions are often improved after marriage and/or employment, especially with the support and care of their spouses (21). However, a multicenter study found that every additional year in the age of college students was associated with a decrease in overall QoL by 2% and a decrease in the environmental dimension by 3.6% (24). A possible explanation is that the study was carried out among nursing students, who had more stress and eustress later in their studies (25).

#### Religion

In addition, Parniyan *et al.* reported that religious attitudes had a positive impact on the mental health and QoL of college students (26). Felicilda-Reynaldo found religiosity was associated with better physical, psychological, and environmental health, and improved social relationships (27). Furthermore, most studies on the relationship between spirituality/religiousness and QoL have suggested that positive spiritual/religious coping styles can improve QoL, while negative spiritual/religious coping styles will impair QoL, regardless of the religion/spirituality types (28).

#### Ethnicity

Zhu *et al.* found no significant difference in QoL between Han and ethnic minorities in China (29). Kelimu *et al.* found the QoL of Han students was lower than that of Uyghur students, which may be related to the lively and cheerful personalities of the latter (30).

#### Urban/rural origin

Furthermore, college students of urban origin scored higher in dimensions including mental health, social relations, and environment than those of rural origin (19,31,32), which may be since most rural students are weaker than urban students in economic, social, and environmental performance (19). However, other studies have argued that the QoL of urban higher vocational school students was lower than that of rural higher vocational school students (33) and the QoL of college students from rural areas was better than those of urban origin in the environmental dimension (34), which may be that students from rural areas have a stronger ability to adapt to the environment and are easier to feel satisfied with the residence and transportation.

#### Family economic status

College students with high family incomes have a better

QoL (17,29,33). In Macau SAR, China, students with a monthly earning of more than or equal to MOP\$30,000 had significantly higher overall QoL scores than those with a monthly earning of less than \$30,000 (21). Assessment of college students' QoL using the World Health Organization Quality of Life Brief Version (WHOQOL-BREF) revealed that students with high family income scored significantly higher in the environmental dimension ( $P < 0.05$ ) (19). A multicenter study also showed that college students with higher monthly family incomes had better QoL (24). Students with low family incomes may have to do a part-time job, and therefore they are under the dual pressure of study and work (25). A survey showed that 40% of nearly poor college students had some degree of depression and about 80% of students were in a state of anxiety (35).

### **Witnessing domestic violence in childhood**

Witnessing domestic violence in childhood will reduce the QoL (17). As abuse and a traumatic experience, witnessing domestic violence will affect the physical, psychological, and social-emotional statuses of children and adolescents after they enter adulthood (36). Choi *et al.* found that witnessing domestic violence in childhood affected the left inferior longitudinal fasciculus, which will lead to emotional, learning, and memory impairments in children and adolescents, further reducing their QoL (37).

### **Only child (or not)**

Some studies showed no significant difference in QoL between only children and non-only children (29,38,39), whereas others argued that only children had better QoL (40,41). Compared with the non-only children, the only children had better QoL in the physiological and environmental dimensions (34). Understandably, the care and education of a child may be somehow neglected in a family with multiple children due to the limited energy and income of the parents, which ultimately impairs the performance of the child in the psychological and environmental dimensions (30).

### **Single-parent families**

The QoL of students from single-parent families is worse than that of students living in nuclear families, large families (40), and two-parent families (33). College students having good relationships with their parents have good QoL (40). A study in the United States also demonstrated that parent-child relationship quality was

positively correlated with QoL (42). A better family relationship means better QoL (29).

### **Physiological factors**

A study in a Croatian university found that musculoskeletal pain could impair the QoL of college students, possibly because the pain could hinder daily activities (20). Studies in women's colleges in India (43), Brazil (44), and China (45) have also shown that premenstrual syndrome (PMS) can notably reduce the QoL of college students in various dimensions. College students with chronic illness had higher levels of anxiety and experiential avoidance and lower levels of quality of life, and the association between anxiety and psychological quality of life was partially explained by experiential avoidance and committed action (46). The QoL is even worse in college students with chronic diseases such as respiratory disease, endocrine disorders, cardiovascular diseases, psoriasis, or cancer (47-49). Chronic illness brings pain, discomfort, and uncertainty about the future, which can negatively affect a person's daily life, level of independence, and interpersonal relationships and may trigger feelings of anxiety, helplessness, loneliness, and hopelessness (50).

### **Psychological factors**

#### **Anxiety and depression symptoms**

Anxiety and depression symptoms in college students affect QoL (30,41,51-56). Students with social phobia had significantly lower QoL than those without this problem (57-59).

#### **Attention deficit hyperactivity disorder (ADHD)**

Studies in Iceland (60), South Korea (61), the United States (62), China (63) and other territories have shown that ADHD reduces the QoL of college students (64), and ADHD individuals have a higher risk of comorbidities (65) and substance abuse (66) (e.g., tobacco and alcohol) and academically do not perform as well as individuals without ADHD (67).

#### **Abuse and neglect in childhood**

Abuse and neglect in childhood will impair QoL (29). A higher number of types of abuse and neglect in childhood was associated with lower scores in all dimensions of QoL in female nursing students (40). Individuals who have experienced abuse and neglect in childhood are more likely to become victims of school bullying, thereby having lower

QoL scores.

### **Social factors**

#### **Childhood left-behind experience (LBE)**

Among freshmen recruited from two Chinese universities, childhood LBE was significantly correlated with low QoL, especially among freshmen of urban origin (68). College students with LBE had significantly lower energy, satisfaction and interest in life, and control over emotions and behaviors than those without LBE (69). College students with LBE had more childhood trauma (especially neglect) and negative emotions (70,71). LBE weakened mental resilience (72). The separation from family or the fewer opportunities for spending time with family can impair the emotional relationships among family members and the coping ability of the family system (73). The absence of parents harms overall family functioning and children's self-control (74). The absence of one or both parents will lead to a lack of parental behavioral control and monitoring and weaken parental support and guidance, which has a negative impact on the left-behind children (75).

#### **Social care**

Social care can reduce anxiety, social phobia, and worrying about the future among college students and improve their QoL (76).

### **Lifestyle/behavior factors**

#### **PA**

A study in the United States found that more sports and PA increased MCS among collegiate students (13). In a Polish study, PA in the household of college students was most positively correlated to the QoL. Sedentary behavior during the week related positively with the subjective quality of life and its intimacy dimension, but sedentary behavior at the weekends was negatively related to objective and subjective QoL as well as dimensions including intimacy, safety, and communicative aspect of the QoL (77). In a cross-sectional survey in Croatia, PA was positively correlated with the domains of general health and vitality in the SF-36 but had a weakly negative correlation with mental health. Sedentary time was negatively correlated with vitality, social functioning, general health, and mental health (20). According to a cross-sectional survey of college students in Northeast China, students who reported high

PA had significantly higher physical component summary (PCS) scores in the total study population and among female students than those who reported low PA, whereas students who reported moderate PA had significantly higher PCS score only among female students (all  $P < 0.05$ ) (78). Interventionist studies have found that exercise improves QoL (79,80), particularly in social functioning and general health (81). Exercise not only can prevent the occurrence of various physical diseases but also is closely related to mental health (82,83). By promoting the release of dopamine, endorphins, and other substances, exercise improves cognitive function, alleviates anxiety, prevents depression, and thus promotes mental health (84).

#### **Sleep**

Adequate sleep is associated with good QoL (33,78). Subjective sleep quality, sleep disorders, and daytime dysfunction in the sleep quality domain were associated with general health, vitality, and emotional role in the QoL domain (85). A strong positive correlation was found between insomnia and stress level (86), with sleep affecting cognitive function, emotional state, and immune function (87,88), which may be associated with reduced QoL.

#### **Internet use**

Studies have shown that students who spend less time online every day had a better QoL (33), and college students with Internet abuse had lower QoL and academic performance (89-91). Internet abuse may reduce QoL by impairing sleep quality (92), anxiety (93), and learning interest/pressure (94). In addition, college students who do not smoke or drink have a better QoL (95).

#### **Bullying-victimization experiences**

In a survey among college students in Hebei, Anhui Province, in 2018, Zhang *et al.* found peer bullying experiences (including verbal bullying victimization) occurring before college were associated with decreased scores of QoL (96). A survey among college students in Taiwan Province in 2013 revealed that college students with cyber bullying-victimization experiences before college had significantly higher QoL in physical health and environmental domains; Regarding social relationships, those with verbal and relational bullying-victimization experiences, both before and in college, had significantly lower QoL, whereas those with verbal and relational bullying-perpetration experiences reported significantly

higher QoL (97).

### *Academically relevant factors*

#### **Majors**

Majors may also affect QoL. In a Croatian university, students majoring in physiotherapy had a higher PCS, while students majoring in social sciences scored higher in the mental component summary score (20). A study in India comparing the QoL of students majoring in art, engineering, or medicine revealed that art students had the worst QoL in the environment, mental health, and physiology domains and better QoL in the social domain, while engineering students had better QoL in all domains than medical students (98). The possible explanation is that art students are predominantly females who are better at communication but have a more uncertain future; in contrast, medical students often face criticisms from senior physicians and negative feedback from patients (99). A study at a university in Xi'an, China, found that art students had the worst QoL, followed by liberal arts students, and science students had the best QoL (100). A study of college students from three universities in Nanjing, China, demonstrated that science students had the best QoL, followed by liberal arts students, and medical students had the poorest QoL (101).

#### **School grade**

Grade is another influential factor of QoL. QoL may be poorer in college students with higher school grades (100). For example, freshmen/sophomores had better QoL than juniors/seniors (33,101). A study on nursing students also showed juniors/seniors had lower scores in physical function, vitality, and social functioning (54). A reasonable explanation may be as follows: the freshmen are full of curiosity, aspiration, expectations of college life, and their academic tasks are relatively simple; in contrast, juniors/seniors have more challenging courses and fewer physical education classes, leading to decreased QoL. However, other studies have found that the QoL of graduates was lower than that of other grades, and the QoL of freshmen was also not high (15,19), which may be because the graduates are facing higher pressure during graduating and applying for jobs, while the freshmen have problems in adapting to a new environment. In addition, the QoL of senior nursing students was higher than that of students at lower grades (40), and sophomores scored higher than freshmen in all QoL domains (102). Furthermore, the scores in the psychological (103) and social (30) domains

increased significantly with the rise of school grades, which may be due to the fact that, with the growth of the school grade, students become more mature in mind, more familiar with the surrounding environment, and more confident about their professional knowledge, which facilitated better QoL in these students.

#### **Others**

In addition, lower interest in the major/discipline (33,104), higher academic stress (33,105-107), and worse academic performance (34,108,109) can also lead to worse QoL.

### **Conclusions**

Compared to the general population, college students have poorer QoL in terms of mental health. Factors associated with poor QoL in college students may include low family income, one-parent family, witnessing domestic violence during childhood, non-only child, physical discomfort, mental problems (including anxiety/depression, social phobia, ADHD, and neglect/abuse during childhood), left-behind experiences, less social care, lack of exercise, inadequate sleep, bullying experiences, online abuse, low interest in major or discipline, poor academic performance, and high academic stress. The QoL characteristics of college students from different areas are different in terms of gender, grade, major, and urban and rural origin.

Mental health education, psychological counseling, and social support should be emphasized in colleges to enable the delivery of timely and effective support to students. For instance, sports and physical activities should be encouraged to help students develop a healthy body; for students from low-income families, supportive policies may be implemented to reduce their financial burden and stress; furthermore, health education activities should be carried out to inform college students about the harm of Internet abuse and inadequate sleep and help them develop good living habits.

However, since samples of medical students are easy to obtain, most of the currently available studies on the QoL of college students were conducted on medical students (78,80,91,106,107) and therefore their findings could not be generalized to college students in other majors. Future studies should pay more attention to the QoL of overall college students and college students majoring in other majors or disciplines. Notably, most of the studies included in our current analysis were cross-sectional surveys, and the relationships between the identified factors and QoL need

to be further explored in longitudinal studies.

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## Footnote

*Reporting Checklist:* The authors have completed the Narrative Review reporting checklist. Available at <https://amj.amegroups.com/article/view/10.21037/amj-22-96/rc>

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