Journal of Health and Social Sciences
The Italian Journal for Interdisciplinary Health and Social Development ***EDIZIONI FS Publishers***
Systematic Review in Occupational Health Psychology

Spiritual well-being and burnout syndrome in healthcare: A systematic review

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Abstract

Introduction: Burnout syndrome (BOS) among healthcare workers (HCWs) is a widespread phenomenon that leads to poor staff health and diminished quality of medical care. Spirituality has been proposed as a coping strategy against BOS. The relationship between spirituality and BOS needs to be evaluated. Therefore, a systematic review was conducted to synthesize evidence for understanding association between spirituality and BOS.

Methods: The PRISMA guidelines were used to conduct a systematic search of bibliographical databases, including PubMed/Medline, Scopus, and several others in June 2022. Titles. Abstracts, and full-texts of all articles were screened to determine eligibility. The National Heart, Lung, and Blood

Institute (NHLBI) quality assessment tool was utilized for the risk of bias (RoB) assessment. Pertinent data were collected using a standardized codebook.
Results: Of the original 217 studies, 26 were included in the systematic review, with a total sample of 8,666 participants. Only five studies were interventional or experimental, while the remaining were cross-sectional. Most studies indicated a positive relationship between spiritual well-being or spirituality and personal accomplishment, and a negative association with emotional exhaustion and depersonalization. Interventional studies found that spirituality-based interventions were effective in reducing BOS among HCWs, however, the evidence is fairly scarce.
Discussion and Conclusions: There is weak evidence that spirituality is inversely associated with BOS. There are insufficient evidence that spiritual-based health promotion programs in the workplace may be effective in preventing and/or reducing BOS in HCWs.

Take-home message: spirituality-based programs could be integrated in broader organization-oriented programs to improve workers' well-being and reducing BOS in the workplace.
Keywords: Burnout syndrome; healthcare; spiritual well-being; workplace health promotion programs; workplace spirituality.

Cite this paper as: Chirico F, Batra K, Batra R, Oztekin GG, Ferrari G, Crescenzo P, Nucera G, Szarpak L, Sharma M, Magnavita N, Yildirim M. Spiritual well-being and burnout syndrome in healthcare: A systematic review. J Health Soc Sci. 2023;8(1):13-32. Doi:10.19204/2023/sprt2

Received: 10 January 2023. Accepted: 08 March 2023; Published: 15 March 2023

INTRODUCTION

Among healthcare workers (HCWs), professional or job burnout is a multidimensional syndrome, which is characterized by depersonalization, emotional exhaustion, and a reduced sense of personal accomplishment associated with poor staff health and diminished quality of medical care potentially affecting healthcare organizations and systems worldwide [1–6]. Burnout syndrome (BOS) can be driven by long-term stressors, such as excessive workloads, long hours, inefficient work processes, and poor interpersonal relationships [7]. Additionally, it can be exaggerated by acute stressful events, such as epidemics [8–12]. Some systematic reviews have reported situations in which BOS can affect up to 80% of physicians [13]. Reportedly, this rate ranged from 14% [14] to 70.1% [15] in critical care operators [16]; 17.3% among HCWs working in a palliative care setting [17] and 13% among dentists [18]. A meta-analysis of research involving emergency nurses demonstrated a high prevalence of BOS, resulting in 30% of the sample being affected by at least 1 of the 3 Maslach Burnout Inventory subscales [19]. These data indicate that HCWs are bearing a disproportionate burden of the BOS. According to the collective quantitative estimate, physicians' burnout was associated with nearly four times decrease in job satisfaction [2]. These data are concerning and underscore the need of developing/promoting appropriate interventions, with one being related to spirituality.

Spirituality related to healthcare is defined as "the concept is a human individual, dynamic characteristic; is expressed through beliefs, practices, and experiences in the search for connection with something that promotes meaning and personal growth; and leads to the development of values and positive inner feelings" [20]. While religiosity and spirituality are often considered in health research as overlapping constructs, both present important differences. Besides being a broader term, spirituality has a connection with God, nature or other surroundings and a relationship with quality and meaning in life. On the other hand, religion is defined as "traditional values, practices related to a certain group of people or faith and institutionalized system of religious attitudes, beliefs, and practices" [21].

Spiritual care, which requires caregivers to develop spiritual competency through self-reflection and education, is an intrinsic and necessary component of palliative care [22]. One study indicated that spiritual well-being could improve nursing students' attitudes toward spirituality and spiritual care [23]. Moreover, faith and spiritual practices play a vital role in the physician-patient relationship

and treatment plan [24] in health practice settings requiring care, comfort, and healing of the patients [25]. Physicians are still in naturalism-based training, and the idea that science and belief in anything supernatural are incompatible still prevails. However, spirituality is now discussed in holistic models of health [26], and it has been proposed to update the World Health Organization (WHO's) health definition which suggests the inclusion of 'spiritual' dimension to make it a more inclusive health definition relevant to the global context [27]. As suggested in the existing literature, spirituality can be a coping strategy to protect HCWs from anxiety, compassion fatigue, depression, and burnout [28–31].

Spirituality has been a concept of interest to researchers with a great range of variability across many population groups. For instance, one study showed that spiritual well-being was associated with job stress and job satisfaction in healthcare professions, including hospice interdisciplinary team (IDT) members [28]. Probably, a person with a high spiritual score experiences less stress [29], which may further have some positive consequences in the workplace [30,31]. Spirituality has also been studied as an effective coping strategy to address burnout in teachers [32–34], university students [35] academic professionals [36], and human service workers [37]. A cross-sectional [32] and a pilot before-after controlled studies [33] have highlighted the protective role of religiosity, spirituality, and prayer in consecrated and lay teachers at Italian catholic schools. Collective spiritual activities have been suggested to improve the mental health status of HCWs engaged with patients with progressive diseases, such as HIV infection prior to the most recent therapeutic developments [38].

Workplace spirituality (WS) is defined as "the recognition that employees have an inner life that nourishes and is nourished by meaningful work that takes place in the context of community" [39]. Additionally, WS includes three dimensions: inner life, a sense of community, and meaningful work [30]. It refers to the inner life when individuals find their inner strength and use it to carry out their activities at work. It is the sense of community that relates to working in an interconnected environment while meaningful work means carrying out activities that are important to the employee [39]. WS can be seen as assisting with both emotion-focused coping in which the limbic system is made calm, as well as problem-focused coping in which the cerebral cortex helps in altering the perception of stressors [40].

It has been recognized that all three dimensions of WS can positively impact work attitudes, such as organizational commitment, involvement, and job satisfaction [30,41], and on organizational climate with positivism, completeness, respect, generosity, trust, joy, and low levels of stress [42,43]. In addition, WS is associated with higher positive affect, self-efficacy, resilience, and work engagement, while a workplace spirituality profile characterized by a low-intensity spiritual experience is related to higher negative feelings [44]. Therefore, in working environments with high levels of spirituality, employees could report low levels of work stress [30]. In addition, spirituality programs have been proposed within the framework of Workplace Health Promotion (WHP) activities, both to increase resilience and coping mechanisms in dealing with psychosocial hazards such as violence, burnout, and work-related stress, and to promote good lifestyles and behaviors that can contribute positively to work-related diseases [45]. However, there is a paucity of literature about the relationship and the effect of spiritual well-being and spirituality programs on burnout syndrome among HCWs.

Objectives

The aims of this systematic review were: (1) to investigate the association between spiritual well-being and BOS in all healthcare sectors, and (2) to evaluate the effect of spiritual programs at the workplace for preventing and/or reducing BOS in HCWs.

Research questions

The questions posed by this research were: 1) Is spiritual well-being negatively associated with high levels of BOS? 2) Are spiritual-based programs effective to reduce BOS levels?

METHODS

Study design and PIO framework

A systematic review was conducted using the PIO (Population, Intervention, Outcome)

framework: Population: Healthcare workers (aged 18 years or above); Intervention: Spirituality interventions or programs; Outcome: Burnout Syndrome. The association between spiritual well-being and BOS was also investigated. We followed the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines for this review [46].

Protocol registration

The study protocol of this research was registered in the International Prospective Register of Systematic Reviews (PROSPERO), in April 2020, with the following registration number: CRD42020181619 (available at https://www.crd.york.ac.uk/PROSPERO/#guidancenotes). Since this study included findings from published literature, the ethical review process was not needed.

Databases and search strategy

To find relevant studies, a systematic search was conducted on June 8, 2022, using PubMed/MEDLINE database primarily, which was later adapted to other bibliographical databases too. The search string for each database was developed iteratively and revised as new search terms were discovered. Three authors independently (RB, KB, & FC) performed the keyword checking with the external experts' help. The electronic search strategy for PubMed used keywords related to the researched topic (spirituality OR spiritual well-being OR workplace spirituality) along with burnout and its synonyms (burnout syndrome OR emotional exhaustion) and healthcare and its definitions (nurse* OR physician* OR practitioner*), appropriately combined by Boolean operators (Table 1). Reference lists of included studies were searched manually in order to avoid missing any relevant articles.

Table 1. The search strategy of the current review (search results = 217 articles).

Search date	Search Query	Search Terms (Query Details)
06/08/2022 Timestamp 13:06:30 EST	(spirituality* OR spiritual well-being OR workplace spirituality) AND (Occupational burnout OR burnout* OR emotional exhaustion*) AND (healthcare* OR nurse* OR physician* OR practitioner*)	spiritual: "spiritual"[All Fields] OR "spiritualism"[MeSH Terms] OR "spiritualism"[All Fields] OR "spirituality"[MeSH Terms] OR "spirituality"[All Fields] OR "spiritualities"[All Fields] OR "spirituality's"[All Fields] OR "spiritually"[All Fields] OR "spirituals"[All Fields] well-being: "health"[MeSH Terms] OR "health"[All Fields] OR ("well"[All Fields]) OR "well being"[All Fields] workplace: "workplace"[MeSH Terms] OR "workplace"[All Fields] OR "workplaces"[All Fields] OR "workplace's"[All Fields] spirituality: "spiritual"[All Fields] OR "spiritualism"[MeSH Terms] OR "spiritualism"[All Fields] OR "spirituality"[MeSH Terms] OR "spirituality"[All Fields] OR "spiritualities"[All Fields] OR "spirituality's"[All Fields] OR "spiritually"[All Fields] OR "spirituals"[All Fields] Occupational burnout: "burnout, professional"[MeSH Terms] OR ("burnout"[All Fields] AND "professional"[All Fields]) OR "professional burnout"[All Fields] OR ("occupational"[All Fields] AND "burnout"[All Fields]) OR "occupational burnout"[All Fields] emotional: "emoting"[All Fields] OR "emotion's"[All Fields] OR "emotions"[MeSH Terms] OR "emotions"[All Fields] OR "emotion"[All Fields] OR "emotional"[All Fields] OR "emotive"[All Fields]

Study Selection Process and eligibility criteria

All citations were exported and manually checked for duplicates. After removing duplicates, bibliographic data were imported into Rayyan systematic review software for the title and abstract

screening. Titles and abstracts were then screened independently by two reviewers (K.B., R.B) based on the inclusion and exclusion criteria. Full-text versions were retrieved for all remaining articles, which were then independently screened again by the two reviewers (F.C., & M.Y.). Conflicts between reviewers were resolved through discussion with the third reviewer (M.S.). Studies were included in the systematic review if they (a) were observational and/or experimental studies; (b) included HCWs (e.g., physicians, nurses, and other medical specialties, etc.) aged 18 years or older as study participants; (c) investigated the direct impact of the spirituality interventions or the spiritual well-being (d) assessed BOS in the psychological outcomes and (e) were written in English.

Articles without data were excluded, as were studies published only as abstracts/posters, protocols, and letters to editors. Non-peer-reviewed articles were also excluded. The numbers of records retrieved and screened at each stage of the review process are shown in the PRISMA flow chart (Figure 1) [47]. The PRISMA diagram was generated using the R package and ShinyApp (available at https://www.eshackathon.org/software/PRISMA2020.html) [48].

Data extraction

A codebook was utilized for standardization and consistency. Reviewers extracted the following data from each included study using a customized data collection form: names of the study authors, publication year, study location, study design, sample size and type, survey instruments, key findings, and quality rating of each study, were collected in a spreadsheet. Data were reviewed multiple times to ensure accuracy.

Risk of bias assessment

For the quality assessments of the included studies, the National Heart, Lung, and Blood Institute (NHLBI) quality assessment tool for cross-sectional and controlled interventional studies was used [available from: https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools].

Two reviewers (RB & KB) assessed the quality of the full texts and performed the scoring independently. The NHLBI tool has 14 items on the checklist to evaluate all essential components of original research studies. Quality was rated as poor (0–4 out of 14 questions), fair (5–10 out of 14 questions), or good (11–14 out of 14 questions) as guided by the tool. A Kappa statistic was calculated to indicate the inter-rater agreement.

RESULTS

Selection of studies

The initial search identified 217 studies (Figure 1), of which 15 duplicates were excluded. Additionally, two studies were removed per ineligibility identified by the automation tool (Rayyan) used in this study. The titles of the remaining 200 records were screened, and 113 records were advanced to the following screening stage. Two additional articles were included through citation screening. The abstracts of these 115 records were sought for eligibility. A total of 89 articles were excluded because of the following reasons: different outcomes (n=21), non-healthcare population (n=18), reviews/commentaries (n=16), irrelevant study objectives (n=12), non-peer-reviewed articles (n=9), studies without data (n=6), abstracts-only studies (n=5), and poor-quality rating (n=2) (Figure 1). Finally, 26 studies were included in the review.

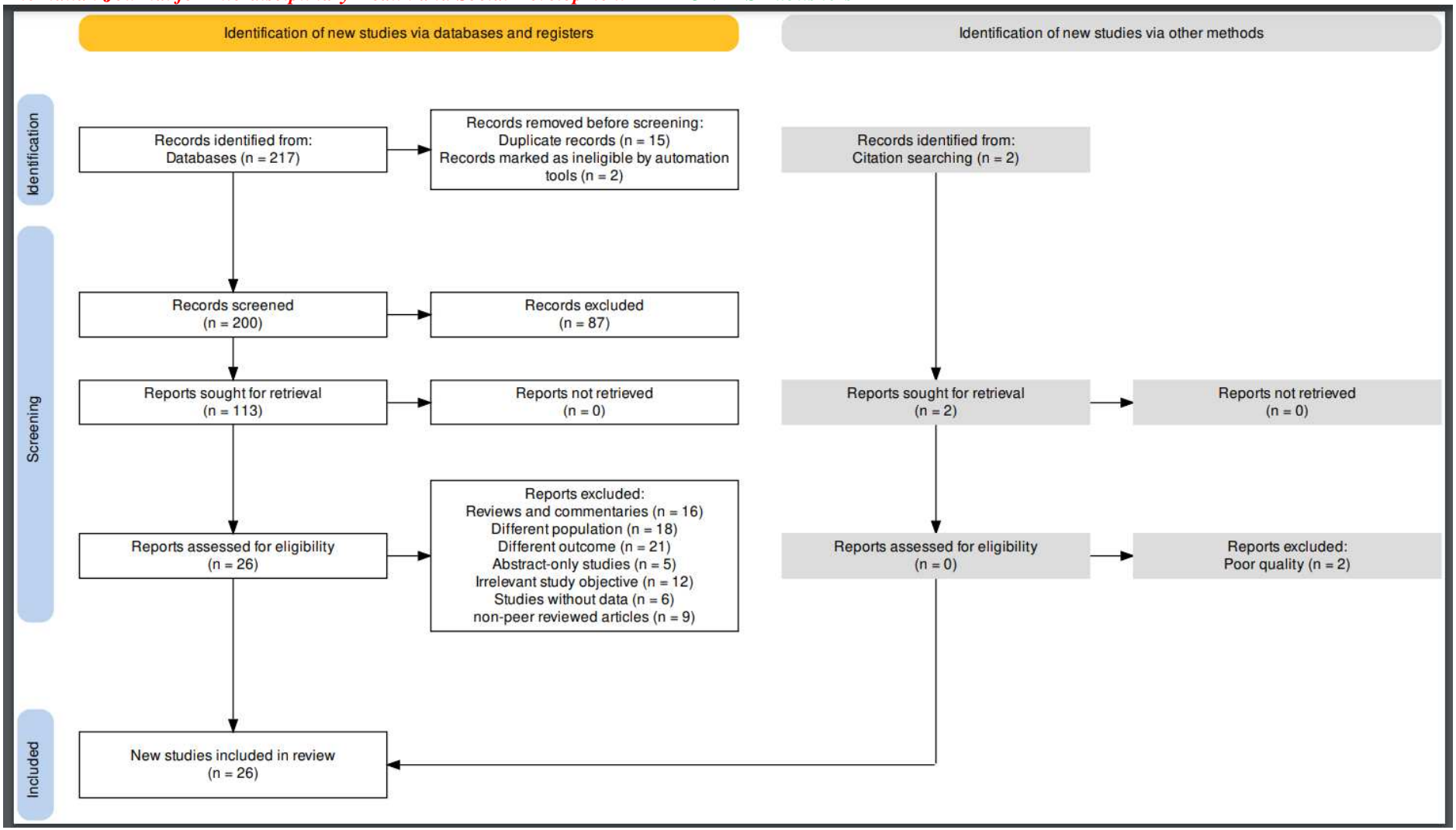

Figure 1. Prisma flow diagram displaying selection process of the studies included in this review.

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Characteristics of the studies

Among 26 studies, five studies were interventional or experimental studies [49–53], while the remaining were cross-sectional studies (Table 2). A relatively large number of studies (n=12) were from the U.S.[50,52,54–62], one study from U.S. and Europe combined [45], and other studies from several countries and regions such as Brazil, Canada, China, France, Iran, Japan, Korea, Malaysia, and Turkey [1,51,53,63–73]. The diagnosis of BOS was mainly performed by the Maslach Burnout Inventory (MBI) (n=18). In the remaining studies different burnout measurement tools, such as Oldenburg Burnout Inventory, Copenhagen Burnout Inventory, and Shirom-Melamed Burnout Measure, were used. A wide variety of measuring instruments were used to assess spirituality. In addition, researchers used self-developed questionnaires for both measuring BOS and spirituality.

The studies concerned various categories of health personnel: nurses (9), doctors (4), internal workers (3), students (2), mixed categories (5) and medical university personnel (3).

The high heterogeneity of study designs and measurement tools made it impossible to complete our study with a meta-analysis.

Quality assessment

Eighteen studies [1,50,51,53–56,58–60,64–69,71,63] were of good quality (score range 7–9). Eight studies were of medium or fair quality [49,52,57,61–63,70,72] (score range: 4–6) (Table 2). The interrater agreement (Kappa statistics) was 82.7%, which indicates “almost perfect” agreement.

Table 2. Data summarization finally included studies in this narrative synthesis (n = 26).

Author and year	Location	Sample size	Study design	Key findings	Survey tools for SW and BOS	Quality
Akbari and Hossaini, 2018 [63]	Iran	231 healthcare staff from Baqiyatallah University of Medical Sciences	Cross-sectional	Spiritual health was negatively correlated with burnout. Emotional regulation had a fully mediating role in the relationship between spiritual health and burnout.	SWBS MBI	Fair
Carneiro et al., 2019 [64]	Brazil	57 HCWs employed at the Maria Gloria and Medical Specialties Ambulatory Units	Cross-sectional	There was a negative correlation between daily spiritual experiences with emotional exhaustion and depersonalization. There was a positive correlation between daily spiritual experiences and high professional accomplishment.	BMMRS MBI	Good
Doolittle and Windish 2015 [54]	USA	Internal medicine (n=44), primary care medicine (n=19), and internal medicine/pediatrics (n=4) training programs	Cross-sectional	There was a positive correlation between SIBS with personal accomplishment. Spirituality, particularly the internal/fluid and existential/meditative domains of SIBS, affected burnout.	SIBS MBI	Good
Doolittle et al., 2013 [55]	USA	108 internal medicine and medicine-pediatrics residents	Cross-sectional	There was a positive correlation between personal accomplishment and spirituality. The humility/personal application domain was negatively correlated with emotional exhaustion and depersonalization.	SIBS MBI	Good
Epstein et al., 2022 [49]	USA-Europe	85 physicians	Intervention study	An intensive, multiday, mindfulness-based workshop had improvements in well-being, quality of interpersonal care and work satisfaction, and meaning and engagement, after 2 months	Climate of Compassion Scale MBI	Fair/ no control group

Gauthier et al., 2015 [50]	USA	38 nurses out of 104 in pediatric ICU	Intervention study	A 5-minute/day intervention over the course of 1-month obtained stress reduction 1month after the intervention. Mindfulness was negatively correlated with emotional exhaustion and positively correlated with personal accomplishment.	Mindfulness Attention Awareness Scale MBI	Good/ no control group
Harris and Tao, 2022 [56]	USA	207 nurses	Cross-sectional	Religion/spirituality was negatively correlated with emotional exhaustion and depersonalization, and positively correlated with personal accomplishment. Mental well-being mediated the association between religion/spirituality and burnout.	WHOQOL-SRPB MBI	Good
Ho et al., 2016 [65]	China	312 HCWs	Cross-sectional	Higher levels of daily spiritual experience were associated with lower levels of burnout.	DSES CBI	Good
Holland and Neimeyer, 2005 [57]	USA	80 medical and mental health practitioners	Cross-sectional	DSES was negatively correlated with all three subscales of the SMBM.	DSES SMBM	Fair
Karadag Arli et al., 2017 [66]	Turkey	118 nurses	Cross-sectional	Nurses' burnout levels increased with the spiritual care they provided. Nurses' burnout levels increased with the increase in their spirituality and spiritual care mean scores.	Spirituality and Spiritual Care Rating Scale MBI	Good
Kim and Yeom, 2018 [67]	South-Korea	318 nurses	Cross-sectional	The lower level of spiritual well-being was a predictor of BOS. Burnout was negatively correlated with spiritual well-being.	SWBS Burnout Scale by Pines	Good

Kim et al., 2021 [58]	USA	271 HCWs	Cross-sectional	High spirituality was associated with 2- to 4-fold lower odds of severe burnout.	CD-RISC-10 A single-item question to assess the level of burnout	Good
Koo et al., 2013 [68]	Canada	63 radiation oncologists, residents, students, and ambulatory care nurses	Cross-sectional	The participants reporting no or lower spirituality experienced higher levels of burnout	ProQOL MBI	Good
Lal et al., 2020 [69]	France	345 tutors to professors from the surgical faculty	Cross-sectional	There was a positive association of personal accomplishment with religious or spiritual beliefs. Emotional regulation had a complete mediating role in the relationship between spiritual health with burnout.	MBI Ad Hoc Instrument (1 single question on religious/spiritual beliefs)	Good
Lucchetti et al., 2018 [70]	Brazil	138 Brazilian and 73 US medical students	Cross-sectional	More symptoms of depression and stress were reported in Brazilian students, whereas greater wellness and environmental quality of life and less exhaustion were reported in US students.	ESWIM OLBI	Fair
Morita et al., 2009 [51]	Japan	40 nurses	Randomized controlled trial	An intervention focused on caring for patients feeling meaningless, collaterally observed improvements in the overall levels of burnout and spiritual well-being.	FACIT-SP MBI	Good

Oman et al., 2006 [52]	USA	58 physicians, nurses, chaplains, and other health professionals	Randomized Controlled Trial	An 8-week, 2-hr per week training using spiritually based self-management tools. Beneficial treatment effects were observed on stress and mental health and remained significant at 19 weeks follow-up	MBI	Fair
Roslan et al., 2021 [73]	Malaysia	754 interns	Cross-sectional	Irregular spirituality routines were associated with increased odds of personal-related burnout and work-related burnout.	CD-RISC CBI	Good
Rushton et al., 2015 [59]	USA	114 nurses	Cross-sectional	Participants in the study who scored lower on the burnout subscales of emotional exhaustion and depersonalization scored higher on resilience. Participants who scored higher on the personal accomplishment subscale scored higher on resilience.	CD-RISC MBI	Good
Salmoirago-Blotcher et al., 2016 [60]	USA	138 physicians	Cross-sectional	There was no significant association between burnout and any of the religiousness/spirituality predictors.	Fetzer Institute Multidimensional Measurement of Religiousness/Spirituality MBI	Good
See et al., 2018 [1]	16 Asian countries/regions	4092 physicians and nurses	Cross-sectional	There was a negative association between religiosity and burnout for physicians and nurses.	Having a religious background or belief with a single item MBI—Human Services Survey	Good
Wachholtz and Rogoff, 2013 [61]	USA	259 medical students	Cross-sectional	There were significant inverse correlations between measures of spirituality and measures of psychological distress/burnout.	DSES BMS	Fair
Watson et al., 2019 [62]	USA	50 physicians	Cross-sectional	Within the subset of physicians who 'disagreed' with the statement 'Spirituality/religion is important in my	Authors developed items related to resilience factors	Fair

				life' there was a significant, positive correlation between the emotional exhaustion burnout domain.	MBI-Human Services Survey	
Wu et al., 2020 [71]	China	391 clinical nurses	Cross-sectional	Burnout and intention to leave showed a significantly positive correlation with lower levels of perceived spirituality.	Authors developed the questionnaire (Measurement tools to develop the questionnaire: Spiritual Climate Scale, Emotional Exhaustion Scale, MBI)	Good
Yong et al., 2011 [53]	Korea	24 nurses+ 27 controls	Experimental study	After conducting a spirituality training program, the experimental group showed higher scores in spiritual well-being, spiritual integrity, and leadership practice, and reported lower scores in burnout.	Spiritual Well-being MBI	Good
Zhang et al., 2019 [72]	China	207 clinical nurses	Cross-sectional	There was a negative correlation between a good spiritual climate and low burnout. The spiritual climate could indirectly influence nurses' job burnout.	Spiritual Climate Scale MBI	Fair

Note: HCWs: Healthcare Workers; MBI: Maslach Burnout Inventory Scale; BMMRS: Brief Multidimensional Measure of Religiousness/Spirituality; SIBS: Hatch Spiritual Involvement and Beliefs Scale; WHOQOL-SRPB: World Health Organization Quality of Life—Spirituality, Religion, and Personal Beliefs; DSES: Daily Spiritual Experience Scale; CBI: Copenhagen Burnout Inventory; SMBM: Shirom-Melamed Burnout Measure; SWBS: Spiritual Well-Being Scale; ProQOL: Professional Quality of Life Scale; ESWIM: Spirituality, and Wellness in Medicine survey; OLBI: Oldenburg Burnout Inventory; FACIT-SP: Functional Assessment of Chronic Illness Therapy-Spiritual; CD-RISC: Connor–Davidson Resilience Scale; BMS: Burnout Measure Short Version.

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Data synthesis

In this systematic review, several studies have documented a negative relationship between spirituality and BOS [58,59,61,61,68,73]. For example, a study conducted with intensive care unit nurses concluded that lower levels of BOS were associated with higher levels of spiritual well-being and the spiritual well-being were one of the factors predicting BOS [67]. A good spiritual climate and higher levels of daily spiritual experience were positively associated with high professional accomplishment and job satisfaction [57,64,65,72]. However, there are also studies that found a positive association between spirituality and BOS, meaning with the increase in the mean scores of spiritual care and spirituality of nurses, burnout levels also increased. The authors thought that this situation might be due to the increase in the workload of nurses during the spiritual care process [66]. In addition, one study found no association between spirituality predictors and BOS [60], while another study showed that spirituality did not affect some domains of BOS such as emotional exhaustion and depersonalization [54]. Other studies did not find a significant relationship between spirituality and job burnout in human service workers [77] and between spiritual orientation and compassion fatigue and, BOS in nurses [78].

Studies also indicated that BOS can cause turnover intention, emotional exhaustion, and depersonalization [64,71,72]. Moreover, in the relationship between spiritual health and BOS, emotional regulation [63,69] and mental well-being [56] had a mediating role. The effectiveness of spirituality-based programs on BOS in the workplace was assessed by five interventional studies, involving a total of 245 workers. A Korean intervention enrolled 24 nurses in the spirituality program and 27 in the control group for a duration of 5 weeks. After the spirituality training program, burnout levels were dramatically reduced in the experimental group compared to the control group while spiritual well-being, spiritual integrity, and leadership practice all increased. The stability of results over time has not been tested [53]. A 5-minute mindfulness meditation for pediatric intensive care nurses before each work shift obtained significant decreases in stress from baseline to post-intervention that was maintained 1 month following the intervention; researchers also found a negative relationship between mindfulness and emotional exhaustion, and a positive relationship between mindfulness and personal accomplishment [50]. Epstein et al. conducted 4 workshops in the U.S. and Europe and obtained an improvement in emotional exhaustion and depersonalization in the 85 physicians who completed the intensive intervention; after adjustment, however, the contribution of mindfulness became nonsignificant [49]. Oman et al. conducted a spiritually based self-management course on 58 HCWs randomized to intervention (n = 27) or waiting list, obtaining a reduction of stress levels that were stable at 19 weeks [52]. An intervention on 40 nurses specifically focused on the care of terminally ill cancer patients feeling meaninglessness including a Spiritual Conference Summary Sheet obtained, as a secondary endpoint, a significant improvement of the overall levels of burnout, emotional exhaustion, personal accomplishment, job satisfaction, and nurses' own spiritual well-being [51]. However, results of these studies should be interpreted with caution given the limitations of the studies. Besides the small sample sizes, there was a substantial heterogeneity among methodology, purpose, selection criteria of the participants, lack of control group in some studies, and limited follow-up data. Only two studies included follow-up of results one or two months after the intervention.

DISCUSSION

With reference to the first objective of this study, to assess the relationship between spirituality and BOS, studies observing the relationship between the two phenomena have not yielded homogeneous results. Despite most cross-sectional studies showed a positive relationship between spiritual well-being or spirituality and personal accomplishment, and a negative association with emotional exhaustion and depersonalization, this relationship cannot be generalized due to several reasons with one being conflicting evidence. First, there are studies that have found no association between WS and BOS and others that have reported that spirituality can increase burnout. The interpretation that the authors of a Turkish study give of the phenomenon, namely that providing spiritual care increases nurses' workload, leads us to think that in the case described the nurses were

not free to choose the path of spirituality, but rather it was a measure imposed by the management. Also, observational studies have looked at some uneven situations, trying to draw a relationship between individual recourse to various forms of spirituality and mental health. To gain converging evidence, a stringent definition of "spirituality" is certainly needed. Also, there is a need for studies to consider various factors that could affect or confound the association. These factors may include but are not limited to the personality of workers, their level of education, job role, and physical and mental health status. In authors' opinion, it is also important to evaluate whether the conditions in the country where the observation takes place comply with the workers' autonomy and the possibility of adhering or not adhering to spirituality courses. HCWs' religious or spiritual beliefs may affect their attitude towards work and affect some aspects of burnout. Therefore, prospective studies to consider the religious beliefs of the workers, defining whether the spiritual intervention was in harmony with these beliefs will be critical. This will provide a better understanding of the relationship between WS and BOS among HCWs.

Considering all retrieved studies, it was found that there is weak evidence of the association between spirituality and BOS. This is not the same as showing that spirituality is always beneficial against BOS, only that workers who resort to spirituality have a lower incidence of BOS. There is a complete lack of studies investigating what factors drive workers toward spiritual activities, because these factors could be the ones that protect against BOS. Workers who make use of spiritual resources are partially protected from BOS. In addition, spirituality might be helpful in recovering workers who are experiencing BOS. Studies observed that in the relationship between spiritual health and burnout, emotional regulation [63,69] and mental well-being [56] had a mediating role. These studies suggest that spirituality and emotional regulation should be taken into consideration in HCWs who experience burnout and could be useful in the recovery of good mental health conditions. This could be a good hypothesis for the future, although our survey does not show that such a possibility has been explored.

The second objective of the current study was to evaluate the effectiveness of spiritually based health promotion interventions, and it was challenging to synthesize evidence given a few available studies. The review yielded only five interventions thereby underscoring the need for more interventional research. The retrieved studies claimed that WS was effective in preventing and/or reducing BOS in all HCWs. However, the evidence collected is very limited. None of the studies included in the review evaluated the implemented programs in terms of cost/benefit or returns on investment. No study has validated the results obtained with a check sometime after the conclusion of the intervention (follow-up). Regarding the method of WS interventions, moreover, there are the same reservations expressed above for the studies that have described the association between spirituality and BOS. Subsequent well-designed and conducted studies will certainly be necessary, however preliminary findings provided some useful insights to confirm the effectiveness of promotion interventions based on spirituality in other healthcare disciplines. For instance, one study demonstrated that spiritual training programs improved workers' spiritual attitudes (compassion, fear, work satisfaction, and meaning) in palliative care professionals [74]. An internet spirituality program improved compassion satisfaction and spiritual well-being in 15 registered nurses in a Veterans hospital [75].

A systematic review with meta-analysis showed that mindfulness interventions were effective in decreasing stress and anxiety in physicians and medical students [76]. In healthcare settings, spiritual skills have been proposed as coping mechanisms in supportive and palliative care of patients with life-threatening illnesses [77–80] to meet patients' and caregivers' spiritual needs. Moreover, the supportive roles of religion and spirituality in end-of-life and palliative care of patients with cancer in a culturally diverse context have been extensively studied [81,82]. For this reason, several educational programs were conducted to improve nurses' self-awareness about spirituality for preparing nurses to offer spiritual care in an end-of-life context [81,82].

In summary, the literature indicated that burnout is a problem of the whole healthcare organization, rather than certain individuals. The quality of work organization is deeply associated

with workers' physical and mental health [82,83]. The systematic review of previous studies showed that programs that adopted organization-directed changes may obtain small benefits in BOS rates among physicians [84]. For example, the reduction of shift hours resulted in overall well-being for the residents with a possible reduction in burnout without adverse impact on patient-based outcomes [85]. Work hour reductions were associated with a decrease in emotional exhaustion and depersonalization and no effect on mean personal accomplishment. When associated with organization-directed changes, self-care workshops showed decreases in depersonalization scores, and a meditation intervention reduced emotional exhaustion [86]. In conclusion, WS interventions could be effective in reducing BOS if included in a broader program to improve the quality of work organization [87,88].

CONCLUSION

The analysis of the studies published so far indicates that there is weak evidence of the association between spirituality and BOS in healthcare. Mental health and spirituality are difficult concepts to measure, analyze, and interpret, and more rigorous studies with appropriate methodology and more experimental studies are needed to address their effectiveness [89–92]. Therefore, the aim of this paper was to present a state-of-art review of the relationship between spirituality and professional BOS in healthcare operators. This systematic review provides evidence for the importance and better understanding of the relationship between spirituality and BOS. This report has also found promising results regarding the role of WS interventions in HCWs. Undeniably, there is a dearth of studies, especially randomized controlled trials about the protective role of spiritual skills and programs on anxiety, stress, and BOS of HCWs. This systematic review of spiritual interventions can improve the evidence and inform HCWs oriented interventions. Also, understanding spiritual interventions and their outcomes can advance the field of research, support evidence-based guidelines and influence clinical and public health practice.

Author Contributions: "Conceptualization: FC Methodology: RB, KB. Software: RB. Validation: MY, GGO. Formal analysis: KB, RB, MY, GGO. Investigation: FC, RB, KB. Resources: MS, NM, MY. Data curation: GF, GN, LS, NLB. Writing—original draft preparation: FC, KB, MY, GGO. Writing—review, and editing: MY, GGO, RB, NM, MS. Visualization: FC, RB. Supervision: FC, MY, NM. Project administration: NM, MS. All authors have read and agreed to the published version of the manuscript."

Funding: This research received no external funding

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Acknowledgements: None.

Conflicts of Interest: The authors declare no conflict of interest.

Publisher's Note: Edizioni FS stays neutral with regard to jurisdictional claims in published maps and institutional affiliation.

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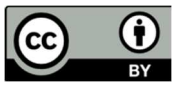

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