Asia Pacific Science Press

Journal of Educational Theory and Practice
ISSN(O):3005-9313
ISSN(P):3005-9305
Vol. 2 No.3 (2025)

Exploration of the Impact of Educational Management on Graduate Students' Psychology under the Context of Prolonged Lockdown due to Sudden Public Health Events

Jingchao Xie[1], Xiaojing Zhang[1], Ying Ji[1], Guangkai Zhang[1], Jinyue Zhou[1], Jiaping Liu[1, 2]*

1.Beijing Key Laboratory of Green Built Environment and Energy Efficient Technology, Beijing University of Technology, Beijing, 100124, China

2.State Key Laboratory of Western Green Building, Xi'an University of Architecture and Technology, Xi'an, 710055, China

Corresponding author: Jiaping Liu, Liujiaping@xauat.edu.cn

Abstract: To investigate the impact of normalized lockdowns during sudden public health events on the lives and mental health of graduate students, a study was conducted using graduate students from a university in Beijing as the survey subjects. The study focused on the effects of transitions between different environments and proposed the guideline of "one body, divided fields, two aspects, and three improvements". Based on the results of the questionnaire survey, evaluations were conducted using the Graduate Student Status Evaluation Scale during the normalized lockdown period. The results indicated that the average daily number of students experiencing physical discomfort or life difficulties did not exceed 6% and 4%, respectively. Mental state scores mostly ranged from 5 to 8, with over 50% of students reporting their mood as "average" or better. Environmental transitions have had a certain impact on the lives and mental health of graduate students. Students spent 4 to 6 hours daily on research and approximately 1 hour on exercise, with nearly 80% of students believing their research efficiency was affected. Accordingly, the following recommendations were proposed: (1) enhance the diversity of cafeteria food and improve hardware facilities; (2) encourage exercise and increase sports equipment; (3) suggest the school carry out caring activities regularly; (4) organize sharing sessions for good deeds and items to boost interest.

Keywords: Sudden Public Health Events; Normalized Lockdowns; Teaching Management; Scientific Research Life; Field Shift; Postgraduate Education

Published: Jul 18, 2025

DOI: https://doi.org/10.62177/jetp.v2i3.488

1.Introduction

Sudden public health incidents have characteristics such as rapid spread and wide impact. Especially in colleges and universities, once a sudden public health incident occurs, measures such as closed-off management have to be adopted successively to effectively curb the spread of the epidemic. These measures restrict personnel movement, strengthen campus management, and effectively ensure the health of teachers and students as well as campus safety. Under such circumstances, students' living and learning habits are bound to be greatly affected. Jin et al. [1] analyzed the current situation of online learning among medical students during the full campus closure for epidemic prevention and control through a questionnaire survey. The results showed that 94.7% of students reported that their study and life were affected. Zhai et al. [2] explored

changes in college students' anxiety symptoms before and after the epidemic using meta-analysis. The results indicated that the detection rate of anxiety symptoms among college students was relatively high, with a higher rate during the epidemic than before. Chen [3] conducted a survey on the mental health status of vocational college students under closed management through questionnaires. It was found that 51.2% and 43.3% of students felt a significant increase in anxiety and fear, respectively, and 50.2% reported a marked increase in fatigue. Deng et al. [4] also pointed out that graduate students had relatively serious social anxiety problems during the normalized phase of epidemic prevention and control. Other studies [5,6] also suggest that limited activity range due to isolation makes people more sensitive and more prone to depression.

Students' physical and mental conditions differ greatly before and after campus closure. However, previous studies on college students have included a wide range of student types and grade levels. Although these studies can reflect the overall situation of college students, there are few detailed studies focusing specifically on graduate students. As a special group in terms of life and study, graduate students mainly engage in independent research in their daily study, rather than following a fixed class schedule. Therefore, how normalized closure affects graduate students' research life is a question worthy of exploration.

"Field" is one of the core concepts proposed by sociologist Bourdieu. A field refers to a social space with its own unique operating rules, and there are multiple different fields in the social system [7]. According to Zhang's research [8], "field" transformation has a certain impact on students' behaviors. Most respondents in the above studies were in campuses with large activity spaces, while there are limited studies on the closed-off environment outside campuses with small activity spaces. In this paper, all respondents were engaged in research work on campus before the closure; after the closure, some students moved from the campus to outside the campus, leading to a field transformation in their research environment.

Based on the above reasons, this paper takes graduate students from a university in Beijing as the research object. It investigates the impact of normalized closure during sudden public health incidents on graduate students' life and psychology, proposes the guiding principle of "integrated body, divided fields, two aspects, and three improvements", and conducts a comparative analysis of the impact of "field transformation". It is expected to provide reasonable suggestions for improving graduate students' quality of life, mental health, and research efficiency during the closure period.

2.Objects and Methods

2.1 Research subjects and questionnaires

The subjects of this survey were graduate students from a university in Beijing, covering all stages of graduate education (from the first year of master's to the third year of doctoral studies). According to the university's closure requirements, the closed locations included on-campus, off-campus student apartments, and home residences. Before the survey began, the students had already been in closed management for 8 days, so the survey phase fell into the period of normalized closed management. Data was collected by distributing online questionnaires for 10 consecutive days, with a total of 300 valid responses recovered (300 valid questionnaires in total). The questionnaire consisted of five parts: (1) Basic information: place of residence and number of cohabitants (2 questions); (2) Physical and mental health status: surveys on health and psychological state (5 questions); (3) Daily schedule; (4) Living and learning conditions; (5) Random questions.

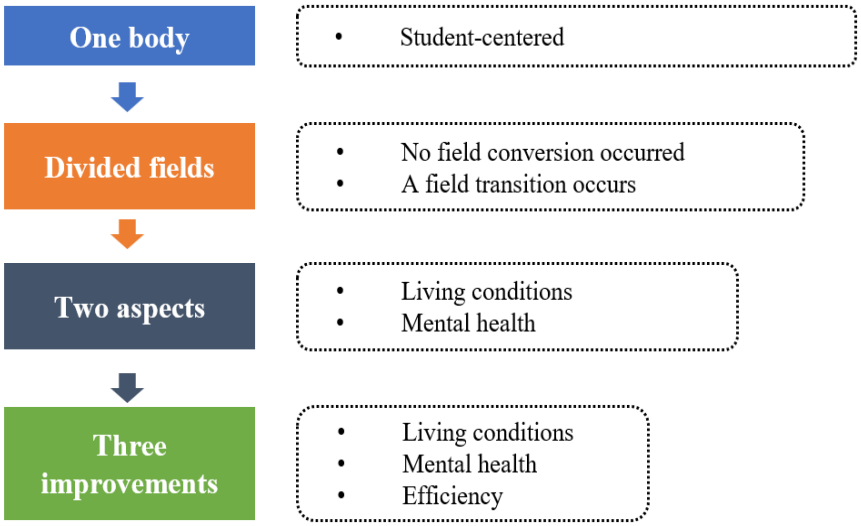
2.2 Guidance route

As shown in Figure 1, during the period of normalized closure, the relational bond between teachers and students should be strengthened. The guiding principle of "one body, divided fields, two aspects, and three improvements" should be followed. Specifically, students are taken as the main body, and the conditions of different transformed fields are considered. Students should be understood, guided, and communicated with from two aspects: life and psychology. This will further improve students' living conditions, mental health, and research efficiency.

2.3 Statistical methods

Non-parametric test refers to a method that uses sample data to infer the distribution pattern of the population when the overall variance is unknown or poorly understood. The software SPSS 26.0 was used to perform non-parametric tests on the average daily research duration and exercise duration in the survey results. All tests were considered to have statistically significant differences when $P < 0.05$.

Figure1: Guidance route.



2.4 Evaluation method

As shown in Table 1, this study conducted an analysis using the postgraduate status evaluation scale during the period of normalized closure, covering three aspects: Comprehensive Assessment (CA), Life Situation Assessment (LSA), and Mental Health Assessment (MHA).

Table1: Evaluation Scale for Graduate Students' Status during Regular Lockdown Period

	Aspects	Indicators	Types	Evaluation rules
CA	LSA	Q1: Whether the body is uncomfortable	Select score	Yes: 1.0 point; No: 2.0 points
		Q2: Whether life is difficult	Select score	Yes: 1.0 point; No: 2.0 points
	MHA	Q3: Mood state	Select score	Extremely depressed: 1.0 point Depression: 2.0 points A bit depressed: 3.0 points General: 4.0 points A little happy: 5.0 points Happy: 6 .0points Very happy: 7.0 points
		Q4: Mental state	Make a score	Grade 1.0 ~ 10.0 points

It can be seen that all indicators in the table are positive indicators. However, the evaluation rules for each indicator are different. To facilitate comparison and eliminate the influence of different dimensions of evaluation indicators, it is necessary to standardize various indicators.

The positive matrix was standardized. Suppose there are n evaluation objects and m evaluation indicators. The positive matrix composed of them is shown in Formula (1). The standardized matrix is denoted as Z, and the calculation formula for each element in Z is shown in Formula (2).

$$X = \begin{bmatrix} X_{11} & X_{12} & \cdots & X_{1m} \\ X_{21} & X_{22} & \cdots & X_{2m} \\ \vdots & \vdots & \ddots & \vdots \\ X_{n1} & X_{n2} & \cdots & X_{nm} \end{bmatrix} \tag{1}$$

$$z_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{n} x_{ij}^2}} \tag{2}$$

Scores for each indicator were calculated as follows:

$$F_i = \frac{\sqrt{\sum_{j=1}^{m}(Z_j^- - z_{ij})^2}}{\sqrt{\sum_{j=1}^{m}(Z_j^+ - z_{ij})^2} + \sqrt{\sum_{j=1}^{m}(Z_j^- - z_{ij})^2}} \quad (3)$$

Where, F_i is the standardized score of the i indicator. The definitions of Z^+ and Z^- are shown in formulas (4) and (5), respectively.

$$Z^+ = (\max\{z_{11}, z_{21}, \cdots, z_{n1}\}, \cdots, \max\{z_{1m}, z_{2m}, \cdots, z_{nm}\}) \quad (4)$$

$$Z^- = (\min\{z_{11}, z_{21}, \cdots, z_{n1}\}, \cdots, \min\{z_{1m}, z_{2m}, \cdots, z_{nm}\}) \quad (5)$$

In this study, the standardized results were used for the analysis of Comprehensive Assessment (CA), Life Situation Assessment (LSA), and Mental Health Assessment (MHA).

3.Results and Discussion

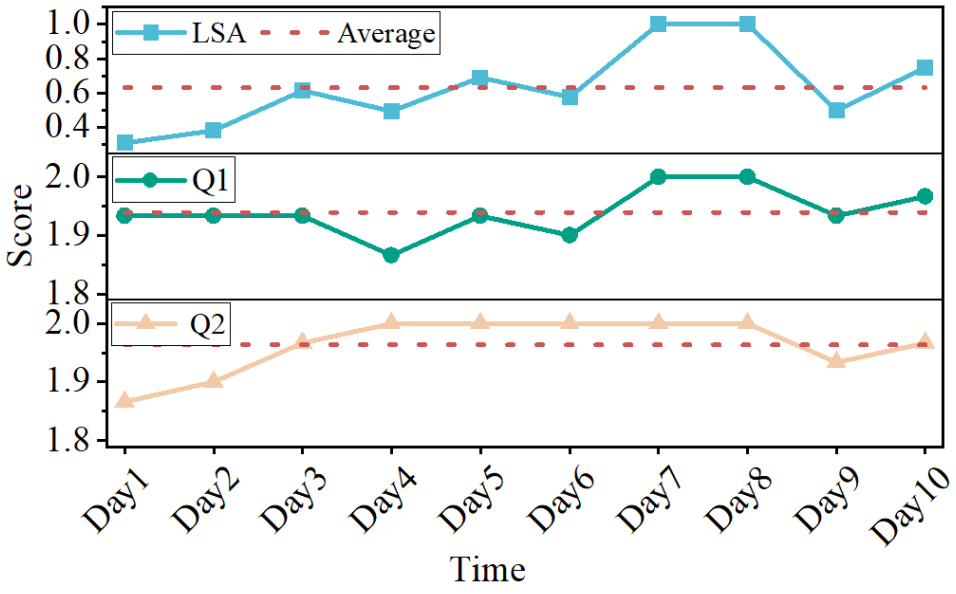
3.1 Life situation assessment

3.1.1 Overall evaluation of living conditions

As one of the "two aspects", the Life Situation Assessment (LSA) reflects the daily quality of life or physical health of graduate students during the normalized closure period through two indicators: Q1 (whether there is physical discomfort) and Q2 (whether there are difficulties in life).

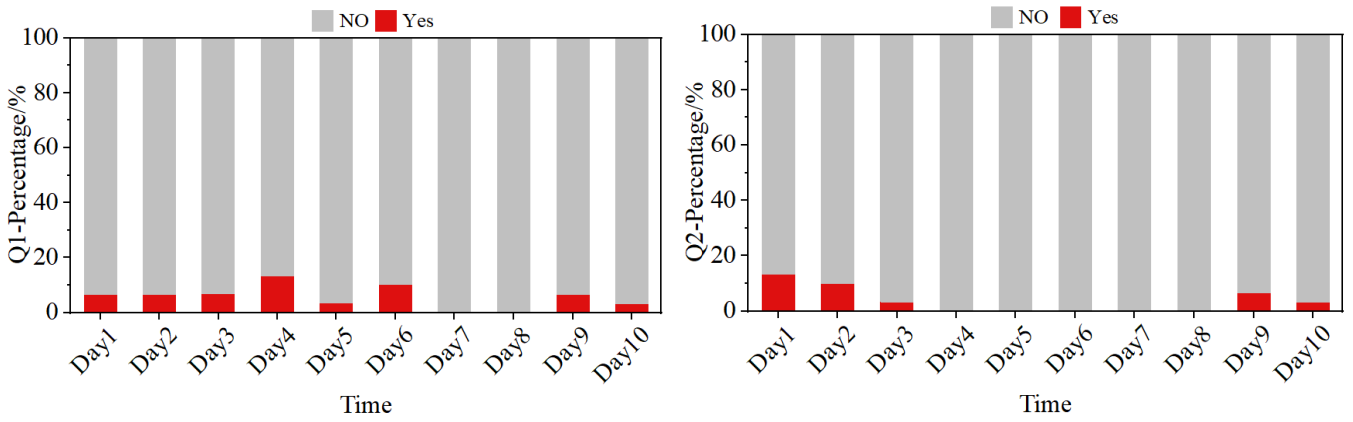
As shown in Figure 2, the average score of LSA was 0.62. Among the scores of indicator Q1, 7 days were lower than the average. For indicator Q2, 3 days were lower than the average. Regarding the overall LSA scores, 6 days were below the average.

Figure2: LSA and the scores of each indicator.



As shown in Figure 3, during the normalized closure period, the average proportion of graduate students with physical discomfort per day did not exceed 6.0%. Among them, there were no students with physical discomfort on Day 7 and Day 8; the proportions were the highest on Day 4 and Day 6, accounting for 13.3% and 10.0% respectively; on other days, the proportions did not exceed 7.0%. The average proportion of students with life difficulties per day did not exceed 4.0%. There were no students with life difficulties from Day 4 to Day 8. The proportions of students with life difficulties on Day 1, Day 2, Day 3, Day 9, and Day 10 were 13.0%, 10.0%, 3.3%, 6.7%, and 3.3% respectively. The LSA was comprehensively affected by the two indicators Q1 and Q2, and its overall fluctuation trend was like that of Q1. During the normalized closure period, the number of graduate students with physical discomfort or life difficulties was relatively small.

Figure3: LSA and the scores of each indicator.

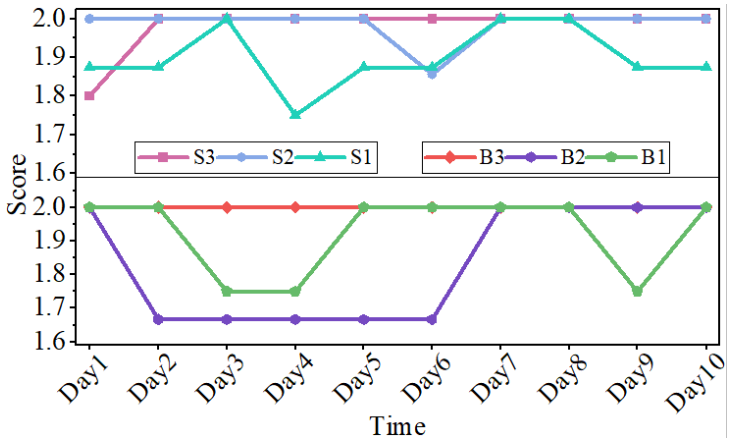


3.1.2 The influence of field transformation on LSA

Among the survey participants, master's students from the first to third year experienced a field shift (FS) in their living places, while doctoral students from the first to third year did not (No-Field Shift, NFS). The change in field conditions had a certain impact on students' lives.

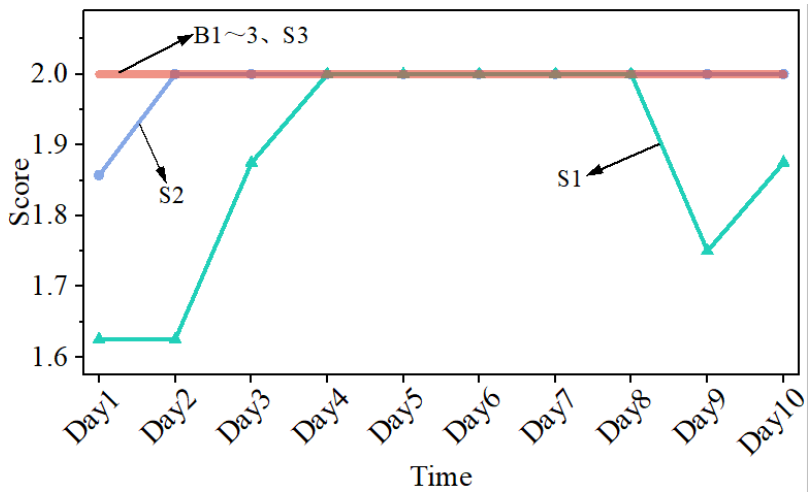
As shown in Figure 4, among doctoral students, those in the third year of their doctoral program had the highest and most stable physical scores. Second-year doctoral students had relatively the lowest scores but showed overall stability. Compared with second- and third-year doctoral students, first-year doctoral students were characterized by greater fluctuations in their scores. According to survey records, the reason for the low scores of second-year doctoral students was that the poor medical conditions during the closure failed to alleviate their pre-existing illnesses, while the issues of first-year doctoral students were related to diet. For master's students, second- and third-year master's students had overall high and relatively stable scores, while first-year master's students had the lowest scores with large fluctuations. The survey found that most students who reported stomachaches and loss of appetite were first-year master's students. Follow-up interviews revealed that the main reason was the single variety of ingredients and poor taste in the canteen of off-campus apartments. It is suggested that the canteen should enhance the diversity of ingredients and improve hardware facilities.

Figure4: The scores of each grade in Q1.



As shown in Figure 5, in the statistics on whether there were difficulties in life, doctoral students and third-year master's students reported no difficulties. Second-year master's students indicated life difficulties on only one day, which was due to being unable to get fruits. For first-year master's students, their scores on life difficulties were low with relatively large fluctuations. They reported the greatest difficulties in life during the early stage of normalized closure, mainly due to the monotonous canteen meals and excessively long queuing times. In the later stage of the survey, the low scores were mainly caused by the ban on couriers entering apartments, which prevented the timely replacement of daily necessities. Overall, it can be found that under the same closed environment, senior students had stronger adaptability to physical life than junior students.

Figure5: The scores of each grade in Q2.



3.2 Mental health assessment

3.2.1 Overall evaluation of mental health

As one of the "two aspects", the MHA characterizes the level of graduate students' psychological endurance as the closure became normalized. It is evaluated through two indicators: mood state and mental state. In this study, the mood state reflects changes in students' emotions by measuring their level of happiness, while the mental state reflects changes in their motivation by assessing their level of vitality. As shown in Figure 6, the average MHA score was 0.64. For indicator Q3, 6 days scored below the average. For indicator Q4, 5 days scored below the average. Regarding the overall MHA scores, 5 days were lower than the average.

The (MHA was comprehensively influenced by Q3 and Q4. Since the fluctuation trends of Q3 and Q4 were similar, the fluctuation trend of MHA was consistent with that of Q3 and Q4. A statistical analysis was conducted on the mental state and mood state of students during the 10-day normalized closure. As shown in Figure 7, from Day 1 to Day 10, most students' mental state scores ranged from 5 to 8, with an average score around 6. This indicated that students' mental state remained at a moderate level during the closure. Meanwhile, there were cases where mental state scores were relatively low (1–5), which should be taken seriously. However, overall, the daily voting scores showed little change.

Figure6: MHA and the scores of each indicator.

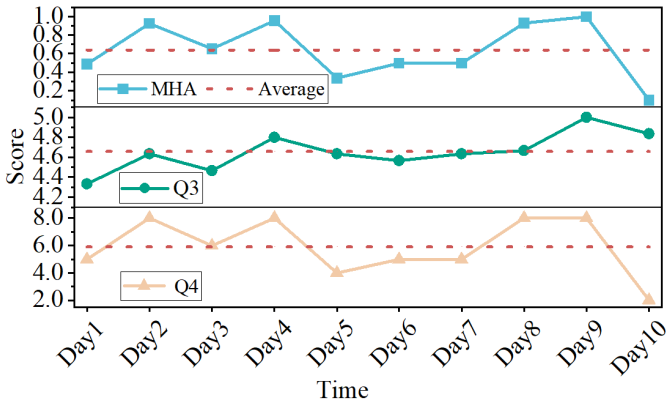
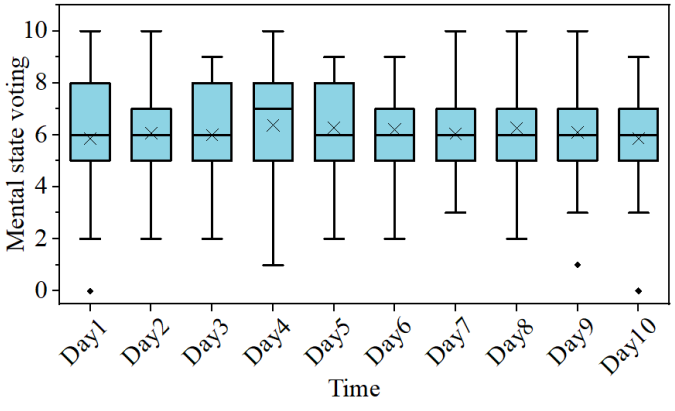
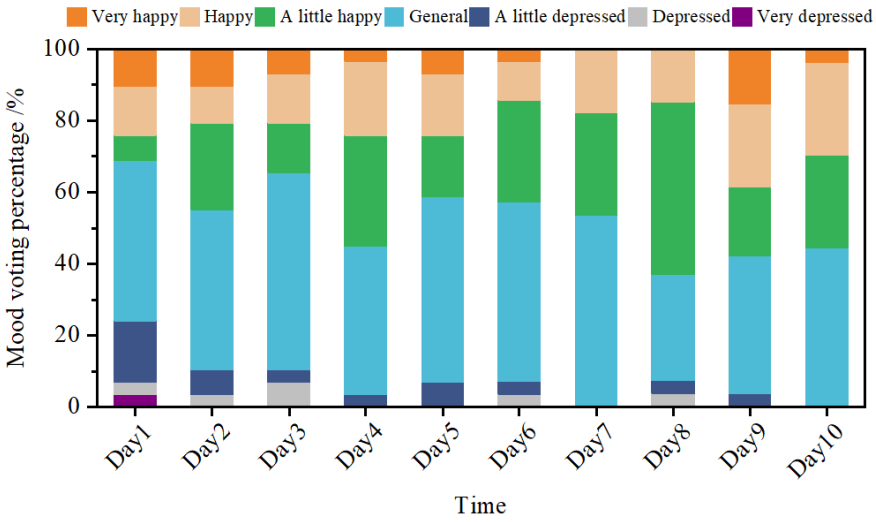


Figure7: Mental state voting.



As shown in Figure 8, approximately 50% of the students voted "average" for their mood, followed by "slightly depressed". The proportions of students who voted "depressed", "very depressed", and "happy" were all less than 20%. This indicates that students' moods remained relatively stable during the closed management period, with few extreme cases ("very depressed" or "very happy"). In addition, although some students reported low mental state scores, the proportions of those who voted "depressed" and "slightly depressed" decreased over time. It has been noted that college students generally exhibit higher anxiety levels during such periods compared to normal times [9], yet graduate students showed a trend of gradual stabilization. This suggests that graduate students have stronger self-regulation abilities compared to lower-grade students.

Figure8: Mood status voting.



3.2.2 The influence of field transition on MHA

The average scores of students' mental state under different transformed fields are shown in Figure 9. For the NFS group, the average mental state score increased from 5.9 to 6.7 from Day 1 to Day 5 and then stabilized. For the FS group, the average score rose from 5.8 to 6.3 from Day 1 to Day 4 and then dropped to the lowest of 5.5.

Both the NFS and FS groups showed an upward trend in the early stage. According to follow-up interviews, this was due to the sense of freshness brought by the school's policy of providing free fruits to students under closed management, which led to the rise in scores in the early stage. In the later stage, as the NFS group did not experience a field shift, their average mental state scores remained stable. However, for the FS group, since the living conditions in the closed environment were worse than those before the closure, they gradually felt unadopted, and their mental state began to decline from Day 4. Therefore, it is suggested that the school should carry out regular care activities, such as distributing fruits (with regular replacement of fruit varieties), and provide certain subsidies when necessary. The impact of field transformation on mood state was similar. As shown in Figure 10, the NFS group had little fluctuation in mood because their surrounding environment remained unchanged, and most of them were in a state of "average" or "slightly happy". For the FS group, however, their mood fluctuated greatly as the closed period prolonged, and there were even cases of "very depressed" in the early and final stages. This is related to the nature of field transformation. The FS group experienced a shift from a relatively favorable field to a relatively unfavorable one, and the gap in field conditions led to significant mood swings among students, even resulting in low spirits. It is advisable to regularly organize friendship meetings to share good things and experiences. Through online platforms, students can share the nice things they encounter in daily life, which can divert their visual attention and thus enhance their interest.

Figure9: Mood status voting.

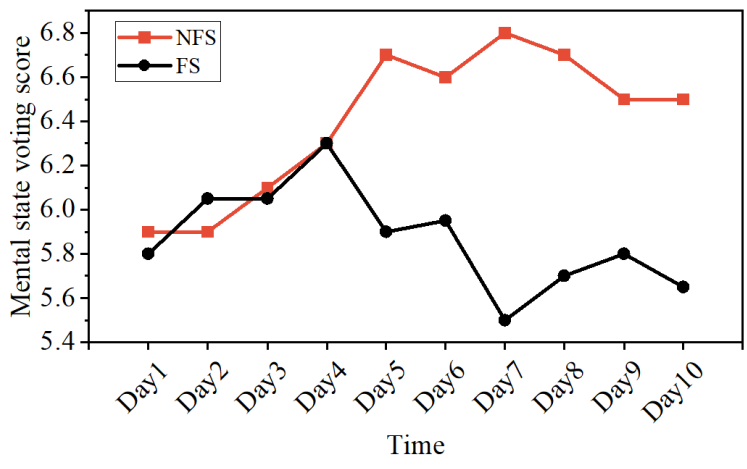
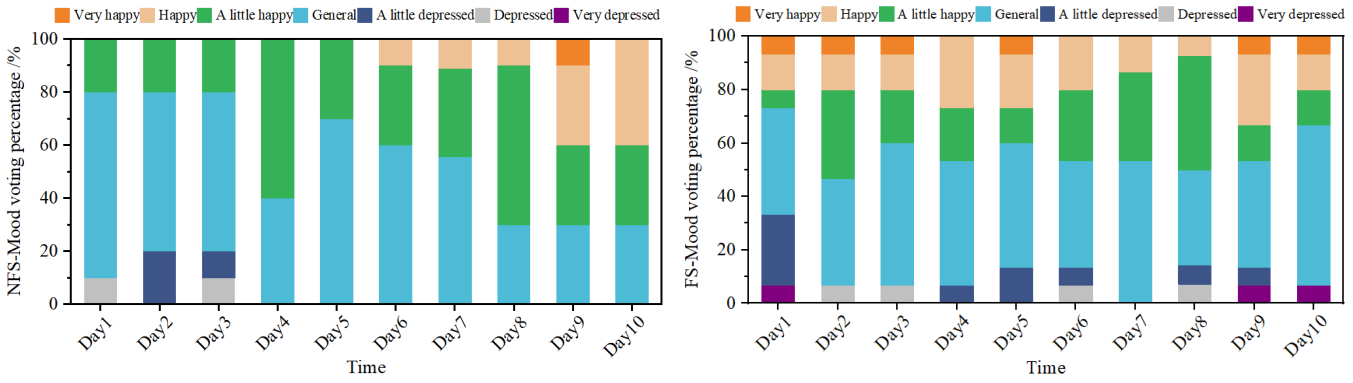


Figure10: FS-NFS Mood status voting.

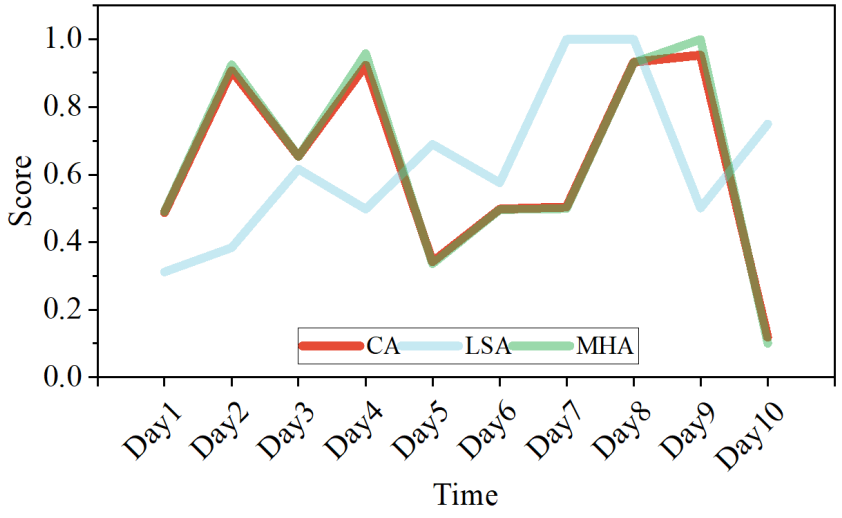


3.3 Comprehensive evaluation of postgraduate student status

3.3.1 Comprehensive evaluation score

The comprehensive assessment scores, derived from the standardization of scores for the four indicators (Q1–Q4), showed a trend over time. As shown in Figure 11, the average score of the CA was 0.63, and its overall change trend was like that of the MHA. This indicates that during the normalized closure period, the comprehensive assessment was most strongly influenced by the mental health assessment.

Figure11: The changing trend of the comprehensive evaluation score.



3.3.2 Research and sports situation

The normalized closure has caused certain fluctuating impacts on graduate students. Then, under the combined influence of such life and psychological interactions, what kind of impact will it have on graduate students' research life? For this reason, a statistical analysis was conducted on graduate students' research time and exercise time before and after the closure.

As shown in Figure 12, before closure, the average daily research duration of students ranged from 7 to 10 hours. After the implementation of normalized closure, the average daily research and study duration of students was between 4 and 6 hours. The results of the non-parametric test on the research duration before and after the closure showed that $P = 1.332E\text{-}15 < 0.05$, indicating that at the 0.05 significance level, the two distributions were significantly different. This suggests that although students had more free time after the closure, they did not spend all of it on research; instead, the overall research duration became shorter due to the impact of the closure. In addition, even though Day 1 to Day 5 were holidays, there was no significant fluctuation in the average research duration of students. In this case, the personalized characteristics of graduate students were reflected, as their research and study arrangements were largely influenced by personal habits. Although the daily research duration of most graduate students was relatively stable, their research efficiency was still affected to some extent. As shown in Figure 13, approximately 3.3% to 16.7% of students believed that the normalized closure had no impact on their research, while 83.3% to 96.7% of students thought it had a certain impact.

Figure12: Average daily research duration.

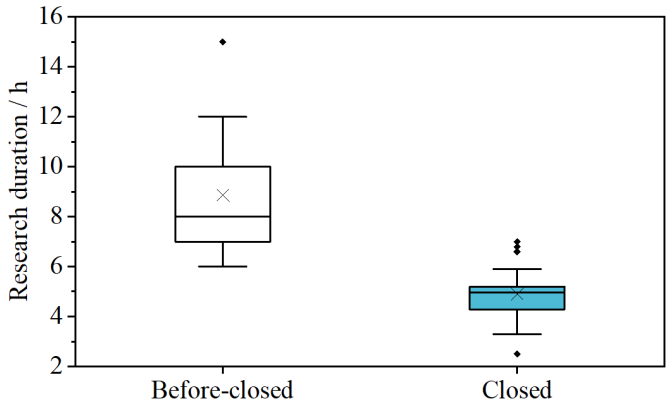
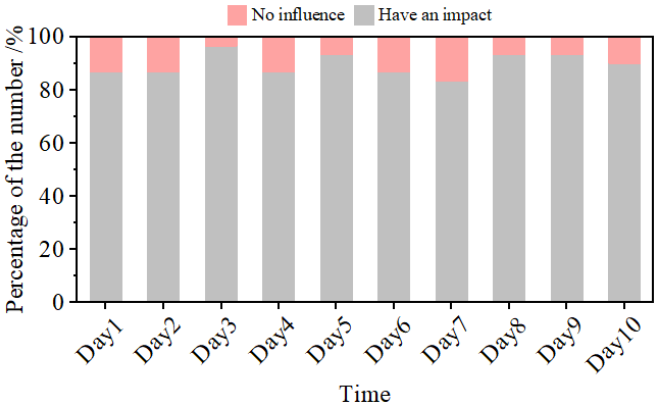


Figure13: Proportion of influence.



As shown in Figure 14, statistics on influencing factors reveal that the most significant factor affecting learning efficiency was a noisy environment, accounting for 30.8% to 48.2%. This is because during the campus closure, students had to work in dormitories, most of which were shared by four or six people. In such a collective environment, individual behavioral differences among residents inevitably led to noise, thereby exerting a substantial negative impact on learning efficiency. Next, poor internet connection and poor air quality also significantly affected learning efficiency. Other factors mainly included physical reasons, life issues, feelings of anxiety and confusion, hot weather, and the inability to carry out research due to the campus closure.

As shown in Figure 15, a non-parametric test was conducted on students' exercise duration before and after the closure, and the result indicated that $P = 0.02637 < 0.05$. At the 0.05 significance level, the two distributions were significantly different. Students' exercise duration increased after the normalized closure, but most students had an exercise duration of less than 1 hour. Overall, students' exercise performance was relatively poor. Therefore, it is advisable to appropriately increase sports equipment to encourage students to exercise more. Considering the characteristics of the closure, it is suggested that the school provides students with simple and practical sports equipment such as badminton, table tennis, skipping ropes, and shuttlecocks.

Figure14: Influencing factors.

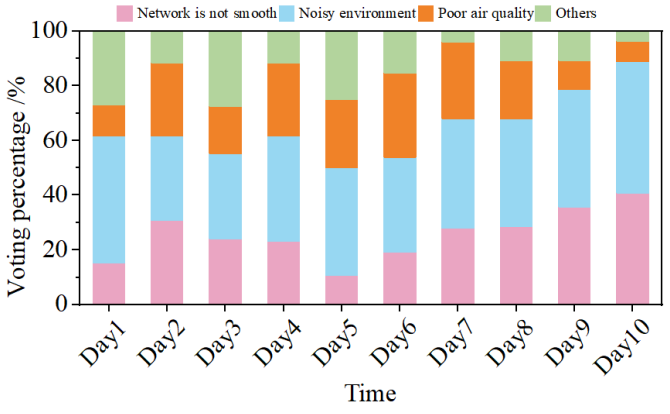
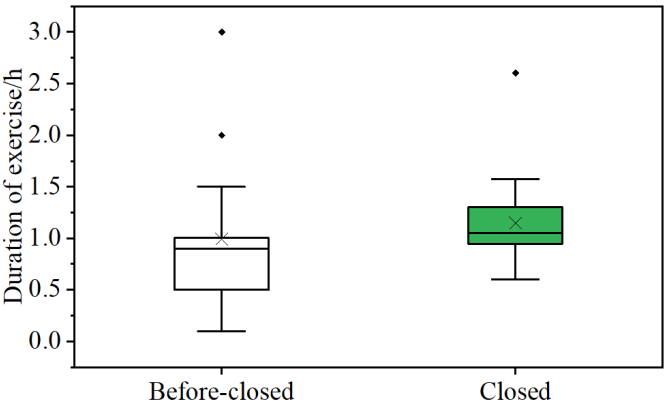


Figure15: Duration of exercise.



4.Conclusion

This study investigates and analyzes the impact of normalized closure during public health emergencies on graduate students' living and mental states, using a questionnaire survey targeting graduate students from a university in Beijing. It proposes the guiding approach of " one body, divided fields, two aspects, and three improvements ". The main conclusions and suggestions are as follows:

(1)Under the same closed environment, senior students have stronger adaptability to physical life and self-regulation ability than junior students. During the normalized closure period, the average daily proportion of students with physical discomfort or life difficulties does not exceed 6% and 4%, respectively. Most scores for mental state range from 5 to 8, and over 50% of students rate their mood as "average" or better.

(2)Field shift has a certain impact on graduate students' psychology. For the NFS group, the average score of mental state increases from 5.9 to 6.7 from Day 1 to Day 5, and then stabilizes, with little fluctuation in mood. For the FS group, the average score rises from 5.8 to 6.3 from Day 1 to Day 4, then drops to the lowest of 5.5. The gap in field conditions leads to significant mood swings among students, even low spirits.

(3)During the normalized closure period, the average daily research duration of students is shorter than that before the closure, ranging from 4 to 6 hours. The most significant factor affecting learning efficiency is a noisy environment, accounting for 30.8% to 48.2%. Students' exercise duration increases slightly compared with before the closure, but overall, it is less than 1 hour. It is suggested to add sports equipment and encourage students to exercise more.

To some extent, the survey results represent the research and living conditions of graduate students at different stages during the closure period, which has certain reference value.

Funding

This study was financially supported by the Construction and Practice of the Industry-University-Education Integration Talent Cultivation Model for the Building Environment Major in the Digital Age (Project No. ERJG202504). This support is gratefully acknowledged.

Conflict of Interests

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

Reference

[1] Jin, Z., Li, Y., Zhu, H., et al. (2022). Analysis on the current situation and influencing factors of medical students′ online learning during the epidemic closure period. Journal of Shenyang Medical College, (3), 242–246.

[2] Zhai, W. H., Zhang, Q., Hu, W., et al. (2022). A meta-analysis of anxiety symptoms and related factors in Chinese college students before and after the COVID-19 epidemic. Chinese Mental Health Journal, (07), 626–632.

[3] Chen, Z. J. (2021). Investigation on Mental Health and Intervention Countermeasures of Higher Vocational Students in the Closed-off Management During COVID-19 — A Case Study of Tangshan Polytechnic College. Industrial Technology and Vocational Education, (3), 70–73.

[4] Deng, X. Y., Liu, X. G., Zhang, S., et al. (2022). Social anxiety and associated factors among graduate students under the normalization of epidemic prevention and control. Chinese Journal of School Health, (3), 413–416.

[5] Zhang, Y., Tong, Y., Wu, Y. J., et al. (2020). Influencing Factors of Mental Health Status among People Quarantined during the Epidemic of COVID-19. Journal of Ningxia Medical University, (10), 999–1005.

[6] Chang, J. H., Yuan, Y. X., Wang, D. (2020). Mental health status and its influencing factors among college students during the epidemic of COVID-19. Journal of Southern Medical University, (02), 171–176.

[7] Pan, W. R., Lin, D. (2016). An Analysis of the PHD Entrance Examinations from the Perspective of the "Field, Habitus and Capital" Theory. Journal of Graduate Education, (5), 33–37.

[8] Zhang, X. (2020). The Influence of Field Conversion on Postgraduate Study——A Case Study of "Life · Practice" Theory. East China Normal University (Master Dissertation).

[9] Qiao, X. M., Guo, W. X., Guo, X. M., et al. (2021). Mental health of college students in Shanxi Province during COVID-19 pandemic and influencing factors. Chinese Journal of Clinicians (Electronic Edition), (4), 288–292.