

The Relationship Between Social Support and Sub-health Status among College Students

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Abstract: Objective: To examine the relationship between social support and sub-health status among college students. **Methods:** A questionnaire survey was conducted among 894 college students in Zhuhai, Guangdong Province. The Physical Activity and Social Support Scale and the Sub-health Rating Scale were used for measurement, and descriptive statistics, Spearman correlation analysis, and linear regression analysis were conducted. **Results:** The median score of the Physical Activity and Social Support Scale was 102 (80, 120), and the median score of the Sub-health Rating Scale was 108 (101, 118). Correlation analysis showed that total social support was significantly and positively associated with total sub-health score ($r = 0.337$, $p < 0.001$), and was also significantly and positively associated with the physical, psychological, and social sub-health dimensions. Regression analysis showed that social support significantly and positively predicted sub-health status ($\beta = 0.337$, $t = 10.692$, $p < 0.001$, $R^2 = 0.114$). **Conclusion:** Higher levels of social support are associated with better health status and a lower degree of sub-health among college students. Universities should strengthen supportive campus environments by improving peer support, teacher support, information support, and resource support to promote students' physical and mental health.

Keywords: Social Support; Physical Activity Social Support; Sub-health

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1. Introduction

The university period is an important transition from adolescence to early adulthood. Compared with secondary school, college students experience substantial changes in learning patterns, daily rhythm, interpersonal relationships, and self-management. After leaving family supervision, they need to cope independently with academic tasks, interpersonal adaptation, financial arrangements, career planning, and lifestyle management. When stable supportive resources are lacking, long-term stress, fatigue, sleep insufficiency, emotional fluctuations, and difficulties in social adaptation may accumulate and manifest as sub-health status. Sub-health is not a clearly diagnosed disease, but a transitional state between health and disease, usually characterized by suboptimal physical function, psychological state, and social functioning. Therefore, attention to sub-health among college students can help identify risk signals before disease onset and provide a basis for early intervention from the perspective of health promotion^[1,2].

In college student health research, social support is an important and stable protective factor. Social support generally refers to emotional care, informational advice, practical assistance, positive feedback, and companionship resources obtained

from family members, friends, peers, teachers, or organizational environments. Recent systematic reviews have shown that social support is closely related to mental health and wellbeing among college students, and higher levels of social support are usually accompanied by better emotional experiences, lower stress levels, and more positive health behaviors ^[3]. Among college students living with mental health problems, social support has also been found to reduce depression, anxiety, psychological distress, and suicide risk ^[4]. In addition, both online and offline social support can significantly improve life satisfaction and psychological adjustment among university students ^[5]. These findings suggest that social support is not only an interpersonal resource but also an important psychosocial condition influencing college students' physical and mental health.

Social support may influence health through multiple pathways. First, emotional support can make individuals feel understood, accepted, and cared for, thereby reducing loneliness and helplessness. Second, informational support can provide coping methods and advice, helping individuals deal more effectively with academic, life, and health-related difficulties. Third, instrumental support can provide concrete help, including companionship, resources, facilities, and practical assistance. Finally, appraisal support can provide positive feedback, allowing individuals to confirm the value of their efforts and behaviors. Together, these forms of support constitute important resources for college students to cope with stress and maintain health. Existing research further suggests that social support may improve health outcomes not only directly but also by reducing perceived stress, strengthening positive coping capacity, and increasing participation in health behaviors ^[6,3].

The social support examined in this study mainly refers to physical activity social support, that is, the supportive resources individuals perceive when participating in physical activity or exercise. The Physical Activity and Social Support Scale distinguishes social support in physical activity contexts into five dimensions: emotional support, appraisal support, informational support, companionship support, and instrumental support ^[7]. A Chinese version of this scale has been translated and psychometrically validated among Chinese college students, supporting its applicability in this population ^[8]. Although physical activity social support occurs in exercise contexts, it is essentially a manifestation of social support in the field of health behavior. For college students, exercising with peers, receiving guidance from teachers, being encouraged by friends, and obtaining facilities and information from the university may enhance participation in health behaviors and strengthen social connectedness. Existing studies have shown that support from family, peers, and teachers can increase college students' motivation to participate in physical activity and help maintain health behaviors ^[9,8].

Sub-health status is a useful health evaluation perspective for college students. Compared with disease diagnosis, sub-health emphasizes non-disease health depletion in daily life, such as fatigue, decreased physical strength, emotional instability, reduced attention, decreased social participation, and weakened social adaptation. Although college students are generally young, this does not mean that their health status is necessarily good. Long-term academic pressure, insufficient exercise, irregular sleep, sedentary behavior, and inadequate interpersonal support may all place students in a sub-health state. If this state persists, it may not only affect learning efficiency and quality of life but also increase future risks of physical and mental illness.

Previous studies have paid more attention to the relationship between social support and mental health, wellbeing, or life satisfaction, whereas research directly linking social support to sub-health status remains relatively limited. In fact, sub-health contains physical, psychological, and social dimensions, and social support may act on all three. Emotional support can relieve negative emotions and stress; informational support can improve health knowledge and coping strategies; companionship and instrumental support can increase opportunities for health activity participation; and appraisal support may enhance confidence in health behaviors. Prior evidence on online and offline social support among university students also suggests that different sources and forms of social support may affect students' life satisfaction ^[5]. A systematic review further indicated that social support can continuously promote college students' mental health and overall wellbeing and reduce mental health risks ^[3]. Taken together, social support is an important protective factor for youth health development and may also exert a positive effect on college students' sub-health status.

Based on the above background, this study uses the original survey data to analyze only two variables: social support and sub-health status among college students. Specifically, this study addresses two questions: first, whether college students'

social support is significantly associated with sub-health status; and second, whether social support significantly predicts sub-health status. This analysis can further clarify the role of social support in sub-health prevention and health promotion among college students and provide implications for constructing supportive campus environments.

2. Methods

2.1 Participants

This study adopted a questionnaire survey method and recruited college students from universities in Zhuhai, Guangdong Province. Questionnaires were distributed through campus announcements, student WeChat groups, QQ groups, and other online and offline channels. Participants completed the questionnaire anonymously after being informed of the study purpose and voluntarily agreeing to participate. A total of 894 valid questionnaires were collected, with an effective response rate of 92.77%. Among the participants, 395 were male (44.20%) and 499 were female (55.80%). Based on the original survey data, this study extracted only the variables of social support and sub-health status for analysis, while other variables such as regular exercise and healthy lifestyle beliefs were not included.

2.2 Measures

2.2.1 Physical Activity and Social Support Scale

Social support among college students was measured using the Physical Activity and Social Support Scale developed by Golaszewski and Bartholomew and translated and validated among Chinese college students by Cao et al.^[7,8]. The scale contains 20 items and includes five dimensions: emotional support, appraisal support, informational support, companionship support, and instrumental support, with 4 items in each dimension. A 7-point Likert scale is used, ranging from 1 (strongly disagree) to 7 (strongly agree), with total scores ranging from 20 to 140. Higher scores indicate higher levels of perceived social support in physical activity contexts. In the present study, the Cronbach's α coefficient of the scale was 0.967, indicating good internal consistency.

2.2.2 Sub-health Rating Scale

Sub-health status was measured using the Sub-health Rating Scale developed by Xu et al.^[10]. The scale contains 39 items and includes three subscales: physical sub-health, psychological sub-health, and social sub-health. The physical sub-health subscale mainly reflects bodily symptoms, organ function, and physical activity capacity; the psychological sub-health subscale reflects cognitive efficiency, emotional state, and psychological adaptation; and the social sub-health subscale reflects social activities, social adaptation, and perceived social support. The total score ranges from 35 to 175, with higher scores indicating better health status and a lower degree of sub-health. In the present study, the Cronbach's α coefficient of the scale was 0.883, indicating good reliability.

2.3 Data analysis

SPSS 26.0 was used for data analysis. First, questionnaire data were organized and screened. Second, descriptive statistics were used to describe the overall levels of social support and sub-health status. Because the relevant variables did not fully conform to a normal distribution, medians and quartiles were used for description. Third, Spearman correlation analysis was used to examine the relationship between social support and sub-health status. Finally, linear regression analysis was conducted to test the predictive effect of social support on college students' sub-health status. The significance level was set at $p < 0.05$.

3. Results

3.1 Descriptive Statistics of Social Support and Sub-Health Status

Descriptive statistics showed that the median total score of physical activity social support among college students was 102 (80, 120). According to the theoretical score range of the scale, at least 75% of the students scored above 80, suggesting that the sample generally perceived a certain level of social support. The median total score of the Sub-health Rating Scale was 108 (101, 118), indicating that most students were at a moderate health level. Because higher scores on the Sub-health Rating Scale represent better health status, this result also suggests that a considerable proportion of students still had some degree of sub-health risk.

Table1: Descriptive statistics of social support and sub-health status

Variables	P25	P50	P75
Social support	80.0	102.0	120.0
Total sub-health score	101.0	108.0	118.0

Note: Higher scores on the Sub-health Rating Scale indicate better health status.

3.2 Correlation Analysis between Social Support and Sub-Health Status

Spearman correlation analysis showed that total social support was significantly and positively correlated with total sub-health score ($r = 0.337$, $p < 0.001$). Because higher scores on the Sub-health Rating Scale indicate better health status, this result suggests that higher levels of social support are associated with better health status and a lower degree of sub-health among college students. Further analyses showed that total social support was significantly and positively correlated with physical sub-health ($r = 0.280$, $p < 0.001$), psychological sub-health ($r = 0.312$, $p < 0.001$), and social sub-health ($r = 0.197$, $p < 0.01$). Among these dimensions, the correlations between social support and physical and psychological sub-health were relatively stronger, suggesting that social support may influence overall health mainly by improving physical feelings and psychological state.

Table2: Correlation analysis between social support and sub-health status

Variables	Social support	Significance
Physical sub-health	0.280	< 0.001
Psychological sub-health	0.312	< 0.001
Social sub-health	0.197	< 0.001
Total sub-health score	0.337	< 0.001

3.3 Predictive Effect of Social Support on Sub-Health Status

Linear regression analysis showed that total social support significantly and positively predicted college students' total sub-health score, with a model explanatory rate of 0.114. This indicates that social support is an important factor closely related to college students' sub-health status: higher levels of social support are associated with better health status. The specific statistical results are shown in Table3.

Further analysis of the predictive effects of each dimension of social support on the total sub-health score showed that emotional support, appraisal support, informational support, companionship support, and instrumental support all significantly and positively predicted sub-health status. Among them, informational support and companionship support showed relatively stronger predictive effects, while instrumental support, appraisal support, and emotional support also had significant predictive effects. These results indicate that college students need not only emotional encouragement but also specific information, activity companionship, and practical resource support.

Table3: Regression analysis of social support predicting total sub-health score

Predictor	R^2	F	β	t
Social support	0.114	114.313	0.337	10.692***
Emotional support	0.069	66.298	0.263	8.142***
Appraisal support	0.075	72.404	0.274	8.509***
Informational support	0.097	95.582	0.311	9.777***
Companionship support	0.095	94.836	0.310	9.738***
Instrumental support	0.083	80.345	0.287	8.964***

Note: *** $p < 0.001$.

4. Discussion

4.1 Social Support Level and Health Status among College Students

This study found that the median total score of physical activity social support among college students was 100 (80, 120), suggesting that the sample generally had access to a certain level of supportive resources. From the perspective of scale dimensions, physical activity social support is not a single form of interpersonal encouragement; rather, it includes emotional, appraisal, informational, companionship, and instrumental support. Encouragement, recognition, advice, companionship, and practical help received during exercise and health behaviors may enhance students' willingness to participate in health activities and improve their positive perceptions of their own health status.

The interpersonal environment during the university period has unique characteristics. Some students leave their original family and secondary-school peer networks and need to rebuild friendships, teacher-student relationships, and group belonging in a new environment. When social support is insufficient, students are more likely to feel isolated and helpless when facing academic pressure, life changes, and health problems. In contrast, stable peer relationships, positive teacher-student interactions, and accessible campus resources can provide psychological security and practical assistance. Therefore, social support is not only an external condition for health behavior but also an important environmental resource for maintaining college students' overall health status.

4.2 Social Support Is Significantly Associated with Sub-Health Status

The results showed a significant positive correlation between social support and college students' sub-health status. Because higher sub-health scores indicate better health, this finding can be interpreted as follows: the higher the level of social support, the lower the degree of sub-health among college students. This result is consistent with recent research on social support, mental health, and wellbeing among college students. A systematic review indicated that social support can improve college students' mental health and wellbeing through emotional, informational, and coping resources^[3]. Another review showed that social support has an important protective effect for university students with mental health problems^[4].

In terms of mechanisms, social support may affect sub-health status through stress buffering and resource supplementation. The stress-buffering pathway emphasizes that when college students face academic, interpersonal, and employment-related stress, support from peers, teachers, or family members can reduce the perceived threat of stressful events and make it easier for individuals to adopt positive coping strategies. The resource-supplementation pathway emphasizes that supportive interpersonal relationships can provide information, advice, companionship, and practical assistance, allowing students to have more resources when coping with health problems. These two pathways may jointly reduce fatigue, emotional distress, and social adaptation difficulties among students with higher levels of social support.

4.3 Social Support Significantly Predicts Sub-Health Status

Regression analysis showed that social support significantly and positively predicted college students' total sub-health score, indicating that social support is an important factor related to sub-health status. Although a cross-sectional study cannot strictly infer causality, theoretical and empirical evidence suggests that good social support may improve students' subjective health experience. Social support provides not only the feeling of being accompanied but also encouragement for health behaviors, understanding in stressful situations, advice for problem solving, and assistance with practical difficulties.

Across different dimensions of sub-health, the correlations between social support and physical and psychological sub-health were relatively stronger. At the physical level, peer companionship, exercise-related information, and resource support may promote participation in physical activity and thereby improve fatigue, sleep, and physical discomfort. At the psychological level, emotional and appraisal support may reduce anxiety, loneliness, and helplessness and enhance individuals' sense of control over their own condition. At the social level, although the correlation between social support and social sub-health was relatively weak, it remained significant, suggesting that supportive relationships may help maintain college students' social participation and group belonging.

All five dimensions of social support significantly predicted sub-health status, with informational and companionship support showing relatively prominent effects. This suggests that for college students, knowing how to manage health, how to obtain exercise- and health-related advice, and having someone accompany them in activities may influence health status more

directly than emotional comfort alone. The predictive effect of instrumental support was also evident, indicating that the provision of facilities, equipment, organizations, and activity resources by universities is also important. In other words, social support exists not only in intimate interpersonal relationships but also in campus systems and resource provision.

4.4 Implications for University Health Promotion

First, universities should build a multi-level social support system. College students' sub-health problems are often not merely physical problems but are produced by the combined effects of academic stress, lifestyle, interpersonal adaptation, and psychological state. Universities can provide emotional, informational, and practical assistance through counselors, class advisers, psychological counseling centers, physical education teachers, student associations, dormitory management, and other channels.

Second, the role of peer support in health promotion should be emphasized. Peers are the most direct source of support in college students' daily lives. Universities can transform individual health behaviors into collective supportive behaviors through exercise check-in groups, health mutual-aid groups, dormitory exercise plans, and class health activities. Compared with asking students to improve health habits alone, peer participation may more easily increase persistence.

5. Limitations and Future Directions

This study was based on cross-sectional questionnaire data and can demonstrate significant associations and predictive relationships between social support and sub-health status among college students; however, several limitations remain. The present study used the Physical Activity and Social Support Scale to measure social support, which can reflect supportive resources in health behavior contexts, but it did not fully cover broader sources such as family support, academic support, intimate emotional support, and online support. Future research could simultaneously include different sources of social support and compare the differential effects of family, peer, teacher, and institutional support on college students' sub-health status.

6. Conclusion

This study examined the relationship between social support and sub-health status among college students. The results showed that college students' physical activity social support was at a moderately high level, whereas sub-health status was at a moderate level overall. Total social support was significantly and positively correlated with the total sub-health score and with the physical, psychological, and social dimensions. In addition, total social support and its five dimensions—emotional support, appraisal support, informational support, companionship support, and instrumental support—significantly and positively predicted sub-health status. Because higher scores on the Sub-health Rating Scale indicate better health status, it can be concluded that higher levels of social support are associated with better health and lower levels of sub-health among college students.

Social support is an important resource for health promotion among college students. Universities should attach importance to constructing supportive campus environments by improving peer support, teacher-student support, health information support, and campus resource support, thereby helping students better cope with stress, maintain health behaviors, improve physical and mental conditions, reduce sub-health risk, and promote comprehensive healthy development.

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No

Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

Reference

- [1] Tao, X., Wu, X., Fu, J., Xiao, Y., & Zhong, T. (2025). Associations between physical activity and health-related quality of life among university students in Zhuhai, China. *Scientific Reports*, 15, Article 31319. <https://doi.org/10.1038/s41598-025-15822-y>
- [2] Wang, S., Niu, Z., Xiong, J., Chai, G., & Ye, X. (2024). The relationship between physical activity and psychological

- sub-health among high altitude region Tibetan college students. *Frontiers in Psychology*, 15, Article 1465845. <https://doi.org/10.3389/fpsyg.2024.1465845>
- [3] Li, R., Hassan, N. C., Zhu, Q., Ouyang, S., & Dong, J. (2025). A systematic review on the impact of social support on college students' wellbeing and mental health. *PLOS ONE*, 20(7), Article e0325212. <https://doi.org/10.1371/journal.pone.0325212>
- [4] Vicary, E., Kapadia, D., Bee, P., Bennion, M., & Brooks, H. (2025). The impact of social support on university students living with mental illness: A systematic review and narrative synthesis. *Journal of Mental Health*, 34(4), 463–475. <https://doi.org/10.1080/09638237.2024.2408237>
- [5] Han Mo, P. K., Li, J., Xie, L., Liu, X., Jiang, H., Chen, Y., Ma, L., & Lau, J. T. F. (2024). Communication in social networking sites on offline and online social support and life satisfaction among university students: Tie strength matters. *Journal of Adolescent Health*, 74(5), 971–979. <https://doi.org/10.1016/j.jadohealth.2023.10.030>
- [6] Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310–357. <https://doi.org/10.1037/0033-2909.98.2.310>
- [7] Golaszewski, N. M., & Bartholomew, J. B. (2019). The development of the Physical Activity and Social Support Scale. *Journal of Sport & Exercise Psychology*, 41(4), 215–229. <https://doi.org/10.1123/jsep.2018-0234>
- [8] Cao, Y., Yuan, J., & Luo, L. (2024). The physical activity and social support scale: A translation and psychometric validation study in a Chinese college student sample. *Frontiers in Psychology*, 15, Article 1252561. <https://doi.org/10.3389/fpsyg.2024.1252561>
- [9] Brown, C. E. B., Richardson, K., Halil-Pizzirani, B., Atkins, L., Yücel, M., & Segrave, R. A. (2024). Key influences on university students' physical activity: A systematic review using the Theoretical Domains Framework and the COM-B model of human behaviour. *BMC Public Health*, 24, Article 418. <https://doi.org/10.1186/s12889-023-17621-4>
- [10] Xu, J., Feng, L. Y., Luo, R., Qiu, J. C., Zhang, J. H., Zhao, X. S., Lu, Y., & Wei, Q. (2011). Reliability and validity of the Sub-health Rating Scale. *Journal of Southern Medical University*, 31(1), 33–38.