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Spiritual care perceptions and empathy of Chinese nursing students: The mediating roles of spiritual well-being

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Abstract

Objective. To investigate spiritual care perceptions, spiritual well-being, and empathy, examine the correlations among spiritual care perceptions, spiritual well-being, and empathy, and explore the mediating role of spiritual well-being between other two variables of Chinese nursing students.

Methods. A cross-sectional design was implemented, and the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Checklist was used to ensure quality reporting of the study. A cluster sample of 2,718 nursing students was selected from 7 universities and colleges in China. The demographic characteristics questionnaire, the Chinese Version of the Spiritual Care-Giving Scale (C-SCGS), the Spiritual Health Scale Short Form (SHS-SF), and the Jefferson Scale of Physician Empathy-Nursing Student (JSPE-NS) were used. Descriptive statistics, correlation, and process plug-in mediation effect analyses were used to analyze the data.

Results. The total score of spiritual care perceptions, spiritual well-being, and empathy were 173.83 ± 25.62, 98.74 ± 12.87, and 105.04 ± 21.34, respectively. Spiritual care perceptions were positively correlated with spiritual well-being ($r = 0.617$, $p < 0.01$) and empathy ($r = 0.528$, $p < 0.01$). And spiritual well-being played a partial mediating role between the other two variables (accounting for 28.1%).

Significance of results. Spiritual care perceptions, spiritual well-being, and empathy were quite moderate, which need in improving. It is suggested that nursing educators pay attention to the spiritual care education of nursing students, perfect the spiritual care education system, and take targeted measures according to nursing students' individual personality traits and differences, improve their spiritual well-being and empathy in multiple ways, so as to improve their spiritual care perceptions and competence.

Introduction

With the continued longevity of adulthood (Ng et al., 2022), the burden caused by chronic and life-limiting diseases is increasing (Cao et al., 2022). Specifically, patients have to bear physical, economic, and psycho-social challenges. These challenges generate holistic physical-psychological-social-spiritual pain (Kang and Kim, 2020). Moreover, these challenges present different degrees of spiritual care needs (O'Brien et al., 2019).

Spirituality is derived from the Latin word "Spiritus," which means breathing, courage, strength, energy, and soul, and usually endowed with the spirit of life, meaning to make life more abundant and vigorous (Lazenby, 2010; Weathers et al., 2016; Green et al., 2020). Spiritual care refers to the provision of care measures or activities for individuals according to their culture and beliefs by listening, accompanying, or discussing the meaning and value of life with patients according to the assessment results of individual spiritual needs and pains (Ayik et al., 2021; Johnson et al., 2021). During spiritual care, nurses can achieve resonance and empathy with patients, help patients explore the value of life and find the meaning of life, and help patients build a healthy body, psychology, and spirituality (Donesky et al., 2020; Musa, 2020). As an important part of palliative care, spiritual care can help patients to explore their spiritual beliefs and find life values, so as to achieve spiritual peace and improve the quality of life (Kang et al., 2021). However, the nurses' knowledge,

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perceptions, and competence of spiritual care are often not commensurate with the patients' needs for personalized, diversified, and high-quality spiritual care in many countries (Bar-Sela et al., 2019; Bandeali et al., 2020).

In 1998, the World Health Organization (WHO) added spiritual well-being as one of the components of health. Spiritual well-being refers to a subjective feeling and functional state of happiness, affirms self-value, manages interpersonal relationships with an open and acceptable attitude, and possesses inner "energy," which is an internal personality trait. It emphasizes that individuals can cope with stress events in the external environment by self-evaluation and integration of their internal and external resources and advantages, so that they can maintain an optimistic and peaceful state of mind (Maazallahi et al., 2021). A study on nurses showed that nurses are considered to be the main implementers of spiritual care (Tuzer et al., 2020). And the results of another study also showed that the spiritual care perceptions of nurses were closely related to their own spiritual care competence and spiritual well-being, which was a positive predictor of spiritual care perceptions (Musa, 2020). As for nursing students, the result is still unclear.

Empathy refers to the ability to experience the situation of others by putting oneself in their shoes in the process of clinical nursing, so as to feel and understand patients' emotions, meet their physical and psychological needs, and alleviate their psychological pain (Peng et al., 2020). In addition, studies have shown that the empathy and humanistic care ability of nurses have a positive correlation with their spirituality and spiritual care perceptions (Damiano et al., 2017; Yuan et al., 2019). That is to say, the more empathy nurses have, the better they can understand the psychological state of patients. That can also lead to more sensitivity and needs of spiritual care and better spiritual well-being and spiritual care perceptions. Studies have shown that the best effect of spiritual care needs to be achieved through spiritual care education so that nurses have a good understanding of the nature of spiritual care (Paal et al., 2015; Petersen et al., 2017).

Background

Many studies have confirmed that, as the reserve force in the nursing profession, the improvement of spiritual care perceptions for nursing students is of great significance (Daghan, 2018; Kroning, 2018; Karadag, 2020). And research by Kalkim et al. (2018) showed that spiritual care perceptions of nursing students were affected by many factors such as religious beliefs, and educational level, and was generally not high, and it was positively correlated with its spiritual care competence. Nursing students' spiritual care perceptions may be also closely related to their spiritual well-being and competence of providing spiritual care for patients (Goncalves et al., 2018). However, their understanding of the connotation of spiritual care is not deep and thorough enough, their practical competence is low, and clinical practice effect is poor, which may be related to the inadequacy of spiritual care education in universities and colleges around the world.

The International Nurses Education Guidelines states that spiritual care is a part of nursing education (Ross et al., 2018). But by now, not enough attention has been paid to the spiritual care education among nursing students in China (Wu et al., 2016). The spiritual care education for nursing students is still in the initial stage of exploration in China, which faced with the following problems, for example, the mechanism and system is not perfect, there is no unified standard of teaching content, etc. (Liang et al., 2016). All these factors contribute to difficulties for nursing students in improving their perceptions and competence of spiritual care.

Also, among the existing spirituality-related studies of nursing students, the spiritual well-being and its relationship between empathy as well as spiritual care perceptions is still unclear. Therefore, investigating nursing students' perceptions and values on spiritual care as well as the challenges and opportunities for incorporating it into clinical practice is of great practical significance for the reform and development of spiritual care education and for shaping the next generation of professional spiritual caregivers.

Besides, in the existing studies in China and abroad, there were few reports on the correlations among spiritual care perceptions, spiritual well-being, and empathy of nurses or nursing students. The mediating roles of spiritual well-being between spiritual care perceptions and empathy is still open for further study. In view of this, we aim to examine the correlations among the three variables, and the mediating roles of spiritual well-being through a cross-sectional study. In this way, we hope it can provide a theoretical basis and reference for the construction of spiritual care education system to improve the spiritual care perceptions and competence of nursing students in China.

And the preliminary theoretical framework of spiritual care established by Zhao (1997) was theoretical basis in this study, which pointed out that spiritual care is connected and integrated with "heaven, human beings, nature, and self," and can ultimately affecting the individual's spirituality. In this study, integration with heaven, human beings, and self were used for variable selection and conceptual framework construction, as shown in Figure 1. As follows: (a) Integration with heaven: "heaven" is a person's own internal mental condition, and everyone has his/her own spiritual pursuit, which corresponds to the "spiritual well-being" of nursing students. (b) Integration with human beings: in society, human beings need to discover themselves from understanding the roles of others, and from their interaction and support with others, which corresponds to "empathy" of nursing students. (c) Integration with self: interactive integration with self is an important foundation for spiritual growth. It transcends negative emotions, perceptions, behaviors and competence, and positively faces emotions and attitudes of one's own and others, which corresponds to "spiritual care perceptions" of nursing students in this study.

Therefore, based on this theory and literature review results, the conceptual framework of this study was constructed, as shown in Figure 2.

Aims

The aims of this study are (a) to investigate spiritual care perceptions, spiritual well-being, and empathy among nursing students in China; (b) to examine the correlations among spiritual care perceptions, spiritual well-being, and empathy; (c) to explore the mediating role of spiritual well-being between spiritual care perceptions and empathy; and (d) to provide a theoretical basis for the construction of spiritual care education interventions to improve the spiritual care perceptions and competence of nursing students in China.

Methods

Study design

A descriptive and cross-sectional design was employed, and the equator checklist document in this study was issued by

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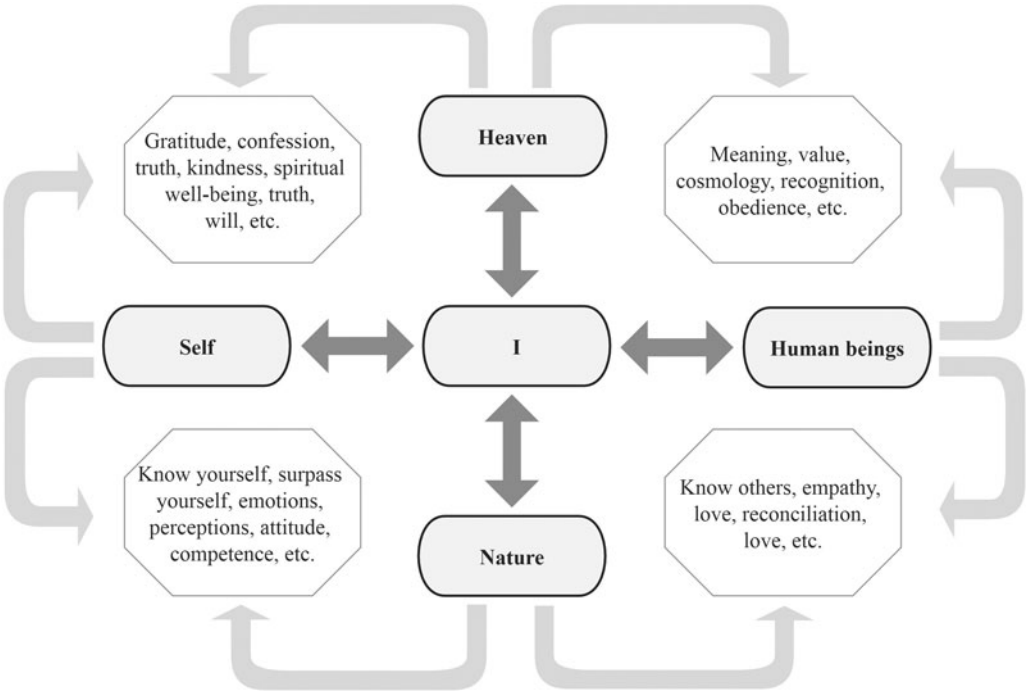

Fig. 1. The preliminary theoretical framework of spiritual care.

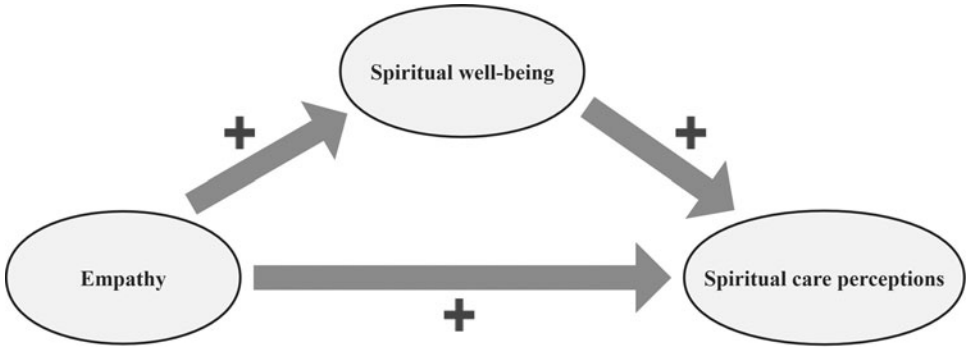

Fig. 2. The conceptual framework of this study.

Strengthening the Reporting of Observational Studies in Epidemiology (STROBE), which was used to ensure quality reporting of the study.

Participants and sample

The cluster sampling was used to recruit nursing students from seven universities and colleges in China. Respondents met the following criteria, respectively. Inclusion criteria: (a) full-time nursing students; (b) able to communicate effectively and complete questionnaires independently; and (c) informed and agreed to participate. Exclusion criteria: (a) suspended or demoted for various reasons and (b) not at school during investigation period.

According to Kendall's (1975) sample estimation method, 10 times of the entries were taken as the sample size in this study. There were 34 items in C-SCGS, 24 items in SHS-SF, and 20 items in JSPE-NS. A total of 78 items need to be analyzed, and considering 10% invalid questionnaires, so the sample size is at least 858, and 2,718 participants were included in this study.

Data collection

Participants were recruited from seven universities and colleges in China from July 2021 to January 2022. Firstly, the investigation was conducted with the prior approval of the university and college administration. Researchers used the unified instruction language to explain the basic information to participants, including the purpose, significance, and confidentiality of this study, and participants were investigated via online questionnaire. Quality control of questionnaires: (a) each micro-signal can be filled only once after being authorized by the system settings; (b) the participants are required to answer all the questions; (c) questionnaires with the filling time less than one minute were excluded; (d) the questionnaires in which answers are obviously contradictory were excluded; (e) the questionnaires with obviously inconsistent personal information of the respondents were excluded. Finally, 2,718 valid questionnaires were collected.

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Measurements

The demographic characteristics questionnaire was developed by the researchers to identify the demographic features of the nursing students in accordance with the literature (Ward et al., 2009; Qiu et al., 2011; Tiew and Creedy, 2012; Hsiao et al., 2013; Hu et al., 2019), including 13 items (such as gender, age, etc.), as shown in Table 1.

The Chinese Version of the Spiritual Care-Giving Scale (C-SCGS) was used to assess the spiritual care perceptions (Tiew and Creedy, 2012; Hu et al., 2019). And the Cronbach's α was reported as 0.836–0.941, which calculated in this study was 0.953. It consists of 4 dimensions and 34 items, including attributes for spiritual care, spirituality and spiritual care values, spiritual perspectives, and defining spirituality and spiritual care. The items in the scale, which are a 6-point Likert type, with the 1–6 scores indicating a range from "strongly disagree" to "strongly agree". The total score of C-SCGS was 34–206, with a higher score indicating higher spiritual care perceptions.

The Spiritual Health Scale Short Form (SHS-SF) was used to assess the spiritual well-being (Hsiao et al., 2013). And the Cronbach's α was reported as 0.930, which calculated in this study was 0.918. It consists of 5 dimensions and 24 items, including connection to others, religious attachment, transcendence, meaning derived from living, and self-understanding. The items in the scale, which are a 7-point Likert type, with the 1–7 scores indicating a range from "strongly disagree" to "strongly agree". The total score of SHS-SF was 24–168, with a higher score indicating higher spiritual well-being.

The Jefferson Scale of Physician Empathy-Nursing Student (JSPE-NS) was used to assess empathy (Ward et al., 2009; Qiu et al., 2011). And the Cronbach's α was reported as 0.836, which calculated in this study was 0.895. It consists of 3 dimensions and 20 items, including viewpoint selection, transposition thinking, and emotional care. The items in the scale, which is a 7-point Likert type, with the 1–7 scores indicating a range from "strongly disagree" to "strongly agree". The total score of JSPE-NS was 20–140, with a higher score indicating higher empathy.

Statistical analysis

The raw data were recorded and checked by two researchers using Epidata 3.1 software, and the data were then statistically analyzed by using SPSS 23.0 version program. The normality test, which included skewness, kurtosis, and histograms, was used to examine whether the scores of numerical variables were normally distributed. Descriptive statistics were used to describe the demographic characteristics of participants. Mean ± Standard deviation [M (SD)] and [M (Q, R)] were used to describe the measurement data in accordance with normal distribution or non-normal distribution, respectively. Correlation analysis was performed to assess the relationships among spiritual care perceptions, spiritual well-being, and empathy. Process plug-in mediation effect analysis was used to assess the mediating role of spiritual well-being between spiritual care perceptions and empathy.

Ethical considerations

Ethical approval for conducting this study was obtained from the ethics committees of universities and colleges. After obtaining the official permission from university and college administration, the researchers approached the participants. The participants were given the entitled to deciding whether to participate in the study or not. Anonymity was ensured as the questionnaire contained no private information that could identify participants.

Table 1. Demographic characteristics of Chinese nursing students (n = 2,718)

Characteristics	*n*	%
Gender		
Male	427	15.7
Female	2,291	84.3
Nationality		
Han	2,452	90.2
Minority	266	9.8
Religion beliefs		
Yes	111	4.1
No	2,607	95.9
Education level		
Junior college student	1,283	47.2
Undergraduate student	1,171	43.1
Graduate student	265	9.7
Birth region		
Cities/towns	1,158	42.6
Rural area	1,560	57.4
Per capita monthly income of the family (RMB)		
<1,000	448	16.5
1,000–2,999	1,120	41.2
3,000–4,999	807	29.7
≥5,000	342	12.6
Served as class committee		
Yes	1,720	63.3
No	998	36.7
School records		
Excellent	552	20.3
Good	1,614	59.4
Qualified	467	17.2
Unqualified	84	3.1
Attended internship		
Yes	1,046	38.5
No	1,672	61.5
Engaging in nursing in the future		
Yes	2,367	87.1
No	351	12.9
Attended spiritual care education		
Yes	201	7.4
No	2,517	92.6
Need spiritual care education		
Yes	2,427	89.3
No	291	10.7

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The questionnaires were anonymous and confidential, and the data obtained are only used for academic research.

Results

A total of 2,718 nursing students were recruited in this study, including 427 males (15.7%) and 2,291 females (84.3%), with an average age of 22.36 ± 5.61. 2,517 (92.6%) not attended spiritual care education training, 2,427 (89.3%) need spiritual care education training. And other demographic characteristics are shown in Table 1.

The total score of C-SCGS, SHS-SF, and JSPE-NS were 173.83 ± 25.62, 98.74 ± 12.87, and 105.04 ± 21.34, respectively, which both were moderate. Among the four dimensions of C-SCGS, the highest score was "spiritual perspectives" (5.27 ± 0.71), and the lowest was "defining spirituality and spiritual care" (4.94 ± 0.89). Among the five dimensions of SHS-SF, the highest score was "meaning derived from living" (4.47 ± 0.72), while the lowest was "religious attachment" (3.02 ± 0.55). Among the three dimensions of JSPE-NS, the highest score was "transposition thinking" (6.13 ± 1.54), and the lowest was "emotion care" (4.81 ± 1.15). And the scores of other dimensions are shown in Table 2.

Table 3 shows that there was a significant positive correlation between spiritual care perceptions and spiritual well-being (r = 0.617, $p < 0.01$), and each of dimensions was positively correlated (0.437–0.605, $p < 0.01$). And spiritual care perceptions were also positively correlated with empathy ($r = 0.528$, $p < 0.01$), and each of dimensions was positively correlated (0.472–0.513, $p <$ 0.01), as shown in Table 3.

The direct effect of empathy on spiritual care perceptions was 0.451 ($p < 0.01$), 95% CI (confidence interval) was [0.253, 0.482], the total effect was 0.627 ($p < 0.01$), 95% CI was [0.314, 0.538], and the indirect effect was 0.176, Boot LLCI to ULCI was [0.125, 0.307] excluding 0, which was statistically significant and showed that spiritual well-being played a part mediating role between spiritual perceptions and empathy, accounting for 28.1% of the indirect effect, as shown in Table 4.

Discussion

The status quo of spiritual care perceptions, spiritual well-being, and empathy

In this study, the total score of spiritual care perceptions was 173.83 ± 25.62, which was quite moderate and similar to the results of Hu et al. (2019) and Pipkins et al. (2020), and it also needs to be further improved. Besides, the total score of spiritual well-being was 98.74 ± 12.87, which was also quite moderate and consistent with the results of Hsiao et al. (2013). The total score of empathy was 105.04 ± 21.34, which was moderate and was similar to the results of Qiu et al. (2011). The results of this study also showed that 89.3% of nursing students need training in spiritual care, indicating that spiritual care education for nursing students in China is still in high demand, which was similar to the result of Eriksson et al. (2015). And it also indicated that a large number of nursing students may recognize the importance and value of spiritual care education in improving the spiritual care perceptions and competence. But only 7.4% of nursing students have received training in spiritual care, indicating that most nursing students are lack of such education, which may be one of the factors that resulted in the unsatisfactory level of the spiritual care perceptions, spiritual well-being, and empathy of nursing students in this study.

The reasons may be as follows: Firstly, there were few curricula, teaching resources, or teachers related to spiritual care education in China, which directly lead to the overall low level of spiritual care competence of nursing students. In addition, domestic spirituality related studies lack spiritual care education for nursing students, and there were no unified teaching contents, independent curricula, spiritual care plans, or supervision standards, which

Table 2. The scores of C-SCGS, SHS-SF, and JSPE-NS of Chinese nursing students [n = 2,718, M (SD)]

		Dimensional score		Average score of items		
Dimensions	Number of items	M	SD	M	SD	Ranking
C-SCGS total score	34	173.83	25.62	5.11	0.79	
Attributes for spiritual care	13	67.08	9.82	5.16	0.76	2
Defining spirituality and spiritual care	8	39.52	5.97	4.94	0.89	4
Spiritual perspectives	5	26.35	4.01	5.27	0.71	1
Spirituality and spiritual care values	8	40.88	6.35	5.11	0.73	3
SHS-SF total score	24	98.74	12.87	4.11	0.61	
Connection to others	4	17.52	2.98	4.38	0.60	2
Meaning derived from living	6	26.82	3.65	4.47	0.72	1
Transcendence	6	25.56	4.12	4.26	0.63	3
Religious attachment	4	12.08	4.76	3.02	0.55	5
Self-understanding	4	16.76	3.93	4.19	0.69	4
JSPE-NS total score	20	105.04	21.34	5.25	1.16	
Viewpoint selection	10	54.30	10.84	5.43	1.07	2
Emotion care	8	38.48	9.93	4.81	1.15	3
Transposition thinking	2	12.26	2.76	6.13	1.54	1

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Table 3. The correlations among spiritual care perceptions, spiritual well-being, and empathy of Chinese nursing students ($n = 2{,}718$, r)

Item	1	1.1	1.2	1.3	1.4	2	2.1	2.2	2.3	2.4	2.5	3	3.1	3.2	3.3
1 C-SCGS total score	—														
1.1 Attributes for spiritual care	0.940**	—													
1.2 Defining spirituality and spiritual care	0.906**	0.773**	—												
1.3 Spiritual perspectives	0.910**	0.797**	0.771**	—											
1.4 Spirituality and spiritual care values	0.941**	0.818**	0.825**	0.901**	—										
2 SHS-SF total score	0.617**	0.558**	0.591**	0.576**	0.605**	—									
2.1 Connection to others	0.562**	0.534**	0.497**	0.531**	0.539**	0.786**	—								
2.2 Meaning derived from living	0.587**	0.568**	0.522**	0.556**	0.578**	0.842**	0.791**	—							
2.3 Transcendence	0.592**	0.553**	0.545**	0.562**	0.581**	0.853**	0.749**	0.804**	—						
2.4 Religious attachment	0.483**	0.472**	0.437**	0.468**	0.501**	0.769**	0.751**	0.723**	0.739**	—					
2.5 Self-understanding	0.536**	0.498**	0.502**	0.521**	0.533**	0.795**	0.801**	0.794**	0.765**	0.752**	—				
3 JSPE-NS total score	0.528**	0.513**	0.509**	0.487**	0.472**	0.452**	0.502**	0.466**	0.463**	0.513**	0.495**	—			
3.1 Viewpoint selection	0.492**	0.476**	0.503**	0.491**	0.482**	0.473**	0.506**	0.477**	0.480**	0.508**	0.501**	0.833**	—		
3.2 Emotion care	0.510**	0.501**	0.511**	0.509**	0.496**	0.495**	0.515**	0.493**	0.499**	0.512**	0.507**	0.825**	0.793**	—	
3.3 Transposition thinking	0.505**	0.495**	0.501**	0.489**	0.494**	0.482**	0.497**	0.483**	0.492**	0.506**	0.502**	0.794**	0.807**	0.825**	—

Note: $^{**}p < 0.01$, —: $r = 1$

Table 4. The mediating effect of spiritual well-being between spiritual care perceptions and empathy of Chinese nursing students ($n = 2,718$, r)

Model pathways	Standardized effect (B)	SE	t-value	p-value	95% CI	F	R	R^2
Total effect								
Empathy ability → Spiritual care perceptions	0.627	0.045	13.933	<0.001**	[0.314, 0.538]	456.397	0.617	0.381
Direct effect								
Empathy ability → Spiritual well-being	0.482	0.038	12.684	<0.001**	[0.287, 0.419]	937.625	0.732	0.536
Empathy ability → Spiritual care perceptions	0.451	0.043	10.488	<0.001**	[0.253, 0.482]	507.851	0.483	0.233
Spiritual well-being → Spiritual care perceptions	0.365	0.061	5.984	<0.001**	[0.107, 0.346]	321.583	0.593	0.352
Indirect effect								
Empathy ability → Spiritual well-being → Spiritual care perceptions	0.176	0.015	—	—	[0.125, 0.307]	—	—	—

Note: **$p < 0.01$.

directly lead to and inability to guarantee the continuity of spiritual care and the low overall low level of spiritual care perceptions of nursing students (Li et al., 2017). Last but not least, spirituality is an abstract concept, and there is currently no uniform and clear definition. Due to the differences in region, nationality, history culture, individual characteristics, as well as the lack of systematic spiritual-related knowledge learning and spiritual care clinical practice for nurses, which may cause differences in understanding their essence and connotation.

The total score of spiritual care perceptions among nursing students in this study were lower than those of studies on oncology nurses (Shi et al., 2020). The reasons may be as follows: Oncology nurses are exposed to death events more often and have so many clinical spiritual care experience than nursing students so they are more likely to better understand the patients' spiritual care needs. Among the four dimensions, the highest score was "spiritual perspectives" (5.27 ± 0.71), and the lowest was "defining spirituality and spiritual care" (4.94 ± 0.89). The reasons may be as follows: Due to the differences in geographical, ethnic, and religious beliefs between east and west countries, as well as the lack of systematic spiritual care education, nursing students have different understandings on the nature and connotation of spirituality.

It is suggested that nursing educators should perfect the spiritual care education system for nursing students, clarify and standardize the education objectives, establish an all-round, scientific and comprehensive evaluation criterion. And they also should pay attention to the combination of spiritual care theory and clinical practice, integrate multi-disciplinary and multi-teaching modes, and combine spiritual care education courses with hospice care, nursing education, nurse ethics, nursing psychology, and other courses. Combined with the cultural characteristics of "benevolence" and "kindness" of Confucianism, Taoism, and Buddhism in China, the traditional Chinese philosophy, religion, traditional Chinese medicine, and Tai Chi should be integrated into the spiritual care education, and the spiritual care education for the sentient beings should be carried out under the background of traditional cultural elements with Chinese characteristics.

There was a positive correlation between spiritual care perceptions and spiritual well-being

This study showed that spiritual care perceptions were positively correlated with spiritual well-being ($r = 0.617$, $p < 0.01$), which means that the higher spiritual well-being is, the higher spiritual care perceptions are, which was consistent with Huber and Macdonald (2012). Chen et al. (2017) considered that spiritual well-being was an important predictor of spiritual care perceptions, and that high spiritual well-being was a prerequisite for providing high-quality spiritual care. Zou and Cao (2017) pointed out that nursing students should first be able to understand the connotation of spirituality, to improve their spiritual care perceptions, and then to maintain full spiritual well-being, which is a prerequisite for high-quality spiritual care.

The reason may be as follows: Nursing students with higher spiritual well-being often communicate better with patients in clinical practice, have a more harmonious nurse–patient relationship, tend to think from the perspective of patients, and they are more likely to empathize with patients at the overall body-heart-society-spirit level. Michaelson et al. (2016) also pointed out that spiritual well-being was the core element of whole person's health, which was a state in which individuals affirm the meaning and value of life, connect with others, society and nature harmoniously, have inner strength and can exceed limitation. Spiritual well-being, as an important element and predictor for nurses to provide high-quality spiritual care, can alleviate the spiritual suffering of terminally ill patients, and achieve spiritual peace and sublimation of life. If nursing students have the spiritual beliefs, they can better provide spiritual care to patients in future clinical practice, and maintain adequate spiritual well-being to provide high-quality spiritual care. And nursing students with higher spiritual care perceptions can cope with their clinical work and daily life by empathizing and concluding with patients and actively seeking the overlap with patients, so as to achieve spiritual health and peace.

It is recommended that nursing educators should be equipped with appropriate and optimized teaching resources for nursing students. They should focus on the combination of spiritual care theory and clinical practice, with the help of practical activities such as internship and voluntary service, to allow nursing students to enable nursing students to familiarize with the environment of hospitals and the overall living conditions of patients. In this process, the theoretical knowledge of spiritual care should be fully applied to the practice of spiritual care to exert the link between nursing students and patients, and to match the actual spiritual needs of patients. In clinical teaching, nursing educators should be familiar with using problem-oriented teaching models,

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such as Problem-Based Learning (PBL) teaching, experiential teaching, case teaching, and role-playing. They should also pay attention to the combination of spiritual care theory and clinical practice, actively guide nurses to consciously infiltrate spiritual care in clinical nursing work, improve their spiritual well-being, thereby improving their spiritual care perceptions. At the same time, combined with the specific cultural background and religious customs in China, nursing educators should formulate a scientific goal of spiritual care perceptions and competence training that focuses on patients' spiritual care needs, and form a set of scientific, feasible and convenient spiritual care education system and service model with Chinese characteristics.

There was a positive correlation between spiritual care perceptions and empathy

The results of this study showed that spiritual care perceptions were positively correlated with empathy ($r = 0.528$, $p < 0.01$), which means the higher the empathy is, the higher spiritual care perceptions are. The reason for this may be that, nursing students with higher empathy often have strong compassion and humanistic care ability. They can correctly understand the verbal and nonverbal behaviors of patients in nursing practice, identify and evaluate the emotional status of patients and their families from the perspective of patients and their families, understand their inner experience, and satisfy their physical-psychological-social-spiritual needs. In this way, they can provide them better high-quality spiritual care in clinical practice and reduce the holistic pain of patients (Guo et al., 2020). And nursing students with higher spiritual care perceptions are more expressive through spiritual care in nursing practice, so as to achieve inner resonance and empathy with patients, increase the accuracy and effectiveness of clinical communication, and it can also promote the nurse–patient communication. It is conducive to meeting the needs of patients and their families and relieving their anxiety, and promoting the establishment and development of a good nurse–patient relationship, thereby improving the quality of care and satisfaction (Chen et al., 2018; Goncalves et al., 2018).

It is suggested that nursing educators should take personalized and targeted interventions, such as situation simulation, role playing, balint group training, and other ways, to enhance the empathy of nursing students through experiential learning and improve their empathy skills. In this way, can establish a harmonious nurse–patient relationships, reduce nurse–patient disputes, and improve the quality of nursing service and satisfaction. At the same time, regular empathy training courses should be conducted for nursing students to increase their emotional resonance with patients and their families, and improve their awareness of spiritual care.

Spiritual well-being played a partial mediating role between spiritual care perceptions and empathy

According to the results of this study, spiritual well-being played a partial mediating role between spiritual care perceptions and empathy among nursing students, accounting for 28.1% ($p < 0.01$), indicating that nursing educators can improve nursing students' spiritual care perceptions not only by enhancing their empathy but also by cultivating their spiritual well-being.

It is suggested that nursing educators should take the characteristics of nursing students and schools into consideration to create more opportunities for nursing students to participate in specialized spiritual care training. They are advised to regularly invite senior nurses and experts of spiritual care to give lectures or discussions on spiritual care, give more encouragement to junior nursing students. And they should fully authorize them to give a full play to their subjective initiative, and actively guide nursing students to consciously infiltrate spiritual care in future internship and nursing practice. Nursing educators should also pay special attention to the training of methods, skills and emotion, insist on explicit integration, and integrate the invisible module of professional emotional education into the whole process of explicit module of spiritual care education, such as spiritual communication. And they should enable nursing students to recognize the significance of spiritual care, and take the initiative to improve their spiritual care perceptions and spiritual well-being, and create a supportive environment of love, tolerance, listening, companionship, and empathy, so as to promote the improvement of spiritual care in schools.

Strengths and limitations

The study has several limitations. Firstly, the study was conducted by a cluster sampling method, and only 2,718 nursing students were selected from 7 universities and colleges in China, which may mean that sample is not being representative enough and the findings are somewhat one-sided and cannot be generalized. In addition, due to the differences and abstractness of "spirituality" cultures between the East and the West, there may be some deviations of results. It is recommended that assessment instruments suitable for Chinese cultural background should be adopted in future research. Last but not least, the multiple linear regression analysis was not used on the influence factors of nursing students' spiritual care perceptions, empathy and spiritual well-being in the study. Further research should be used for a more rigorous design, which is suggested to include more nursing students from different regions and to explore factors influencing spiritual care perceptions of nursing students in China.

Conclusion

This study found that the spiritual care perceptions, spiritual well-being, and empathy of 2,718 nursing students were quite moderate, which need in improving. Also, significant and positive correlations were found among spiritual care perceptions, spiritual well-being, and empathy, and spiritual well-being played a partial mediating role between spiritual care perceptions and empathy. It is suggested that nursing educators should pay attention to the spiritual care education of nursing students, perfect the spiritual care education system, and take targeted measures according to nursing students' individual personality traits and differences, improve their spiritual well-being and empathy in multiple ways, so as to improve their spiritual care perceptions and competence.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S1478951522001134.

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JP, XZ, ZL, and LL contributed to the analysis of the work, data interpretation, draft the article, and the final approval of the version to be submitted.

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