

Original Article

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Spiritual care needs and their associated influencing factors among elderly patients with moderate-to-severe chronic heart failure in China: A cross-sectional study

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Abstract

Background. The significance of spiritual care needs among chronic diseases patients has been emphasized across countries and cultures in many studies. However, there were few studies on spiritual care needs among elderly patients with moderate-to-severe chronic heart failure (CHF) in China.

Objective. To investigate spiritual care needs and associated influencing factors among elderly patients with moderate-to-severe CHF, and to examine the relationships among spiritual care needs, self-perceived burden, symptom management self-efficacy, and perceived social support.

Methods. A cross-sectional design was implemented, and the STROBE Checklist was used to report the study. A convenience sample of 474 elderly patients with moderate-to-severe CHF were selected from seven hospitals in Tianjin, China. The sociodemographic characteristics questionnaire, the Spiritual Needs Questionnaire Scale, the Self-Perceived Burden Scale, the Self-efficacy for Symptom Management Scale, and the Perceived Social Support Scale were used. Descriptive statistics, univariate, multiple linear regression, and Pearson's correlation analysis were used to analyze data.

Results. The total score of spiritual care needs among 474 elderly patients with moderate-to-severe CHF was 37.95 ± 14.71 , which was moderate. Religious belief, educational background, self-perceived burden, symptom management self-efficacy, and perceived social support were the main factors affecting spiritual care needs, and spiritual care needs were negatively correlated with self-perceived burden ($r = -0.637$, $p < 0.01$) and positively correlated with symptom management self-efficacy ($r = 0.802$, $p < 0.01$) and social support ($r = 0.717$, $p < 0.01$).

Significance of results. The spiritual care needs of elderly patients with moderate-to-severe CHF were moderate, which were influenced by five factors. It is suggested that clinical nurses, families, and society should take targeted spiritual care measures to improve patients' symptom management self-efficacy and perceived social support from many aspects, and reduce self-perceived burden to meet their spiritual care needs and improve the quality and satisfaction of spiritual care in nursing practice.

Introduction

Spirituality originated from the Latin “spiritus,” which means breathing, representing an indispensable part of life, and has many different connotations and characteristics (Buck, 2006). In 1992, Reed (1992) proposed that spirituality is one of the essential characteristics of human beings, necessary for happiness and health, a manifestation of people's self-transcendence ability in the development process, and a process of realizing the value and significance of life through self-transcendence. Murgia et al. (2020) defined spirituality as an individual's exploration of the meaning and purpose of life, which may or may not be related to religions, including the connections among themselves, religions, beliefs, values, and practices giving meaning to life, which can motivate individuals to realize the highest ideal and life value. Weathers et al. (2016) analyzed the concept of spirituality and identified three attributes of spirituality: connectedness, transcendence, and meaning of life. The American National Consensus Project (ANCP) for Quality Palliative Care (Handzo et al., 2020) pointed out that spirituality is a way for people to find and express the meaning, value, and purpose of life and to experience the connection among themselves, others, supremes (such as Gods or holiness), nature, and beliefs. Spiritual care is to provide individuals with care measures or

activities in line with 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 or problems (Ayik et al., 2021). As the core of palliative care and holistic care, spiritual care aims to meet patients' spiritual needs and alleviate spiritual problems, including helping patients seek meaning and purpose in life when suffering from illness, giving love and forgiveness, and obtaining internal and external resources, so that patients can get peace and comfort (Donesky et al., 2020).

Chronic heart failure (CHF) is commonly a manifestation of various heart diseases entering the end stage, which can gradually deteriorate in several years or even decades (Jaffer et al., 2021). With the improvement of life quality and the rising trend of population aging, the number of CHF patients has increased year by year. Up to now, 23 million patients have been diagnosed with CHF worldwide, and the annual increase is 2 million, among which the prevalence rate of the elderly over 70 years old is as high as 10%, and there is a significant positive correlation between the disease incidence and age (Miura et al., 2014; Mills et al., 2015; Gillilan et al., 2017). In addition, some studies have reported that CHF patients often have different degrees of spiritual distress and pain, such as anxiety, fear, and other negative emotions (Wen et al., 2014; Kimani et al., 2016), the decline of self-existence (Gillilan et al., 2017), the decline of happiness (Park and Sacco, 2017), and the fear of life and death (Ross and Austin, 2015). Moreover, there is a significant positive correlation between these disorders and cardiac function classification. When the spiritual health of CHF patients is poor, the patients' physique will decline periodically or even as a whole, thus generating spiritual care needs (Clark and Hunter, 2019). The current definitions of spiritual care needs have not been unified, and the most commonly used definition is the expectation and need for everyone to find the meaning, value, and purpose of life and to experience the connection among themselves, others, supremes (such as Gods or holiness), nature, and beliefs (Crooms and Gelfman, 2020). However, the conventional psychological nursing methods can not adequately meet the care needs of patients with CHF, so clinical nurses need to evaluate their spiritual care needs and implement targeted spiritual care interventions.

Background

In 1998, the World Health Organization (WHO) mentioned that people should pay attention to spiritual health and added spiritual health as one of the components of health, emphasizing that people should pay attention to and provide patients with physical, psychological, spiritual, and cultural care (Dhar et al., 2011). Since then, much attention has been paid to spiritual health. In addition to suffering from the disease itself and treatment, CHF patients also have to face the possible death and end of life. And the fear of life and death, coupled with the lack of social support system and family support, will easily lead to negative emotions, such as anxiety, depression, and meaningless life, increase the self-perceived burden, reduce self-efficacy, feel powerless and helpless to continue life, and even lead to suicide crisis (Gillilan et al., 2017). Therefore, CHF patients often have the needs of spiritual sustenance, self-worth, intimacy, hope, life meaning, and trust and understanding of others, that is, spiritual care needs (Clark and Hunter, 2019).

In recent years, the interest of the research communities toward the spiritual care needs of CHF patients has been growing

year after year, especially abroad. Many studies have shown that CHF patients have at least one or more spiritual care needs, which are affected by a variety of factors such as demographic (gender and age), disease itself (course and complications), and religious belief. Park (2008) found that there is a corresponding relationship between longevity changes and multiple dimensions of spirituality in elderly CHF patients. Cagle et al. (2017) showed that elderly CHF patients and their caregivers with spiritual care have unique psychosocial needs. Alpert et al. (2017) believed that elderly CHF patients have spiritual care needs, especially it is necessary to manage the symptoms of pain, dyspnea, and depression in elderly patients with moderate-to-severe heart failure. When symptom management is challenging, palliative care cooperation with expert symptom management and spiritual care can benefit patients. Hooker et al. (2017) integrated spiritual intervention in CHF patients' care and improved the life quality of patients. Scholars in Taiwan Province studied the spiritual care needs of patients with chronic diseases earlier and matured. Scholars in Taiwan studied the spiritual care needs of patients with chronic diseases earlier and matured. In 2000, the health institutions in Taiwan Province promulgated the "Assessment and Counseling Plan for Spiritual Needs of Hospice Care" and "Reference Guide for Standard Operation of Hospice Care," which both evaluated the spiritual care needs with the help of spiritual assistance and spiritual distress (Wei, 2016).

However, domestic spiritual care started late, with few researchers, mostly focusing on the study of spiritual care for cancer patients, and the spiritual care needs of cancer patients are affected by demographic, disease, social support, personality traits, and so on. While there are few reports on CHF patients of their spiritual care needs, only Yuan and Lu (2017) and Qian et al. (2017). By now, there is no study on spiritual care for elderly patients with moderate-to-severe CHF. Besides, the specific spiritual care needs have not been systematically expounded, and the intervention measures of spiritual care need to be optimized. Most of the studies were qualitative studies, but few were quantitative studies. Compared with mild CHF patients, elderly patients with moderate-to-severe CHF have more serious spiritual distress and pain, such as self-perceived burden, which leads to their symptom management self-efficacy gradually decreasing, and they also hold different views and needs for spiritual care (Alpert et al., 2017). In addition, a study has shown that the higher the social support, the higher the spiritual care needs of cancer patients (Cheng et al., 2018). Finally, Chinese traditional culture is profoundly influenced by Confucianism, Taoism, Buddhism, and folk beliefs, and patients' concepts of Gods and religions are different from those of foreign patients. However, how to explain the quantity and degree of spiritual care needs of elderly patients with moderate-to-severe CHF is lack of clarity, which needs in-depth study.

In 2017, the National Health Commission of the People's Republic of China issued the "Practice Guide for Hospice Care (Trial)" (2017), which pointed out that hospice care should include providing spiritual care for patients, indicating that China emphasized the necessity of providing spiritual care in the clinical nursing process at the policy aspect. Many studies pointed out that spirituality is the cornerstone of holistic nursing practice, and medical staff should pay attention to patients' spiritual care, and the assessment of patients' spiritual care needs is the first step to formulate targeted intervention programs, and it is also the basic element of patient-centered nursing. Modern holistic nursing emphasizes whole-person health and care, that is, emphasizing the integration and needs of physiology,

psychology, spirituality, and society, so as to meet the meaning and comfort of patients (Savarese and Lund, 2017). The assessment of spiritual care needs plays an important role in palliative care and holistic care, and the attention to spirituality reflects the great difference between hospice care and traditional medicine and the humanistic care. Therefore, assessing and understanding patients' spiritual care needs is the first step to implement high-quality spiritual care.

Aims

The aims of this study are (1) to investigate spiritual care needs and their associated influencing factors among elderly patients with moderate-to-severe CHF; (2) to examine the relationships among spiritual care needs, self-perceived burden, symptom management self-efficacy, and perceived social support; and (3) to provide a theoretical basis for the formulation of intervention measures to meet the spiritual care needs of patients in China.

Methods

Study design

A cross-sectional, quantitative design was undertaken, and the study was adherent to the reporting of observational studies (STROBE) statement, which can be found in Supplementary material.

Participants and sample

The convenience sampling was used to recruit elderly patients with moderate-to-severe CHF from seven hospitals in Tianjin, China. Respondents met the following criteria: inclusion criteria: (1) meet the diagnostic criteria of "Guidelines for Diagnosis and Treatment of Heart Failure in China (2014)" (Zhang and Zhang, 2014), (2) age of ≥ 60 , (3) NYHA cardiac function was grade III or IV, (4) the six-min walking distance ≤ 450 m, (5) communicate effectively, (6) complete the questionnaire independently or with assistance, and (7) informed and consent to participate; exclusion criteria: (1) with mental problems or cognitive impairment, (2) combined with other serious organic diseases, and (3) participating in similar research.

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 15 variables in the sociodemographic characteristics questionnaire, 6 variables in the Spiritual Needs Questionnaire Scale (SpNQ), 3 variables in the Self-Perceived Burden Scale (SPBS), 1 variable in the Self-efficacy for Symptom Management Scale (SESMS), and 3 variables in the Perceived Social Support Scale (PSSS). A total of 28 variables need to be analyzed, and considering 10% invalid questionnaires, so the sample size is at least 154, and 474 sample sizes were included in this study.

Data collection

Data were collected from seven hospitals in Tianjin, China, from September 2020 to March 2021. The investigation was conducted with the prior approval of the university and hospital administrator. The 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. The researchers issued questionnaires to patients

who met the inclusion criteria, and the patients 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. Finally, 474 valid questionnaires were distributed and recovered.

Measurements

In this study, the spiritual care needs model of patients with chronic diseases established by Büssing et al. (2010) was used, including four core dimensions: connection, peace, meaning/purpose, and transcendence, which can be attributed to the underlying categories of social, emotional, existential, and religious needs of patients, as shown in Figure 1. And the preliminary theoretical framework of spiritual care established by Zhao (1997) was also 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 2.

The sociodemographic characteristics questionnaire was designed by the researchers after referring to the relevant literature, including 15 items, such as gender, age, nationality, educational background, and religious belief, as shown in Table 1.

The SpNQ (Büssing et al., 2013; Zhao and Wang, 2018) with good reliability and validity was used to assess spiritual care needs. It consists of 6 dimensions and 27 items, including actively giving needs, existential needs-release, inner peace needs, religious needs-praying, existential needs-reflection, and religious needs-resources. Cronbach's α was 0.910. In this study, its Cronbach's α was 0.932. A Likert 4-rating method was used, with the 0–3 score indicating a range from never to extremely. The total score of SpNQ was 0–81, with a higher score indicating a higher level of spiritual care needs.

The SPBS (Cousineau et al., 2003; Wu and Jiang, 2010) was used to assess the self-perceived burden. There are 3 dimensions and 10 items in SPBS, including physical burden, emotional burden, and economic burden. Cronbach's α was 0.910. In this study, its Cronbach's α was 0.947. A Likert 5-rating method was used, with the 1–5 score indicating a range from never to always. The total score of SPBS was 10–50, with a higher score indicating heavier self-perceived burden.

The SESMS (Shang-Liu et al., 2014) was used to assess the self-efficacy of patients with heart failure in a specific aspect of symptom management. A total of seven items were included and the Cronbach's α was 0.919, and its Cronbach's α was 0.956 in this study. A Likert 10-rating method was used, with the 1–10 score indicating a range from strongly disagree to strongly agree. The average of seven entries scores as the final score, and the total score of SESMS was 1–10, with a higher score indicating higher symptom management self-efficacy.

The PSSS (Zimet et al., 1990; Wang et al., 1999) was used to assess perceived social support. There are 3 dimensions and 12 items in PSSS, including family support, friend support, and other support. Cronbach's α was 0.88, and Cronbach's α was 0.901 in this study. A Likert 7-rating method was used, with the 1–7 score indicating a range from strongly disagree to strongly agree. The total score of PSSS was 12–84, with a higher score indicating a higher level of perceived social support.

Statistical analysis

Data were analyzed by IBM SPSS 21.0. Descriptive statistics (numbers and percentage distribution) were used to describe sociodemographic

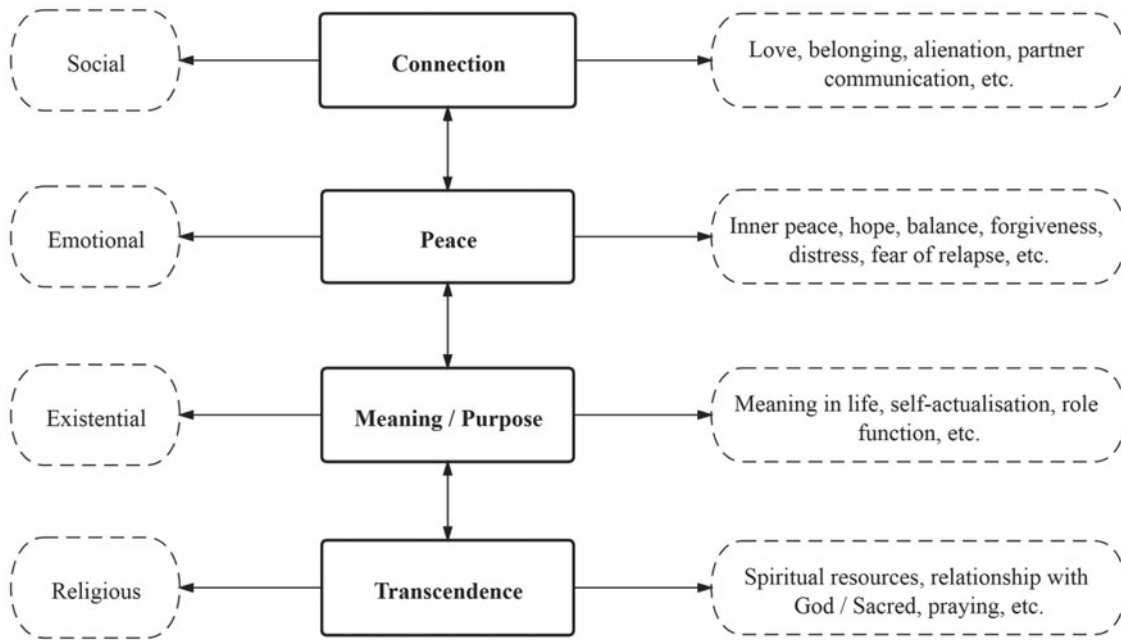


Fig. 1. The spiritual care needs model of patients with chronic diseases.

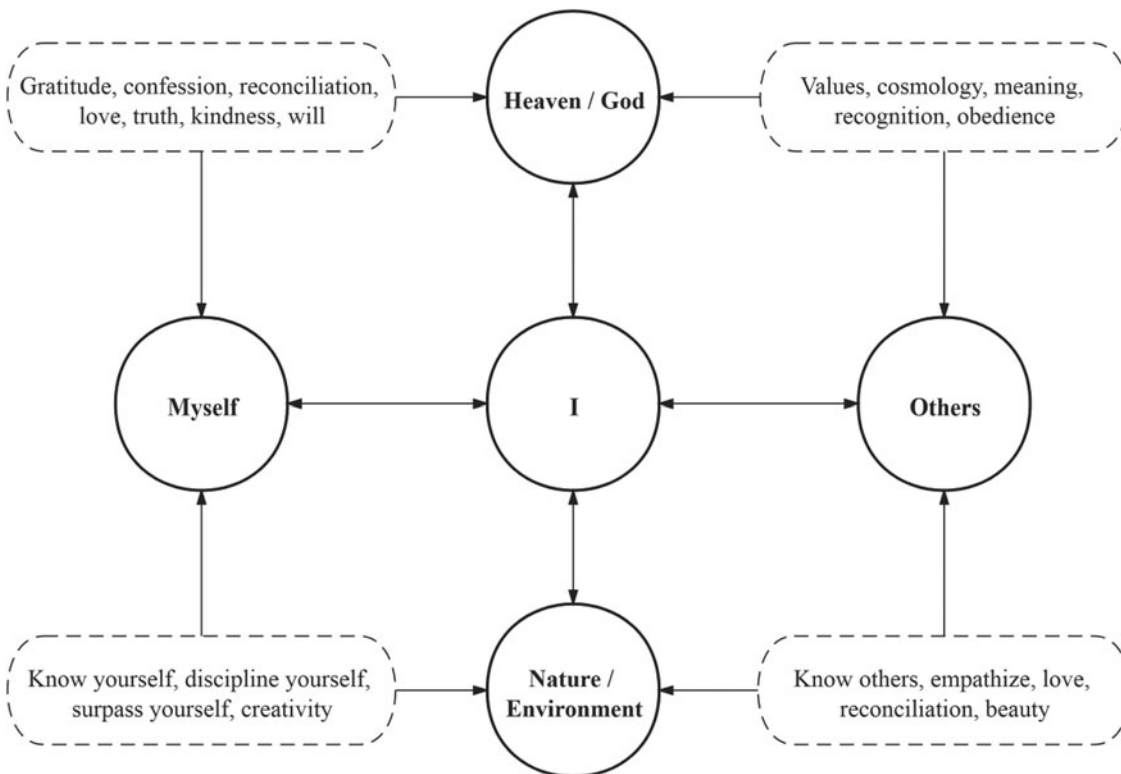


Fig. 2. Preliminary theoretical framework of spiritual care in Taiwan Province.

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, one-way ANOVA, and non-parametric test analysis were used to compare between two or more groups. Multiple regression analysis was used to identify the factors contributing to spiritual care needs. Pearson’s correlation analysis was used to explore

the correlation among several variables with statistical significance set to *p* < 0.05 (two-tailed).

Ethical considerations

Ethical approval for conducting this study was obtained from the ethics committees of hospitals in China. After granting the official

permission from university and hospital managers, the participants were approached by the researchers. The purpose and significance of this study were explained to patients 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 academic research and will not be used for other commercial purposes.

Results

A total of 474 patients were enrolled in this study, including 312 males (65.8%), 162 females (34.2%), with an average age of 75.21 ± 5.71 , 138 patients aged 60–69 (29.1%), 170 patients aged 70–79 (35.9%), 116 patients aged 80–89 (24.5%), and 50 patients aged ≥ 90 (10.5%). And other sociodemographic characteristics were shown in Table 1.

The total score of spiritual care needs among 474 elderly patients with moderate-to-severe CHF was 37.95 ± 14.71 , which was moderate. Among six dimensions, the average scores of dimension from high to low were actively giving needs (1.53 ± 0.57), religious needs-praying (1.52 ± 0.59), existential needs-reflection (1.40 ± 0.59), inner peace needs (1.36 ± 0.57), religious needs-sources (1.29 ± 0.58), and existential needs-release (1.08 ± 0.57). And the total scores of SPBS, SESMs, and PSSS were 35.20 ± 6.43 , 33.58 ± 9.95 , and 51.80 ± 9.05 , as shown in Table 2.

According to the results of single factor analysis, patients with different nationalities, religious beliefs, educational background, residence, *per capita* monthly income of the family, and medical insurance type had statistical significance in the SpNQ score difference, as shown in Table 1. The results of multiple linear regression analysis from Table 3 revealed that religious belief, educational background, self-perceived burden, symptom management self-efficacy, and perceived social support were the main factors affecting the spiritual care needs, which could explain 69.8% ($R^2 = 0.712$, adjusted $R^2 = 0.698$, $p < 0.01$).

Table 4 showed that spiritual care needs were negatively correlated with self-perceived burden ($r = -0.637$, $p < 0.01$) and all its dimensions ($r = -0.379$ to -0.636 , $p < 0.01$). Besides, spiritual care needs were positively correlated with symptom management self-efficacy ($r = 0.802$, $p < 0.01$), perceived social support ($r = 0.717$, $p < 0.01$), and all their dimensions ($r = 0.536$ – 0.717 , $p < 0.01$).

Discussion

In this study, the total score of SpNQ among 474 elderly patients with moderate-to-severe CHF was 37.95 ± 14.71 , which was generally moderate, indicating that the patients generally have spiritual care needs, which was similar to the research results of Büssing et al. (2013). The SpNQ score was close to those of cancer patients in Zhao and Wang (2018), but their spiritual care needs were generally higher than those of patients with chronic diseases in Shanghai (Büssing et al., 2010). The reason may be that elderly patients with moderate-to-severe CHF are more likely to suffer from physical symptoms such as pain, dyspnea, and edema than ordinary patients with chronic diseases, and their inner problems and pain such as anxiety and depression are higher. They desire strongly to overcome and get rid of the pain and predicament, are eager to be loved by family and friends, seek help and comfort, and are often eager to talk to others about their

inner thoughts and life sentiments so as to overcome their own predicament (Kimani et al., 2016). Among the six dimensions, the highest was “actively giving needs,” and the reasons may be as follows: First, patients may pay more attention to the degree of harmony and mutual assistance among families. A harmonious family promotes patients’ inner peace and patients can feel the life sense, which is also the main factor affecting spiritual care needs. Second, patients are influenced by Chinese traditional Confucian, Taoist, and Buddhist cultural thoughts such as “benevolence, righteousness, propriety, wisdom, faith” and “Five Luns,” as well as the spirit of the times such as the Communist Party of China’s (CPC) purpose of “serving the people wholeheartedly,” the core values of contemporary socialism, and the revolutionary spirit. In addition, patients hope that in the process of treatment and rehabilitation, they will not become the burden of the family and hope that they can be a person with valuable, do their best to do what they can for their families, and even develop the idea of continuing to benefit and contribute to society. Last but not least, when patients are faced with various serious symptoms of diseases (such as dyspnea and edema), they will try to find various forms of spiritual sustenance. By comforting and helping other patients, sharing disease experience, diverting attention, reexamining the relationship with others and society, which are beneficial for reducing negative emotions, enhancing confidence, understanding and recognition, obtaining emotional support and spiritual well-being, and realizing self-worth and social integration. The reasons for the low “existential needs-release” and “religious needs-sources” may be as follows: First, in this study, 348 patients (73.4%) had no religious beliefs. In addition, there may be the CPC members in the patients who advocate atheism and Marxism, which leads to their general disapproval of religions and Gods, and they will not participate in some religious activities. Second, in China, most patients rely on religions, Gods, Buddha, and so on after falling ill. Patients want to increase the certainty of self-existence through religious belief. Coupled with a fast-paced lifestyle and sudden economic pressure, some patients rarely have no time to calm down and think about their life value and significance, and lack religious and cultural beliefs. Finally, only 126 (26.6%) patients have religious beliefs, and some patients may complain about Gods after they fall ill, think that Gods have deceived themselves, failed to protect themselves and eliminate disasters, and have disappointed and negative attitudes toward religions, and even give up their faith in religions.

The results of this study showed that religious belief and educational background were the influencing factors of spiritual care needs, and patients with religious belief and high educational background had high spiritual care needs, which was similar to the results of previous studies (Forouzi et al., 2017; Cheng et al., 2018; Ayik et al., 2021). The reasons may be as follows: First, religious belief is an important part of spiritual care needs, which is an expression of spirituality, at the highest level of spiritual conceptual framework, and its expression forms mainly include participating in religious activities, reading related books, and so on, seeking integration in the relationships among heaven, human, things, and myself, seeking eternal life meaning and value, and regaining peace and comfort through continuous transcendence and integration. Studies have shown that religious belief was associated with patients’ mental health, and religious believers were more likely to accept the truth of the disease as a post-traumatic growth experience that can divert attention from physical symptoms and relieve pressure (Shi et al., 2012). And CHF patients with religious beliefs have faith in survival, and in the face of

Table 1. Sociodemographic characteristics and the scores of SpNQ based on sociodemographic differences among elderly patients with moderate-to-severe CHF (*n* = 474)

Characteristics	<i>n</i>	%	M (SD)	<i>t</i> / <i>F</i>	<i>p</i> -value
Gender				0.200	0.841
Male	312	65.8	38.08 (14.41)		
Female	162	34.2	37.68 (15.37)		
Age (years)				1.108	0.347
60–69	138	29.1	38.30 (14.99)		
70–79	170	35.9	38.26 (15.17)		
80–89	116	24.5	39.19 (13.77)		
≥90	50	10.5	33.00 (14.35)		
Nationality				–2.260	0.025*
Han	406	85.6	37.07 (13.93)		
Minority	68	14.4	43.18 (18.06)		
Religions belief				13.114	<0.001**
Religion	126	26.6	53.56 (11.00)		
None	348	73.4	32.29 (11.44)		
Marital status				0.759	0.518
Single	22	4.6	34.82 (16.76)		
Married	282	59.5	39.11 (14.84)		
Divorced	58	12.3	36.45 (12.81)		
Widowed	112	23.6	36.41 (14.98)		
Educational background				15.332	<0.001**
Primary school and below	60	12.7	29.37 (12.98)		
Junior middle school	140	29.5	32.03 (11.28)		
High school/technical secondary school	136	28.7	39.34 (11.48)		
Junior college	100	21.1	43.88 (16.05)		
Undergraduate and above	38	8.0	52.68 (17.12)		
Residence				5.795	<0.001**
City/town	276	58.2	42.19 (15.15)		
Village	198	41.8	32.03 (11.81)		
Living conditions				–1.136	0.257
Living alone	126	26.6	36.14 (12.47)		
Non-living alone	348	73.4	38.60 (15.42)		
Per capita monthly income of the family (RMB)				15.154	<0.001**
<1,000	106	22.3	30.30 (12.84)		
1,000–2,999	174	36.7	35.16 (9.55)		
3,000–4,999	132	27.8	42.77 (15.31)		
≥5,000	62	13.2	48.55 (18.82)		
Medical insurance type				8.789	<0.001**
Medical insurance for urban workers	176	37.2	43.86 (17.18)		
Medical insurance for urban and rural residents	200	42.2	34.35 (10.61)		
Full cost	66	12.7	32.97 (13.36)		
Others	32	6.9	38.13 (14.93)		

(Continued)

Table 1. (Continued.)

Characteristics	<i>n</i>	%	M (SD)	<i>t</i> / <i>F</i>	<i>p</i> -value
CHF courses (years)				1.608	0.203
≤5	110	23.2	38.89 (14.67)		
6–10	214	45.2	39.22 (14.67)		
>10	150	31.6	35.44 (14.68)		
Number of medications/species				0.786	0.457
1–2	54	11.4	40.59 (8.82)		
3–4	214	45.1	36.84 (13.58)		
≥5	206	43.5	38.40 (16.91)		
Combined with other chronic diseases/species				1.855	0.159
1–2	130	27.4	37.98 (11.11)		
3–4	260	54.9	39.15 (15.55)		
≥5	84	17.7	34.14 (16.52)		
NYHA cardiac function grade				−0.308	0.759
Grade III	278	58.6	37.70 (15.08)		
Grade IV	196	41.4	38.30 (14.24)		
Six-min walking distance (m)				−0.242	0.809
<150	230	48.5	37.70 (16.85)		
150–450	244	51.5	38.17 (12.42)		

p* < 0.05.*p* < 0.001. *t*: independent *t*-test, *F*: one-way ANOVA test.

diseases, they may actively explore the value and significance of life through various prayers and religious activities, and seek spiritual support, hope, strength, and spiritual sustenance from Gods to resist diseases. Additionally, patients with higher educational background can acquire disease-related knowledge more actively and efficiently. They have a deeper understanding of the disease and can be sensitive to spiritual troubles and needs. In this process, they are good at using all available cultural and social resources to make positive psychological suggestions and adjustments and seek help from others and society to maintain their health in terms of “body-mind-society-spirit” and keep their inner and spiritual well-being. Büssing et al. (2013) also pointed out that patients with higher educational background will have a stronger demand for spiritual care with inner peace.

This study showed that the self-perceived burden among elderly patients with moderate-to-severe CHF was a negative predictor of spiritual care needs, and they were negatively correlated which means that the heavier self-perceived burden is, the lower spiritual care needs are. Self-perceived burden is the empathy worry caused by diseases and care needs affecting others, resulting in the decrease of guilt, depression, pain, burden, and self-feeling (Rehmann-Sutter, 2019). The reasons may be as follows: The heavier self-perceived burden, the stronger guilt, the more prone to negative emotions such as anxiety, depression, and depression. And they may have the inability to face the diseases, families, and society directly, which may lead to gradually reduce confidence in overcoming the diseases, block spiritual harmony, so as to significantly reduce the spiritual care needs. Studies have shown that psychosocial factors (such as self-perceived burden) can alleviate or aggravate the symptoms of diseases by affecting the mental health status of patients, thus affecting the occurrence, development, and prognosis of diseases,

and ultimately determining the life quality of patients (Fang et al., 2013). Therefore, the psychological experience of self-perceived burden should be taken into account when trying to meet the spiritual care needs of elderly patients with moderate-to-severe CHF. By strengthening communication with patients, encouraging patients to express their inner feelings, and taking effective measures to reduce patients' self-perceived burden through various effective structural psychological interventions and emotional intelligence interventions (such as life review therapy, logotherapy, reminiscence therapy, dignity therapy, religious therapy, and grief counseling), so as to help patients find the meaning of life, thus improving life quality and meeting their spiritual care needs.

According to this study, symptom management self-efficacy was a positive predictor of spiritual care needs, and they were positively correlated which means that the higher symptom management self-efficacy is, the higher spiritual care needs are. Symptom management self-efficacy refers to patients' self-confidence and subjective judgment ability to prevent, identify, and alleviate the disease-related symptoms (White et al., 2017). The reason may be as follows: On the one hand, patients with higher symptom management self-efficacy often look at problems from different angles and deal with them in different ways. When faced with physiological pain and various negative emotions and pressures, they can analyze and think deeply about existing problems, hoping to use all favorable factors (such as interpersonal relationship and family support) to deal with them positively and optimistically, so as to adapt to the development of diseases, enhance self-confidence and self-esteem, and then achieve spiritual harmony and generate higher spiritual care needs (Chin et al., 2021). On the other hand, if the patients' spiritual care needs are not effectively satisfied, they will have various negative emotions, which

Table 2. The scores of SpNQ, SPBS, SESMs, and PSSS among elderly patients with moderate-to-severe CHF ($n = 474$)

Item	Dimensional score		Average of entries		Ranking
	M	SD	M	SD	
SpNQ total score	37.95	14.71	1.41	0.54	
Existential needs-reflection	5.61	2.36	1.40	0.59	3
Inner peace needs	9.55	3.98	1.36	0.57	4
Actively giving needs	10.69	4.02	1.53	0.57	1
Existential needs-release	2.16	1.13	1.08	0.57	6
Religious needs-praying	6.07	2.35	1.52	0.59	2
Religious needs-sources	3.86	1.75	1.29	0.58	5
SPBS total score	35.20	6.43	3.524	0.64	
Physical burden	17.54	2.86	3.51	0.57	3
Emotional burden	14.11	3.06	3.53	0.76	2
Economic burden	3.55	0.93	3.55	0.93	1
SESMs total score	33.58	9.95	4.80	1.42	
PSSS total score	51.80	9.05	4.32	0.75	
Family support	19.01	3.32	4.75	0.83	1
Friend support	16.84	3.19	4.21	0.80	2
Other support	15.95	3.09	3.99	0.77	3

Table 3. A multiple linear regression of spiritual care needs among elderly patients with moderate-to-severe CHF ($n = 474$)

Variable	B	SE	β	t-value	p-value
Constant	46.785	8.121	–	5.761	<0.001**
Nationality	–0.831	1.564	–0.020	–0.531	0.445
Religions belief	–9.088	1.545	–0.273	–5.881	<0.001**
Educational background	3.866	0.985	0.233	3.926	<0.001**
Residence	–2.193	1.594	–0.074	–1.376	0.170
Per capita monthly income of the family	–1.353	1.097	–0.089	–1.233	0.219
Medical insurance type					
Medical insurance for urban and rural residents	3.065	1.799	0.103	1.704	0.090
Full cost	2.655	2.425	0.063	1.095	0.275
Others	3.402	2.342	0.058	1.452	0.148
SPBS total score	–0.772	0.136	–0.257	–5.676	<0.001**
SESMs total score	0.808	0.110	0.547	7.381	<0.001**
PSSS total score	0.247	0.111	0.152	2.232	0.027*

* $p < 0.05$.** $p < 0.001$, $R = 0.844$, $R^2 = 0.712$, adjusted $R^2 = 0.698$, $F = 50.689$.

are prone to self-blame and inferiority, and they are unable to obtain spiritual power to support themselves in symptom self-management, and their self-efficacy will also reduce. Therefore, medical staff should attach great importance to the cultivation of patients' self-efficacy, and strengthen their symptom self-management behavior in many ways and aspects, as follows: (1) strengthening health education on disease knowledge to make patients master the evaluation of common symptoms, encouraging patients to take measures to deal with various symptoms,

and constantly strengthening patients' self-identity in symptom management, thus increasing their confidence; (2) according to the alternative experience, CHF patients with higher self-management ability and better symptom control can be "model demonstration" and activities can be carried out in the form of patient forum; (3) letting the patient's most trusted person adopt the methods of "verbal persuasion," such as positive guidance and suggestion, so that patients can believe that they have the ability to manage symptoms, relieve all kinds of pressure to satisfy

Table 4. The relationships among SpNQ, SPBS, SESMs, and PSSS in elderly patients with moderate-to-severe CHF ($n = 474$, r)

Item	1	1.1	1.2	1.3	1.4	1.5	1.6	2	2.1	2.2	2.3	3	4	4.1	4.2	4.3
1 SpNQ total score	—															
1.1 Existential needs-reflection	0.952**	—														
1.2 Inner peace needs	0.971**	0.919**	—													
1.3 Actively giving needs	0.970**	0.903**	0.927**	—												
1.4 Existential needs-release	0.838**	0.771**	0.786**	0.797**	—											
1.5 Religious needs-praying	0.943**	0.883**	0.886**	0.897**	0.770**	—										
1.6 Religious needs-sources	0.873**	0.798**	0.817**	0.808**	0.706**	0.812**	—									
2 SPBS total score	-0.637**	-0.588**	-0.636**	-0.609**	-0.505**	-0.631**	-0.536**	—								
2.1 Physical burden	-0.589**	-0.554**	-0.596**	-0.561**	-0.441**	-0.585**	-0.491**	0.947**	—							
2.2 Emotional burden	-0.632**	-0.575**	-0.633**	-0.597**	-0.511**	-0.623**	-0.552**	0.964**	0.842**	—						
2.3 Economic burden	-0.511**	-0.471**	-0.484**	-0.517**	-0.459**	-0.515**	-0.379**	0.830**	0.704**	0.784**	—					
3 SESMs total score	0.802**	0.766**	0.778**	0.792**	0.624**	0.790**	0.650**	-0.745**	-0.701**	-0.710**	-0.658**	—				
4 PSSS total score	0.717**	0.689**	0.697**	0.704**	0.618**	0.676**	0.581**	-0.695**	-0.620**	-0.685**	-0.644**	0.833**	—			
4.1 Family support	0.711**	0.695**	0.682**	0.717**	0.609**	0.675**	0.536**	-0.614**	-0.556**	-0.592**	-0.584**	0.825**	0.930**	—		
4.2 Friend support	0.674**	0.631**	0.661**	0.669**	0.578**	0.628**	0.553**	-0.670**	-0.591**	-0.669**	-0.611**	0.775**	0.960**	0.839**	—	
4.3 Other support	0.641**	0.620**	0.627**	0.603**	0.561**	0.609**	0.556**	-0.686**	-0.610**	-0.681**	-0.628**	0.754**	0.940**	0.786**	0.881**	—

** $p < 0.01$. —: $r = 1$.

spiritual care needs, and finally to achieve the purpose of improving life quality and prognosis.

The study also showed that the perceived social support was a positive predictor of spiritual care needs, and they were positively correlated which means that the higher perceived social support is, the higher spiritual care needs are. Perceived social support is one of the potential resources for patients facing disease stress, which not only provides buffer and protection for themselves, but also helps them maintain a good emotional experience. Good perceived social support can help patients correctly understand diseases, actively diagnose and receive treatment (Shen and Yang, 2020). The reason may be as follows: On the one hand, the more perceived social support patients perceive, the more negative emotions they can vent to their families, friends, and medical staff. In the process, they feel the spiritual support and power given by families and friends to actively adapt to various negative effects brought by diseases, and their self-confidence is enhanced, so their spiritual care needs are higher, which was similar to previous studies on cancer patients (Cheng et al., 2018; Xue et al., 2019; Sastra et al., 2021). On the other hand, if the spiritual care needs are not met, they are prone to negative emotions such as anxiety and depression and are unwilling to open their hearts to communicate with others about their own feelings and thoughts. As a result, families, friends, and medical staff are unable to give appropriate social support, and the support utilization is low, which will cause a more serious impact and increase disease burden. It is suggested that in the management among elderly patients with moderate-to-severe CHF in the future, medical institutions, families, and other social components should strengthen the degree of support for patients and listen to patients' needs patiently. Family is an important place for patients to relieve psychological pressure and reduce negative emotions. When the main caregiver is the closest families, which will help patients get more social support, relieve various pressures, and adjust bad emotions (Okello et al., 2018; Magasi et al., 2019). And some patients should be encouraged to participate in social medical insurance reasonably, and keep close contact with various social relationships, actively seek social support, and make proper use of relevant social resources so as to improve confidence in disease treatment, reduce psychological and spiritual burdens, improve awareness of the meaning and value of life, and meet their spiritual care needs to the greatest extent.

Strengths and limitations

There were some limitations to this study. First, the study was conducted using a convenience sampling method, which might affect the generalizability of the findings. Additionally, the SpNQ is Chinese version, due to the complexity and individuality of the concept of "spirituality and spiritual care," there may be some deviations of results. Third, the data were only collected from seven hospitals in Tianjin, China, which may lead to the generalizability of the findings might be affected and may not represent the total spiritual care needs among elderly patients with moderate-to-severe CHF across all secular and religious groups. More rigorous design should be used, and that is suggested to include more CHF patients from different regions and levels in further research.

Conclusions

To sum up, the spiritual care needs of 474 elderly patients with moderate-to-severe CHF in this study were moderate, which

were influenced by five factors: religious belief, educational background, self-perceived burden, symptom management self-efficacy, and perceived social support. And patients with religious belief, higher educational background, symptom management self-efficacy, perceived social support, and lower self-perceived burden have higher spiritual care needs. It is suggested that clinical nurses, caregivers, families, and society should improve patients' symptom management self-efficacy and perceived social support from multiple aspects, and reduce self-perceived burden, so as to meet their spiritual care needs to the greatest extent and improve the quality and satisfaction of spiritual care in nursing practice.

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Author contributions.

ZhangYi Wang contributed to the work design, data collection, analysis, data interpretation, writing and critical review of the article, and final approval of the version to be published. Zhao Wang contributed to the work design, analysis, data interpretation, writing and critical review of the article, and final approval of the version to be published. Yue Wang contributed to the data collection, analysis of the work, data interpretation, writing of the article, and final approval of the version to be published. LuWei Xiao contributed to the analysis of the work, data interpretation, writing of the article, and final approval of the version to be published. Haomei Zhao contributed to the analysis of the work, data interpretation, and final approval of the version to be published. XueChun Li contributed to the analysis of the work and data interpretation. SiAi Zhang contributed to the analysis of the work and data interpretation. XiaoLi Pang contributed to the data interpretation, writing and critical review of the article, and final approval of the version to be published.

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