RESEARCH ARTICLE

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Psychological support and demand for death education among Chinese college students during the COVID-19 pandemic: The mediating role of neutral death attitude

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Abstract

Aim: This study aimed to explore the mediating role of neutral death attitude between psychological support and demand for death education among college students during COVID-19.

Design: A cross-sectional survey was conducted with 1800 college students selected by convenience and snowball sampling from 20 provinces and municipalities.

Methods: A questionnaire survey (The Psychological Support Scale, Demand for Death Education Scale and Neutral Death Attitude Scale) was distributed to 1800 college students.

Results: Psychological support had a significant positive predictive effect on demand for death education and neutral death attitude, with neutral death attitude partially regulating the demand for death education of college students after receiving psychological support.

KEYWORDS
college students, COVID-19, demand for death education, neutral death attitude, psychological support

1 | INTRODUCTION

College students showed varying levels of psychological problems during the COVID-19 pandemic. For example, the seriousness of the pandemic has intensified college students' worries about their own lives (Lin & Xu, 2020); frequent exposure to negative information about the pandemic on the Internet can aggravate their stress response (Lian et al., 2020; Wu et al., 2020); college students' anxiety about death is affected by regions, with worsened control of the pandemic leading to higher levels of anxiety (Meng et al., 2020); the anxiety and fear of college students who lacked protective guidance from parents tended to be higher (Zhang et al., 2020). These psychological problems are related to the fear of death exacerbated by the pandemic (Perz et al., 2022). Attitudes towards death often play a crucial role (Daaleman & Dobbs, 2010; Chen & Ding, 2018; Shi et al., 2019). College students who fear death regard it as a threat towards and deprivation of their own lives. Students with an escapist attitude think that hardships experienced cannot be solved. Thus, they use death to eliminate suffering (Huang, 2014). Psychological support has been vital in helping people during the COVID-19 pandemic. For example, psychological support may equipped to prevent negative stress consequences (Ye et al., 2020), reduced the potential acute and long-lasting effects of COVID-19 on mental health (Ghiretti et al., 2020), improved the prognosis of COVID-19-positive patients (Yang, Yang, et al., 2020; Yang, Zhang, & Jia, 2020) and had a negative direct effect on police officers' stress response during the COVID-19 pandemic (Jiang, 2021). Psychological support is one of the forms of social support, which involves empathy, care and love, leading to

feelings of warmth and trust in the supported individual and is perceived and is closely related to an individual's subjective feelings (Liu & Huang, 2010). Psychological support is a traditional and effective form of social support for college students that can affect individuals' perceptions and attitudes towards death (Peng, Wan, et al., 2017; Peng, Zhao, et al., 2017; Zhou et al., 2013; Zhou & Wei, 2013).

Attitude is an individual's relatively persistent, stable and consistent psychological tendency (Jin, 2020). Death attitude refers to the evaluative internal psychological tendency, whether positive or negative, that an individual holds when responding to death (Chen et al., 2006). Wass (2004) summarized death education as a formal or informal death-related teaching activity centred on death, including teaching objectives, content, methods and evaluation. It is an integrated discipline covering death studies, psychology, ethics and other content. Xu (2016) proposed three levels of death: nature of death, how to deal with death and near-death and the emotional reactions they bring, and how to adjust death and near-death and suggested their wide range of implications.

College students have had a high demand for death education, with more than 60% of college students hoping to pursue death education courses, especially effective course content and implementation methods (Zhou et al., 2020). As a learning motivation, the demand for death education reflects the desire of learners to receive death education (Wang, 2015). According to the theory of reasoned action (TRA), as a potential cause, attitude can cause changes in behaviour and indirectly predict other psychological changes (Fishbein & Ajzen, 2010; Wu & Li, 2016). The COVID-19 pandemic has highlighted the theme of death for individuals. Further, it could be predicted that people's behavioural responses and psychological changes would differ according to their death attitudes. Therefore, the demand for death education reflects individuals' relevant death attitudes, and there is a significant correlation between demand for death education and death attitudes (He & He, 2019). Studies have also shown that social support is closely related to and can promote the generation of psychological needs (Li et al., 2018; Mireya et al., 2017). Therefore, a close relationship between psychological support, death attitude and demand for death education can be surmised.

2 | BACKGROUND

2.1 | Psychological support and demand for death education

To be best of our knowledge, there is no research that examines the relationship between college students' psychological support and demand for death education. However, there are many related studies on social support and learning motivation. The demand for death education is a learning motivation. Importantly, social support is the material or spiritual support individuals receive from the outside world. An excellent social support system can provide people with a positive psycho-emotional experience (Huang, Chen, & Wang, 2021). In contrast, psychological support is one of the crucial forms of social

support (Liu & Huang, 2010) and is closely related to social support (Wang, Li, et al., 2021; Wang, Song, & Zhang, 2021). Turkpour and Mehdinezhad (2016) believe that only the psychological support felt by the individual can be called social support. However, some scholars equate the two meanings (Sun, 2021; Wei & Zhang, 2021; Zhang et al., 2018). Several studies that the more social support college students receive, the stronger their learning motivation will be (Patrick et al., 2007; Song et al., 2014; Yang, Zhang, & Jia, 2020; Zhong et al., 2016). Wentzel et al. (2010) confirmed that social support from teachers and peers stabilizes students' motivation.

Social support can affect an individual's mental state through two processes.

The first one, called the main effect model, is universal. Whether the individual is stressed or currently receiving support, social support has a universal beneficial effect. It provides people with predictability, including stability and the certainty of self-worth (Cohen et al., 2014). Therefore, we can assume that social support can enhance the function of a series of psychological phenomena such as learning motivation. The second is the buffering model, which posits that social support is only linked to physical and mental health under stressful conditions. Social support buffers the negative impact of stressful events on physical and psychological health (Parrish et al., 2011). There are also two possible outcomes. First, social support may act on the intermediate link between stressful events and subjective evaluation; if individuals feel a certain amount of social support before experiencing stress, they would underestimate the harmfulness of the stressful situation and not evaluate it as a stressful event. For example, in the context of COVID-19, if teachers provide adequate online feedback at the beginning, this would help reduce students' stress and improve learning motivation (Pan, 2020). Teachers' feedback is a kind of support for students' learning, which plays a crucial role in students' learning process, performance and development, especially when teachers' feedback is consistent with students' goals. In the context of the pandemic, teachers need to strengthen online feedback when carrying out online teaching to reduce students' learning difficulties. Second, social support may also buffer the relationship between the subjective experience of stress and the acquisition of the disease. Social support can include problem-solving strategies and reduce stress (Li, 1998). For example, students' concerns regarding difficulties may be decreased through problem-solving (Kawachi & Berkman, 2001). The number of casualties worldwide from COVID-19 is large, forcing people to think about, encounter or experience death, which may result in individuals experiencing despair. In such cases, the acceptance of death education may be an appropriate response. Therefore, it is assumed that psychological support has a positive predictive effect on the demand for death education.

### 2.2 | Neutral death attitude and demand for death education

Neutral death attitude is the most positive among the various death attitudes (Chen et al., 2006). Death attitude generally includes five

dimensions: fear of death, death escape, neutral death attitude, approach acceptance and escape acceptance (Wong & Tomer, 2011). Fear of death and death escape has the apparent implication of alienating death, while approaching acceptance and escape acceptance imply a degree of religiosity and life frustration, respectively (Wong, 2008). Only a neutral death attitude has no emotional attachments and is a relatively pertinent attitude towards death (Liao, 2000; Liu et al., 2013; Neimeyer, 2004). Individuals with a neutral death attitude will accept that death is an inevitable reality and think that their life is fulfilling and meaningful. Simultaneously, they are not afraid of death and are more likely to make the best use of their lives. In either case, the beneficial effects of a neutral death attitude on mental health are pretty convincing (Wong, 2008).

Wong and Tomer (2011) investigated neutral death attitudes. Du et al. (2021) and Peng, Zhao, et al. (2017), Peng, Wan, et al. (2017) asserted that establishing a natural orientation attitude should be the first step in death education. Adesina et al. (2014) held similar views and believed that an objective scientific understanding of death must first be developed before individuals can adjust their mentality and face death rationally. Fishbein and Ajzen (2010) considered all the factors that may indirectly affect behaviour through behaviour intention. Furthermore, a significant factor affecting behaviour intention was attitude (Wu & Li, 2016). Notably, the more positive the individual's attitude towards a specific behaviour, the stronger the individual's behavioural preference (Sniehotta et al., 2014). The demand for death education is a desire or motivation to learn from death education. Community residents' demand for death education is positively correlated with death fear, neutral death attitude and approach acceptance dimensions in the Death Attitude Scale (Xu et al., 2020). The neutral death attitude of palliative care specialist nurses is also positively correlated with the demand for death education (Luo et al., 2021). It can be seen that the neutral death attitude is closely related to the demand for death education. Therefore, it is assumed that the neutral death attitude can positively predict the demand for death education.

2.3 | Psychological support and neutral death attitude

Though research on the relationship between college students' psychological support and neutral death attitudes is rare, few studies have been conducted on social support and death attitudes. The discovery of the relationship between social support and death attitude was found in the process of studying death fear and health status (Xu, 2013), and it is believed that social support is related to multiple themes related to death (Li, 2019; Liang, 2016). Early literature focussed on patients, older adults, medical staff and other individuals who commonly encountered death and was centred on the relationship between death anxiety and social support (Wang, Song, & Zhang, 2021; Li, 2019). Social support is crucial when experiencing life-threatening diseases, major disasters and at the end of life (Mayfield, 2004). Studies have shown that, irrespective of age, social support has a significant predictive or mediating effect on
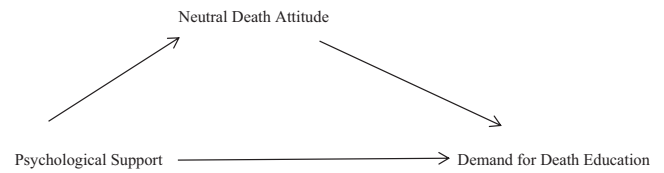
FIGURE 1 Hypothetical model of the mediating role of neutral death attitude

death attitudes (Berkman et al., 2000; Cicirelli, 2002). The greater the support experienced by individuals, the lesser their fear of death (Aday, 2006; Xu, 2013; Xu et al., 2013). Social support is a protective factor against suicide among rural residents (Lu et al., 2011). Among older adults, social support is significantly negatively and positively correlated with the fear of death and neutral death attitude, respectively (Zhou et al., 2013).

Similarly, among gay men with HIV infections, receiving less family support was related to higher death anxiety (Iverach et al., 2014). The conservation of resources theory (COR) (Hobfoll, 2011) states that reducing an individual's available resources may lead to the future scarcity of resources; thus, one's response is generally to take immediate action to reduce the resources expended. Conversely, individuals with sufficient resources can obtain more resource increments, such as increased motivation, behaviour or health. Therefore, during the COVID-19 pandemic, when an individual feels the threat of death, psychological support, as a social resource, is provided to the individual so that the individual has the strength to cope with, face up to, resist death and form a rational death attitude, which is precisely the meaning of a neutral death attitude. In a sense, psychological support can be regarded as social support (Sun, 2021; Turkpour & Mehdinezhad, 2016; Wei & Zhang, 2021; Zhang et al., 2018). Therefore, it is assumed that psychological support can positively predict neutral death attitudes.

Thus, based on two models of social support and the theories of COR and TRA, we hypothesize that a neutral death attitude may be a critical mediator between psychological support and demand for death education (see Figure 1).

3 | METHOD

3.1 | Participants

Using convenience and snowball sampling, a questionnaire was distributed online to measure the psychological support, neutral death attitude and demand for death education of college students from 20 provinces and municipalities. A total of 1800 questionnaires were collected, and the questionnaires that had been answered for too long (>900s) or too short (<120s) or were of poor quality were removed. The final number of participants was 1538, with an effective recovery rate of 85.44%. The participants included: 766 (49.80%) males and 772 (50.20%) females; 333 (21.65%) first-year undergraduates, 337 (21.91%) second-year undergraduates, 315 (20.48%) third-year undergraduates, 286 (18.60%) fourth-year

undergraduates and 267 (17.36%) postgraduates; and 818 (53.19%) urban residents and 720 (46.81%) rural residents; and 665 (43.24%) student leaders and 873 (56.76%) non-student leaders.

3.2 | Procedure

Data collection was collected online through WeChat software. First, the questionnaires were edited as a web link for delivery. Then, the researchers sent the link to all the college students in the Wechat address book using the Wechat private message and WeChat group and asked the participants to complete it. Simultaneously, participants were asked to send it to the college students in their own Wechat address book to collect data scrolling. This study was approved by the ethics and law ethics committees of the Shandong University Of Political Science and Law on 24 August 2020. The study was conducted in September 2020. At that time, China's pandemic had been contained and social life had returned to normalcy. College students had also returned to school to resume classes, but they were required to follow a strict registration system to enter and exit the school. In the first half of 2020, students were studying online.

3.3 | Control and inspection of common method deviations

The Harman single factor test was performed on the measurement items involved (Zhou & Long, 2004). There were four eigenvalues greater than 1, and the variance explanation degree of the first factor was 28.42%, which is less than the critical value of 40%. Therefore, there is no serious common method deviation in this study.

3.4 | Tools

3.4.1 | Psychological Support Scale

A questionnaire prepared by Shen et al. (2020) regarding the psychological status of medical workers in COVID-19 prevention and control was used, totalling four items. The items were rated on a five-point scale: the higher the score, the stronger the psychological support. There was no occupational restriction on the items, making them suitable for college students. Students answered according to the context of the pandemic. One question was, "Have you received systematic psychological support during the COVID-19 pandemic?" The Cronbach's α coefficient of this measurement was 0.75.

3.4.2 | Demand for Death Education Scale

Compiled by Yan (2002), the Demand for Death Education Scale had 10 items, rated on a 5-point scale. Higher scores indicated a higher

TABLE 1 Demographic characteristics

	Number	Proportion (%)
Gender		
Male	766	49.80
Female	772	50.20
Grade		
First-year undergraduates	333	21.65
Second-year undergraduates	337	21.91
Third-year undergraduates	315	20.48
Fourth-year undergraduates	286	18.60
Postgraduates	267	17.36
Area		
Urban residents	818	53.19
Rural residents	720	46.81
Student leaders		
Yes	665	43.24
No	873	56.76

demand for death education. Students could answer according to the context of the pandemic. One question was, "I think students should be educated about death." The Cronbach's α coefficient of this measurement was 0.84.

3.4.3 | Neutral Death Attitude Scale

The general attitude of college students towards death tends to be neutral, mainly with natural acceptance (Gao et al., 2018; Zhou et al., 2020). We adopted the "natural/neutral acceptance" dimension of the death attitude descriptive scale compiled by Wong and Tomer (2011) and Liao (2000), totalling five items rated on a five-point scale: the higher the total score, the more positive the attitude towards neutral death. Students answered according to the usual situation. One question was, "Death is only part of the life process." The Cronbach's α coefficient of this measurement was 0.73.

4 | RESULTS

4.1 | Descriptive statistics of variables

The demographic characteristics of the participants and the descriptive statistical results of the variables are shown in Tables 1 and 2. The psychological support received by college students was significantly positively correlated with the neutral death attitude, including the demand for death education. Furthermore, the neutral death attitude was also significantly positively correlated with the demand for death education.

4.2 | Analysis of the mediating role of neutral death attitude

We used Model 4 (a simple mediating model) in the SPSS macro compiled by Hayes (2013). We controlled variables, such as gender, grade, residence, and whether participants were frontline student leaders or not, to test the mediating effect of neutral death attitude on the relationship between psychological support and demand for death education. The results (see Table 3) show that psychological support has a significant positive predictive effect on demand for death education ($B = 0.34$, $t = 13.63$, $p < .001$). Further, the direct predictive effect of psychological support on demand for death education is significant when the mediating variable is included ($B = 0.30$, $t = 12.47$, $p < .001$). Psychological support has a significant positive predictive effect on the neutral death attitude ($B = 0.14$, $t = 5.49$, $p < .001$), and neutral death attitude has a positive predictive effect on demand for death education ($B = 0.27$, $t = 11.35$, $p < .001$).

Additionally, it was found that the upper and lower limits of the bootstrap 95% confidence interval of the direct effect of psychological support on demand for death education included 0. Nevertheless, the upper and lower limits of the bootstrap 95% confidence interval of the mediating effect of neutral death attitude did not (see Table 4). This indicates that psychological support can affect the demand for death education and predict the demand for death education through the mediating effect of a neutral death attitude. The direct effect values were 0.30 (psychological support), and mediated effect values were 0.04 (neutral death attitude), with effect ratios of 88.24% and 11.76%, respectively.

5 | DISCUSSION

5.1 | Psychological support has a positive predictive effect on the demand for death education

This study shows that psychological support can positively predict college students' demand for death education. This is similar to previous research findings: social support can improve the cognitive function of older adults (Mireya et al., 2017) and can enhance the well-being of middle school students (Luo & Mu, 2017; Zhao et al., 2016).

First of all, the results verify the main effect model in the theory of social support theory. Psychological support has a universal gain function (Cohen et al., 2014), which improves college students'

cognitive demand. Moreover, Maslow's hierarchy of needs theory holds that higher-level needs will be considered after the lower-level needs of individuals are met (Peng, 2019). Therefore, the universal pathway of this enhanced function of psychological support may also be explained from this perspective. That is, psychological support from the outside meets college students' demand for belongingness and love, after which a higher level of cognitive demand (demand for death education) is also driven.

Secondly, the results also support the second meaning of the buffering model. Given the significant pressure brought by the pandemic, psychological support can help people develop an adequate buffer and encourage them to actively think and actively adapt to find strategies to solve problems. Therefore, the demand to allow themselves to receive death education seems reasonable, which can solve some problems caused by death.

Finally, individual health and self-realization are affected by whether psychological needs are met, and psychological demand depends on whether the external environment can provide sufficient support (Edward & Richard, 2000). The more social support individuals perceive, the more actively they pursue psychological demands (Li et al., 2019). This virtuous circle is precisely the essence of resource gain in COR theory.

5.2 | Psychological support positively predicts a neutral death attitude

This study shows that psychological support can positively predict college students' neutral death attitude, consistent with previous studies: psychological support can predict rational death attitudes (Peng, Wan, et al., 2017; Peng, Zhao, et al., 2017; Zhou et al., 2013; Zhou & Wei, 2013). Additionally, psychological support promotes the mental health of disaster victims, enabling them to accept that disasters lead to death and help them develop a more rational death attitude (Fan et al., 2020). Psychological support can also help victims of catastrophes accept death and protect their mental health (Feng et al., 2014).

First, according to the first conclusion of the buffering model, if individuals receive appropriate and sufficient psychological support, they can deal with potential stress events and will not easily escalate stress events and evaluate them as dangerous or difficult. Furthermore, neutral death attitude is superior to other death attitudes because it is fearless and can coexist with death rationally. From this point of view, psychological support is indeed beneficial

TABLE 2 Descriptive statistics of variables

	M	SD	Psychological support	Neutral death attitude	Demand of death education
Psychological support	3.02	0.85	1		
Neutral death attitude	3.73	0.64	0.14**	1	
Demand of death education	3.77	0.61	0.33**	0.31**	1

$^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

TABLE 3 Mediating model test of neutral death attitude

Regression equation (N = 1,538)		Fitting index			Coefficient significance	
Outcome variable	Predictor	R	R²	F(df)	B	t
Neutral death attitude		0.17	0.03	9.25***(5)		
	Psychological support				0.14	5.49***
	Gender				−0.12	−2.43*
	Grade				0.01	0.04
	Area				−0.16	−3.14***
	Student leaders or not				0.02	0.37
Demand of death education		0.34	0.12	39.78***(5)		
	Psychological support				0.34	13.63***
	Gender				0.02	0.31
	Grade				0.05	2.60***
	Area				−0.11	−2.16*
	Student leaders or not				−0.07	−1.44
Demand of death education		0.43	0.18	57.40***(6)		
	Psychological support				0.30	12.47***
	Neutral death attitude				0.27	11.35***
	Gender				0.05	1.03
	Grade				0.05	2.70**
	Area				−0.06	−1.34
	Student leaders or not				−0.08	−1.60

*$p < .05$, **$p < .01$, ***$p < .001$.

TABLE 4 Decomposition table of total effects and mediating effects

	Effect value	Boot standard error	Boot CI lower limit	Boot CI upper limit	Effect ratio (%)
Total effect	0.34	0.02	0.29	0.39	
Direct effect	0.30	0.02	0.25	0.35	88.24
Mediating effect of neutral death attitude	0.04	0.01	0.02	0.06	11.76

*$p < .05$, **$p < .01$, ***$p < .001$.

to establishing a neutral death attitude. Second, the hope is that schools and colleges should provide timely and effective psychological support for students during the COVID-19 and guide students to have a rational understanding of death and establish a rational death attitude.

5.3 | Neutral death attitude plays a mediating role between psychological support and demand for death education

The results of this study are consistent with several studies: death attitude plays an intermediary role between death concept and quality of life (Wang et al., 2016), between social support and depression (Xu et al., 2013) and between the meaning of life and well-being (Liu et al., 2013). Therefore, psychological support can directly and

positively predict the demand of death education of college students and play a role through a neutral death attitude. This is in line with TRA (Fishbein & Ajzen, 2010): an individual's attitude affects intention or demand and increases with the intensity of the attitude. Therefore, the stronger the neutral death attitude of college students, the more rational their attitude towards death. Furthermore, they become more responsible for life; thus, they understand the importance of receiving scientific and correct death education. This urges them to have the intention or demand to comply with this death attitude and seek better death education conducive to the quality of life.

5.4 | Other significant predictors in the model

Gender has a significant role in predicting neutral death attitudes, and male college students have better neutral death attitudes

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than female college students, consistent with the findings of Lin et al. (2012). This may be related to women being more likely to have mood swings and emotional thinking, while men are more self-controlled (Xin et al., 2019).

Grade plays a significant role in predicting the demand for death education. Therefore, with the increase in grades, college students' death education demand becomes stronger, consistent with the research results of Huang et al. (2020) and Du et al. (2021). The reason may be that with a higher grade, the thinking level of college students is improved, and the scope of knowledge is also broader. Thus so, the curiosity and desire for death education are also enhanced accordingly.

The area plays a significant role in predicting neutral death attitudes and the demand for death education, and urban college students are better than rural college students. The former may be related to the advanced and open thinking of the urban population, but the role of the area in previous studies is not apparent (Huang, Chen, & Wang, 2021; Huang, Huang, & Yao, 2021; Zhou et al., 2020; Zhou et al., 2021), which needs to be confirmed by future research. The latter may be related to the fact that the pandemic first began in the city and then spread to the rural areas, and the urban population was threatened with death much earlier.

6 | CONCLUSION

Psychological support has a positive predictive effect on college students' demand for death education. Psychological support positively predicts a neutral death attitude, and neutral death attitudes mediate the relationship between psychological support and demand for death education. During the COVID-19 pandemic, schools and colleges should provide sufficient psychological support for students to resist death threats and guide them to establish a neutral death attitude.

7 | LIMITATIONS

This study was limited by the pandemic and used a cross-sectional research design. Therefore, causality cannot be inferred. Future research should use longitudinal or experimental designs to explore the causal relationship between psychological support, demand for death education and neutral death attitude by manipulating independent and intermediary variables. Additionally, this study used convenience and non-randomized samples. Therefore, using random sampling in future research would be more convincing.

The prediction magnitude of the independent to the dependent variable and the proportion of the mediating effect must also be improved. This prompts us to focus on the confounders in the research. By consulting the literature (Corr, 2016; McAfee et al., 2022; Stillion & Attig, 2015), we focussed on "cultural taboos," which suggest that the taboo of talking about death is common across both races and countries, especially in China, where the topic susceptible, and death

is a topic that is generally avoided in society. The topic of death has different levels of cultural taboos worldwide. This makes us wonder whether there is cognitive inhibition when the participants are asked to respond, which may subconsciously hinder the activation of related concepts, thus affecting the response effect of the participants. This issue may be solved through an experimental design in the future.

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