

The Effect of Social Support on Study Engagement of English Majors in Medical Schools: The Mediating Role of Basic Psychological Needs

Yan Li^{1,2}, Rosilawati Sueb¹, Khadijah Said Hashim¹

¹Universiti Teknologi MARA (UITM), Malaysia, ²Youjiang Medical University For Nationalities, China

Email: rosil334@uitm.edu.my

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i3/22233> DOI:10.6007/IJARPED/v13-i3/22233

Published Online: 23 August 2024

Abstract

The relationship among social support, basic psychological need and study engagement of English majors in medical schools is significant but insufficiently studied. The aim of this study is to provide a reference for nurturing higher-quality talents in medical schools. Methodology: A questionnaire survey was conducted on English majors of a medical school in China's Guangxi province by using the social support, basic psychological need and academic input scales. Results: The results show that social support not only directly and positively influences English majors' study engagement, but also further stimulates study engagement through basic psychological needs. Conclusions: The findings indicate that social support is an important factor in stimulating the study engagement of English majors in medical schools, and basic psychological needs have an important functional value for study engagement. A well-built social support system can promote the satisfaction of the basic psychological need of English majors in medical schools, which is beneficial to students' study engagement.

Keywords: Study Engagement, Social Support, Basic Psychological Need, English Majors in Medical Schools.

Introduction

As a positive learning state, study engagement is an important factor affecting the quality of learning, an important indicator of the students' learning process, and of great value and significance to the promotion of students' individual development and teaching quality. With the development of positive psychology, researchers have paid more attention to cultivating and shaping individuals' positive behaviors, attitudes, and mental qualities, and advocated the use of positive ways to promote the development of individuals in order to obtain positive power (Seligman, 2000). Under the educational background of "New Era, New Liberal Arts and Significant Foreign Languages" (Guo, 2020), English majors are required to comprehensively apply interdisciplinary knowledge and think creatively, which brings unprecedented opportunities and challenges to them. The English major in medical schools possesses a

distinct uniqueness, being an organic integration of two interdisciplinary fields: English and Medicine. This program fosters an intrinsic connection and deep integration between English language proficiency and medical knowledge, aiming to cultivate high-quality interdisciplinary professionals with a strong command of English and a solid medical background (Xu,2022). In the context of globalization, professionals with expertise in both English and Medicine are crucial in promoting international academic exchanges in the medical field, serving as key connectors in advancing medical development both domestically and internationally (Zhang,2015). Consequently, higher demands are placed on the level of study engagement among English majors in medical schools. And then how to effectively stimulate and maintain their engagement of English majors in medical schools has become a critical challenge in improving the quality of talent cultivation.

Study Engagement is a learning-related, lasting, positive, and complete emotional and cognitive mental state (Schaufeli et al., 2002), which is a positive behavior and quality that can be shaped and cultivated. Self-Determination Theory (SDT) (Deci & Ryan, 2000) suggests that every individual has the potential for positive upward development, only that this potential does not arise spontaneously, but requires support from the external environment. When an individual receives sufficient support from the external environment, this positive development potential can promote the development of the individual, and vice versa. It can be seen that the individual's behavior is the result of the interaction between the individual's intrinsic needs and the external environment. The external environmental support is an important source of the satisfaction of basic psychological needs (Wu, 2018), and the satisfaction of the three basic psychological needs of autonomy, competence, and the need for relationships is an indispensable "nutrient" to promote the individual's psychological growth, personality integration, and positive behaviors (Deci & Ryan, 2000).

Impact of Social Support on Study Engagement

Social support refers to an individual's perception of the external support that he or she wants or can get (Sarason, 1991). In other words, it is the support that the individual feels subjectively. Bronfenbrenner's (1979), ecosystem theory suggests that the family, school, and neighborhood are the closest microsystems that influence adolescent development, and that social support from parents, teachers, classmates, and neighbors plays an important role in an individual's positive behavior. Social support from parents, teachers, classmates, and neighbors plays an important role in individual positive behaviors. Parental support has a significant motivational effect on college students' study engagement, which is like a huge psychological energy gas station that constantly transmits positive energy for their children (Chen, 2022) and provides intrinsic motivation for academic success (Chen, 2022). Teacher support has a positive predictive effect on students' commitment to learning. To clarify, when students perceive more support from teachers, they show higher interest and experience more pleasure in learning; accordingly, they are willing to invest more time, energy, and strategies in learning (Yu, 2019). Students who perceive more peer support possess a stronger sense of psychological security and invest more in their academics (Li, 2022). Based on the ecosystem theory and previous studies, this study propose the hypothesis 1: social support has a significant positive effect on the study engagement of English majors in medical schools.

The Mediating role of Basic Psychological Need

Basic psychological needs include autonomy needs, competence needs and relationship needs. Autonomy need means that individuals decide their own behavior to a certain extent; competence need means that individuals can feel that they have the ability to complete the activities they are engaged in; relationship need means that individuals can feel cared for, understood and supported by others. According to SDT, the fulfillment of an individual's basic psychological needs plays an important mediating role between external environmental factors and individual developmental outcomes. Most previous studies focus on middle school and high school students to explore the mediating role of basic psychological needs between autonomy support and study engagement (Jing, 2023; Tan, 2021), and few take college students as the object of study. Gao (2016) found that the autonomy-supportive classroom environments created by university foreign language teachers can increase the basic psychological needs of college students, thus reducing their foreign language learning anxiety. Based on SDT and existing literature, Hypothesis 2 is proposed: basic psychological needs mediate the relationship between social support and the study engagement of English majors in medical schools.

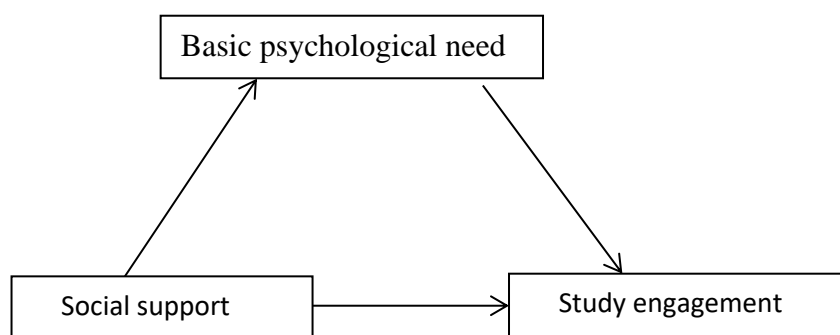


Fig 1. Hypothesis model

Methodology

Research Subjects

In order to better understand the learning situation of English majors in a medical school and to be able to put forward targeted educational suggestions, this study takes English majors in a medical school in China's Guangxi province as the research objects. There are a total of 273 English majors from sophomore to senior in this school (39 males and 234 females). Since freshmen students have just joined the school and are still in the adaptation stage, this study only focuses on sophomore, juniors and senior students. According to Krejcie and Morgan's (1970) principles of sample size selection for research, the minimum sample size needed for this study is 160.

Random sampling method was used to survey the sophomore, junior and senior students majoring in English at a medical school in Guangxi, following the principles of anonymity and voluntary participation. A total of 180 questionnaires were distributed and 177 were recovered, with a recovery rate of 98.3%; excluding invalid questionnaires such as contradictory answers or regular answers, there were 162 valid questionnaires, with an effective rate of 91.5%. Among them, there are 22 male students (13.58%), 140 female students (86.42%); 50 sophomores (30.86%), 53 juniors (32.72%), 59 seniors (36.42%); 109 rural students (67.28%), 35 county students (21.60%), 18 city students (11.11%); 15 only

children (9.26%), 147 non-only children (90.74%); 99 ethnic minorities (61.11%), 63 ethnic Han (38.89%).

Research Tools

Social Support Scale

This study used the Comprehension Social Support Scale compiled by Zime et al. and translated and revised by Jiang Qianjin (1999), to measure the degree of social support felt by individuals. This study takes college students as the research object, and changes “leaders, relatives, and coworkers” to “teachers, classmates, and relatives” in the scale. The scale consists of three dimensions: family support, friend support and other support, with a total of 12 questions, 4 questions for each dimension. This scale is scored on a 7 point Likert scale, with 1 indicating total disagreement and 7 indicating total agreement. The higher the score, the higher the level of social support felt by the individual. The Cronbach’s alpha coefficient for this scale in this study is 0.95.

Basic Psychological Need Scale

This study adopts the basic psychological need scale compiled by Deci and Ryan (2000) and rendered and revised by Yu Chengfu et al (2012), to assess the extent to which an individual’s basic psychological need are satisfied in real life. The scale consists of three dimensions: autonomy needs, competence needs, and relationship needs, with a total of 21 questions, and the three dimensions have 6, 8, and 7 questions, respectively. This scale uses a 7 point Likert scale, with 1 indicating total disagreement and 7 indicating total agreement. The scale has 9 questions with reverse scoring, and these questions need to be reversed before calculating the mean score of each dimension. Similarly, the higher the score, the higher the degree of fulfillment of the basic psychological need of the individual. The Cronbach’s alpha coefficient for this scale in this study is 0.84.

Study Engagement Scale

This study adopts the Study Engagement Scale compiled by Schaufeli et al (2002), and translated and revised by Fang Laitan (2008), to measure the state of students’ study engagement. The scale includes three dimensions of vigor, dedication, and absorption, with a total of 17 questions, six, five, and six questions in the three dimensions, respectively. This scale is scored by the 7 point Likert scale, with 1 being never and 7 being always. Higher scores indicate a higher level of commitment to learning. The Cronbach’s alpha coefficient for this scale in this study is 0.95.

Statistical Methods

The statistical software SPSS26.0 was used to analyze the data for common method bias, descriptive statistics and correlation, and the mediation effect test was conducted using the SPSS macro program PROCESS3.5 wrote by Hayes.

Results

Common Method Bias Test

This study utilized a self-report format for data collection, which may present the problem of common method bias. According to Podsakoff (2003), and Zhou Hao et al (2004), Harman’s one-way test was used for the common method bias test. The results of the unrotated exploratory factor analysis showed that nine factors had eigenvalues greater than

1 and the first factor explained 34.95% of the variance, which is less than the critical value of 40%. Therefore there is no serious common method bias in this study.

Descriptive Statistics and Correlation Analysis of the Variables

The results of descriptive statistics and correlation analysis of social support, basic psychological need, and study engagement are shown in Table 1. The results show that there is a significant positive correlation between social support, basic psychological need, and study engagement. Social support was significantly positively correlated with study input ($r=0.50, p<0.01$), social support was significantly positively correlated with basic psychological need ($r=0.72, p<0.01$), and basic psychological needs were significantly positively correlated with study engagement ($r=0.53, p<0.01$).

Table 1

Mean, Standard Deviation and Correlation Analysis of Each Variable (n=162)

| | M | SD | 1 | 2 | 3 |
|----------------------------|------|------|-------|-------|---|
| 1 Social support | 4.80 | 1.01 | 1 | | |
| 2 basic psychological need | 4.43 | 0.32 | .72** | 1 | |
| 3 Study engagement | 4.33 | 0.79 | .50** | .53** | 1 |

Note: ** indicates that the result is significantly positively correlated based on $p<0.01$.

Mediating Effect Test

Using the percentile Bootstrap method of recommended bias correction by Wen Zhonglin and Ye Baojuan (2014), model 4 in the macro program PROCESS3.5 of SPSS was applied to repeat the sampling 5,000 times to test the significance of mediating effects at the 95% confidence interval. Social support was used as the independent variable, basic psychological need as the mediator variable, and study engagement as the dependent variable, with grade as the control variable (the independent sample t-test or one-way ANOVA was conducted on the effects of gender, grade, place of origin, only child, and ethnic minority demographic variables on study engagement, and it was found that only grade had a significant effect on study engagement). Control variables were virtualized and each variable was standardized during the process.

The results of the regression analysis showed (see Table 2 and Figure 1) that social support positively predicted study engagement ($\beta=0.49, R^2=0.27, p < 0.001$) after controlling the relevant demographic variables and without the basic psychological need mediator variable. Social support positively predicted basic psychological need ($\beta=0.23, R^2=0.37, p < 0.01$). After adding the effect of basic psychological need, social support can still positively influence learning input ($\beta=0.23, R^2=0.37, p < 0.01$), but the β value decreased from the original 0.49 to 0.23, and basic psychological need can positively influence study engagement. This shows that basic psychological need play a partial mediating role between social support and study engagement (Wen and Ye, 2014).

The results of the mediating effect analysis showed (see Table 3) that social support significantly and positively predicted study engagement ($\beta=0.49, 95\% \text{ CI } [0.27, 0.51]$), and in

the model test of this equation, $R^2 = 0.27$, $F = 19.67$, $p < 0.001$. In addition, social support still significantly and positively predicted study engagement after adding basic psychological need ($\beta = 0.23$, 95% CI [0.09, 0.31]), in this model, $R^2 = 0.33$, $F = 19.76$, $p < 0.001$, and the indirect effect of basic psychological need between social support and study engagement was significant ($\beta = 0.36$, 95% CI [0.03, 0.32]). According to the mediation effect test procedure (Wen and Ye, 2014), the mediation effects of basic psychological need were all verified. The total mediation effect size was 0.38, 95% confidence interval is [0.27, 0.51], and the mediation effect accounted for 52.63% of the total effect. The mediation effect of “social support \rightarrow basic psychological need \rightarrow study engagement” was 0.20, with a 95% confidence interval of [0.09, 0.31], which did not include 0, indicating that the mediation effect of this path was significant.

Table 2
Regression Analysis of Basic Psychological Need Mediation Model

| Independent variable | Study engagement | | Basic psychological need | | Study engagement | |
|--------------------------|------------------|---------|--------------------------|----------|------------------|---------|
| | β | t | β | t | β | t |
| Grade | | | | | | |
| Senior | -0.13 | -1.65 | 0.05 | 0.80 | -0.15 | -1.97 |
| Junior | -0.14 | -1.76 | 0.04 | 0.67 | -0.16 | -2.04 |
| Sophomore | 0 | | | | | |
| Social support | 0.49 | 7.13*** | 0.72 | 12.95*** | 0.23 | 2.41* |
| Basic psychological need | | | | | 0.36 | 3.85*** |
| R^2 | 0.27 | | 0.52 | | 0.33 | |
| F | 19.67 | | 56.52 | | 19.76 | |

Note: * indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$, the same below.

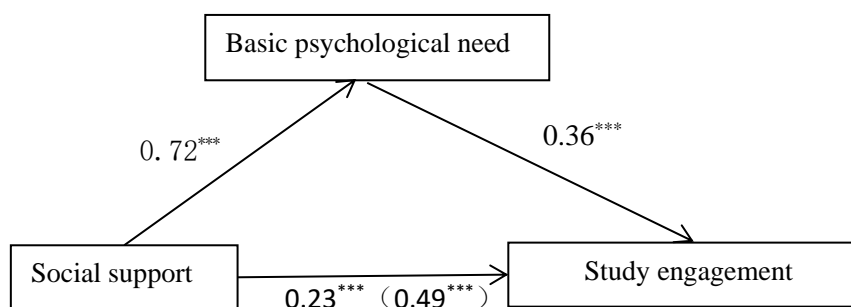


Figure 2. Basic psychological need mediation model

Table 3

Basic Psychological Need Mediating Effect Text

| Effect category | Effect size | Boot standard error | 95% confidence interval | | | | Relevant effect size |
|------------------|-------------|---------------------|-------------------------|----------|------------------|--------|----------------------|
| | | | Boot limit | CI lower | Boot upper limit | CI | |
| Total effect | 0.38 | 0.06 | 0.27 | | 0.51 | | |
| Direct effect | 0.18 | 0.07 | 0.03 | | 0.32 | 47.37% | |
| Mediating effect | 0.20 | 0.06 | 0.09 | | 0.31 | 52.63% | |

Discussion**The Effect of Social Support on the Study Engagement of English Majors in Medical Schools**

The study shows that social support has a positive predictive effect on the study engagement of English majors in medical schools, i.e., the more social support students perceive, the higher their level of study engagement, which is consistent with the results of previous studies (Fernandez et al, 2019; Zuo, 2023; Zhang, 2015), verifying hypothesis 1. Social support gives students a sense of psychological security Li (2022), and can invest more time and energy in their studies. Students who received more social support were better able to develop excellent psychological qualities, such as perseverance in learning (Li, 2023; Liu, 2020), self-efficacy (Jia, 2020), and a high level of internal motivation to learn (Peng, 2023). They were more persistent in the face of the pressure of complex and heavy learning of English and medical knowledge, and more accomplished in their learning activities,. They are also more willing to devote themselves to learning, thus forming a virtuous learning system. The more social support students feel, the more willing they are to work hard to achieve their expectations, the stronger their sense of learning goals, the more willing they are to internalize the value of “knowledge is power”, and the more they are willing to voluntarily and wholeheartedly devote themselves to their studies, experiencing a sense of significance and value in their studies.

The Mediating Role of basic psychological need

The results of this study show that basic psychological needs mediate the relationship between social support and English majors’ commitment to learning in medical schools. To clarify, social support not only directly affects English majors' commitment to learning in medical schools, but also affects commitment to learning through basic psychological needs. This is consistent with the results of previous research (Xin, Z., 2022), which verifies hypothesis 2. It indicates that high levels of social support can promote the satisfaction of basic psychological needs, which can stimulate individuals to positively self-integrate and self-improvement, and thus show a positive learning state. It also illustrates that SDT has cross-situational consistency.

Study engagement is the result of an individual’s perception of the external environment and the integration of his or her own needs. Autonomy need, competence need, relationship need are basic psychological needs of each individual. When students can comprehend more social support, it is conducive to promote the satisfaction of the basic psychological need of the individual, because the social support is like a rich soil, nourishing the internal psychological needs of the individual, so as to guarantee the full development of the three

basic psychological needs. Furthermore, when the three basic psychological needs are satisfied, the individual will no longer have a lack of inner strength, thus releasing more energy to devote to learning activities, pursuing a more perfect self, and achieving self-actualization. Research has also confirmed that basic psychological needs are the basic motivation for individuals to produce positive behaviors (Deci & Ryan, 2000). At the same time, the satisfaction of basic psychological needs prompts students to feel the self-determination of behavior, which effectively promotes the internalization of intrinsic and extrinsic motivation, generates more autonomous motivation, and ultimately stimulates more positive behaviors, i.e., voluntary participation in learning, and a high level of commitment to learning.

Educational Implications

Build a Social Support System to Improve Students' Social Support Level

Learning is a complex, variable and dynamic process, and social support is an effective protective factor in the learning process, which can effectively stimulate and keep study engagement. According to the ecosystem theory, the factors that have the most direct, close and important influence on the development of an individual come from the family, school and neighborhood in the microsystem. Female students in English majors are generally more dependent on their families and schools.

“Undergraduate supervisor system” (Zhang, 2022) could be an effective way of support. For school education, it is necessary to improve the level of teacher support as part of social support. Taking high level of teacher support as a support point, so as to form good peer support and family support. Specifically, the “undergraduate supervisor system” allows teachers to participate in the whole process of students’ growth in a close, in-depth and all-round way, guiding students to correct their intellectual attitudes, pay attention to their physical and mental health, and reasonably plan their careers, so as to become students’ beacon. Teachers’ charisma, rich knowledge, solid professional knowledge, professional ethics and academic qualities will influence and shape their students. At the same time, the teacher-student relationship in the mentor group can promote the development of peer relationships, while the group’s peers’ help with sharing and cooperation can promote peer support, which can together improve the students’ sense of self-efficacy and belonging. Last but not least, teachers can appropriately keep in touch with the parents of the students in the mentor group and communicate with them in a timely manner, so that parents can easily understand the situation of their sons or daughters at school and can give them more understanding, support and help. It can be seen that with teachers as the focus point, a dispersion and chain effect from point to point is formed to create a high level of social support and nurturing environment.

Pay Attention to the Psychological Learning Changes of Students

It is significant to pay attention to the psychological learning changes of students, and turn “I am asked to learn” into “I want to learn”. Basic psychological needs are innate, and are stable across contexts, geographies and cultures. SDT argues that every individual has the potential for positive growth, so how to tap this potential is a question that every educator needs to think about. Tapping the full potential of basic psychological needs has significant implications for education. Psychological factors have an irreplaceable impact on students’ study engagement. Psychological acceptance of learning, understanding the meaning and value of learning, and experiencing the power brought by knowledge are key factors, which

can guide students to engage in learning, and transform from passive learning to active learning. In the students' learning process, it is necessary to provide students with more comfortable, guided and cooperative social support, and provide space and platforms to promote the fulfillment of the needs of autonomy, competence and relationship. When students feel that they can independently decide on their own life and learning, that they have the ability to be competent in their own learning and life, and that there are people caring for them, then they will gather more intrinsic motivation in the individual, thus engage in learning, acquire knowledge and energy, and achieve self-fulfillment.

Conclusion

This study found that social support has a significant positive effect on the study engagement of English majors in medical schools; basic psychological needs mediate between social support and the study engagement of English majors in medical schools. Social support is a crucial factor in stimulating the study engagement of English majors in medical schools, and basic psychological needs have an important functional value for study engagement. A well-built social support system can promote the satisfaction of the basic psychological needs of English majors in medical schools, which can help to stimulate and keep students' study engagement.

References

- Chen, Yanyan & Liu, Hong. (2022). The effect of parental autonomy support on college students' study engagement - Evidence from 812 first-generation college students. *Journal of Hefei University (Comprehensive Ed)* (06), 107-113.
- Laitan, F., Kan, S., & Fenghua, Z. (2008). Reliability and validity of the Chinese version of the study engagement scale. *Chinese Journal of Clinical Psychology* (06), 618-620.
- Yingjian, G. (2020). On the construction of foreign language education in the new era: thoughts and reflections. *Foreign Languages in China* (01), 4-12.
- Huaqing, G., & Lirong, W. (2016). The effect of autonomy support on college students' learning anxiety in foreign language classrooms: the mediating role of basic psychological needs. *Chinese Journal of Special Education*(11),82-88.
- Yuqin, J. (2023). The effects of perceived teacher support on study engagement of rural junior high school students: The mediating role of basic psychological needs. *Mental Health Education in Primary and Secondary School* (20), 8-12.
- Qianjin, J. (1999). The perception social support scale (PSSS). *Handbook of Mental Health Rating Scales*.
- Xueji, J., Lin, C., Lin, L., & Chongde, L. (2020). The relationship between perceived teacher support and study engagement among high school students: the chain mediating role of academic self-efficacy and achievement goal orientation. *Psychological Development and Education* (06), 700-707.
- Jiaxin, L., Ruifan, L., Hongmin, F., & Jiwei, S. (2022). Perceived peer support and mathematics study engagement of middle school students - a variable-centered and individual-centered analysis. *Studies of Psychology and Behavior* (05), 629-636.
- Xiaona, L., Xiaoyan, G., Xiaohua, L., & Zongkui, Z. (2023). Self-supportive environment and perseverance quality of middle school students: a moderated mediating model. *Educational Research and Experiment* (02), 102-111.
- Yumin, L. (2020). The effect of perseverance personality on study engagement: a chain mediating model. *Journal of Shanghai Educational Research* (09),18-23.

- Jingwen, P. (2023). Influencing factors of college students' internal drive to learn and its functioning mechanism--an analysis based on Grounded Theory. *Modern University Education*(02),93-102.
- Zheng, T., Yang, L., & Peng, T. (2021). The effect of parental autonomy support on migrant children's study engagement: The mediating role of basic psychological needs. *Journal of Schooling Studies* (01), 73-80.
- Caizhi, W., Shuo, R., Fangting, Z., Yan, S., & Yongyu, G. (2018). Basic psychological needs and fulfillment. *Advances in Psychological Science* (06), 1063-1073.
- Zhonglin, W., & Baojuan, Y. (2014). A mediating modeling test with moderation: competition or substitution? *Acta Psychologica Sinica* (05),714-726.
- Zhixue, Y. (2019). A study on the relationship between teacher support and students' study engagement in higher vocational colleges and universities--an analysis of mediating effect based on learning self-efficacy. *Vocational and Technical Education* (17), 65-70.
- Chengfu, Y., Wei, Z., Yiyin, Z., Ting, Y., Jianping, H., & Danli, L. (2012). The relationship between gratitude, basic psychological needs and pathological Internet use among adolescents. *Psychological Development and Education* (01), 83-90.
- Hao Z., & Lirong, L. (2004). Statistical test and control method for common method bias. *Advances in Psychological Science* (06), 942-950.
- Min, Z. (2022). Effects of minority college students' comprehension of social support on study engagement--a case study in Sichuan Province. *Social Scientist* (12),154-160.
- Xinyong, Z. (2015). A study on the impact of social support on college students' study engagement - based on the mediating role of professional commitment. *Research in Educational Development* (09),59-64.
- Hong, Z. (2015). Study of current situation and cultivation on medical English professional talent. Chongqing Medical University.
- Enxiang, Z., Xiongying, C., Gang, H., Xinyu, W., & Yingying, P. (2022). A "four-in-one" model of undergraduate supervisor system in applied universities under the concept of "three-dimension education". *Journal of Beijing Union University (Humanities and Social Sciences)* (04), 8-16.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard university press.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, 11(4), 227-268.
- Fernandez-Lasarte, O., Goni, E., Camino, I., & Ramos-Diaz, E. (2019). Perceived social support and school engagement in secondary students. *Revista Española de Pedagogía*, 77(272), 123-141.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.
- Seligman, M. E., & Csikszentmihalyi, M. (2000). *Positive psychology: An introduction* (Vol. 55, No. 1, p. 5). American Psychological Association.
- Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students: A cross-national study. *Journal of cross-cultural psychology*, 33(5), 464-481.

- Sarason, B. R., Pierce, G. R., Shearin, E. N., Sarason, I. G., Waltz, J. A., & Poppe, L. (1991). Perceived social support and working models of self and actual others. *Journal of personality and social psychology*, 60(2), 273
- Wei, X., & Jing, B. (2022). Pathways and innovative practices for the construction of first-class undergraduate English programs in medical schools under the new liberal arts background: A case study of the provincial first-class undergraduate construction of the English program at Hubei University of Chinese Medicine. *English Square*, (17), 114-116.
- Xin, Z. (2022). Perceived social support and college student engagement: moderating effects of a grateful disposition on the satisfaction of basic psychological need as a mediator. *BMC psychology*, 10(1), 1-9.