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Correlations among spiritual care competence, spiritual care perceptions and spiritual health of Chinese nurses: A cross-sectional correlational study

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Abstract

Background. The significance of spiritual care competence among nurses has been emphasized across countries and cultures in many studies. However, there were few studies on correlations among spiritual care competence, spiritual care perceptions, and spiritual health of nurses in China.

Objective. To investigate spiritual care competence, spiritual care perceptions, and spiritual health, and examine the correlations among spiritual care competence, spiritual care perceptions and spiritual health, and the mediating role of spiritual health between other two variables of Chinese nurses.

Methods. A cross-sectional and correlational design was implemented, and the STROBE Checklist was used to report the study. A convenience sample of 2,181 nurses were selected from 17 hospitals in 3 provinces, China. Participants provided data on sociodemographic by completing the Chinese Version of the Spiritual Care Competence Scale, the Chinese Version of the Spiritual Care-Giving Scale, and the Spiritual Health Scale Short Form. Descriptive statistics, univariate, multiple linear regression, and Pearson correlation analysis were used to analyze data.

Results. The total scores of spiritual care competence, spiritual care perceptions, and spiritual health were 58.25 ± 16.21, 144.49 ± 16.87, and 84.88 ± 10.57, respectively, which both were moderate. Spiritual care competence was positively correlated with spiritual care perceptions ($r = 0.653$, $p < 0.01$) and spiritual health ($r = 0.587$, $p < 0.01$). And spiritual health played a mediating role between the other two variables (accounting for 35.6%).

Significance of results. The spiritual care competence, spiritual care perceptions, and spiritual health of Chinese nurses need to be improved. It is recommended that nursing managers should pay attention to spiritual care education of nurses, and improve spiritual care perceptions and spiritual health in multiple ways, so as to improve their spiritual care competence and to maximize the satisfy spiritual care needs of patients in China.

Introduction

The word spirituality is a broad concept, derived from the Latin word "spiritus" meaning "breathe" and "make alive." It is usually given the spirit of life, making life more abundant and vigorous, subjective feeling and inner experience, and exists in all individuals, including the exploration of the meaning of life, personal value and growth, that is the essence and basic characteristic of human beings. Also, spirituality is the embodiment of an individual's ability to transcend oneself in the process of life, and it is a spiritual force which is intrinsically related to the meaning of existence (Balducci, 2019; Murgia et al., 2020). Spiritual care refers to a nursing activity or method that nursing staff who identify and evaluate the patients' concerns, distress and spiritual needs during the nursing process, and according to their individual characteristics to allow the patients' physical, mental, and spirit to reach comfortable by accompanying, listening, respecting or directly discussing the meaning and value of life with the patient (Harrad et al., 2019; Kannan and Gowri, 2020). However, it has not been explicitly incorporated into clinical nursing practice so far (Green et al., 2020).

The World Health Organization (WHO) pointed out the fourth dimension of health, namely spiritual health in 1998, and advocated value and satisfy the harmony and unity of patients in the four aspects of physical, psychological, social, and spiritual (Dhar et al., 2011). By now, the treatment and rehabilitation of most diseases is a long process, and patients not only have to face the suffering of the disease but also have to bear the pressure of family and society, which can easily lead to "holistic suffering" on the physical, psychological, social, and spiritual levels. When there were spiritual distress (such as anxiety, depression, sadness, and other negative emotions) (Silva et al., 2019; Nolan et al., 2020) and spiritual care needs (such as seeking love, hope, strength, life meaning, purpose, and the trust and understanding of others) (Ross and Miles, 2020; van Nieuw et al., 2020), if they are not relieved and satisfied, it may affect the patients' physical symptoms and psychological treatment effects, and even cause spiritual pain (Schultz et al., 2017). Previous studies have shown that spiritual care can maintain the dignity of the patient, respect the faith of patients, reduce the sense of disease uncertainty, help to restore inner peace, explore the value of life, find the meaning of life, and improve the quality of life (Veloza-Gomez et al., 2017; Lee, 2019).

Spiritual care competence refers to the knowledge, attitude and skills of spiritual care possessed by nurses, which can significantly improve the physical and mental health of patients and their satisfaction with the quality of clinical nursing practice services (Cao et al., 2020; Kang et al., 2021). As studies revealed the spiritual care competence of nurses had a positive effect on cancer patients, which can improve their psychological coping ability, sense of satisfaction, inner spiritual strength, and quality of life (Lee, 2019). A study based on 181 oncology nurses and 638 hospice nurses showed that spirituality is significantly related to their ability, personal coping ability, and the frequency of providing spiritual care to provide spiritual care. Besides, the spiritual health and spiritual care perceptions of nurses are important factors affecting the provision of spiritual care (Taylor et al., 1999). Also, according to the findings of American scholars, 69.0% of nurses can confirm spiritual problems of patients, and 76.0% of nurses believe that they lack the knowledge, ability, or resources associated with spiritual care (Hellman et al., 2015). Nursing practice is an important link and process for nurses to directly contact clinical real cases directly and take care of critical illness and dying patients, and it is also a key step to cultivate their spiritual care competence (Ross et al., 2016). Nurses are considered to be the main implementers of spiritual care for patients, who are most easily aware of their spiritual distress, spiritual pain and spiritual care needs, and nurses' spiritual care competence may be closely related to their spiritual care perceptions and spiritual health (Mamier et al., 2019; Musa, 2020).

The American Nursing Association (ANA) and the International Nurses Association (INA) have incorporated spiritual health into their practice guidelines and norms to assess their spiritual care competence (Dy et al., 2015). Sessanna et al. (2011) proposed that spiritual health is the cornerstone of nursing practice, and solving the existing or potential spiritual problems of patients is an important part of holistic nursing. But now, nurses' perceptions and competence of spiritual care are often incompatible with spiritual care needs of patients. Related research rarely pay attention to nurses' own spiritual health and spiritual care education. Professor McSherry (2006) pointed out that the obstacles affecting spiritual care include both intrinsic and extrinsic aspects (such as spiritual care cognition, knowledge, attitude, health, and ability). The International Nurse Education Guidelines also hold that spiritual care is a part of nursing education, and the best spiritual care effect is required to improve nurses' understanding of the essence and connotation of spiritual care through spiritual care education (Paal et al., 2015). Only by deeply understanding and exploring the relevant knowledge of spiritual care, maintaining adequate spiritual health, improving spiritual care competence, and making full use of existing resources to better apply spiritual care to clinical nursing practice, can patients' spiritual care needs be met to the greatest extent and the quality of nursing services and satisfaction of patients be improved (Petersen et al., 2017).

However, in the current domestic research, little was known about the level and results of spiritual care education. The spiritual curriculum is not perfect, and there is no systematic and standardized integration (Li et al., 2017). In addition, spirituality concepts and connotations are abstract and vague, so it is difficult to define clearly in the curriculum. With the differences of traditional culture and religious belief between the East and the West, some Chinese nurses may confuse spirituality with religious belief, and even refer spiritual care services to other professional nursing groups (Liang et al., 2016). Many factors have combined to make it difficult for nurses to improve their spiritual care competence. Also, the research for spiritual care competence in China were mainly focused on oncology nurses, reproductive center nurses, hospice nurses, pension institution nurses, and nursing interns. And the research content mainly focused on the status quo of spiritual care competence and its associated influencing factors, and hardly took spiritual care competence as a dependent variable to examine the correlations among the three variables and the mediating role.

Aims

The aims of this study are (1) to investigate spiritual care competence, spiritual care perceptions, and spiritual health of Chinese nurses; (2) to examine the correlations among spiritual care competence, spiritual care perceptions, and spiritual health; and (3) to explore the mediating role of spiritual health between spiritual care competence and spiritual care perceptions; (4) to provide a reference for the construction of spiritual care education intervention program to improve spiritual care competence of nurses in China.

Methods

Study design and setting

A cross-sectional, descriptive, and correlational design was undertaken, and the study was adherent to the reporting of observational studies (STROBE) statement.

Participants and sample

The convenience sampling was used to recruit nurses from 17 hospitals in 3 provinces, China. Respondents met the following criteria: inclusion criteria: (1) obtained a nurse's professional qualification certificate, (2) worked for ≥1 year, (3) informed consent and voluntary participation in the study; exclusion criteria: (1) intern nurses, (2) advanced training, rotation and regular training nurses, (3) not on duty during the investigation period.

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According to Kendall's (1975) sample estimation method, 5–10 times of the variables were taken as the sample size in this study. There were 19 variables in sociodemographic characteristics questionnaire, 6 variables in the Chinese Version of the Spiritual Care Competence Scale (C-SCCS), 4 variables in the Chinese Version of the Spiritual Care-Giving Scale (C-SCGS), and 5 variables in the Spiritual Health Scale Short Form (SHS-SF). And a total of 34 variables need to be analyzed, and considering 20.0% invalid questionnaires such as wrong filling, missed filling and regular answers, so the sample size ranges from 204 to 408. Finally, 2,181 sample sizes were included in this study, which meet the sample requirements.

Data collection

Data were collected from 17 hospitals in 3 provinces, China, from November 2020 to June 2021. The investigation was conducted with the prior approval of the university and hospital administrators. The 13 researchers with standardized training used the unified instruction language to explain the basic information to the participants, including the purpose, significance, and confidentiality of this study, and take the department as the unit, with the assistance of the head nurse of each department distribution. The researchers issued questionnaires to nurses who met the standards of admission, and nurses were asked face-to-face to fill in the questionnaires. Besides, researchers recalled them on the spot, checked whether there was any defect, and made corrections in time. The questionnaires were anonymous and confidential, and the data obtained is only used for academic research and will not be used for other commercial purposes. A total of 2,265 questionnaires were distributed and a total of 84 questionnaires with regular answers or obviously contradictory answers were eliminated. In total, 2,181 valid questionnaires were selected for analysis. The effective recovery rate was 96.3%.

Instruments

In this study, the preliminary theoretical framework of spiritual care established by Zhao (1997) was used, which core perspective is that spirituality is manifested in the relationship and harmony among themselves, others, heaven (Gods), and the natural environment, as shown in Figure 1. The conceptual framework of this study was shown in Figure 2 guided the study design and analysis.

The sociodemographic characteristics questionnaire was designed by the researchers after referring to the relevant literature, including 19 variables, such as gender, age, nationality, religious belief, marital status, and education background and so on, as shown in Table 1.

The Chinese Version of the Spiritual Care Competence Scale (C-SCCS; van Leeuwen et al., 2009; Wei et al., 2017) with good reliability and validity was used to assess spiritual care competence. The scale consists of 22 items in 6 dimensions, including "assessment and implementation," "professionalization and improving quality of care," "personal support and patient counseling," "referral to professionals," "attitude toward patients spirituality," and "communication." The Cronbach's α was 0.974, content validity is 0.980. In this study, its Cronbach's α was 0.969. All items scores ranged from 1–5 Likert scale and the total score was 22–110, with higher scores indicating greater spiritual care competence.

The Chinese Version of the Spiritual Care-Giving Scale (C-SCGS; Tiew and Creedy, 2012; Hu et al., 2019) with good reliability and validity was used to assess spiritual care perceptions. The scale consists of 4 dimensions and 34 items, including "attributes for spiritual care," "defining spirituality and spiritual care," "spiritual perspectives," and "spirituality and spiritual care values." The Cronbach's α of each dimension was 0.836–0.941. In this study, its Cronbach's α was 0.951. Likert 6 rating method was used, with the 1–6 score indicating a range from "strongly disagree" to "strongly agree." The total score of C-SCGS was 34–206, with higher scores indicating higher spiritual care perceptions.

The Spiritual Health Scale Short Form (SHS-SF; Hsiao et al., 2013) with good reliability and validity was used to assess spiritual health. There were 5 dimensions and 24 items in SHS-SF, including "connection to others," "meaning derived from living," "transcendence," "religious attachment," and "self-understanding." The Cronbach's α was 0.930 and its Cronbach's α was 0.911 in this study. Using Likert 5 rating method, 1–5 score indicating "strongly disagree" to "strongly agree." The total score of SHS-SF was 24–120, with higher scores indicating better spiritual health.

Statistical analysis

Data were analyzed by using IBM SPSS 21.0. Descriptive statistics (numbers, percentage distribution) were used to describe sociodemographic characteristics. 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. Independent T-test and one-way ANOVA analysis were used to compare between two or more groups of the measurement data in accordance with normal distribution, respectively. And Mann–Whitney U-test and Kruskal–Wallis H test were used to compare between two or more groups of the measurement data in accordance with non-normal distribution, respectively. Pearson's and Spearman's correlation analysis were used to explore the correlations among several variables in accordance with normal distribution or non-normal distribution, respectively. And using the Process plug-in Bootstrap program method in SPSS to analyze the mediating effect of spiritual health with statistical significance set to $p < 0.05$ (two-tailed).

Ethical considerations

Ethical approval for conducting this study was obtained by the ethics committee of university and hospitals in China. After granting the official permission from nursing managers in the 17 selected hospitals, the participants were approached by the researchers. The aims and significance of this study were explained to nurses who met the inclusion criteria. The participants were given the right to decide whether to participate in the study. And they were also informed about their right to withdraw from the project without having to provide a reason. Anonymity was ensured as the questionnaire contained no marks, names or numbers that could identify participants. And all data obtained will only be used for the academic research and will not be used for other commercial purposes.

Results

A total of 2,181 nurses were enrolled in this study, including 321 males (14.7%), 1,860 females (85.3%), with an average age of 35.21 ± 3.15, 909 nurses aged ≤25 (41.7%), 840 nurses aged

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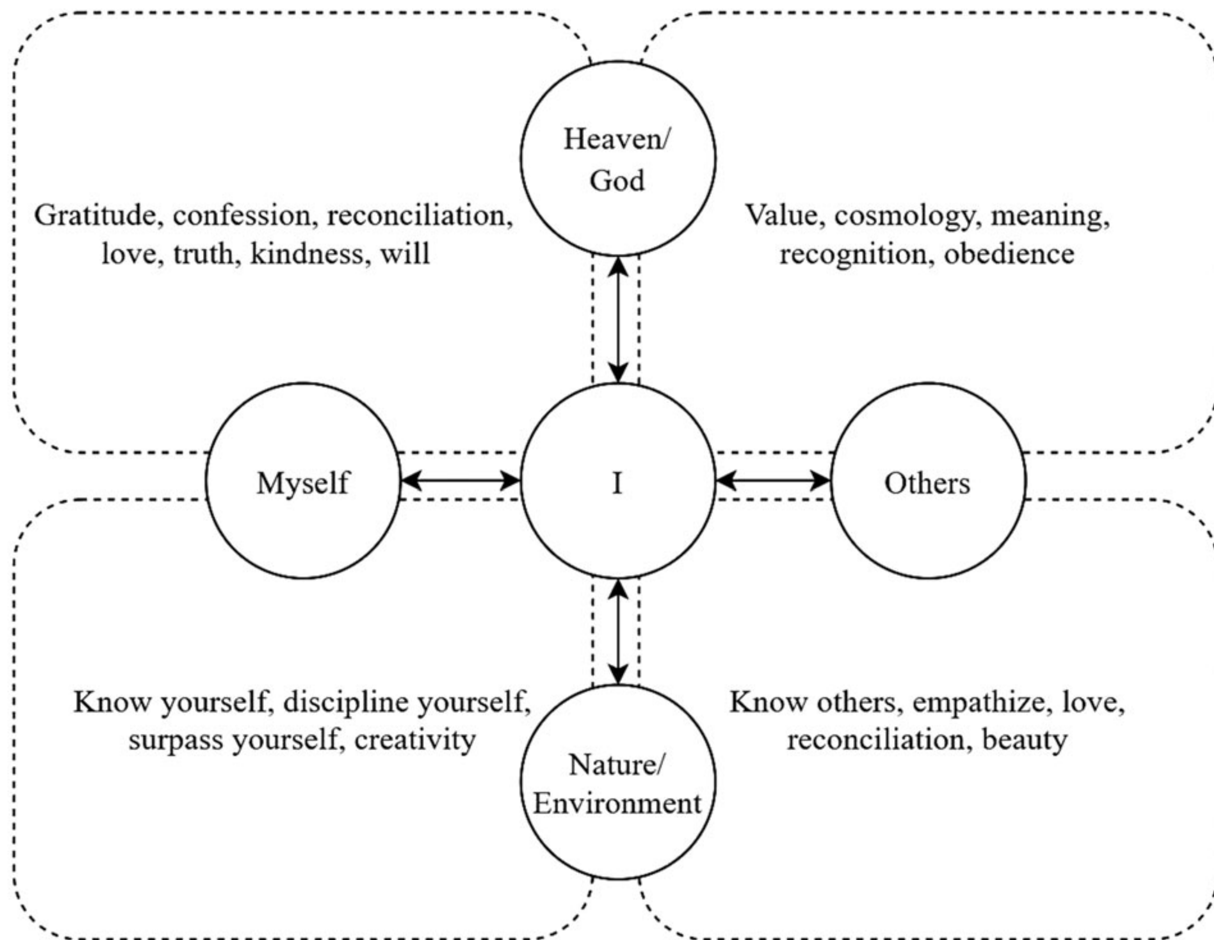

Fig. 1. The preliminary theoretical framework of spiritual care.

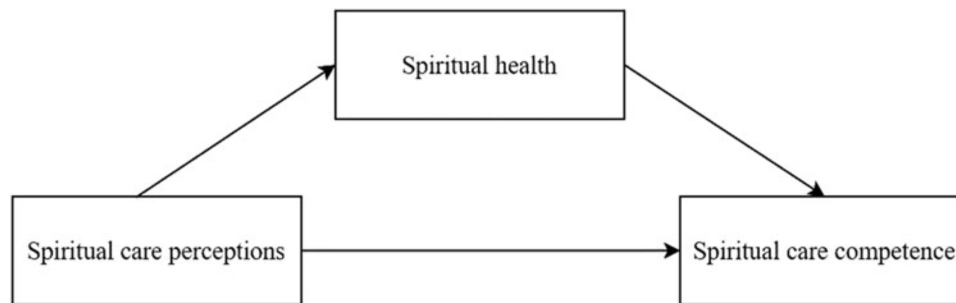

Fig. 2. Flowchart of the conceptual framework.

26–35 (38.5%), 314 nurses aged 36–45 (14.4%), and 118 nurses aged > 45 (5.4%). And other sociodemographic characteristics are shown in Table 1.

The total score of C-SCCS, C-SCGS, and SHS-SF of nurses were 58.25 ± 16.21, 144.49 ± 16.87, and 84.88 ± 10.57, respectively, which both were moderate. Among the six dimensions of C-SCCS, the highest dimension mean score was "communication" (2.97 ± 0.91), and the lowest was "personal support and counseling of patients" (2.43 ± 0.73). Of the four dimensions in C-SCGS, the highest dimensions mean score was "defining spirituality and spiritual care" (4.37 ± 0.63), and the lowest was "spirituality and spiritual care values" (4.15 ± 0.56). Among the five dimensions of SHS-SF, the dimension with the highest average score was "meaning derived from living" (3.65 ± 0.53), and the lowest dimension was "religious attachment" (3.43 ± 0.45). And the scores of other dimensions are shown in Table 2.

According to the results of single factor analysis, there were statistically significant differences in the C-SCCS among Chinese nurses in age, marital status, education background, nursing age, monthly income, technical title, administrative position, hospital nature, hospital grade, if a clinical teacher, working section, employment modality, if spiritual care experience, participated in spiritual care training, lectures or courses, needs for spiritual care training, lectures or courses, as shown in Table 1.

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Table 1. Sociodemographic characteristics and the scores of C-SCCS based on sociodemographic differences of Chinese nurses ($n = 2{,}181$)

Characteristics	*n*	%	M (SD)	*t* / *F*	*p*-value
Gender				1.086	0.278
Male	321	14.7	59.91 (17.03)		
Female	1860	85.3	58.17 (15.95)		
Age (years)				75.126	<0.001**
≤25	909	41.7	51.42 (13.81)		
26–35	840	38.5	56.73 (13.13)		
36–45	314	14.4	68.10 (15.37)		
>45	118	5.4	80.54 (16.87)		
Nationality				1.135	0.257
Han	1821	83.5	58.81 (16.21)		
Minority	360	16.5	57.07 (16.45)		
Religious belief				0.551	0.583
Yes	231	10.6	59.18 (17.56)		
No	1950	89.4	58.14 (15.88)		
Marital status				22.055	<0.001**
Single	715	32.8	52.94 (15.59)		
Married	1281	58.7	58.60 (14.92)		
Divorced	157	7.2	68.22 (17.59)		
Widowed	28	1.3	79.75 (15.54)		
Education background				41.079	<0.001**
Technical secondary school	151	6.9	51.10 (16.70)		
Junior college degree	473	21.7	52.20 (13.54)		
Bachelor degree	1435	65.8	57.47 (14.80)		
Master degree or above	122	5.6	74.93 (16.37)		
Nursing age (years)				67.195	<0.001**
≤5	955	43.8	51.62 (13.88)		
6–10	714	32.7	56.69 (12.73)		
11–15	329	15.1	66.70 (15.40)		
>15	183	8.4	75.30 (18.21)		
Monthly income (RMB)				53.932	<0.001**
<3,000	288	13.2	48.94 (15.24)		
3,000–4,999	447	20.5	53.00 (13.16)		
5,000–6,999	421	19.3	52.06 (13.00)		
7,000–8,999	336	15.4	56.51 (12.80)		
≥9,000	689	31.6	68.72 (15.38)		
Technical title				78.533	<0.001**
Nurse	713	32.7	51.81 (15.47)		
Senior nurse	920	42.2	53.29 (11.22)		
Supervisor nurse	417	19.1	65.32 (14.54)		
Co-chief nurse	94	4.3	78.27 (12.60)		
Chief nurse	37	1.7	89.15 (11.13)		
Administrative position				59.990	<0.001**
None	1858	85.2	54.64 (14.15)		
Head nurse	173	7.9	68.56 (16.25)		

(*Continued*)

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Table 1. (*Continued.*)

Characteristics	*n*	%	M (SD)	*t* / *F*	*p*-value
Department head nurse	98	4.5	77.22 (13.21)		
Co-chief of nursing department or above	52	2.4	81.26 (15.10)		
Hospital nature				5.701	<0.001**
Specialized hospital	585	26.8	64.56 (16.93)		
General hospital	1596	73.2	56.41 (15.87)		
Hospital grade				30.745	<0.001**
Grade 3A Hospital	1280	58.7	62.59 (17.31)		
Grade 3B Hospital	367	16.8	54.47 (11.51)		
Grade 2A Hospital	303	13.9	51.96 (11.58)		
Grade 2B Hospital	133	6.1	44.85 (7.91)		
Grade 1 Hospital	98	4.5	50.11 (12.41)		
If a clinical teacher				5.565	<0.001**
Yes	203	9.3	63.72 (16.01)		
No	1978	90.7	56.87 (15.63)		
Working section				18.176	<0.001**
Internal medicine department	373	17.1	56.76 (15.07)		
Surgery department	334	15.3	60.09 (17.65)		
Gynecology department	205	9.4	52.03 (12.06)		
Paediatrics department	185	8.5	51.30 (9.92)		
Outpatient department	220	10.1	51.70 (11.54)		
Emergency department	247	11.3	52.70 (12.78)		
ICU department	268	12.3	58.50 (16.49)		
Operation room	190	8.7	58.30 (13.85)		
Nursing department	148	6.8	79.21 (16.10)		
Other	11	0.5	67.00 (18.52)		
Employment modality				38.795	<0.001**
Enterprise system	997	45.7	62.55 (17.86)		
Contractual system	613	28.1	57.79 (13.27)		
Personnel agency system	346	15.9	50.57 (10.71)		
Labour dispatch system	225	10.3	44.88 (8.13)		
If spiritual care experience				20.208	<0.001**
Yes	194	8.9	83.78 (18.21)		
No	1987	91.1	54.75 (13.17)		
Is necessary spiritual care for patients				1.558	0.147
Yes	2152	98.7	59.01 (18.26)		
No	29	1.3	56.97 (15.16)		
Participated in spiritual care training, lectures or courses				19.032	<0.001**
Yes	266	12.2	78.34 (15.29)		
No	1915	87.8	53.41 (12.34)		
Needs for spiritual care training, lectures or courses				4.780	<0.001**
Yes	2120	97.2	60.18 (17.62)		
No	61	2.8	54.39 (13.71)		

t, independent *T*-test, *F*, one-way ANOVA test.
**$p < 0.01$.

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Table 2. The scores of C-SCCS, C-SCGS, and SHS-SF of Chinese nurses ($n = 2,181$, M (SD))

Item	Numbers of entries	Dimensional score		Average of entries		Ranking
		M	SD	M	SD	
C-SCCS total score	22	58.25 (16.21)		2.65 (0.83)		
Assessment and implementation	4	10.44 (3.17)		2.61 (0.81)		3
Professionalization and improving quality of care	5	12.90 (3.95)		2.58 (0.77)		4
Personal support and patient counseling	5	12.15 (3.78)		2.43 (0.73)		6
Referral to professionals	2	5.02 (1.53)		2.51 (0.75)		5
Attitude toward patients spirituality	4	11.80 (3.51)		2.95 (0.87)		2
Communication	2	5.94 (1.79)		2.97 (0.91)		1
C-SCGS total score	34	144.49 (16.87)		4.25 (0.52)		
Attributes for spiritual care	13	55.38 (6.92)		4.26 (0.61)		2
Defining spirituality and spiritual care	8	34.96 (4.27)		4.37 (0.63)		1
Spiritual perspectives	5	20.95 (3.15)		4.19 (0.59)		3
Spirituality and spiritual care values	8	33.20 (4.53)		4.15 (0.56)		4
SHS-SF total score	24	84.88 (10.57)		3.54 (0.45)		
Connection to others	4	14.28 (2.31)		3.57 (0.51)		2
Meaning derived from living	6	21.90 (3.12)		3.65 (0.53)		1
Transcendence	6	21.06 (3.01)		3.51 (0.48)		3
Religious attachment	4	13.72 (2.21)		3.43 (0.45)		5
Self-understanding	4	13.92 (2.17)		3.48 (0.50)		4

Table 3 shows that there was a significant positive correlation between spiritual care competence and spiritual care perceptions ($r = 0.653$, $p < 0.01$), and all dimensions were positively correlated (0.512−0.627, $p < 0.01$). And spiritual care competence was also positively correlated with spiritual health ($r = 0.587$, $p < 0.01$), and each of dimensions was positively correlated (0.321−0.556, $p < 0.01$), as shown in Table 3.

As shown in Table 4, the direct effect of spiritual care perceptions on spiritual care competence was 0.383 ($p < 0.01$), 95% Cl confidence interval was [0.319, 0.501], the total effect was 0.595 ($p < 0.01$), 95% Cl confidence interval was [0.522, 0.614], and the indirect effect was 0.212, Boot LLCl to ULCl was [0.083, 0.235] excluding 0, which was statistically significant and showed that spiritual health played a part mediating role between spiritual care competence and spiritual perceptions, accounting for 35.6% of the indirect effect.

Discussion

In this study, the total score of Chinese nurses' spiritual care competence was 58.25 ± 16.21, and the whole was moderate, which was similar to Chen et al. (2019) and Liu et al. (2019), and there was much room for improvement. Besides, the total score of spiritual perceptions was 144.49 ± 16.87, which also was moderate and was consistent with the results of Shi et al. (2020). The total score of spiritual health was 84.88 ± 10.57, which was moderate as a whole and was similar to the results of Hsiao et al. (2013).

The results of this study showed that 98.7% of nurses considered that spiritual care was necessary for patients, indicating that nurses may recognize the importance and value of spiritual care for patients, but only 8.9% of nurses had spiritual care experience, which may be one of the important factors that caused the spiritual care competence of nurses in this study to be in the moderate and lower level as a whole and their spiritual care perceptions ambiguous and inaccurate. The reasons may be as follows: Firstly, there were few curriculum related to spiritual care education and no special teaching resources, teachers and authoritative teaching materials in China, which directly lead to the low overall level of spiritual care competence of nurses; what's more, 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 of nurses, which may cause differences in understanding of their essence and connotation. However, domestic spirituality related studies lack spiritual care education for nurses, and there were no unified teaching content, independent curriculum, spiritual care plans, supervision standards, and inability to guarantee the continuity of spiritual care (Li et al., 2017), which all limited the improvement of spiritual care competence among nurses.

The total score of spiritual care competence among nurses in this study was lower than those of studies on oncology nurses (Yang et al., 2018), reproductive center nurses (Wang et al., 2020), hospice nurses (Wu et al., 2020), elderly care institutions nurses (Liu et al., 2020), and nursing interns (Qi et al., 2019). The reasons may be that the development of spiritual care in China started late and was mainly focused on patients with

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Table 3. The correlations among spiritual care competence, spiritual care perceptions, and spiritual health of Chinese nurses ($n = 2{,}181$, r)

Item	1	1.1	1.2	1.3	1.4	1.5	1.6	2	2.1	2.2	2.3	2.4	3	3.1	3.2	3.3	3.4	3.5
1 C-SCCS total score	—																	
1.1 Assessment and implementation	0.927**	—																
1.2 Professionalization and improving quality of care	0.938**	0.886**	—															
1.3 Personal support and patient counseling	0.943**	0.851**	0.901**	—														
1.4 Referral to professionals	0.882**	0.817**	0.835**	0.874**	—													
1.5 Attitude toward patients spirituality	0.858**	0.793**	0.807**	0.821**	0.791**	—												
1.6 Communication	0.871**	0.785**	0.789**	0.834**	0.821**	0.849**	—											
2 C-SCGS total score	0.653**	0.592**	0.601**	0.596**	0.553**	0.587**	0.603**	—										
2.1 Attributes for spiritual care	0.637**	0.581**	0.574**	0.581**	0.531**	0.595**	0.627**	0.935**	—									
2.2 Defining spirituality and spiritual care	0.588**	0.548**	0.555**	0.577**	0.544**	0.602**	0.615**	0.917**	0.852**	—								
2.3 Spiritual perspectives	0.625**	0.567**	0.582**	0.543**	0.512**	0.607**	0.599**	0.895**	0.798**	0.801**	—							
2.4 Spirituality and spiritual care values	0.593**	0.558**	0.571**	0.573**	0.525**	0.598**	0.601**	0.941**	0.847**	0.883**	0.856**	—						
3 SHS-SF total score	0.587**	0.565**	0.541**	0.571**	0.543**	0.568**	0.555**	0.807**	0.763**	0.758**	0.739**	0.813**	—					
3.1 Connection to others	0.551**	0.523**	0.524**	0.519**	0.498**	0.537**	0.521**	0.685**	0.645**	0.633**	0.656**	0.681**	0.865**	—				
3.2 Meaning derived from living	0.538**	0.541**	0.518**	0.525**	0.505**	0.512**	0.508**	0.731**	0.725**	0.701**	0.694**	0.752**	0.885**	0.763**	—			
3.3 Transcendence	0.562**	0.534**	0.527**	0.556**	0.487**	0.549**	0.517**	0.768**	0.743**	0.722**	0.731**	0.714**	0.873**	0.741**	0.799**	—		
3.4 Religious attachment	0.378**	0.354**	0.383**	0.416**	0.321**	0.376**	0.342**	0.597**	0.523**	0.534**	0.498**	0.548**	0.846**	0.783**	0.781**	0.723**	—	
3.5 Self-understanding	0.521**	0.513**	0.530**	0.511**	0.463**	0.521**	0.520**	0.693**	0.658**	0.635**	0.641**	0.637**	0.851**	0.775**	0.743**	0.785**	0.776**	—

—: $r = 1$.
**$p < 0.01$.

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Table 4. The mediating effect of spiritual health between spiritual care competence and spiritual care perceptions of Chinese nurses ($n = 2{,}181$)

Dependent variable	Independent variable	*B*	*SE*	*t*-value	*p*-value	*F*	*R*	R^2	95% CI
Spiritual health						1547.351	0.815	0.664	
	Spiritual care perceptions	0.516	0.017	30.353	<0.001**				[0.491, 0.545]
Spiritual care competence						521.468	0.641	0.411	
	Spiritual care perceptions	0.595	0.031	19.194	<0.001**				[0.522, 0.614]
Spiritual care competence						259.645	0.657	0.432	
	Spiritual health	0.411	0.085	4.835	<0.001**				[0.175, 0.453]
	Spiritual care perceptions	0.383	0.039	9.821	<0.001**				[0.319, 0.501]

**$p < 0.01$.

advanced cancer (Wei, 2021), heart failure (Liu et al., 2020), and other chronic diseases (Wang et al., 2021), while little attention was paid to the spiritual health and spiritual care needs of patients in other departments. Because of the particularity of department atmosphere and working environment, compared with nurses in general hospital, oncology nurses and hospice care nurses and tend to care for critically ill patients or patients with advanced disease, and elderly care nurses tend to care for elderly or empty nesters, who have more spiritual sustenance and spiritual care needs, so as to nurses have more opportunities to get in touch with spiritual care practice and experience the diversity of patients' religious beliefs and spiritual care needs in clinical practice, which may gradually promote a deeper understanding of spiritual care in the care process, leading to a qualitative change in spiritual care competence. While nursing interns had more purposeful and sufficient time to communicate with patients in clinical practice, giving patients more time to think about their personal value and meeting their needs to the greatest extent.

And among the scores of various dimensions, the "communication" dimension was the highest, which may be related to the nature of nursing profession. Nurses can actively listen and maintain moderate silence in clinical practice so that patients can be allowed to express themselves as much as possible and have sufficient time to think about personal value and meet their spiritual care needs to the greatest extent, so as to establish a good communication relationship and achieve resonance and empathy with patients. And the lowest was "personal support and patient counseling," which may be related to nurses' little knowledge of spiritual care, understanding of spiritual caregivers and high workload of daily care. And many objective factors limit the failure to provide patients with effective spiritual care support. In a nutshell, the reasons for the low spiritual care competence among nurses are that spiritual care was still in the early stage of exploration in China, and most nurses lacked knowledge and training experience related to spiritual care, spiritual care perceptions and spiritual health, causing the spiritual care competence to be low.

This study showed that there was a positive and significant correlation between spiritual care competence and spiritual care perceptions, which means that the greater the nurse's spiritual care perceptions, the more frequently spiritual care was included in that nurses' practice and the stronger spiritual care competence, and this correlation was vital and meaningful, which was consistent with Azarsa et al. (2015) and Shi et al. (2020). The study of Mthembu et al. (2016) found that nurses' spiritual care perceptions can directly affect their judgment and treatment of providing spiritual care to patients. Nurses should first grasp the diversity, essence and connotation of spirituality, spiritual care and religious belief, then improve their own level of spiritual care perceptions, and learn to assess patients' spiritual health and understand spiritual care needs, which is a prerequisite for good quality spiritual care. On the one hand, the reason may be that nurses with higher of spiritual care perceptions tend to have stronger ability of transposition thinking and compassion care, and can correctly understand the verbal and non-verbal behavior of patients in nursing practice, accurately perceive and understand their inner experience from the perspective of themselves and spirituality, identify spiritual distress and pain, and perceive their emotional changes such as anxiety, depression, fear, and spiritual care needs, so as to promote nurses to better provide high-quality and comfortable spiritual care services to patients in clinical practice. On the other hand, nurses with higher spiritual care competence have higher learning needs, actively participate in relevant training and learning, pay attention to clinical practice, consolidate their theoretical knowledge of spiritual care through spiritual care practice, strengthen their spiritual awareness, beliefs and values, enhance their sensitivity and skills, and constantly reflect on and summarize their experiences, emotions, actions and spiritual responses to improve their spiritual care perceptions.

The results of this study showed that there was a positive and significant correlation between spiritual care competence and spiritual health, which was consistent with Markani et al. (2018). Chen et al. (2017) considered that spiritual health was an important predictor of spiritual care competence, and that high spiritual health was a prerequisite for providing high-quality spiritual care. Nurses must have the belief so that they can provide psychological care and spiritual care to patients, and be able to identify the obstacles and challenges in providing spiritual care and maintain adequate spiritual health to provide high-quality spiritual care. There may be reasons as follows: On the one hand, nurses with higher spiritual care competence tend to have stronger communication skills and harmonious relationships with patients, and it is more inclined to think, understand and accept views, emotions and behaviors of patients from the perspective of spiritual care, which can improve their spiritual health imperceptibly in the process of spiritual care. On the other hand, nurses with higher spiritual health can correctly understand their own shortcomings and the importance of spiritual care, listening and empathy, actively seek harmonious correlations with patients and available resources to deal with their own spiritual perceptions, emotion and living conditions, and desire systematic and scientific spiritual care training and learning to improve the efficiency and standardization of spiritual care, so as to achieve real spiritual health and self-harmony, which can improve their spiritual care competence from the root.

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According to the results of this study, spiritual health played a part mediating role between spiritual care competence and spiritual care perceptions among nurses, accounting for 35.6% ($p <$ 0.01), indicating that nursing managers can improve nurses' spiritual care competence not only by enhancing their spiritual care perceptions, but also by cultivating their spiritual health. Nursing administrators should combine the characteristics of nurses and departments to create more opportunities for nurses to participate in specialized training on spiritual care. They can regularly invite senior nurses and experts of spiritual care to give lectures or discussions on spiritual care, give more appreciation and encouragement to junior nurses, fully authorize them to give full play to their subjective initiative, and actively guide nurses to consciously infiltrate spiritual care in nursing practice. And they should make nurses aware of the significance and importance of spiritual care, and take the initiative to improve their spiritual care perceptions and spiritual health, and create a supportive environment of love, tolerance, listening, companionship and empathy, so as to promote the improvement of spiritual care in departments.

This study showed that only 8.9% of Chinese nurses had spiritual care experience, and the higher spiritual care competence of nurses who had previous spiritual care experience in the past. And 87.8% of nurses did not attend spiritual care training, lectures or courses, and 97.2% of nurses need to be offered spiritual care training, lectures or courses, indicating that spiritual care education need of Chinese nurses was high, and spiritual care education system of nurses in China urgently needs to be improved and perfected, which was similar to the results of Cooper et al. (2013) on nursing students. Spiritual care education, as a systematic teaching and supervision guarantee for nurses to provide spiritual care for patients, can improve the ability of individuals to cope with difficulties (Tan et al., 2015), enable nurses to update their knowledge of spiritual care, enhance the sensitivity of spiritual response, and understand the spiritual care elements in holistic care, thus promoting a positive spiritual transformation of patients to meet their spiritual care needs (Liang et al., 2016). Baldacchino (2011) suggested that spiritual care should be included in nursing education and nursing practice, and Caldeira et al. (2016) also believed that spiritual care competence should be included in the evaluation of developing nursing profession and nursing service standards. Numerous studies (Mthembu et al., 2016; Kang et al., 2021) have shown that the level of nurses' spiritual care perceptions and attitude can directly affect their judgment and handling of spiritual care. Through spiritual care training, which can not only improve nurses' spiritual care perceptions and spiritual health level of spiritual care (Deluga et al., 2020), but also can improve nurses' insight into spiritual care to a certain extent, for providing high-quality spiritual care services in future clinical practice (Jiao et al., 2020). Therefore, it is urgent to attach importance and carry out nurses' spiritual care education, improve nurses' spiritual care competence, which can promote the harmony and unity of patients' "physical–psychological–social–spiritual" aspect.

By now, spiritual care education of nurses in China was still in its infancy and has not been paid attention to. The teaching curriculum, contents, methods, objectives, and evaluation methods of spiritual care are not clear, lacking independence and positivism. And spiritual care education system and mechanism are not yet perfect, lacking strong theoretical and practical support. Furthermore, spiritual care education was mainly carried out based on medical colleges and resources distribution was unbalanced, resulting in the lack of spiritual care education resources in some affiliated hospitals. Due to the differences in religious beliefs, traditional culture and values between the East and the West, and the characteristic spiritual care service mode suitable for China's national conditions has not been developed. In a nutshell, the reasons above jointly restricted the improvement of nurses' spiritual care competence.

It is recommended that nursing managers should pay more attention to nurses' spiritual care education in the future, perfect the spiritual care education system, formulate a comprehensive, multi-level and scientific assessment standard, evaluation and training system of spiritual care competence, and equip with appropriate and optimized teaching resources. And nursing managers should 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. In clinical teaching, nurses must be good at using problem-oriented and nurse-oriented teaching models, such as Problem-Based Learning (PBL) teaching, experiential teaching, case teaching, role-playing, narrative education, and film-television teaching (Liang et al., 2016), pay attention to the combination of spiritual care theory and clinical practice, actively guide nurses to consciously infiltrate spiritual care in clinical nursing work, let nurses feel and experience the significance and value of spiritual care in practice, reflect on their own shortcomings, and evaluate the teaching effect of spiritual education with scientific and objective indicators. What's more, actively build a "school-hospital" cooperation platform to maximize the use of resources. On the one hand, hold regular spiritual care lectures and symposia and invite senior nurses with rich spiritual care experience to preach. On the other hand, nursing managers should make full use of the school teaching resources to carry out spiritual care continuing education and training for nurses to improve their theoretical knowledge of spiritual care. And drawing on the experience of advanced spiritual care education foreign countries and Taiwan Province, and combining the cultural characteristics of Confucianism, Taoism, Buddhism, such as the "goodness," "benevolence," "kindness," and "love" in China, integrating traditional Chinese philosophy, religion, traditional Chinese medicine and Tai Chi into spiritual care education and training (Qi et al., 2019), and developing assessment tools for the spiritual needs of patients and nurses' spiritual care competence suitable for Chinese cultural background. In this way, a scientific nurses' spiritual care competence training goal centered on the spiritual care needs of patients is formulated, and then a set of spiritual care service mode with Chinese characteristics with strong applicability, economy, science, feasibility, and convenience for clinical operation is formed to improve spiritual care competence among nurses.

Strengths and limitations

There were some limitations in the study. Firstly, the study was conducted using a convenience sampling method, which might affect the generalizability of the findings. Additionally, the research instruments were all Chinese versions. Due to the complexity and individuality of the concept of "spirituality and spiritual care," there may be some deviations in the research results. Thirdly, the data were only collected from 17 hospitals in 3 provinces, China, therefore, the generalizability of the findings might be affected and may not represent the total spiritual care

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competence, spiritual care perceptions, and spiritual health of nurses across all secular and religious groups, especially rural regions in China. Last but not least, the multiple linear regression analysis was not used on the influence factors of nurses' spiritual care competence in the study. Further research should be used for a more rigorous design, which is suggested to include more clinical nurses from different regions in the future and to explore factors influencing spiritual care competence of nurses in China.

Conclusion

To sum up, the findings of this study showed the spiritual care competence, spiritual care perceptions, and spiritual health among 2,181 Chinese nurses both were moderate, which need to be improved. Also, significant and positive correlations were found among spiritual care competence, spiritual care perceptions and spiritual health, and spiritual health played a partial mediating role between spiritual care competence and spiritual care perceptions. It is recommended that nursing managers should pay attention to spiritual care education of nurses, and improve spiritual care perceptions and spiritual health from many aspects, so as to grasp the spiritual care needs of patients, identify spiritual distress and spiritual pain in future nursing practice, provide holistic care and achieve human health.

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Haomei Zhao contributed to the work design, analysis, data acquisition, data interpretation, draft the article, and the final approval of the version to be submitted.

Siai Zhang and Yue Wang 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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