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Content Validity of Defining Characteristics of the Nursing Diagnosis of "Spiritual Distress"

Fateme Eshghi¹, Azam Shirinabadi Farahani^{2*}, Armin Zareiyan³

Abstract

Background: Spiritual distress negatively affects well-being, and its effects are much stronger and more permanent than the positive aspects of spirituality. Since spiritual distress has destructive effects, the introduction and validation of defining characteristics, which are most likely expressive of spiritual distress in the client, can be applied in the daily use of this nursing diagnosis for the quick identification of individuals with spiritual distress, designing targeted and culture-based nursing care, and cost reduction.

Aim: The present study was performed with aim to assess the content validity of the defining characteristics of nursing diagnosis of "spiritual distress".

Method: This methodological study was performed based on the six steps of Fehring's diagnostic content validity model. A total of 40 nursing experts participated in the study to validate 74 defining characteristics. Descriptive statistics and Fehring's diagnostic content validity model were used for data analysis.

Results: Contents validity of 74 defining characteristics was assessed. Six defining characteristics were identified as primary that four were introduced by North American Nursing Diagnosis Association (NANDA), four were considered as irrelevant and 64 were identified as secondary that 29 were introduced by NANDA. The total score of diagnostic content validity was 0.68.

Implications for Practice: Validation and identification of defining characteristics as representative of nursing diagnosis of spiritual distress can be effectively applied to help quick and correct identification and provide targeted and optimal nursing care.

Keywords: Distress, Nursing diagnosis, Spirituality, Validation studies

^{1.} Ph.D. Student in Nursing, Student Research Committee, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

^{2.} PhD in Nursing, Assistant Professor, Department of Pediatric Nursing, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

^{3.} PhD in Nursing, Associate Professor, Public Health Department. Health in Disaster & Emergencies Dept. Nursing Faculty. Aja University of Medical Sciences. Tehran. Iran

^{*} Corresponding author, Email: farahani1381@yahoo.com

Introduction

Spiritual distress (00066) has been distributed by the North American Nursing Diagnosis Association (NANDA) in Taxonomy I of Nursing Diagnoses in 1978. Then, in 2002-2004, 2015-2017, and 2018-2020, it was revised in the versions of NANDA-I classifications. The NANDA-I in 2015-2017 allocated spiritual distress to the 10th domain of the classification, named life principles, in the class of Value/belief/action congruence (1, 2). In the last version (2018-2020), spiritual distress was defined as a "state of suffering related to the inability to experience meaning in life through connections with self, others, world, or a superior being" (1). Nursing diagnoses are critical components to design and implement a nursing care plan (3). Nursing diagnoses guarantee that nurses use professional language to determine the standards. Nursing diagnoses are considered as the main part of planning nursing care and selecting nursing interventions in order to achieve outcomes that are the responsibility of nurses (2, 3). The components of nursing diagnosis, which is defining characteristics(DCs) of each diagnosis, the risk factors and their related factors need to be repeatedly redefined in different populations to improve the reliability and validation of the use of nursing diagnoses (4). NANDA-I describes people's responses to identified health problems as DCs of nursing diagnoses (5, 6). The DCs refer to a template to facilitate the description of signs and symptoms of a response toward a health problem, which help nurses in correct and quick diagnosis and provide targeted and specific nursing care for each health problem (5, 6). NANDA emphasizes that studies on nursing diagnoses and their validation should be expanded in order to improve nursing care (4, 7). Therefore, a valid nursing diagnosis is based on evidence and can withstand the criticism of professional nurses (8). The validation of nursing diagnoses is a distinctive method in nursing research that its results lead to the formation of the necessary technical and scientific knowledge for understanding the responses of patients to specific phenomena. It can be properly used in clinical practice and can be associated with important consequences for nursing education and research (9). In 1987, Fehring published an article on validation methods of nursing diagnoses. This methodology consisted of two approaches: diagnostic content validity (DCV) and clinical diagnostic validity (CDV) (8). In Fehring's method, scoring is based on tentative major and tentative minor criteria (8). In the recent edition of NANDA, the DCs are no longer divided into major and minor ones. When a NANDA nursing diagnosis has more than seven defining criteria, Fehring's method (1987) is recommended to be used for the validation of nursing diagnoses (10). Accordingly, some researchers have used the diagnostic content validity (DCV) (11) and some others the clinical diagnostic validity (12-14) introduced by Fehring to validate the DCs of spiritual distress nursing diagnosis. Chaves et al. applied the Fehring's DCV model and identified seven major DCs for the nursing diagnosis of spiritual distress. These DCs include: disorders in the system of beliefs or relationship with God, express anger toward God, express lack of meaning/purpose in the life, inability to experience the transcendent, express alienation or isolation, question suffering, and express lack of peace (11). The spiritual distress is the opposite side of spiritual well-being. Researchers have referred to many positive effects of spiritual well-being, including reduced anxiety and depression (15), decreased tension and stress, increased social support and interaction (16), increased abilities to adapt and achieve physical, mental and social aspects of health (17), increased quality of life (18-20) and life satisfaction (21). In contrast, spiritual distress is associated with depression (22), continuous chronic pain, dysfunction (23) and family's inability to manage the conflicts (24). Generally, spiritual distress negatively affects wellbeing, and its effects are much stronger and more permanent than the positive aspects of spirituality (23). Spirituality and spiritual distress are the essential core of human existence and the examples of abstract structures related to provide comprehensive nursing care to patients (3). In contrast to nursing diagnoses which include the physical dimensions, the use of these abstract diagnoses is still not prevalent in providing daily nursing care (3). Since spirituality and related concepts depend on the cultural and religious background of society (25), it is needed to validate this nursing diagnosis in different cultures and religions. Moreover, since spiritual distress has destructive effects, the introduction and validation of DCs, which are most likely expressive of spiritual distress in the client, can be effectively applied in the daily use of this nursing diagnosis for the quick identification of individuals with spiritual distress, designing targeted and culture-based nursing care, and cost reduction. NANDA has also considered the validation of diagnoses as a prioritized issue to achieve improved care and professional development (10). However, these studies are clearly insufficient at the international level (10) and almost no such study was found in the

national level. The first phase of the present study was an integrated review, and according to some authors' suggestion, it should be performed as the first step for validation of nursing diagnosis (8, 26). The mentioned integrated review was conducted with aim to determine all indicators and DCs for spiritual distress reported in various studies and articles. As the second phase of a larger validation project, this study aimed to validate the content of nursing diagnosis of spiritual distress using the method proposed by Fehring.

Methods

This methodological study was conducted from October 2020 to September 2021 to validate nursing diagnoses by using the diagnostic content validity model proposed by Fehring (8). This model obtains the opinions of nursing professionals regarding to their evaluation of the extent to which a DC represents a nursing diagnosis. According to Fehring, before this process, a literature review is conducted to provide the theoretical background of nursing diagnoses and their DCs, as well as the possibility of adding other DCs to the list provided by NANDA. As the initial step of this validation study, 74 DCs from the results of a previous integrated review of the literature related to spiritual distress using a method proposed by Broom (27) were included. To perform this integrated review, databases of PubMed, ProQuest, Web of Science, Embase, Scopus, and Cochran Library, and Persian scientific databases were searched between January 2010 and December 2020. Search terms included the following key words/MESH terms and their synonyms: spirituality, spiritual distress and nursing diagnosis. Terms were searched alone and combined with Boolean Operators (and/or). From 283 empirical and theoretical literature identified, 21 articles were included in the review (28). From these 74 DCs, The 33 DCs have been described by NANDA for the nursing diagnosis of spiritual distress (1) (Figure1).

The study participants consisted of 40 experts in the fields of spirituality and nursing diagnosis from Tehran, Iran, Shahid Beheshti, Shiraz, Alborz, Yasuj, Hamedan, Esfahan, Bandar Abbas, Zahedan, Kerman, and Bam universities of medical sciences. Purposive sampling method was performed based on the knowledge of research members or by internet search based on scientific publications, or clinical experience of specialists in the field of spiritual health, spirituality and nursing diagnosis. Accordingly, eligible subjects based on expertise criteria were selected by searching in scientific databases such as the Research Expert center in National Research Information System, the websites of nursing and midwifery schools in the country, and reviewing the resumes of different professors. Some subjects were selected based on their introduction by the research team and with their assurance of their eligibility.

The inclusion criteria for selection of nursing experts were adapted from Fehring's proposed model (8), which include a master or PhD degree in nursing, a master thesis or PhD dissertation in the field of spirituality, spiritual distress and nursing diagnosis, writing and publishing a research project and articles in spirituality, spiritual distress and nursing diagnosis, at least one year of work experience and current clinical experience in spirituality, spiritual distress and nursing diagnosis.

Data collection tools & method

Data collection tool consisted of a two-part electronic form, the first part of which was related to the demographic information of the specialists and the second part was a checklist with 74 DCs (33 DCs were introduced by NANDA and 41 based on the integrated review study). This checklist was designed according to the results of the previous stage (integrated review study) of this validation project, and its content and face validities were confirmed. Five of the six steps of Fehring's diagnostic content validation model were completed. In the first step, the experts rated each DCs in 5-point Likert scale ranging from "very characteristic=5" to "not at all characteristic or indicative of the diagnoses =1". The second step was optional, using the Delphi technique, which was not performed in this study. The repeated rounds required by this technique could lead to the loss of study participants (Figure 1).

The designed checklist, the demographic questionnaire, and the informed consent form were provided to the eligible subjects by e-mail. Also, the study process was explained. The experts sent their answers to the researcher via email. In response to the researcher, 10 subjects believed that they did not have the necessary expertise to provide the related information, thus, were removed in the reminder emails and excluded from the study.

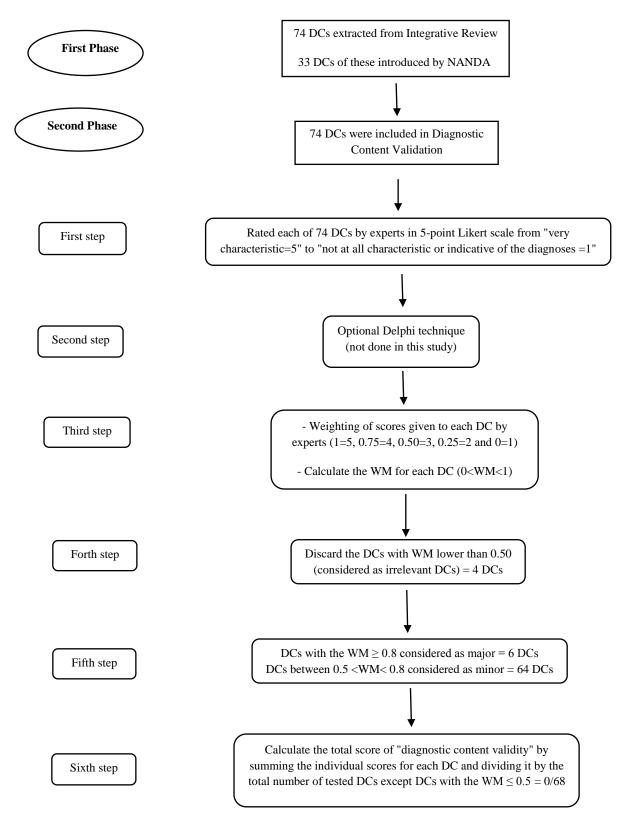


Figure 1. flowchart of study phases and Fehring's method steps in this study

Data analysis

Data were analyzed by SPSS software (version 23). Descriptive statistics such as mean, mode, minimum and maximum score, frequency and frequency percentage were used to describe and analyze the data. According to the third step of Fehring's method, the scores given by the experts to each of the DCs were weighted as follows (1=5, 0.75=4, 0.50=3, 0.25=2 and 0=1). The weighted

mean (WM) was calculated and the content validity score of each characteristic was obtained. This score should range from zero to one. In the fourth step, the DCs with weighted mean lower than 0.50 and these DCs were considered as irrelevant and were discarded. In the fifth step, DCs with the WM \geq 0.8 were considered as major or primary and those with WM 0.5-0.8 as minor or secondary. In the final step, the total score of "diagnostic content validity" was calculated by summing the individual scores for each DC and dividing it by the total number of tested DCs. The DCs with a score of \leq 0.5 were not included in the total score (Figure 1) (8). Only the diagnoses with a total score of >0.6 were considered valid (11).

As a part of doctoral dissertation, this study has been approved by the ethics committee of Shahid Beheshti University of Medical Sciences. The objectives of the research were explained to the participants and they were assured of the confidentiality of their information. Moreover, they signed the consent form without any force, threat or seduction.

Results

Finally, 40 participants, mostly female (77.5%) with mean age of 43.45±7.72 years participated in the present study. Demographic variables of the research units were described in Table 1. The results related to the DCs for the nursing diagnosis of spiritual distress were summarized in Table 2.

Table 1. Demographic variables of the participants

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Variable	ble N(%) Variable		N(%)			
Experience in ND or S	5	Workplace				
1-10 years	34(85.00)	Hospital	15(37.5)			
10-20 years	6(15.00)	University	25(62.5)			
Education level		Academic rank				
Master	14(35.00)	Instructor	23(57.5)			
PhD	24(60.00)	Assistant professor	7(17.5)			
Postdoctoral	1(2.50)	Associate professor	8(20.00)			
Super specialist	1(2.50)	Full professor	2(5.00)			

According to first and third steps of Fehring's method (Figure 1), each of the 74 DCs was rated by expert and was weighted and its mean was calculated. Based on fourth step, the DCs of "pain" (0.45), "dissatisfaction with others" (0.45), "disobedience to others" (0.43), and "not forgiving others" (0.46), with a WM of <0.50 were proposed as irrelevant criteria in the nursing diagnosis of spiritual distress and were discarded. These DCS were excluded from the integrated review study as initial step. Based on fifth step, the DC such as "lack of meaning in the life" (0.85), "question meaning of life" (0.84), "perceived insufficient meaning in life" (0.84), "feeling abandoned by God" (0.84), "anger toward God/power greater than self" (0.83) and "lack of purpose in life" (0.81) with a WM of >0.80 were considered as primary defining characteristics which had the highest weight and relevance to the nursing diagnosis of spiritual distress that were representative of this diagnosis. Four of these DCS including "question meaning of life", "perceived insufficient meaning in life", "feeling abandoned by God" and "anger toward God/power greater than self" were introduced by NANDA. The rest of the DCs, with the WM of 0.50 to 0.80, were considered as secondary criteria. Twenty nine of these DCS

Table 2. Defining Characteristics of the nursing diagnosis of spiritual distress according to the scores obtained in the content validation

classification	defining characteristics of spiritual distress	weighted mean	Standard Deviation	maximum	minimum	Mode	
major	Expresses lack of meaning in life * (11),(14),(30),(13),(29),(36),(35),(37)	0.85	0.18	1	0.50	1	
	Questioning meaning of life ** (30),(38),(12),(13),(39),(46),(47)	0.84	0.23	1	0.25	1	
	Perceived insufficient meaning in life **	0.84	0.20	1	0.25	1	
	Expresses feeling abandoned by God ** (11),(14),(30),(29),(39),(35)	0.84	0.22	1	0.25	1	
	Expresses anger toward God/power greater than self ** (11),(14),(30),(29), (36), (35)	0.83	0.23	1	0.25	1	
	Expresses lack of purpose in life * (11),(14),(29),(3),(35),(37)	0.81	0.24	1	0	1	

	Expresses Hopelessness in relation with God/power greater than self ** (38) Questioning meaning of illness and suffering** (11),(14),(30),(13),(39),(40),(35) Expresses emptiness * (30),(41),(39) Anxiety ** (30),(12),(13),(41),(42) Expresses concern about beliefs and values system and/or	0.79 0.78 0.77	0.25 0.24	1	0.25	1
	(11),(14),(30),(13),(39),(40),(35) Expresses emptiness * (30),(41),(39) Anxiety ** (30),(12),(13),(41),(42) Expresses concern about beliefs and values system and/or		0.24			
	Expresses emptiness * (30),(41),(39) Anxiety ** (30),(12),(13),(41),(42) Expresses concern about beliefs and values system and/or	0.77		1	0	1
	Expresses concern about beliefs and values system and/or	0.76	0.23 0.23	1 1	0.25 0	1 0.75
		0.76	0.23	1	0.25	1
	God * (14),(30),(38),(3),(45),(46),(47),(35) Express lac k of peace **					
	(11),(14),(30),(43),(38),(12),(13),(44),(48),(35)	0.75	0.20 0.23	1	0.25	0.75 0.75
	Expresses guilt ** (11),(14),(30),(42),(35) Inability to pray ** (3)	0.75 0.74	0.23	1 1	0.25	1
	Express lack of hope * (11),(14),(30),(38),(13),(29),(42),(3),(48),(35),(37)	0.74	0.25	1	0	0.75
	Inability for introspection in relation with God/power greater than self ** (3)	0.73	0.28	1	0	1
	Expresses inability to experience transcendence ** (14),(30),(46),(47), (48),(35)	0.73	0.24	1	0.25	1
	Inability to participate in religious activities ** (3),(45),(40),(48)	0.73	0.26	1	0	1
	Request for a spiritual leader ** (39)	0.73	0.25	1	0	1
	Requests spiritual support and care * (11),(14),(30),(44),(35)	0.73	0.26	1	0	1
	Expresses worthless * (30),(42) Perceived suffering in relation with God/power greater	0.73	0.20	1	0.25	0.75
	than self ** (40)	0.72	0.21	1	0.25	0.75
	Sudden changes in spiritual practices ** (38),(3) Expresses feeling being lost * (37)	0.72 0.72	0.24 0.23	1 1	0.25 0	0.75 0.75
	Expresses suffering* (12),(13),(42),(3),(48)	0.72	0.22	1	0.25	0.75
	Feeling frustration * (41)	0.71	0.22	1	0.25	0.75
	Questioning identity ** (30), (12),(13),(42),(46),(47)	0.70	0.27	1	0	0.75
	Refuses to interact with spiritual leader ** (3)	0.70	0.27	1	0	0.75
minor	Expresses lack of self-forgiveness * (29),(42),(3),(40)	0.69	0.23	1	0	0.75
	Expresses disinterest in reading spiritual literature ** (3),(39)	0.69	0.26	1	0	0.50
	Feeling giving up * (37) Expresses behavioral alteration: anger **	0.68	0.22	1	0.25	0.75
	(11),(14),(30),(29),(41),(42),(39),(40),(35)	0.68	0.25	1	0	0.75
	Express feeling of grief * (14),(30),(44),(36)	0.68	0.24	1	0	0.75
	Expresses uncertainty of the future * (29),(11)	0.68	0.23	1	0.25	0.75
	Express feeling of discontented * (48)	0.68	0.24	1	0.25	0.50
	Expresses Giving up the life * (48) Refuses to interact with significant other **	0.68	0.26	1	0	0.75
	(11),(14),(30),(13),(42),(35)	0.67	0.27	1	0	0.75
	Requests to talk to a religious leader * (29) Expresses loneliness * (30),(12),(13),(41),(42),(48)	0.67 0.66	0.27 0.24	1 1	0 0.25	0.50 0.75
	Expresses Separation from support system ** (42),(29),(42),(3),(48),(37)	0.66	0.26	1	0.25	0.50
	Expresses concern about the future * (30)	0.66	0.26	1	0	0.75
	Cry ** (11),(14),(30),(12),(13),(42),(35)	0.65	0.28	1	0	0.50
	Expresses Inadequate acceptance of what happen ** (38),(44),(3)	0.65	0.27	1	0	0.50
	Ineffective coping strategies ** (3)	0.65	0.23	1	0.25	0.75
	Expresses alienation ** (11),(14),(39),(36),(42),(35)	0.65	0.26	1	0.25	0.75
	Express feeling of temporality * (14)	0.65	0.21	1	0.25	0.75
	Expresses lack of confidence * (30),(38)	0.65	0.26	1	0	0.50
	Expresses regret and the need for forgiveness * (30),(39),(36)	0.65	0.25	1	0	0.50
	Express feeling of sorrow * (39) Expresses lack of control * (30)	0.65 0.64	0.23 0.25	1 1	0.25 0	0.50 0.75
	Fear ** (30),(12),(13),(29),(41),(42),(48)	0.64	0.25	1	0	0.75
	Express Lack of dignity * (42),(37)	0.63	0.27	1	0	0.75
	Feeling self unloved **	0.63	0.26	1	0	0.75
	Express fatalism* (42),(40),(48)	0.63	0.25	1	0.25	0.73
	Expresses fatigue ** (30),(13)	0.62	0.25	1	0.23	0.75
	Expresses lack of courage ** (11),(14),(30),(35)	0.62	0.24	1	0	0.75

	Table 2	. Continued	<u> </u>			
	Expresses lack of interest in nature ** (14),(30)	0.62	0.28	1	0	0.75
	Expresses lack of love * (11),(14),(30),(35)	0.61	0.27	1	0	0.75
	Insomnia ** (30),(12),(13),(42)	0.60	0.29	1	0	0.75
	Express feeling of regret $*(11)$,(36), (48) ,(35)	0.58	0.27	1	0	0.50
	Questions dignity * (30)	0.58	0.24	1	0	0.50
	Express feeling of denial* (48)	0.58	0.26	1	0	0.50
	Express feeling of shock * (48)	0.58	0.28	1	0	0.50
	Express feeling of pessimistic * (48)	0.58	0.26	1	0	0.75
	Expresses lack of creativity (singing, listening to music, writing) ** (30)	0.56	0.28	1	0	0.50
	Expresses concern about family * (30),(12),(13),(42),(40)	0.56	0.27	1	0	0.75
	Impaired role performance* (42)	0.56	0.26	1	0	0.50
	Hurt * (41)	0.53	0.29	1	0	0.50
	Inability to express creativity * (11),(14),(12),(13),(35)	0.52	0.27	1	0	0.50
	Expresses Lack of autonomy * (42),(37)	0.52	0.27	1	0	0.50
irrelevant	Expresses not forgiving others * (48)	0.46	0.26	1	0	0.50
	Pain * (41)	0.45	0.25	1	0	0.5
	Expresses dissatisfaction with others * (48)	0.45	0.23	1	0	0.25
	Expresses disobedience to others * (48)	0.43	0.25	1	0	0.25

^{*} Defining characteristics of the nursing diagnosis of Spiritual Distress extracted from Integrative Review

were introduced by NANDA (Table 2). According to final step, the total score of diagnostic content validity was equal to 0.68.

Discussion

The aim of this study was content validation of DCs of nursing diagnosis of spiritual distress.

According to the findings of the present study, the DC of "lack of meaning in life" had the highest weighted mean. In the previous studies, this DC was reported as the main DC (29, 30) and the third most important criterion of nursing diagnosis of spiritual distress (11). This result is in line with the definition of spiritual distress nursing diagnosis provided by NANDA (1). On the contrary, another study found this criterion as one of the minor DC for the nursing diagnosis of spiritual distress; this contradiction can be due to the difference in methodology and research samples (13). "Question meaning of life" was another DC with a high weighted mean in the present study. Also, Caldeira et al. reported this criterion as one of the major DC in spiritual distress (12, 13). The DC of "perceived insufficient meaning in life", with a high weighted mean, was one of the main DC for the nursing diagnosis of spiritual distress in the present study. These DCs have been introduced by the NANDA for this nursing diagnosis and are involved in the subcategory of connections to self (1). Based on the results of the current study, the DCs associated with the meaning of life had the highest weighted mean and thus, is suggested as key DCs. Introducing and categorizing the DCs of nursing diagnosis of spiritual distress, NANDA has placed these DCs in the subcategory of connections to self (1). This result is consistent with the existing definitions of spirituality and the related concepts, including spiritual distress. Spirituality includes a wide range of relationships that instill a sense of meaning or purpose (31, 32). This idea is expressed in spiritual distress as the inability to give meaning to life experiences (1). This introduces spiritual distress as a broad concept which is not necessarily related to any specific religious belief, practice or affiliation (31, 32). In other words, spirituality and spiritual distress are quite subjective and internal concepts (33) and, as one of the dimensions of human existence, they are common to all humans whether they follow a particular religion or not (34). Therefore, despite different religious and cultural structures, the DCs associated with the meaning of life in the spiritual crises of life is common to all human beings as a main criterion.

According to the results of the current study, the next DC which had a high weighted mean was the "feeling abandoned by God". In previous studies, some researchers introduced this criterion as one of the DC of spiritual distress with a high frequency (14, 29); others, however, mentioned it as one of the irrelevant DC to spiritual distress (13). Nonetheless, NANDA, as the reference of nursing diagnoses, has included this DC in the subcategory of connections with a superior power in the nursing diagnosis

^{**} Defining characteristics of the nursing diagnosis of Spiritual Distress introduced by NANDA

of spiritual distress (1). The main reason for this contradiction can be different religious background. Also, different research samples and different methodologies can be effective on this contradiction. Therefore, more studies need to be designed using other methodological methods and different contexts to increase the clinical evidence of nursing diagnosis of spiritual distress,

The DC of "anger toward God/power greater than self" was another criterion which had a high weighted mean in the current study. In previous studies, researchers have described this criterion with high frequency or a main DC for spiritual distress (11, 14, 29, 30, 35, 36). However, in another study (13), this DC was less correlated with the nursing diagnosis of spiritual distress. NANDA, however, has introduced this criterion as the subcategory of connection with a superior power (1). Qualitative studies and meta-analysis are needed to be performed to resolve these contradictions and increase the validity of nursing diagnosis of spiritual distress. According to the results of the present study, "lack of purpose in life" was another DC with a high weighted mean. "Lack of purpose in life" and "lack of meaning in life" have been introduced by previous researchers as the main DC of spiritual distress (29). In other studies, researchers have introduced this DC as one of the criteria with high frequency and significance (3, 11, 14). Among the DCs which had the highest weighted mean according to the experts of the present study, the four DCs of "perceived insufficient meaning in life", "anger toward God/power greater than self ", "Question meaning of life" and "feeling abandoned by God" have been introduced by NANDA as the DC for nursing diagnosis of spiritual distress (1). The source of the other two DCs was the integrated review which was conducted as the initial stage of this study. For more validation of the nursing diagnosis of spiritual distress, these DCs need to be examined in terms of clinical validity in order to precisely determine which of them are experienced by clients and patients in critical conditions. The DCs of "pain", "dissatisfaction with others", "disobedience to others" and "not forgiving others" obtained from the integrated review (initial stage of the study) had a frequency lower than the acceptable level. It is suggested to remove these criteria. Moreover, according to the total validation score in the present study, the nursing diagnosis of spiritual distress is considered to be valid.

One of the limitations of this study was the COV-19 pandemic that led to limited in-person access to them and face-to-face communication. Thus, e-mail was used for sending the study forms and receiving their opinions. Accordingly, collecting their opinions was slow and time-consuming and a low response rate was received.

Implications for practice

Based on the results of the present study, identification of these major DCs as representative of nursing diagnosis of spiritual distress can help quick and correct identification and provision of targeted and optimal nursing care. This will improve the nursing profession and the client's satisfaction from nurses, as well as the self-confidence of nurses. It should be noted that these DCs are tentative and clinical validation and further studies with a large samples should be performed for clinical use.

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Conflicts of interest

The authors declared no conflict of interest.

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