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STUDY PROTOCOL

Health as expanding consciousness: Change of psychological situation in nursing students

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Abstract

Aim: This study aims to explore the mind of Chinese nursing students transitioning to online education in the pandemic using health as expanding consciousness (HEC) as methodology.

Design: A qualitative, descriptive study based on interviews.

Methods: This qualitative study was conducted from September to November 2021 by students in the Guangzhou university of Chinese medicine. Thirteen participants were recruited using purposive sampling. A questionnaire containing two sections with demographic information, the General Self-Efficacy Scale (GSES) and the Connor-Davidson resilience scale (CD-RISC)-10 was collected to explore the health of participants.

Results: A total of 13 participants were enrolled in the study (69% female). Students ranged in age between 19 and 24 years and the mean age was 22 years. All students lived with their families. Five participants (38%) had a master's degree in nursing, three (23%) were in fourth year of college, four (30%) were in third year of college and one (7%) was in their second year of college respectively. More than half of the participants had high levels of mental toughness and self-efficacy. Four generic categories were identified form a unitary-transformative paradigm perspective. The respondents reported three health pattern phases: Curriculum Transformation, Curriculum adaptation and Curriculum expansion.

Conclusion: This research backs up Newman's hypothesis, and supports the theoretical framework. HEC explains well the psychology of nursing students during the epidemic. More research is needed in the future to develop comprehensive, targeted emotional regulation therapies for nursing students.

KEYWORDS
COVID-19, health as expanding consciousness, nursing education, online education

1 | INTRODUCTION

In March 2020, World Health Organization (WHO) declared the most prevalent and deadly epidemic 'COVID-19' of the 21st century (Farsi et al., 2020). Quarantine and lockdown restrictions have been placed on populations worldwide to stop the spread of COVID-19, so the whole education have undergone unprecedented disruption worldwide (Haslam, 2021). Nursing education was forced to urgently transition to online learning, which caught universities off the surprise and presented substantial challenges (Lira et al., 2020). The epidemic impacted significantly the lives, work, social life and emotional well-being of nursing students. Curriculum education at universities, campuses and health institutions has been interrupted, forcing students to stay at home, creating stress, anxiety, insomnia and depression (Patterson, 2016). Additionally, isolation or blockade may lead to long-term psychological effects.

The development of digital learning in nursing education has been derived by strategic needs, professional development and technological capabilities. COVID-19 accelerates the delivery of this transformation to online learning. Innovative teaching methods expand exponentially in the use of online learning in higher education institutions. Virtual reality (Chen et al., 2020), virtual simulation (Padilha et al., 2019), videoconferencing, multimedia programmes, discussion forums and other established virtual learning environments are available in the pandemic. Nevertheless, nursing students and faculty who were used to traditional face-to-face teaching, struggled to adjust to entirely online learning lacking non-verbal communication, time management and course persistence (Kim et al., 2021). More specifically, nursing faculty should pay more attention to interacting with students in online course environment.

A growing number of research has demonstrated the potential of using technology-enhanced learning in nursing education. However, epidemic prevention measures have brought psychological issues of students to light. Mental health problems are really widespread among nursing students during the epidemic (Reverté-Villarroya, Ortega, Lavedán, et al., 2021). Concerns about disruptions in clinical placements (Lazenby et al., 2020), changes to classroom curriculum, staying at home for an extended period, being away from friends and delayed graduation lead to stress-related symptoms, despair and anxiety (Ma et al., 2020). Although innovative teaching methods show some positive effects of e-learning, negative effects should not be underestimated. Virtual simulation necessitates more sophisticated technology and settings for universities and faculty, particularly in developing countries where situations are more challenging, therefore not all schools can provide this environment and facilities (Agu et al., 2021). Ineffective learning strategies also affect nursing students (O'Doherty et al., 2018). When faced with smartphones and computers, many nursing students are distracted by other things rather than focusing on the classroom, poor academic performance and some students are unable to adapt to the concept of online education, resulting in psychological stress and burden, as well as an inability to adapt to the concept of learning. Students' academics were hampered by the rapid change in the epidemic, which resulted in burdens and began to cause anxiety and depressed symptoms (Puljak et al., 2020).

Prior studies have already shown the psychological health of nursing students during the epidemic, such as depression and failure to adjust to transformative learning, since they are experiencing a new culture that was previously inaccessible (Kochuvilayil et al., 2021; Ramos-Morcillo et al., 2020; Zhu et al., 2021). Unfortunately, these studies relied solely on objective health surveys, rather than a thorough grasp of the psychological processes that are compatible with the nursing student's transition. It was necessary to identify the characteristics that enhance nursing student health in a broader sociocultural context, as well as relevant support techniques.

Health and illness, according to Newman's theory of health as expanding consciousness (HEC), are the same, both being processes of increasing consciousness that preserve a relative balance. Health and disease are expressions of a larger whole. Consciousness is the upward journey of life to a higher degree in a condition of harmony. Individuals have the potential to gain insight into patterns as consciousness evolves. Space and time, family and community interactions, coping mechanisms and health services are all discussed in depth. When stress occurs in nursing students, it subliminally affects the body. As a result, mental issues may develop, the student's healthy relationship with the body is broken and students enter a depressive period. Some students will adapt to the shift and value their geographical and temporal flexibility, while others will worry about lack of digital knowledge or practical human engagement and camaraderie. Nursing students gradually acclimated to online learning after a time period. When old patterns no longer work and individuals are faced with choice points, students must explore new patterns to establish a new balance. Pattern recognition leads to a greater expansion of consciousness, which is regarded as a turning point to transcend or unbind into complete freedom.

The purpose of this study was to explore the mind of Chinese nursing students transitioning to online education during the pandemic. In addition, to investigate the implications of Newman's theory of health as expanding consciousness in the process of psychological transformation, the lifestyle changes that students undergo. The study could provide better information to improve the management and treatment of mental health problems among nursing students.

2 | METHODS

2.1 | Study design

This study is a descriptive qualitative study (Elo & Kyngäs, 2008) with a content analysis approach designed to help us describe and understand nursing students' perceptions of online education and mental health in the context of the pandemic. We conducted semi-structured interviews.

The questionnaire contained two sections. The first section collected demographic information, such as age, grade and gender.

The second section included Chinese versions of the General Self-Efficacy Scale (GSES) and the 10-item Connor-Davidson resilience scale (CD-RISC-10). The GSES has 10 entries, individual dimensions, on a 4-point Likert scale, from 1 ('completely incorrect') to 4 ('completely correct'). The possible maximal score is 40. The high total score indicates that participants had high non-domain-specific self-efficacy. The Cronbach's alpha was previously reported as 0.91 and was 0.77 in this study. The Chinese version scale has been validated in undergraduate samples with good reliability and validity (Zhang & Schwarzer, 1995).

The CD-RISC-10 is used widely to assess resilience, and specifically the ability to cope with adversity (Connor et al., 2003). The CD-RISC10 Chinese version was translated and revised by Wang and his colleagues (2010). Item responses range from 0 ('not true at all') to 4 ('true nearly all the time'), and higher total scores reflect greater ability to cope with adversity. Previous studies validated Cronbach's alpha of the scale above 0.8 means great internal consistency (Faria Anjos et al., 2019; Tourunen et al., 2021). The internal consistency of the scale was good (Cronbach's $\alpha = 0.9$) in this study.

Before the start of the interview, we asked participants to complete a paper-based questionnaire on demographic characteristics. After the interview, the GSES and the CD-RISC-10 scale were completed by participants to measure the participants' non-domain-specific self-efficacy and positive psychological qualities.

This study was reported using a standard checklist for qualitative research reports to improve the transparency and quality of the study (Hsieh & Shannon, 2005).

2.2 | Setting and sample

Purposive sampling was used to recruit students involved in the bachelor's programme and master's programme in nursing at Guangzhou University of Traditional Chinese Medicine. All participants have experienced online learning more than 5 months in spring semester from February to August 2021. Each student has introduced the purpose and significance of the study, and the interview was conducted with the consent of all participants. We explained to the participants that the study was conducted anonymously. The location and time of the interview were agreed by telephone before the interview, and the location was convenient for the interviewees to ensure that the interview environment was quiet, comfortable and undisturbed. A total of 13 nursing students participated in the study, one 2nd year, four 3rd year, three 4th year and five Master.

2.3 | Data collection

The study was collected on 1 September 2021, and ended on 30 November 2021. Students signed an informed consent form and completed a sociodemographic questionnaire.

Individual interviews which lasted between 30 and 40 minutes were audio-recorded digitally via phone. Six students experienced three interviews, four students experienced four interviews and three students experienced five interviews. The interview began with general demographic questions and moved on to more sensitive topics after establishing rapport with the participants. The data were collected using semi-structured interviews with open-ended questions, for example: *What are the forms of online classes you take?*, *what a typical day of online classes looks like for you?*, *How has covid-19 affected you?*, *Have you ever faced challenges in the education process?*, *What have you done to deal with challenges to the education process?*, *How has home isolation from online education affected you*, *and what is your psychological state?*, *How do you evaluate the education process in the last semester?*, *What do you think about the future of the COVID-19 pandemic?* The main questions were designed by the researchers. During the interview process, the researcher listened carefully, recorded truthfully and recorded in detail the non-verbal behaviour of the interviewees, including their facial expressions and body movements. The researcher attempted to understand the perceptions, feelings and experiences described by the participant. Ambiguities are resolved by checking with the participant immediately after the interview. The interviews also continued to reach data saturation, meaning no further data and new concepts were obtained on the topics of interest.

2.4 | Data analysis

Descriptive statistics were used to examine the sociodemographic and academic characteristics of the participants. CD-RISC-10 and GSES Scores ≥29 represent high resilience. Resiliency is the ability to adapt and deal flexibly with hard situations as well as the ability to tolerate negative emotions and failures.

The structural framework for data analysis was based on traditional content analysis (Hsieh & Shannon, 2005) and the interpretive framework was based on Newman's theory of HEC (Newman, 1999). Explored what was meaningful to the participants and what they were conscious of in their lives and livelihoods. Data analysis was conducted through a continuous evolutionary process of data collection. The interviews were transcribed into textual word drafts immediately after the end of the interviews. The transcripts were analysed and coded sentence by sentence to structure the meaning units. The units then were constantly compared and categorized into themes. In the next step, the themes were sorted into subthemes. In addition, based on Newman's theory, key segments of the data were arranged together in chronological order to highlight particular events, patterns or themes. We explored how the mind of nursing students changed over time. Finally, we explored the relationships and commonalities between participants' consciousness and their dimensions in the theme analysis to see how their consciousness altered with time. In order to improve the credibility, an independent academic reviewed all transcripts to identify comparable themes.

3 | RESULTS

A total of 13 participants were enrolled in the study and nine participants were female. Students ranged in age between 19 and 24 years and the mean age was 22 years. All students lived with their families. Five participants (38%) had a master's degree in nursing, three (23%) were in fourth year of college, four (30%) were in third year of college and one (7%) was in their second year of college respectively. We did not select first-year college nursing students because they were new to college and had not yet had the experience of online education. Eight responders (61%) scored above 29 in the GSES scale indicating high self-efficacy and 11 participants (84%) scored ≥29 in the CD-RISC-10 scale. Online education is available in the form of group discussion, flipped classroom, virtual mode, and video conferencing. The scores of GSES and CD-RISC10 are shown in Table 1.

Pattern of health shifted dynamically and changed through the different phases: Curriculum transformation, Curriculum adaptation and Curriculum expansion (Figure 1). In summary, five students were remaining in curriculum transformation, four students struggled in curriculum adaptation phase and four students entered the curriculum expansion phase.

3.1 | Curriculum transformation phase

The sudden outbreak of the epidemic has disrupted the lifestyle and study schedule of students. They live in a 'chaotic world' in a 'past-oriented' way. Some participants expressed their desire to return to their original face-to-face education. The majority of students pointed out their concerns about online education. In particular, expectations of environmental change, changes in learning patterns, fear of being 'raw' and concern about losing touch with their environment and how they would cope with this sudden shift …. In this regard, participants described:

> It's definitely better to have a classroom atmosphere in school. After all, there is only one person in the classroom at home, and the self-control at home is not enough to fully focus on the course, so the learning efficiency is particularly low. (Participant 4)

> I felt that I was not concentrating and that my ability to learn independently and pay attention was significantly reduced. I am not very used to this because I have not been exposed to this format before. I was worried about not being able to accept that non-verbal communication such as eye contact was important to me. (Participant 6)

COVID-19 is potentially a 'neutral zone', where the old ways of living and learning have passed, but the new ways of working have not yet been fully formed. Students have taken on new roles, even though they do not yet recognize what these changes mean. This is the 'psychological no-man's land' between the old and new ways, where people feel uncomfortable. During this phase, anxiety levels rise, while motivation and productivity decline. The participants' individual interests were in conflict with the environment, and the participants felt that their current model was clearly not appropriate for the situation. Concerns about educational advances and future employment opportunities, greatly contributed to stress and anxiety. One participant said she felt so overwhelmed and anxious.

> I was uncertain graduation, I was afraid that the outbreak would affect our clinical rotations, I was

TABLE 1 Participants characteristics

Participant	Gender	Age	Year and study	Live with family members	Online lesson pattern	GSES score	CD-RISC10 score
1	Female	22	Master	Yes	Group, Video, VR	27	29
2	Male	22	4th	Yes	Video	30	31
3	Female	23	3rd	Yes	VR, Group, Video, Flipped Classroom	39	40
4	Female	21	Master	Yes	Video, Symposia	29	28
5	Female	24	Master	Yes	Video, Symposia	27	24
6	Female	22	4th	Yes	Video, VR	26	32
7	Male	20	3rd	Yes	Video, VR	38	29
8	Male	22	3rd	Yes	Video lecture	30	29
9	Female	24	Master	Yes	Group, Video	31	34
10	Female	19	2nd	Yes	Group, Video, VR	28	32
11	Female	22	4th	Yes	Group, Video, VR	29	33
12	Male	24	Master	Yes	Video, VR	32	34
13	Female	23	3rd	Yes	Video lecture	28	29

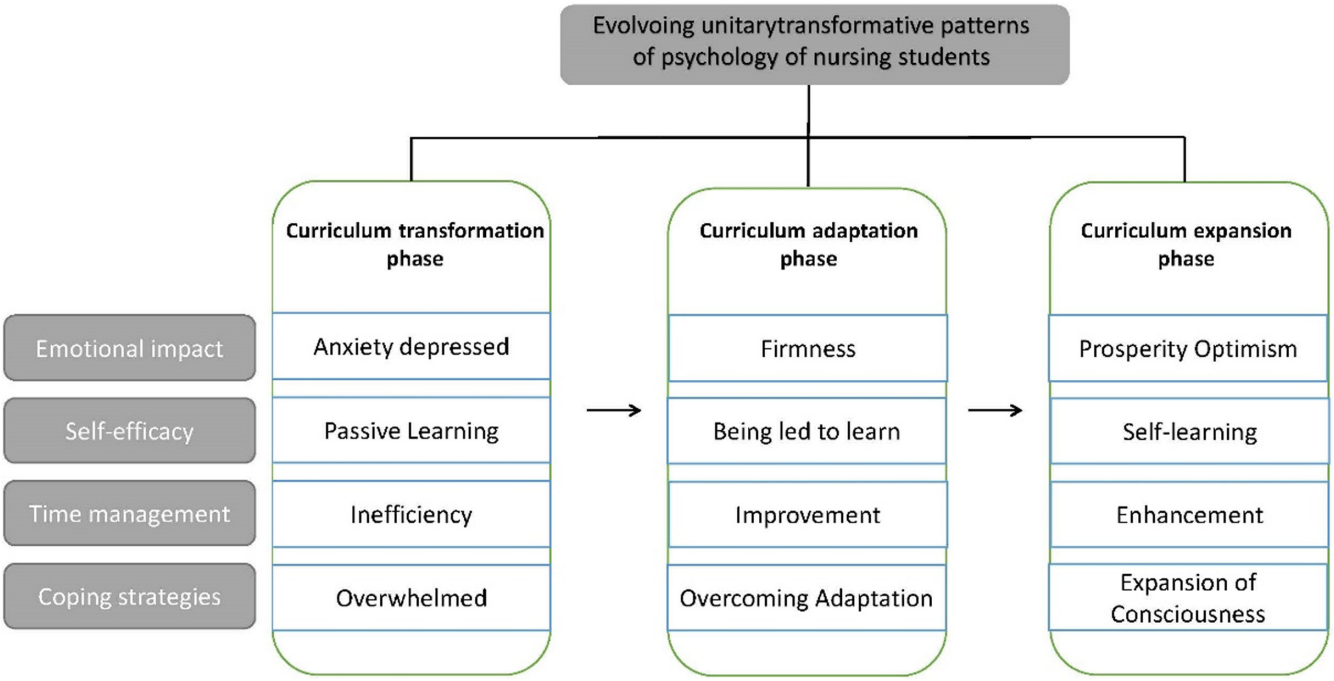

FIGURE 1 Curriculum trajectory in nursing students

> worried about the lack of clinical practice training, I was unsure of myself … COVID-19 had hit me hard. A lot of fear, apprehension and a lot of uncertainty about what is going to happen…. (Participant 1)

> The sign-in, roll call, and meetings left me exhausted, the online classes were much more stressful than classroom teaching, and many of the group collaborative assignments were not discussed through communication. The TCM Clinical Nursing course was taught twice a day, and I had to do a disease document for each class, and I did it every day until after 1 am…. (Participant 13)

Participants also described concerns about their parents, classmates, and neighbourhoods. The COVID-19 news in the media made participants feel they were living in a huge cage, confined to a small space every day. One participant said.

> I worried about my mother going out to work every day, and that was at the height of COVID-19. Every morning when she left, I started to shed tears and I was afraid of her leaving (sigh). She also didn't come home with us for New Year's Eve, but stayed there alone. I will sit in front of the computer every day to grab a mask for the family spare…. (Participant 5)

Time management and self-efficacy at this stage were inadequate. Avoidance behaviour exhibited by participants in dealing with difficulties exacerbated the emotional challenges of the COVID-19 dilemma. In this phase we find 'disorientation'. The first phase lasts between 7 and 10 days. A decrease in mental performance and concentration can be observed. This is a subtle and expected phase, in which the situation is not well defined.

3.2 | Curriculum adaptation phase

After the first phase, students enter the normalization phase, when they learn new routines and attend in online courses and seminars. The conditions of confinement begin to be assimilated and a new daily life begins to be normalized. Another participant said:

> Now I'm doing more things and taking more notes than before. It's very different. It becomes easier now. 'Now I have these habits. I did not do anything at the beginning, now I do everything, it's like I'm used to'. (Participant 9)

Participants' experiences were supported from the side by friends, classmates, parents and faculty. In addition, with increased participation, psychological stability, and emotional improvement, they formed a sense of belonging to a family. Participants described that they were able to better understand the school dilemma and the impact of COVID-19 after a period of time. This is what the participants said.

> When I was feeling upset, I would have a video call with a classmate and the interaction kept me grounded. Once during a class debrief, she shared the

> screen and I just kept verbalizing the presentation and it was done in 'harmony' (laughs). (Participant 9)

> My parents were always quietly supportive. When I had outbursts, they would help calm me down, offer to talk to me, and they supported me a lot. The teacher also organizes regular class meetings and cares about our lives. In addition, the teacher will let the class members chat privately with everyone, so that they can go to him if they encounter difficulties. (Participant 10)

Based on Newman's theory, participants were able to identify their turning points through the observation model. Despite the long wait for the frustration and uncertainty experienced with COVID-19, participants reached the turning point where they were able to transcend their limitations. Participants begin to adjust to the point of choice, connect and empathize with faculty during periods of imbalance and confusion.

3.3 | Curriculum expansion phase

The disorder and disharmony in people's patterns, prompting movement from low level of consciousness to a higher level that leads to a shift or expansion of consciousness, represents an opportunity for personal growth and facilitates change in one's interaction with the environment. The emerging relationship is at the turning point, where participants can transcend themselves into a new order of reality and a new level of consciousness. Participants reported that they began to feel more comfortable with the situation.

> Everything has changed a little and now I can keep up with all the changes that have taken place. (Participant 2)

> At first, I didn't accept the situation. I kept wanting another answer so that I could accept it. As time went on, I began to accept it. I wanted it. Just to settle down and live a comfortable life …. I think this goal is attainable (cheerful). (Participant 3)

The participant is now living a 'self-directed' life, pursuing the present and future after overcoming the past. Participants said they were not tied to the role as nursing students, joined new activities, expanded social networks and began planning to return to university. Participants are more conscious and resilient in the present moment. One participant made the following comment:

> I feel more energized and empowered, I no longer worry about COVID-19, I see COVID-19 as a grind, I now do what I want to do, my willingness to learn is stronger, and I have learned to study independently. (Participant 12)

In this phase, participants did not consider online classes as a burden and they were immersed in the thrill of self-directed and independent learning. Participants also reported specific changes, such as picking up the course before faculty got to class and completing post-class assignments faster or better. One said:

> I got a lot out of it. I finished a book in its entirety and wrote down my thoughts after reading it. I've started to grab answers after the teacher's questions, which is important for me to build my confidence, and I've really changed a lot, or so I thought. (Participant 11)

4 | DISCUSSION

This study is based on HEC to understand the psychological well-being of nursing students under the epidemic shift to online learning. Remote learning has been applied on a large scale globally, but there is little research on psychological transformation and support strategies for nursing students in a broad socio-cultural context. The results of this study are consistent with Newman's theory and support the theoretical framework of HEC. HEC gave us a good opportunity to understand the involvement of nursing students in pattern recognition and psychological transformation.

The pandemic exacerbated the stress of the transition of education roles. Faced with the stress of public health emergencies, nursing students often adopt immature coping strategies. The advent of the pandemic has led to an abrupt shift to web-based learning. These conditions pose challenges to nursing students who learned traditionally face-to-face. When nursing students first started online learning, they got anxious about social distance and the pressure of stressful studies. The epidemic disrupted students' lifestyles and study plans, limiting their activities and learning methods. They sensed that they were in disarray and that the existing model no longer fits this pattern. Choice points occurred in participants when they made decisions that altered their life experiences. Choice points create opportunities for transformation. Periods of tension and anxiety manifest when experiencing a chaotic event. A new family image or a new activity emerges when participants believe the situation has been resolved. They are reborn from the chaotic event with a new sense of freedom. This perception promoted participants' confidence in making decisions in the future. Additionally, in this study, all participants were living with parents. Informal support structure from family, friends, mentors and community may better prepare an individual's resilience to mental burden (Cao et al., 2020).

Changes in life experiences or patterns can lead to anxiety and stress in nursing students under the pandemic. This experience can be transformative. Similar to a chaotic event, they expand their consciousness to make the best intervention decision. Over time, they accumulate information and translate it into an expanded

consciousness where they can see the scenes of life. Participants enter a higher level of consciousness where patterns are identified and transformed, and in the second half of the session, they empower themselves to overcome limitations. Participants are better able to regulate positive emotion and thus have higher psychological resilience when facing difficulties.

Not only did the participants themselves engage in pattern recognition, but the faculty also saw a shift in patterns during the sessions. Faculty hold class meetings or conduct one-on-one counselling to help the students. Newman believes that patterns are important and that each individual has a set of patterns for living in harmony with the environment. Nursing focuses on pattern recognition, and when patterns are broken, it is the nurse's job to help the patient re-establish a new pattern and adapt to the environment. By building a trusting partnership and interaction with nursing students, nursing instructors help the nursing student to recognize their individual overall pattern, understand health patterns and encourage nursing students to recall or do things that are meaningful to them. Every person in any situation, no matter how chaotic and desperate it may seem, is part of a universal process of expanding consciousness—a process of becoming more selfish, finding greater meaning in life and making new connections with others (Newman, 1999). Ultimately, faculty and nursing students together reveal the evolution of the model.

Consciousness is not unique to humans, human beings and all things are a form of consciousness. Expanded consciousness is the process by which a person progresses to a higher level, where the individual becomes more perfect and meaningful in life and living (Newman, 1999). Nursing students adapt to new life, actively embrace new teaching models and pursue participation in the process of model identification. In the process of accepting online learning and home isolation, the relationships of family in students gradually evolved indicating that participants understand this new approach. In terms of spacetime, participants' experiential experiences moved from a chaotic, past-oriented world, to a passive, present-oriented world, to a self-oriented world.

Having experienced the COVID-19 pandemic, nursing students are stronger and fearless. The findings matched those of a previous study with nursing students (Reverté-Villarroya, Ortega, Raigal-Aran, et al., 2021). Understanding and adapting online learning appears to be a critical component in advancing nursing students' awareness. Participants become more robust as an outcome of COVID-19, and life is advancing towards a greater level of consciousness.

5 | LIMITATION

One of the study's major weaknesses was the tiny sample size, with participants being nursing students at only one medical university, potentially resulting in selection bias. Furthermore, because self-report analysis was used to assess indicators of psychiatric psychological status, this could have resulted in reporting bias. Methods that are more impartial and unbiased should be used. Finally, the data and interviews for this study were gathered after nursing students returned to school, which could have led to recollection bias.

6 | CONCLUSION

Nursing students have experienced psychological alterations as part of the pandemic shift to remote learning. From tension and anxiety to gradual adjustment and determination, finally, to consciousness expansion into a greater degree of freedom, this process is consistent with the pattern of HEC. Communication and assistance among mentors, parents and classmates may also help to boost morale and peer support. The findings of this study may provide healthcare providers with a deeper understanding of health as an emerging holistic model. More research is needed in the future to develop comprehensive, targeted emotional regulation therapies for nursing students.

AUTHOR CONTRIBUTIONS

Conception and design: Lulu Tang. Data analysis and interpretation: Shuting Lu. Manuscript writing: All authors. Final approval of manuscript: All authors.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article.

ETHICS STATEMENT

This study was approved by the Ethics Committee of The First Affiliated Hospital of Guangzhou University of Chinese Medicine.

INFORMED CONSENT STATEMENT

Subject consent was waived due to no more than minimal risks involved in this online survey study.

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REFERENCES

Agu, C. F., Stewart, J., McFarlane-Stewart, N., & Rae, T. (2021). COVID-19 pandemic effects on nursing education: Looking through the lens of a developing country. *International Nursing Review*, *68*(2), 153–158. https://doi.org/10.1111/inr.12663

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, *287*, 112934. https://doi.org/10.1016/j.psychres.2020.112934

Chen, F. Q., Leng, Y. F., Ge, J. F., Wang, D. W., Li, C., Chen, B., & Sun, Z. L. (2020). Effectiveness of virtual reality in nursing education:

Meta-analysis. *Journal of Medical Internet Research*, *22*(9), e18290. https://doi.org/10.2196/18290

Connor, K. M., Davidson, J. R., & Lee, L. C. (2003). Spirituality, resilience, and anger in survivors of violent trauma: A community survey. *Journal of Traumatic Stress*, *16*(5), 487–494. https://doi.org/10.1023/A:1025762512279

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Faria Anjos, J., Heitor Dos Santos, M. J., Ribeiro, M. T., & Moreira, S. (2019). Connor-Davidson resilience scale: Validation study in a Portuguese sample. *BMJ Open*, *9*(6), e026836. https://doi.org/10.1136/bmjopen-2018-026836

Farsi, Z., Ahmadi, Y., Noodeh, F. A., Farahani, R. H., & Baniyaghoobi, F. (2020). Presenting characteristics, comorbidities, and outcomes among hospitalized patients with 2019 novel coronavirus-infected pneumonia in Tehran, Iran. *Jundishapur Journal of Chronic Disease Care*, *9*(3), 104512.

Haslam, M. B. (2021). What might COVID-19 have taught us about the delivery of nurse education, in a post-COVID-19 world? *Nurse Education Today*, *97*, 104707. https://doi.org/10.1016/j.nedt.2020.104707

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Kim, S. Y., Kim, S. J., & Lee, S. H. (2021). Effects of online learning on nursing students in South Korea during COVID-19. *International Journal of Environmental Research and Public Health*, *18*(16), 8506. https://doi.org/10.3390/ijerph18168506

Kochuvilayil, T., Fernandez, R. S., Moxham, L. J., Lord, H., Alomari, A., Hunt, L., Middleton, R., & Halcomb, E. J. (2021). COVID-19: Knowledge, anxiety, academic concerns and preventative behaviours among Australian and Indian undergraduate nursing students: A cross-sectional study. *Journal of Clinical Nursing*, *30*(5–6), 882–891. https://doi.org/10.1111/jocn.15634

Lazenby, M., Chambers, S., Chyun, D., Davidson, P., Dithole, K., Norman, I., & Tlou, S. (2020). Clinical nursing and midwifery education in the pandemic age. *International Nursing Review*, *67*(3), 323–325. https://doi.org/10.1111/inr.12601

Lira, A., Adamy, E. K., Teixeira, E., & da Silva, F. V. (2020). Nursing education: Challenges and perspectives in times of the COVID-19 pandemic. *Revista Brasileira de Enfermagem*, *73*(Suppl. 2), e20200683. https://doi.org/10.1590/0034-7167-2020-0683

Ma, Z., Zhao, J., Li, Y., Chen, D., Wang, T., Zhang, Z., Chen, Z., Yu, Q., Jiang, J., Fan, F., & Liu, X. (2020). Mental health problems and correlates among 746 217 college students during the coronavirus disease 2019 outbreak in China. *Epidemiology and Psychiatric Sciences*, *29*, e181. https://doi.org/10.1017/s2045796020000931

Newman, M. A. (1999). *Health as expanding consciousness*. Jones & Bartlett Learning.

O'Doherty, D., Dromey, M., Lougheed, J., Hannigan, A., Last, J., & McGrath, D. (2018). Barriers and solutions to online learning in medical education—An integrative review. *BMC Medical Education*, *18*(1), 130. https://doi.org/10.1186/s12909-018-1240-0

Padilha, J. M., Machado, P. P., Ribeiro, A., Ramos, J., & Costa, P. (2019). Clinical virtual simulation in nursing education: Randomized controlled trial. *Journal of Medical Internet Research*, *21*(3), e11529. https://doi.org/10.2196/11529

Patterson, S. L. (2016). The effect of emotional freedom technique on stress and anxiety in nursing students: A pilot study. *Nurse Education Today*, *40*, 104–110. https://doi.org/10.1016/j.nedt.2016.02.003

Puljak, L., Čivljak, M., Haramina, A., Mališa, S., Čavić, D., Klinec, D., Aranza, D., Mesarić, J., Skitarelić, N., Zoranić, S., Majstorović, D., Neuberg, M., Mikšić, Š., & Ivanišević, K. (2020). Attitudes and concerns of undergraduate university health sciences students in Croatia regarding complete switch to e-learning during COVID-19 pandemic: A survey. *BMC Medical Education*, *20*(1), 416. https://doi.org/10.1186/s12909-020-02343-7

Ramos-Morcillo, A. J., Leal-Costa, C., Moral-García, J. E., & Ruzafa-Martínez, M. (2020). Experiences of nursing students during the abrupt change from face-to-face to e-learning education during the first month of confinement due to COVID-19 in Spain. *International Journal of Environmental Research and Public Health*, *17*(15), 5519. https://doi.org/10.3390/ijerph17155519

Reverté-Villarroya, S., Ortega, L., Lavedán, A., Masot, O., Burjalés-Martí, M. D., Ballester-Ferrando, D., Fuentes-Pumarola, C., & Botigué, T. (2021). The influence of COVID-19 on the mental health of final-year nursing students: Comparing the situation before and during the pandemic. *International Journal of Mental Health Nursing*, *30*(3), 694–702. https://doi.org/10.1111/inm.12827

Reverté-Villarroya, S., Ortega, L., Raigal-Aran, L., Sauras-Colón, E., Ricomà-Muntané, R., Ballester-Ferrando, D., Rascón-Hernán, C., Botigué, T., Lavedán, A., González-Osorio, L., Osorio-Spuler, X., & Burjalés-Martí, M. D. (2021). Psychological well-being in nursing students: A multicentric, cross-sectional study. *International Journal of Environmental Research and Public Health*, *18*(6), 3020.

Tourunen, A., Siltanen, S., Saajanaho, M., Koivunen, K., Kokko, K., & Rantanen, T. (2021). Psychometric properties of the 10-item Connor–Davidson resilience scale among Finnish older adults. *Aging & Mental Health*, *25*(1), 99–106. https://doi.org/10.1080/13607863.2019.1683812

Wang, L., Shi, Z., Zhang, Y., & Zhang, Z. (2010). Psychometric properties of the 10-item Connor–Davidson Resilience Scale in Chinese earthquake victims. *Psychiatry and Clinical Neurosciences*, *64*(5), 499–504.

Zhang, J. X., & Schwarzer, R. (1995). Measuring optimistic self-beliefs: A Chinese adaptation of the General Self-Efficacy Scale. *Psychologia: An International Journal of Psychology in the Orient*, *38*(3), 174–181.

Zhu, Y., Wang, H., & Wang, A. (2021). An evaluation of mental health and emotion regulation experienced by undergraduate nursing students in China during the COVID-19 pandemic: A cross-sectional study. *International Journal of Mental Health Nursing*, *30*(5), 1160–1169. https://doi.org/10.1111/inm.12867

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