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Review

Spirituality in Nursing: An Overview of Research Methods

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Abstract: Spirituality has been widely considered important for patients' health and for healthcare practice and is related to connectedness, meaning in life, and transcendence. Research concerning spirituality is growing rapidly, and the implementation of spiritual care should be based on evidence. This literature review aims to describe the methods that have been used in nursing research focusing on spirituality. The electronic search on databases through EBSCOhost identified 2091 citations, and a total of 231 studies were included. The methods used in research on spirituality in nursing are mostly quantitative (52.4%), but some are qualitative (42.8%) and mixed (4.8%). Regarding the quantitative research, most studies are observational (90.9%), and these are mainly descriptive (82.7%) and correlational (17.3%). Most studies used a cross-sectional design (98.7%), and few used longitudinal design (1.3%). The qualitative research is descriptive (39.4%), phenomenological (26.3%), and grounded theory (14.1%). Research on spirituality in nursing is based on both main paradigms (quantitative and qualitative), but also on mixed methods. Studies have mainly been conducted using cross-sectional designs when compared to longitudinal designs. The latter seem to constitute a gap in nursing knowledge and evidence regarding the changes of spirituality over time, which is particularly important for nurses' delivery of spiritual care.

Keywords: nursing; research methods; review; spirituality

1. Introduction

Spirituality is often defined as a fundamental dimension in people's lives (Lepherd 2015), or an integral and universal dimension of the human condition (Woll et al. 2008). Spirituality is based on several foundations from various religious traditions, spiritual movements, belief systems, cultures, and contexts (Swinton and Pattison 2010). The way spirituality is lived and felt depends on each individual, since it is an individual experience, even when beliefs and traditions are shared (Lepherd 2015). Many authors have defined the concept of spirituality in different ways, so a consensus has been difficult to achieve, as the concept may have several meanings (Evangelista et al. 2016). Still, the main attribute and characteristic of the concept is the need to find purpose and meaning in life (Narayanasamy 2004). Spirituality is also understood as awareness of transcendence, and connection with self, others, or beyond the self with something greater (Rothman 2009). When looking at the different definitions of the concept, the common attributes are connectedness, meaning in life, and transcendence (Weathers et al. 2016).

Spirituality plays an important role in health, particularly in times of crisis or severe illness, as it is foundational and links the bio-psycho-social dimensions as an integrated whole (Fisher 2016). Spirituality has been described as critical for patients' health and for healthcare practice (Timmins and Caldeira 2017a), and the benefits of spiritual experiences and beliefs on health have been highlighted (Balboni et al. 2011). For example, spirituality plays a critical role in terminally ill patients against

end-of-life despair (McClain et al. 2003). Spirituality is a positive dimension of the human being and care and might help patients reframe their experiences and condition of illness as well as find meaning in life and in that circumstance (Puchalski 2012).

Several barriers to spiritual care have been identified, such as the lack of education and preparedness, and the reductionist understanding of the concept of spirituality, which has led nurses to perceive their competencies as scarce in providing spiritual care. Nurses require competencies in three domains to provide spiritual care: awareness and use of self, spiritual dimension of the nursing process, and assurance and quality of expertise (Van Leeuwen and Cusveller 2004). These competencies should be adjusted according to the problems, settings, and culture in which nurses are immersed (Van Leeuwen and Cusveller 2004). Additionally, the nurses' personal spirituality plays a critical role in the perceptions of spirituality and competencies in providing spiritual care (Van Leeuwen and Schep-Akkerman 2015). Spiritual care is defined as a subjective and dynamic concept, and is considered a unique aspect of care (Ramezani et al. 2014). It is based on an interdisciplinary approach, in which each professional plays an important role (Puchalski 2006), and nurses are also responsible for providing individualized spiritual care to patients and families (Timmins and Caldeira 2017b). Spiritual care is the nurses' responsibility (Swinton and Pattison 2010; Baldacchino 2006), and spiritual care integrates the daily practice of nursing (Timmins and McSherry 2012).

Nursing care is expected to be holistic, so the spiritual dimension should be taken into consideration (Ramezani et al. 2014). In the last couple of decades, the new concept of "spiritual well-being" has emerged, which seeks to bring together the concepts of spirituality and wellness (Gommez and Fisher 2003). This new concept of spiritual well-being is characterized by having a multidimensional background (Gouveia et al. 2009) and is often considered an indicator of the patients' quality of life and spiritual health status (Fehring et al. 1997). Furthermore, spiritual distress is a nursing diagnosis that has been listed in NANDA International (NANDA-I) since 1978 (Herdman and Kamitsuru [1994] 2014), and is defined as "a state of suffering associated with the meaning of his/her life, related to a connection to self, others, world, or a Superior" (Caldeira et al. 2013, p. 83).

The growing interest in spirituality in nursing, in the understanding of the related concepts, and in exploring spiritual care strategies and procedures has been identified in the scientific literature in this domain in the last three decades (Clarke 2009; Ross 2006). The implementation of spiritual care should be evidence-based, so an overview of research methods seems important in order to raise awareness of what has been done so far and which methods can be used in the future, which will be described in this review. These results may also provide a helpful mapping of common aspects of spirituality that have been most frequently addressed as well as the existing gaps in nursing literature that need further development and research. This study aims to characterize the research methods concerning spirituality in nursing.

2. Materials and Methods

The literature review based on electronic searches in March 2017 in the EBSCOhost platform, included the following databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Psychological Information Database (PsycINFO), Medical Literature Analysis and Retrieval System Online (MEDLINE), and Medical Journals in Spanish (MedicLatina). Electronic searches were also conducted in the following databases: Cumulative Index to Nursing and Allied Health Literature (LILACS) and the Scientific Electronic Library Online (SciELO). The search terms were "spiritual care," "spirituality" and "nursing," using the search strategy: ("spiritual care" OR "spirituality") AND "nursing," in the abstracts (ABSs) (Table 1).

Table 1. Number of citations on the databases search.

Search	CINAHL	PsycINFO	MEDLINE	MedicLatina	LILACS	SciELO
S#1: nursing	113,664	45,079	133,192	1077	9380	9702
S#2: spirituality	3364	12,111	4218	40	320	602
S#3: Spiritual care	739	1090	904	4	216	239
S#4: S2 OR S3	3771	12817	4733	43	501	795
S#5: S1 AND S#4	852	508	696	9	10	16

The inclusion criteria previously defined were as follows: search terms in the abstract; primary studies on spirituality in nursing, and articles written in English, French, Spanish, and Portuguese. Two independent reviewers conducted the process of selection and analysis of the articles. The results were imported to EndNote Web®. The initial search found 2091 results of which 749 duplicates were removed. All 1342 titles were read and analyzed according to the inclusion criteria, and 596 articles were selected at this stage. The abstracts were read and, at the end, 231 papers reporting primary studies were included (Figure 1). The critical appraisal of the studies was not performed, since the review aims to identify the research methods and procedures regardless of the quality of the research. Data were extracted to an Excel file comprising the following information: year, country, authors, article title, journal, thematic area, research paradigm, research methods, and data collection methods and procedures.

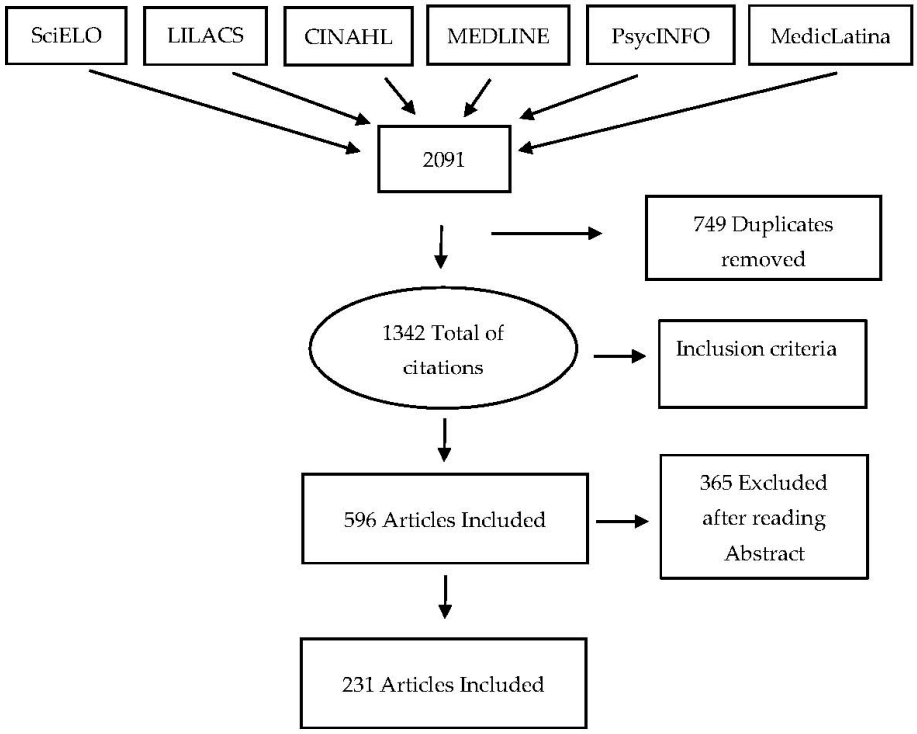

Figure 1. Study selection process.

3. Results

All 231 studies were published in 102 different international journals. The nursing journals having more publications were: *Journal of Clinical Nursing* (*n* = 22), *Oncology Nursing Forum* (*n* = 18), *Journal of Advanced Nursing* (*n* = 14), *Journal of Holistic Nursing* (14), *Nurse Education Today* (*n* = 10), *Holistic Nursing Practice* (*n* = 6), and *Journal of Nursing Research* (*n* = 5). Spirituality in nursing is an international research subject, as 34 countries have been identified in the included studies. The USA leads (*n* = 85),

followed by Taiwan (*n*= 20); Brazil (*n* = 15), Iran (*n* = 13), UK (*n* = 10), Norway and Australia (*n* = 8), Singapore (*n* = 7), and Colombia, Netherlands, Jordan, and Sweden (*n* = 5) (Figure 2).

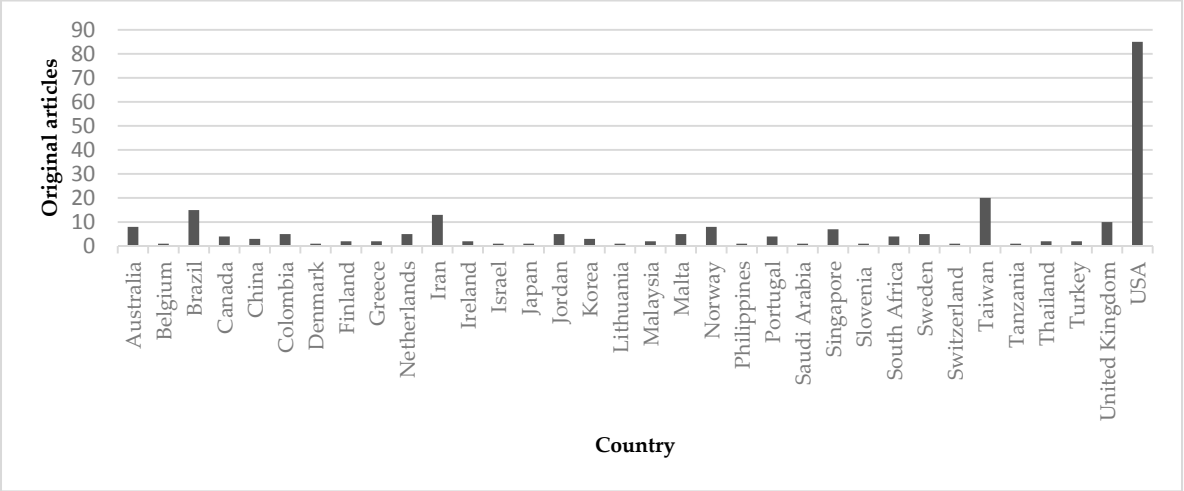

Figure 2. Distribution of results by country of research.

The first paper included in this review was published in 1986, from the USA, and it concerns spiritual care as a nursing responsibility towards patients' spiritual needs. Until 2000, few studies had been published, but from that year onwards, an increase in scientific production is clear. The years 2012 and 2016 had the highest number of published studies, with a total of 23 and 25 original studies each. When comparing the years 2010 and 2016, within a timeframe of six years, the number of studies has duplicated (Figure 3).

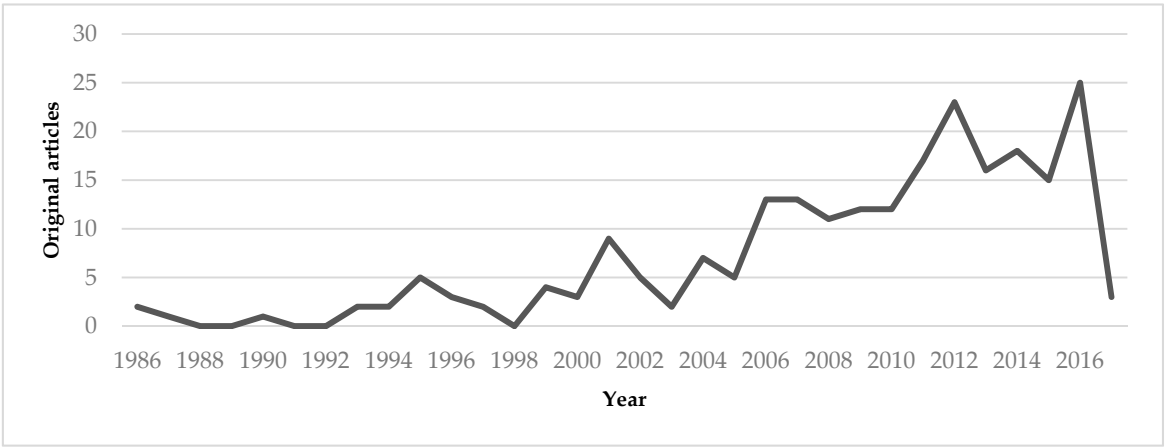

Figure 3. Distribution of results by year of publication.

The studies have been organized in six categories after independent analysis and discussion, according to the research topics on spirituality: education, management, assessment tools, oncology and palliative care, nursing diagnosis validation, and spiritual care. The topic most often addressed was spiritual care (*n* = 118), followed by education (*n* = 52), oncology and palliative care (*n* = 35), assessment tools (*n* = 18), nursing diagnosis validation (*n* = 5), and management (*n* = 3) (Table 2).

Table 2. Categories of the results in this review.

Categories	Studies
Education	Cooper and Chang (2016); Dietmann (2016); Riklikiene (2016); Strand et al. (2016); Williams et al. (2016); Wu et al. (2016b); Chandramohan and Bhagwan (2015); Coscrato and Villela Bueno (2015); Frounzandeh et al. (2015); Linda et al. (2015); Abbasi et al. (2014); Attard et al. (2014); Lopez et al. (2014); Papazisis et al. (2014); Ross et al. (2014); Yilmaz and Gurler (2014); Cone and Giske (2013); Espinha et al. (2013); Silva et al. (2013); Tiew et al. (2013); Burkhart and Schmidt (2012); Costello et al. (2012); Giske and Cone (2012); Hsiao et al. (2012a); Sousan et al. (2012); Tiew and Drury (2012); Wu et al. (2012); Chung and Eun (2011); Nardi and Rooda (2011); Pillon et al. (2011); So and Shin (2011); Tomasso et al. (2011); Baldacchino (2010); Hsiao et al. (2010); Shores (2010); Wehmer et al. (2010); Campesino et al. (2009); Chism and Magnan (2009); Souza et al. (2009); Taylor et al. (2009); McSherry et al. (2008); Van Leeuwen et al. (2008); Lovanio and Wallace (2007); Mooney and Timmins (2007); Rankin and Delashmutt (2006); Cavendish et al. (2004); Milligan (2004); Lemmer (2002); Pesut (2002); Boutell and Bozett (1990); Fehring et al. (1987); Carson et al. (1986).
Management	Ross and Austin (2015); Kazemipour et al. (2012); Caldeira et al. (2011).
Assessment tools	Çoban et al. (2017); Hernández et al. (2017); Cruz et al. (2016); Musa and Pevalin (2016); Wu et al. (2016a); Martins (2015); Vermandere et al. (2015); Chiang et al. (2014); Freitas et al. (2013); Hsiao et al. (2013); Iranmanesh et al. (2012); Tiew and Creedy (2012); Pennapa Unsani et al. (2012); Tiew and Creedy (2012); Burkhart et al. (2011); Kreitzer et al. (2009); Van Leeuwen et al. (2009); Yoshioka et al. (2009); Delaney (2005).
Oncology and palliative care	Nazi et al. (2016); Rassouli et al. (2015); Tornøe et al. (2014); Wang and Hsu (2014); Gaston-Johansson et al. (2013); Khorami Markani et al. (2013); Newberry et al. (2013); Van Leeuwen et al. (2013); Au et al. (2012); Blanchard et al. (2012); Chien (2010); Murray (2010); Shih et al. (2009); Tanyi and Werner (2008); Wimmer et al. (2008); Hermann (2007); Zajec and Šolar (2007); Lundmark (2006); Meraviglia (2006); Nolan et al. (2006); Taylor (2006); Bauer-Wu and Farran (2006); Meraviglia (2004); Musgrave and McFarlane (2004a); Musgrave and McFarlane (2004b); Ferrell et al. (2003); Taylor (2003); Narayanasamy (2002); Halstead and Hull (2001); Hermann (2001); Highfield et al. (2000); Thomas and Retsas (1999); Post-White et al. (1996); Taylor et al. (1995); Taylor et al. (1994).
Nursing diagnosis validation	Caldeira et al. (2016); Caldeira et al. (2014); Chaves et al. (2010a); Chaves et al. (2010b); Pehler (1997).
Spiritual care	Ormsby et al. (2017); Chew et al. (2016); Chew et al. (2016); Cone and Giske (2016); Davoodvand et al. (2016); Haugan et al. (2016); Jun and Lee (2016); Labrague et al. (2016); Melhem et al. (2016); Minton et al. (2016); Musa et al. (2016); Musa(2016); Noome et al. (2016); Ramezani et al. (2016); Sanders et al. (2016); Wittenberg et al. (2016); Azarsa et al. (2015); Chan (2015); Giske and Cone (2015); Torskenæs et al. (2015); Wu et al. (2015); Zakaria Kiaei et al. (2015); Ødbehr et al. (2015); Baldacchino et al. (2014); Cilliers and Terblanche (2014); Jahani et al. (2014); Mesquita et al. (2014); Pfeiffer et al. (2014); Pilger et al. (2014); Taylor et al. (2014); Velásquez and Gómez (2014); Kaur et al. (2013); Ruder (2013); Rykkje et al. (2013); Taylor (2013); Tokpah and Middleton (2013); Torskenæs and Kalfoss (2013); Deal and Grassley (2012); Fouka et al. (2012); Hsiao et al. (2012b); Lin et al. (2012); Moraes Penha and Paes da Silva (2012); Palencia and Durán de Villalobos (2012); Ponte et al. (2012); Leguía and Priet (2012); Van Dover and Pfeiffer (2012); Yang et al. (2012); Carron and Cumbie (2011); Chaves et al. (2011); Dhamani et al. (2011); Kim et al. (2011); Liu et al. (2011); McSherry Jamieson (2011); Nabolsi and Carson (2011); Vlasblom et al. (2011); Walulu and Gill (2011); Wu and Lin (2011); Chan (2010); Lundberg and Kerdonfag (2010); Mahmoodishan et al. (2010); Pedrão and Beresin (2010); Bailey et al. (2009); Dunn et al. (2009); Pehler and Craft-Rosenberg (2009); Wu et al. (2009); Baldacchino (2008); Burkhart and Hogan (2008); Carr (2008); Christensen and Turner (2008); McLeod and Wright (2008); Herrera (2008); Wong et al. (2008); Cavendish et al. (2007); Chung et al. (2007); Creel (2007); Hsiao et al. (2007); Koslander and Arvidsson (2007); Litwinczuk and Groh (2007); Van Dover and Pfeiffer (2007); Wallace and O'Shea (2007); Yanga and Maob (2007); Baldacchino (2006); Black et al. (2006); Cavendish et al. (2006); Chan et al. (2006); Hubbell et al. (2006); Mordiffi (2006); McSherry (2006); Ray and McGee (2006); Belcher and Griffiths (2005); Koslander and Arvidsson (2005); Lundmark (2005); Kociszewski(2004); Ormsby and Harrington (2004); Lowry and Conco (2002); Waltson(2002); Carroll (2001); Cavendish et al. (2001); MacKinlay (2001a); MacKinlay (2001b); Narayanasamy and Owens (2001); Sellers (2001); Tuck et al. (2001); Cavendish et al. (2000); Tongprateep (2000); Castellaw et al. (1999); Kohler (1999); Shih et al. (1999); Ross (1997); Hungelmann et al. (1996); Pullen et al. (1996); Bauer and Barron (1995); Clark and Heidenreich (1995); Harrington (1995); Valopaasi et al. (1995); Burkhardt (1994); Burkhardt (1993); Zerwekh (1993); Soeken and Carson (1986).

When analyzing the methodologies in the studies about spirituality in nursing, the majority are quantitative (52.4%), but some are qualitative (42.8%) and mixed (4.8%). The first studies were mostly based on the qualitative research paradigm, but this trend changed in 2004, when a predominance of quantitative studies started being published (Table 3).

Regarding the quantitative paradigm, most studies are mainly observational (90.9%), followed by quasi-experimental (5.8%) and experimental (3.3%). The first RCT was published in 2011 and it concerns the effect of nurses' training on spirituality and nursing care.

Concerning the observational studies, most are descriptive (82.7%) and less are correlational (17.3%). Regarding the time dimension, the research design is mostly cross-sectional (98.7%) and a scarce percentage is longitudinal (1.3%). The first longitudinal study was conducted by McSherry et al. (2008) over a period of three years, aiming to analyze nursing students' perceptions of spirituality and spiritual care using the Spirituality and Spiritual Care Rating Scale.

Studies based on the qualitative paradigm are mostly descriptive (39.4%), phenomenological (26.3%), and grounded theory (14.1%) (Table 3). In relation to data collection, questionnaires have been preferred (39%), followed by interviews (28%) and assessment tools (7.8%).

Table 3. Research paradigm and methods of results in this review.

Research Paradigm	Methodology	Studies
Quantitative	Observational descriptive	Çoban et al. (2017); Hernández et al. (2017); Caldeira et al. (2016); Cruz et al. (2016); Haugan et al. (2016); Labrague et al. (2016); Melhem et al. (2016); Musa et al. (2016); Riklikiene (2016); Sanders et al. (2016); Williams et al. (2016); Wu et al. (2016a); Wu et al. (2016b); Chan (2015); Chandramohan and Bhagwan (2015); Martins (2015); Wu et al. (2015); Zakaria Kiaei et al. (2015); Abbasi et al. (2014); Attard et al. (2014); Caldeira et al. (2014); Chiang et al. (2014); Jahani et al. (2014); Lopez et al. (2014); Mesquita et al. (2014); Papazisis et al. (2014); Ross et al. (2014); Freitas et al. (2013); Hsiao et al. (2013); Kaur et al. (2013); Newberry et al. (2013); Ruder (2013); Silva et al. (2013); Tiew et al. (2013); Blanchard et al. (2012); Iranmanesh et al. (2012); Leguía and Priet (2012); Tiew and Creedy (2012); Pennapa Unsani et al. (2012); Wu et al. (2012); Burkhart et al. (2011); Caldeira et al. (2011); Chaves et al. (2011); McSherry and Jamieson (2011); Nardi and Rooda (2011); Pillon et al. (2011); Tomasso et al. (2011); Wu and Lin (2011); Chan (2010); Chaves et al. (2010a); Chaves et al. (2010b); Murray (2010); Pedrão and Beresin (2010); Shores (2010); Campesino et al. (2009); Dunn et al. (2009); Kreitzer et al. (2009); Van Leeuwen et al. (2009); Wu et al. (2009); Yoshioka et al. (2009); Herrera (2008); Wong et al. (2008); Hermann (2007); Hsiao et al. (2007); Litwinczuk and Groh (2007); Zajec and Šolar (2007); Wallace and O'Shea (2007); Chan et al. (2006); Hubbell et al. (2006); Lundmark (2006); Meraviglia (2006); Ray and McGee (2006); Taylor (2006); Bauer-Wu and Farran (2005); Belcher and Griffiths (2005); Delaney (2005); Lundmark (2005); Milligan (2004); Musgrave and McFarlane (2004a); Lemmer (2002); Pesut (2002); Tuck et al. (2001); Highfield et al. (2000); Castellaw et al. (1999); Pehler (1997); Hungelmann et al. (1996); Taylor et al. (1995); Taylor et al. (1994); Boutell and Bozett (1990); Carson et al. (1987); Soeken and Carson (1986).
	Observational correlational	Chew et al. (2016); Jun and Lee (2016); Musa and Pevalin (2016); Musa (2016); Azarsa et al. (2015); Gaston-Johansson et al. (2013); Hsiao et al. (2012); Kazemipour et al. (2012); Palencia and Durán de Villalobos (2012); Kim et al. (2011); Chism and Magnan (2009); McSherry et al. (2008); Chung et al. (2007); Yanga and Maob (2007); Black et al. (2006); Meraviglia (2004); Musgrave and McFarlane (2004b); Pullen et al. (1996); Fehring et al. (1987).
	Quasi-experimental	Yilmaz and Gurler (2014); Costello et al. (2012); Hsiao et al. (2012a); Taylor et al. (2009); Van Leeuwen et al. (2008); Lovanio and Wallace (2007); MacKinlay (2001b).
	Experimental	Frouzandeh et al. (2015); Burkhart and Schmidt (2012); Chung and Eun (2011); Vlasblom et al. (2011).

Table 3. *Cont.*

Research Paradigm	Methodology	Studies
Qualitative	Descriptive	Cooper and Chang (2016); Davoodvand et al. (2016); Dietmann (2016); Nazi et al. (2016); Ramezani et al. (2016); Strand et al. (2016); Wittenberg et al. (2016); Coscrato and Villela Bueno (2015); Rassouli et al. (2015); Baldacchino et al. (2014); Velásquez and Gómez (2014); Espinha et al. (2013); Khorami Markani et al. (2013); Au et al. (2012); Fouka et al. (2012); Lin et al. (2012); Moraes Penha and Paes da Silva (2012); Ponte et al. (2012); Yang et al. (2012); Dhamani et al. (2011); Liu et al. (2011); Chien (2010); Hsiao et al. (2010); Mahmoodishan et al. (2010); Bailey et al. (2009); Wimmer et al. (2008); Cavendish et al. (2007); Mooney and Timmins (2007); Cavendish et al. (2006); Nolan et al. (2006); Rankin and Delashmutt (2006); Taylor (2003); Cavendish et al. (2001); Hermann (2001); Post-White et al. (1996); Clark and Heidenreich (1995); Harrington (1995); Burkhardt (1993); Zerwekh (1993).
	Descriptive and exploratory	Noome et al. (2016); Linda et al. (2015); Ross and Austin (2015); Pilger et al. (2014); Torskenæs and Kalfoss (2013); Van Leeuwen et al. (2013); Tiew and Drury (2012); Sousan et al. (2012); Lundberg and Kerdonfag (2010); Wehmer et al. (2010); Souza et al. (2009); Halstead and Hull (2001); Narayanasamy and Owens (2001).
	Descriptive and reflection	Baldacchino (2010).
	Descriptive and comparative	Torskenæs et al. (2015).
	Descriptive and correlational	Bauer and Barron (1995).
	Phenomenology	Ormsby et al. (2017); Ødbehr et al. (2015); Cilliers and Terblanche (2014); Pfeiffer et al. (2014); Taylor et al. (2014); Tornøe et al. (2014); Rykkje et al. (2013); Tokpah and Middleton (2013); Deal and Grassley (2012); Nabolsi and Carson (2011); So and Shin (2011); Pehler and Craft-Rosenberg (2009); Shih et al. (2009); Carr (2008); Christensen and Turner (2008); McLeod and Wright (2008); Tanyi and Werner (2008); Creel (2007); Koslander and Arvidsson (2007); Mordiffi (2006); Koslander and Arvidsson (2005); Kociszewski (2004); Lowry and Conco (2002); Narayanasamy (2002); Carroll (2001); Tongprateep (2000).
	Grounded theory	Giske and Cone (2015); Wang and Hsu (2014); Cone and Giske (2013); Giske and Cone (2012); Van Dover and Pfeiffer (2012); Walulu and Gill (2011); Burkhart and Hogan (2008); van Dover and Pfeiffer (2007); McSherry (2006); Waltson (2002); MacKinlay (2001a); Cavendish et al. (2000); Thomas and Retsas (1999); Burkhardt (1994).
	Ethnographic	Ferrell et al. (2003); Sellers (2001).
	Pilot study	Ross (1997).
	Phenomenology and Grounded theory	Carron and Cumbie (2011).
Mixed Methods	Cone and Giske (2016); Minton et al. (2016); Vermandere et al. (2015); Taylor (2013); Baldacchino (2008); Baldacchino (2006); Cavendish et al. (2004); Ormsby and Harrington (2004); Kohler (1999); Shih et al. (1999); Valopaasi et al. (1995).	

4. Discussion

Research on spirituality in nursing has existed at least since the 1980s, and this topic continues to be widely studied. Regardless of the evident and recent increase in the number of publications on spirituality, the number of publications is small when compared to other topics, and when considering the overall development and increase of healthcare research and nursing journals. The results of this review concern a period of over 30 years, and 231 articles were included reporting research on spirituality in nursing. Although spirituality has an evident heritage in healthcare, empirical evidence became more often published in nursing literature in the 1980s. Since 2000, a significant increase of primary studies in spirituality has been published and this topic is sometimes considered a new field of research (Cockell and McSherry 2012; Ross 2006).

When considering the methodological approach, in recent years, the quantitative paradigm has been largely used in nursing studies concerning spirituality. However, there is no superiority of one paradigm over the other, as each paradigm contributes in different ways to the complex study of the health/illness process in nursing (Weaver and Olson 2006). Therefore, quantitative and qualitative research are complementary methods in the development of nursing science (Haase et al. [1993] 2000). There is a small percentage of mixed-method studies (4.7%), but it is becoming increasingly necessary to use both qualitative and quantitative methodologies in the study of spirituality (Moberg 2002).

Currently, mixed methods is a trend methodology in health research because it facilitates the study of complex human phenomena (Doyle et al. 2016). Moreover, research based on the triangulation of methodologies improves the scientific integrity and rigor of knowledge in nursing, and ultimately contributes to the development of nursing as a scientific discipline (Weaver and Olson 2006).

The existence of more quasi-experimental studies (than experimental studies) on this topic is similar to other research topics in nursing research, and this might be justified by the several barriers that have been described, such as the shortage of potential participants that would lengthen the period required to conduct an experimental study (Gray et al. [1987] 2017). The main goal of quasi-experimental and experimental designs are common and both are essential to test the effectiveness of nursing interventions to improve outcomes in nursing practice (Gray et al. [1987] 2017).

There is a large percentage of descriptive studies using the qualitative or the quantitative paradigms, and these data meet the results presented in the study by Cockell and McSherry (2012). Spirituality is an expanding area in terms of knowledge, so it is essential to present a description of all aspects related to this area of research (Cockell and McSherry 2012). Hence, only a clear understanding of what spirituality is may allow a clear and deep assessment and provision of spiritual care (Pesut et al. 2008). Spiritual care is based on an interdisciplinary approach, and nurses share the responsibility of assessing, diagnosing, and providing effective interventions, which could be direct (such as listening, presence, or reading) or indirect (such as facilitating chaplain, family, or other visits). The existence of many descriptive studies is not surprising since spirituality is a quite recent concept within nursing literature and descriptive studies are performed when there is little information about a phenomenon (Gray et al. [1987] 2017).

Concerning the time dimension in research design, only 1.3% of the studies used a longitudinal design. Perhaps one of the reasons for the few longitudinal studies is that they include many limitations, namely, that they require a long time, they are expensive to perform, and there is loss of observations in data collection (Aalen and Gunnes 2010; Jahnukainen 2011). Despite the disadvantages mentioned above, longitudinal studies are more powerful than cross-sectional studies and the major advantage concerns the ability of controlling the variation of variables over time and of providing evidence of causal inferences (Liu et al. 2009). Therefore, longitudinal studies are fundamental to evaluate how spirituality (or related phenomena, such as spiritual distress or spiritual well-being) relates to certain variables over time, variables such as stress, life satisfaction, social support satisfaction, depression, and health (Kaye and Raghavan 2002). Spirituality, religiosity, and beliefs can change over time, according to life experience, and this is particularly important in the healthcare context. Societies are embedded in a context of globalization, so they are in constant evolution and change over time. The religious environment and religious faith also accompany such change and are influenced by other religions around the world.

Regarding the research topics, few studies have been identified on nursing diagnosis validation concerning spirituality, and those included in this review mainly used Richard Fehring's models for nursing diagnosis validation. The importance of the validation of nursing diagnoses in spirituality is to assess the needs of patients and to improve clinical practice in nursing (Caldeira et al. 2012). The validation of nursing diagnoses plays a critical role, such as the nursing diagnosis of spiritual distress, since nurses play a significant role in alleviating the patients´ suffering. In this regard, Caldeira et al. (2017) conducted a clinical validation of the nursing diagnosis of spiritual distress in cancer patients undergoing chemotherapy, while Chaves et al. (2010) validated impaired spirituality in patients with chronic renal disease. However, the greatest obstacle for the validation of nursing diagnoses is the methodology, which can be complex and require broad knowledge in the areas of epidemiology and biostatistics (Lopes et al. 2013).

The number of studies about assessment tools has also increased (n = 18). The studies comprise the development of new instruments and the validation of several scales in different populations. It should be noted that Ross (2006) identified only two methodological studies concerning the development of

tools for assessing spiritual needs. It is recommended that the development of these assessment tools should involve and promote the participation of patients (Timmins and Caldeira 2017b).

There has been a growth of studies on educational aspects of spirituality in nursing. For example, Ross (2006) mentioned that only three studies had been published thus far, and Cockell and McSherry (2012) reported that ten studies had been conducted. In this review, a total of 52 studies in education were found; thus, in a time frame of four years, 42 additional studies have been published. In 2006, Ross underlined education in spirituality as an emergent topic and on finding that nurses were receiving little training in this area, and reinforced the growth of this topic in research. Nurses are responsible for assessing the patients' spiritual needs and for providing spiritual care and so this topic must be included in the nursing *curriculum* throughout graduation training (Caldeira et al. 2016). Giske and Cone (2012) conducted a grounded theory research on the nursing students' learning of patient spiritual care and the results suggest that spirituality should be present throughout the nursing program, thereby allowing students to assess and to provide spiritual care, so they can apply theoretical knowledge in their clinical practice. After attending spiritual care training courses, nursing students demonstrate increased self-efficacy in providing spiritual care to patients (Frouzandeh et al. 2015).

In relation to topic management, four studies have been conducted, and this can represent a challenge in developing innovative research concerning nursing management and workplace spirituality. Spiritual leadership promotes an environment for learning spiritual care and encourages a holistic approach both to the patient and to teamwork (Baldacchino 2015). However, most of the research topics are in palliative care and oncology and spiritual care.

Future investigation should focus on the production of a higher level of scientific evidence, namely, quasi-experimental, mixed-method, correlational, and longitudinal studies addressing spirituality in nursing.

Nursing research should be simultaneously focused on the patient and on the theoretical framework, aiming to improve the quality of nursing care (Severinsson 2012). Additionally, nursing research is fundamental to influence evidence-based practice and to guarantee safe patient outcomes, whilst contributing to the growing body of nursing knowledge (Cleary 2016). Nursing research is an overwhelming and challenging theme, although in the end it is a rewarding experience (Van Cott and Smith 2009).

5. Conclusions

Spirituality is an important topic in healthcare and in nursing literature, and the interest in this topic has been growing in the last several decades. Nursing is a scientific discipline that is developing rapidly, and nursing practice is expected to be evidence-based. This should also be expected with regard to implementing spirituality in nursing practice or in providing spiritual care. Thus, it is important to find a deeper understanding of the methodological approach previously used in nursing research concerning spirituality towards the continuity of evidence development and the adequacy of research approaches to the study of this human dimension.

This paper aimed to review the research methods used in nursing literature concerning spirituality. The results highlight that both main paradigms (quantitative and qualitative) are predominantly used, while few studies employ mixed methods. Regarding the quantitative paradigm, most studies are observational and with descriptive characteristics. As for qualitative studies, most of them are descriptive, phenomenological, and grounded theory. Considering the timeline, most studies are cross-sectional. Nevertheless, quasi-experimental and experimental studies, mixed methods, and correlational designs appear to be an urgent need for the development and consolidation of knowledge. The findings provided by this review address the existing gap on longitudinal studies on spirituality and related phenomena and their essential role in creating a solid ground for nursing knowledge and for the improvement of effective and adequate spiritual care interventions.

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