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# Training hospital staff on spiritual care in palliative care influences patient-reported outcomes: Results of a quasi-experimental study

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## Abstract

**Background:** Spiritual care is reported to be important to palliative patients. There is an increasing need for education in spiritual care.

**Aim:** To measure the effects of a specific spiritual care training on patients' reports of their perceived care and treatment.

**Design:** A pragmatic controlled trial conducted between February 2014 and March 2015.

**Setting/participants:** The intervention was a specific spiritual care training implemented by healthcare chaplains to eight multidisciplinary teams in six hospitals on regular wards in which patients resided in both curative and palliative trajectories. In total, 85 patients were included based on the Dutch translation of the Supportive and Palliative Care Indicators Tool. Data were collected in the intervention and control wards pre- and post-training using questionnaires on physical symptoms, spiritual distress, involvement and attitudes (Spiritual Attitude and Involvement List) and on the perceived focus of healthcare professionals on patients' spiritual needs.

**Results:** All 85 patients had high scores on spiritual themes and involvement. Patients reported that attention to their spiritual needs was very important. We found a significant ( $p=0.008$ ) effect on healthcare professionals' attention to patients' spiritual and existential needs and a significant ( $p=0.020$ ) effect in favour of patients' sleep. No effect on the spiritual distress of patients or their proxies was found.

**Conclusion:** The effects of spiritual care training can be measured using patient-reported outcomes and seemed to indicate a positive effect on the quality of care. Future research should focus on optimizing the spiritual care training to identify the most effective elements and developing strategies to ensure long-term positive effects. This study was registered at the Dutch Trial Register: NTR4559.

## Keywords

Palliative care, spiritual care, training, patient-reported outcome measures

### What is already known about the topic?

- Spiritual care (SC) is reported to be important for palliative patients.
- There is an increasing need for education in SC.
- Consensus-based multidisciplinary guidelines for SC in palliative care (PC) are available to be implemented.

### What this paper adds?

- This paper shows that the effects of SC training can be measured using quantitative methods in patient-reported outcomes related to the quality of care.

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- This paper shows the importance to patients of healthcare professionals' attention to their spiritual needs in the Netherlands.
- This trial shows that SC training of healthcare professionals had a significant effect on patients' reports of healthcare professionals' attention to their spiritual needs and even on their sleep.

#### Implications for practice, theory or policy

- SC education based on multidisciplinary guidelines is an important tool for quality improvement of PC. Future research should focus on optimizing SC training to identify the most effective elements and on developing strategies to ensure long-term positive effects.

## Background and objectives

There is a growing consensus worldwide concerning the integration of spiritual care (SC) into whole person care.<sup>1</sup> In the Netherlands, this consensus is strongly related to the development of modern palliative care (PC). After the decline of the compartmentalization of Dutch society, in which healthcare was organized along confessional/denominational lines, spirituality in the Netherlands healthcare system has been neglected or implicitly included in psychosocial terms, such as 'meaning making' for decades. From the moment PC became part of a national programme in the Netherlands, healthcare professionals, policymakers and researchers have been presented with the challenge of reassessing and introducing the complex concepts of spirituality and SC not only in hospice care but also in hospitals, other facilities and home care.<sup>2</sup> The development of the national consensus-based multidisciplinary guideline for SC took approximately 3 years, and the guideline was published in 2010.<sup>3</sup> This guideline for practice was positively amended in the field and guided a systematic integration of the spiritual dimension of care into the national standards for PC.<sup>4</sup> For English, German and Spanish translations, contact the site of the Taskforce Spiritual Care of the European Association of Palliative Care.<sup>5</sup> The guideline advises to adopt a value-oriented approach, not simply a problem-oriented approach to spiritual needs or distress, also in order to address patients' spiritual resources and activate patients' vitality and resilience.

PC in the Dutch healthcare system operates at a high standard,<sup>6</sup> but PC is not a separate medical speciality or subspeciality, and most hospitals do not have dedicated PC units.<sup>7</sup> Hence, PC is often delivered by healthcare professionals in curative departments without specific training in SC.

Although most healthcare professionals are generally not trained in the basic concepts and methods of SC, the national practice guidelines focus on SC as a dimension that can be delivered by all healthcare professionals in any setting in which palliative patients are treated. Implementation of this new approach or method in institutions such as hospitals is considered to be a complex intervention<sup>8</sup> that requires specific education. Therefore, new

educational programmes that train healthcare professionals in SC need to be developed, implemented and evaluated regarding their effects on patient care.

In this study, a specially designed training on SC based on the consensus definition of spirituality published by the Taskforce on Spiritual Care of the European Association for Palliative Care (EAPC)<sup>9</sup> and the Dutch guideline on SC<sup>3</sup> was developed and evaluated in an intervention study. Trained hospital chaplains educated multidisciplinary teams of healthcare professionals in the clinical wards of non-academic teaching hospitals. Table 1 shows the profiles of the hospitals in the Netherlands.

The aim of the intervention was to improve healthcare professionals' attention to patients' expressions of spiritual needs, not to implement one specific tool for spiritual interventions, to raise healthcare professionals' competencies in supporting patients on this dimension, and raise the quality of care as perceived by palliative patients on the wards that received the training. In this article, we present the results of the patient-reported outcomes.

## Methods

### Study design

This pragmatic multicentre trial<sup>10</sup> on patient outcomes followed a quasi-experimental pre-test–post-test design and was part of an exploratory mixed methods action research study. We used quantitative methods to assess the effects of the intervention, SC training for PC, on the patients. This study was designed and conducted in accordance with the WHO Good Clinical Practice Guidelines. Ethical approval was granted by the medical ethical committee in Leeuwarden, the Netherlands, on 4 July 2013 (nWMO22). This study was registered at the Dutch Trial Register: NTR4559.<sup>11</sup>

### Participants

**Hospitals.** The hospitals were selected based on three inclusion criteria: being a member of the association of

**Table 1.** Hospital profiles in the Netherlands.

8 university medical centres	Complex and highly specialized care Research and innovation Education and training of medical and nursing disciplines
27 teaching hospitals, members of the Association of tertiary medical teaching hospitals (STZ)	Standard and complex specialized care Research and innovation Education and training of medical and nursing disciplines
55 general hospitals	Standard care for less specialized problems
4 specialized top clinical centres	(specialized in, for example, cancer, organ transplantation, and in vitro fertilisation (IVF))

tertiary medical teaching hospitals (*Stichting Topklinische Ziekenhuizen*), being actively involved in advancing PC by having a specialist consultation team or implementing PC quality improvement programmes and having a dedicated trained healthcare chaplain specialized in SC for PC.

**Wards.** The intervention and control wards were selected by the local co-researchers, that is, the dedicated chaplains; as the teachers, the chaplains were responsible for the SC training for PC. The criteria for the intervention wards were that the chaplain was connected to the intervention ward, that the ward was willing to facilitate and encourage staff to follow the training and that the ward was willing to facilitate patient interviews.

**Patients.** The physician responsible for each patient was asked to provide the patients' advanced clinical conditions (Table 2) as well as the indicators for supportive care or PC (Table 3). The physicians were asked, 'Would it surprise you if this patient died in the next 12 months?' When the answer was negative, the patient was asked to participate, was provided written information about the study and after providing written informed consent, was included in the study. The included patients were asked to complete the questionnaire independently. If needed, the questionnaire was read at their bedside by a specialist PC nurse or a ward nurse from another department with additional PC training.<sup>12</sup>

Patients were included based on the Dutch translation of the Supportive and Palliative Care Indicators Tool<sup>13</sup> (OPZIS). The OPZIS seemed feasible in the context of this study.<sup>14</sup> We have included four independent groups on two time moments. At T1: intervention group 1 one month before the training on the intervention ward, control group 1 simultaneously on a control ward in the same hospital. At T2: intervention group 2 one month after the training on the intervention ward, and control group 2 simultaneously on the control ward. In the protocol we asked the local researchers for the total number of patients on a ward during the measurement, the total of number of palliative patients and the number of excluded palliative patients, but no team was able to gather this information within reasonable time limits as illustrated in the flow diagram.

Because the intervention training was provided to the clinical staff, randomization of the patients was not an

option. Since we did not perform a spiritual intervention to patients directly, diagnostic awareness was not measured.

### Intervention

The intervention in this trial is not a standardized spiritual intervention administered to patients with a high score (e.g.  $\geq 4$  on a scale from 0 to 10), but a training SC, based on the Dutch multidisciplinary guideline on SC and the EAPC definition of spirituality, to multidisciplinary teams of regular wards, where patients are treated in curative and palliative trajectories. The Dutch multidisciplinary guideline instructs healthcare professionals to look for patients' spiritual resources and not to limit themselves to a problem-oriented approach towards patients' spirituality. In accordance with the action research approach,<sup>15</sup> the SC training intervention given by specially trained local healthcare chaplains varied locally within the preliminary set of requirements of the study protocol.<sup>16</sup> The core skills to train were screening or assessing spiritual needs, accompanying patients within a professional role and referring patients to specialists when the patients are in a crisis. Multidisciplinary education was mandatory. Local variations in training were possible for two of the three provided tools for screening/assessment, for one or two lessons, for the teaching methods and when adapting to locally existing quality programmes in (palliative) care. For more detailed information, see the set of requirements of the training in Table 4.

### Objectives

The objective of the study was to measure the effects of SC training in PC on patients' perceptions of their care and treatment:

Primary outcome: healthcare professionals' attention to patients' life issues and their existential and spiritual distress.

Secondary outcomes:

- Healthcare professionals' openness to conversations about life questions and existential and spiritual distress;

Table 2. Sample description.

	Intervention group		Control group		p-value	Total n (%)
	T1 intervention group 1, n = 29	T2 intervention group 2, n = 24	T1 control group 1, n = 19	T2 control group 2, n = 13		
N=85						
Age in years (mean, SD)	67.11 (9.9)	66.17 (9.3)	66.88 (13.6)	71.75 (8.9)	0.632 <sup>a</sup>	38 (44.7)
Gender: female (n, %)	14 (16.5)	10 (11.8)	10 (11.8)	4 (4.7)	0.627 <sup>b</sup>	
Clinical indicators of advanced conditions <sup>d</sup>						
Heart/vascular disease (n, %)	1 (1.2)	1 (1.2)	2 (2.4)	5 (5.9)	0.004 <sup>b</sup>	9 (10.6)
Respiratory disease (n, %)	10 (11.8)	6 (7.1)	2 (2.4)	3 (3.5)	0.313 <sup>b</sup>	21 (24.7)
Kidney disease (n, %)	6 (7.1)	4 (4.7)	8 (9.4)	5 (5.9)	0.176 <sup>b</sup>	23 (27.1)
Liver disease (n, %)	0	0	0	0		0
Cancer (n, %)	9 (10.6)	8 (9.4)	13 (15.3)	8 (9.4)	0.026 <sup>b</sup>	38 (44.7)
Neurological disease (n, %)	1 (1.2)	0	1 (1.2)	0	0.627 <sup>b</sup>	2 (2.4)
Dementia/frailty (n, %)	7 (8.2)	5 (5.9)	5 (5.9)	2 (2.4)	0.892 <sup>b</sup>	19 (22.4)
Religion					0.437 <sup>b</sup>	84 (98.8)
None (n, %)	9 (10.7)	10 (11.9)	5 (6.0)	6 (7.1)		30 (35.7)
Roman Catholic (n, %)	3 (3.6)	3 (3.6)	3 (3.6)	3 (3.6)		12 (14.3)
Protestant (n, %)	10 (11.9)	6 (7.1)	9 (10.7)	1 (1.2)		26 (31.2)
Muslim (n, %)	2 (2.4)	1 (1.2)	1 (1.2)	0		4 (4.8)
Humanist (n, %)	2 (2.4)	3 (3.6)	0	0		5 (6.0)
Buddhist (n, %)	0	0	0	1 (1.2)		1 (1.2)
Other (n, %)	3 (3.6)	1 (1.2)	1 (1.2)	1 (1.2)		6 (7.1)
SAIL						
Meaningfulness (mean, SD)	4.43 (0.86)	4.42 (0.99)	4.59 (0.87)	3.94 (0.97)	0.294 <sup>c</sup>	82 (96.4)
Trust (mean, SD)	4.40 (0.79)	4.47 (0.91)	4.31 (0.88)	4.54 (0.89)	0.893 <sup>c</sup>	85 (100)
Acceptance (mean, SD)	4.64 (0.86)	4.35 (1.08)	4.82 (0.80)	4.36 (1.00)	0.446 <sup>c</sup>	85 (100)
Caring for others (mean, SD)	4.80 (0.83)	4.53 (0.82)	5.05 (0.72)	4.23 (1.48)	0.183 <sup>c</sup>	85 (100)
Connectedness with nature (mean, SD)	4.55 (1.31)	4.78 (1.34)	5.29 (0.90)	5.12 (1.52)	0.107 <sup>c</sup>	84 (98.8)
Transcendent experiences (mean, SD)	1.99 (1.12)	2.79 (1.56)	2.04 (0.88)	1.93 (1.26)	0.128 <sup>c</sup>	78 (91.6)
Spiritual activities (mean, SD)	2.82 (1.59)	2.79 (1.38)	3.19 (1.37)	1.85 (1.05)	0.065 <sup>c</sup>	82 (96.4)
Number of patients in departments						
Oncology (n, %)	7 (8.2)	10 (11.8)	11 (12.9)	5 (5.9)		33 (38.8)
Lung diseases (n, %)	17 (20.0)	10 (11.8)	1 (1.2)	0		28 (32.9)
Renal unit (n, %)	5 (5.9)	4 (0.7)	5 (5.9)	5 (5.9)		19 (22.4)
Internal diseases (n, %)	0	0	2 (2.4)	3 (3.5)		5 (5.9)

SD: standard deviation; SAIL: Spiritual Attitude and Involvement List.

<sup>a</sup>One-way analysis of variance.<sup>b</sup>Pearson's chi-square.<sup>c</sup>Kruskal-Wallis.<sup>d</sup>Total is more than 100% because some patients had multiple diseases.

**Table 3.** Indicators for supportive or palliative care.

	Intervention group		Control group		p-value <sup>a</sup>	Total
	T1 intervention group 1, n = 29		T1 control group 1, n = 19			
	n (%)	n (%)	n (%)	n (%)		
Performance status (ECOG > 2)	19 (22.4)	19 (22.4)	18 (21.2)	13 (15.3)	0.018	69 (81.2)
General indicators of deteriorating health						
Unplanned hospital admissions ( $\geq 2$ ) in the past 6 months	17 (20.0)	11 (12.9)	9 (10.6)	5 (5.9)	0.623	42 (49.4)
Weight loss (5%–10%) over 3–6 months and/or BMI < 20	4 (4.7)	1 (1.2)	6 (7.1)	8 (9.4)	0.000	19 (22.4)
Persistent, troublesome symptoms despite optimal treatment	13 (15.3)	10 (11.8)	9 (10.6)	6 (7.1)	0.984	38 (44.7)
Risk of dying due to acute deterioration	11 (12.9)	9 (10.6)	16 (18.8)	6 (7.1)	0.007	42 (49.4)
Living in nursing care home/unit or needs care at home	2 (2.4)	2 (2.4)	7 (8.2)	1 (1.2)	0.015	12 (14.1)
Patient requests supportive/palliative care or treatment withdrawal	0	4 (4.7)	5 (5.9)	0	0.012	9 (10.6)
New diagnosis of a progressive life-threatening disease	2 (2.4)	2 (2.4)	4 (4.7)	1 (1.2)	0.414	9 (10.6)
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Mean Utrecht Symptoms Diary	2.8 (1.4)	2.6 (1.5)	3.4 (1.9)	3.2 (0.9)	0.263	

ECOG: Eastern Cooperative Oncology Group; BMI: body mass index; SD: standard deviation.  
<sup>a</sup>Pearson's chi-square.

**Table 4.** Requirements for the Pilot Training Spiritual Care in Palliative Care (SCPC).

Target group	Multidisciplinary clinical teams of physicians, nurses and other healthcare professionals of departments in teaching hospitals (not being: specialized palliative care teams or units)
Competencies	Aim is to develop basic competencies for multidisciplinary spiritual care: recognising, referring, self-reflectiveness and open attitude towards patient spirituality, as formulated by Kuin <sup>17</sup> based on the work of Van Leeuwen. <sup>18</sup>
Preparation	A Dutch e-learning module on SCPC based on the Guideline is considered to be ideal as preparation for a local training. An electronic learning environment with a selection of reading material and video fragments on SC considered to be compatible with the Guideline will be made available to participants who want to prepare themselves before the pilot training SCPC (available at <a href="https://www.mcl.nl/patient/specialismen-en-centra/geestelijke-verzorging/spirituele-zorg">https://www.mcl.nl/patient/specialismen-en-centra/geestelijke-verzorging/spirituele-zorg</a> )
Planning	Implementation of the training is considered ideal when planned as two lessons of 90'–120' with an interval of at least 3 weeks. Minimum is one lesson of 90' with follow-up teaching methods (coaching on the job, bedside teaching)
Structure	The local format of the training has to be designed with the aim to (1) sensitize participants for the spiritual dimension of palliative care, (2) make participants realize the importance of their own spiritual and existential dimensions, in order to (3) integrate it into professional practice
Tools	No screening tools for spiritual care or spiritual care models proposed by Pennaertz are admitted to the pilot training SCPC. Because of lack of validated translations, the choice is limited to those already mentioned and translated in the NL Guideline: symbolic listening according to Weiher, <sup>19</sup> the translation of the three screening questions developed by the Mount Vernon Cancer Network <sup>20</sup> and the Dutch spiritual care model by Leget Ars Moriendi. <sup>21</sup>
Practice-based learning	Teaching has to be practice oriented, practice based, participants should be stimulated to deliver case descriptions and receive feedback on these descriptions from the teacher/chaplain
Freedom for local adjustments	Given the local diversity in teaching hospitals and the nature of teaching spiritual care, the pilot training SCPC is not possible without any diversity in tone, language and methods. The local teachers/chaplains receive a relative freedom in methodology and planning. Educational aims and goals as mentioned above are to be considered. Teaching to only one discipline of the multidisciplinary clinical team is not an option
Teaching methods	No mandatory teaching methods. Selected core concepts and definitions of the guideline will be delivered on slides. Basic knowledge of Kolb's experiential learning model will be taught to the group of teachers/chaplains, preferred methods of teaching spiritual care will be exchanged in the group during the study
Accreditation	The intervention needs approval by professional organizations of physicians and nurses, so participants can score the training to meet their professional registration requirements

- Healthcare professionals' respect for patients' beliefs or philosophies on life;
- Access to the healthcare chaplain in the department;
- Feeling that life was worthwhile during the last 3 days;
- Other possible physical or psychosocial symptoms.

### Outcome measurements

The levels of palliative patients' physical, psychosocial and spiritual distress were measured 1 month before and 1 month after the specific training of the healthcare professionals on the experimental wards. The levels of palliative patients were simultaneously measured on the control wards. The target was to include 5–10 patients in the experimental and 5–10 patients in the control wards: 10–20 patients pre and 10–20 patients post each intervention. The questionnaire contained items on age, gender, demographics and indicators for SC and PC, 15 items on patients' physical and psychosocial symptoms using the Utrecht Symptom Diary,<sup>22</sup> 4 spiritual items adapted from the Distress Thermometer,<sup>16,23</sup> 26 items from the Spiritual

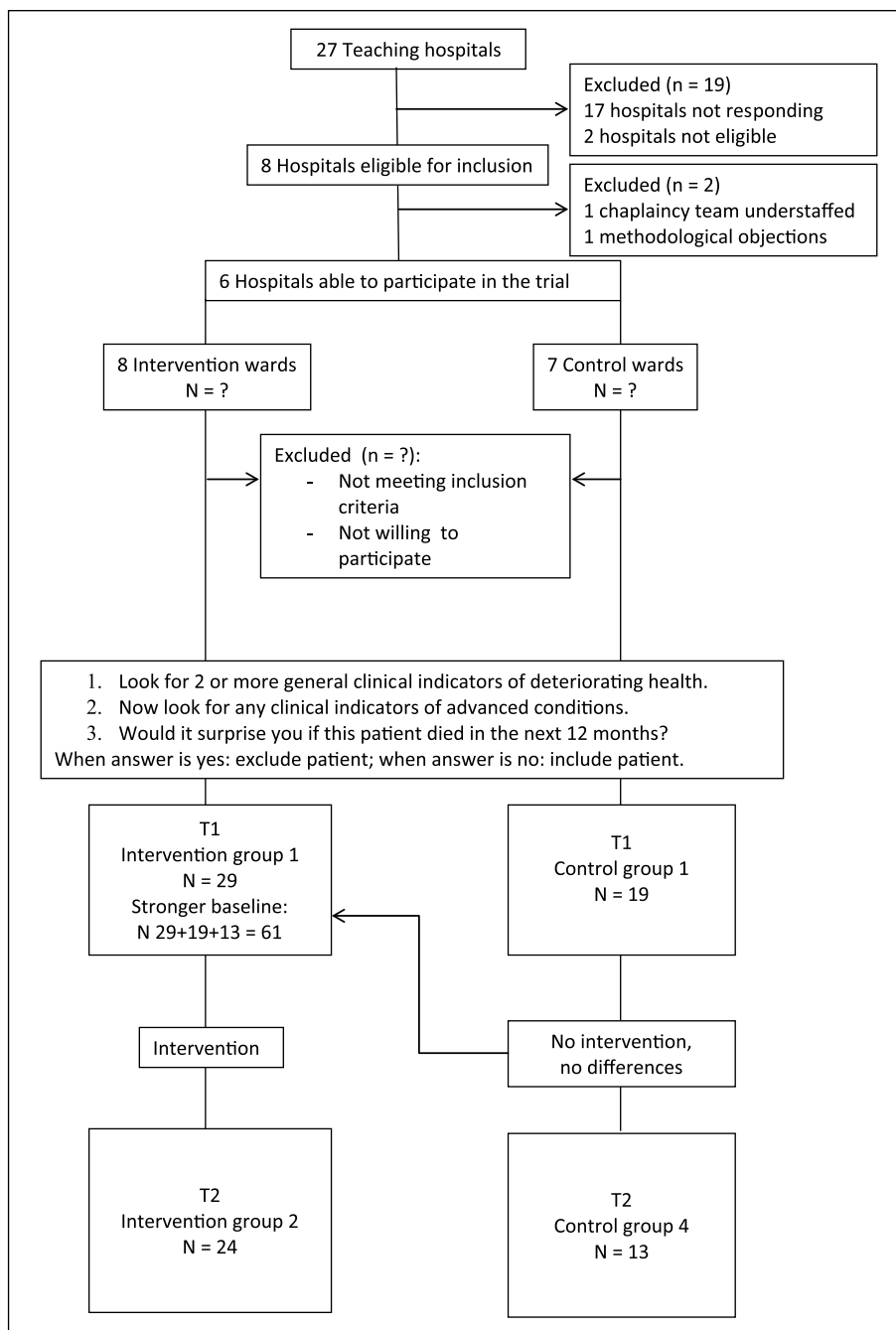
Attitude and Interests List<sup>17</sup> and 6 items related to SC from the NIVEL report on consumer quality indicators of PC.<sup>18</sup>

### Statistical methods

Patient data were coded referring to the hospital, ward and numerical order of inclusion.

Earlier studies in the Netherlands were based on different definitions of spirituality or religion. Validated instruments for SC in Dutch based on (inter-)national consensus definitions still lack in this – for the Netherlands – rather new field of multidisciplinary SC. Therefore, this trial was explorative (phase one) and a power analysis was not possible. For this pilot study, the target number of multidisciplinary teams ( $n=10$ ) as well as the target number of patients ( $n=18$  per site) were not based on a formal sample size calculation. Frequencies were calculated to describe the patients, and characteristics were tested for group differences between the four groups, or calculated as group means to test for group differences using the one-way analysis of variance (ANOVA), Pearson's chi-square and Kruskal–Wallis tests. The Mann–Whitney test was performed to test for differences between two groups





**Figure 1.** Flow diagram.

(intervention group 2 vs intervention group 1 with control groups 3, 4) showing the effect of the intervention. The data were analysed using the Statistical Package for the Social Sciences, IBM Statistics for Windows version 19.0.

## Results

### Study population

**Hospitals, wards.** In August 2013, the chaplaincy teams of all 27 teaching hospitals were invited to participate in this

trial (Figure 1). Eight hospitals were able to fulfil the inclusion criteria. One chaplaincy team could not implement the intervention because of the limited capacity of their local PC consultation team and chaplaincy department. In another hospital, the intervention was administered to a group of PC ambassadors working on different wards; therefore, we could not include patient data from this intervention. Two hospital chaplaincy teams trained two wards, one of which functioned as a control ward for the first intervention. This explains the difference in the

number of intervention and control wards in the flow diagram. Eight wards were trained: four pulmonology wards, two oncology wards, one internal medicine ward and one renal ward. The control wards included three oncology wards, one internal medicine ward, one pulmonology ward and one nephrology ward.

**Patients.** In the remaining six hospitals in which we trained eight multidisciplinary teams, we were able to collect data from 85 palliative patients. We were not able to collect the total number of patients treated at the wards during the measurements. Because we cannot give a point prevalence of palliative patients in the hospital population, we maintained the three question marks in the flow diagram. The data were divided into four groups: pre-intervention group 1 ( $n=29$ ), post-intervention group 2 ( $n=24$ ), control group 3 ( $n=19$ ) and control group 4 ( $n=13$ ).

Patient groups had a mean age varying between 66.2 and 71.8 years, and 44.7% were females. Almost half of the patients had cancer (44.7%), a quarter had kidney disease (27.1%), a quarter had respiratory disease (24.7%), a fifth suffered from dementia/frailty (22.4%) and others had diseases including heart/vascular disease (10.6%) and neurological disease (2.4%). These patients were treated and cared for in oncology wards (38.8%), pulmonology wards (32.9%), nephrology units (22.4%) and internal medicine wards (5.9%).

The four groups of patients had high mean values (3.94 – 5.29) on the same subscales of the Spiritual Attitude and Interests List: meaningfulness, trust, acceptance, caring for others and connectedness with nature. Subscales with a value  $\geq 4$  are considered important dimensions of responders' spirituality.

The mean values of patients' (2.9/3.4) or proxies' (4.2/3.3) life issues and existential and spiritual problems or needs were within the range of the mean values of the other symptoms. Patients rated the importance of healthcare professionals' attention to their and their proxies' life issues and existential and spiritual problems or needs as high (8.5/7.2).

## Outcomes

After we tested for differences between the four groups and found no relevant differences between the patient population of different wards, we also tested for differences between group 3 (control ward pre-intervention) and group 4 (control ward post-intervention) and found no significant differences, concluding that we can ascribe a possible difference in the post-intervention group 2 as an effect of the intervention. We added groups 3 and 4 to group 1 to obtain a larger control group/baseline (see Table 5). As the effects of educating healthcare professionals were being measured, there was no reason to select patient groups based on their specific conditions. Because we did not train a cardiology ward, the outcomes

related to heart/vascular disease, although statistically significant, were considered not relevant.

For the primary outcome measure of 'healthcare professionals' attention to life issues and existential and spiritual distress', the post-intervention group (group 2) showed a significant improvement ( $7.0 > 8.0$ ,  $p$ -value=0.008). The secondary outcome measures showed no significant effects.

The outcomes of the Utrecht Symptom Diary showed no effects of the intervention on physical and psychosocial symptoms, with one relevant exception: a positive significant effect in favour of 'Sleeping' ( $4.0 > 1.0$ ,  $p$ -value=0.020). There was no significant correlation between both significant effects 'healthcare professionals' attention to life issues, existential or spiritual distress' and 'sleeping' ( $p=0.86$ ).

## Discussion

With this sample size, the study generates sufficient data for an exploratory evaluation, of the effect of an educational intervention administered to healthcare professionals, from the perspective of the patients. At the same time our study provides a method for an exploratory evaluation of the implementation of a multidisciplinary guideline on SC. It is important to realize that we did not evaluate a training of one specific spiritual intervention and its effect when administered to patients directly.

The performance status, general indicators of deteriorating health and the mean symptom values reflected the fact that the four groups of (palliative) patients with severe conditions were not in their dying stages.

The variation in religious affiliation (Table 3) compared with the 2014 national statistical data in the Netherlands showed an underrepresentation of non-believers and humanists (35.7% + 6% = 41.7% vs a total of 49.2% in the national data), an underrepresentation of Catholics (14.3% vs 24.4%), an overrepresentation of Protestants (31.2% vs 15.8%) and a normal representation of Muslims (4.8% vs 4.9%).<sup>19</sup> These findings can be explained by the fact that the participating hospitals were situated in the middle and the north of the Netherlands.

This study demonstrates that the clinical effects of SC training for healthcare professionals can be measured using patient-reported outcomes, despite the fact that the concept of SC was relatively new and the tools to measure SC were still under development. Adding questions to the Utrecht Symptom Diary or other Edmonton Symptom Assessment System (ESAS)-like questionnaires, as described in the protocol, seemed to result in the most significant research outcomes. Since we found no correlation between the primary outcome, the improved healthcare professionals' attention to patients' life questions and spiritual and existential needs, and the significant positive effect on patients' sleep, we conclude these are two independent effects of the intervention.

**Table 5.** Symptoms and existential or spiritual needs.

	Intervention group 2, n=24	Baseline group 1, 3, 4, n=61	p-value <sup>a</sup>	Total, N=85
Utrecht Symptoms Diary: no symptom, 0 to extreme symptom, 10	Mean (SD) n	Mean (SD) n		n/N
Pain	2.33 (2.7)	2.6 (2.6)	0.592	
Activity	4.9 (2.9)	5.2 (3.1)	0.694	
Nausea	1.3 (2.4)	1.9 (3.1)	0.623	
Depression	2.0 (2.8)	2.5 (3.1)	0.407	
Anxiety	2.1 (2.7)	1.5 (2.6)	0.250	
Drowsiness	1.0 (1.5)	1.4 (2.3) 60	0.854	84/85
Appetite	3.6 (3.5)	4.8 (3.5)	0.193	
Well-being	4.3 (3.1)	4.4 (2.9)	0.937	
Shortness of breath	2.6 (2.9)	2.1 (2.8)	0.249	
Sleeping	2.1 (2.6)	4.0 (3.3)	0.020	
Tiredness	5.3 (3.2)	5.8 (2.9)	0.676	
Constipation	1.5 (2.3)	2.4 (3.3)	0.402	
Confusion	0.46 (1.1)	0.52 (1.3)	0.945	
Dry mouth	4.2 (3.4)	5.4 (3.5) 60	0.133	84/85
Vomiting	0.46(1.5)	1.3 (2.6)	0.150	
Existential, spiritual problems or needs: no distress, 0 to extreme distress, 10				
Patients' life issues, existential, spiritual distress	2.9 (3.3)	3.4 (2.9)	0.480	82/83
Patient reported proxies' life issues, existential, spiritual distress	4.2 (3.3)	3.3 (3.3)	0.302	77/85
Importance of healthcare professionals' (HCPs) attention to life issues, existential, spiritual distress	8.5 (1.6)	7.2 (2.9)	0.056	
Patient-reported outcome measures				
HCPs' attention to life issues, existential, spiritual distress (0–10)	7.9 (1.8)	5.9 (3.2)	0.008	
HCPs' openness to conversations about life issues, existential, spiritual distress (0–4)	3.3 (0.8) 22	2.9 (1.0) 48	0.114 <sup>b</sup>	70/85 <sup>c</sup>
Caregivers respect for patients beliefs or philosophy of life (0–4)	3.6 (0.6) 16	3.4 (0.7) 29	0.620 <sup>b</sup>	45/85 <sup>c</sup>
Access to healthcare chaplain at this department (0–4)	3.2 (1.1) 14	2.9 (1.3) 30	0.391 <sup>b</sup>	44/85 <sup>c</sup>
Feeling life is worthwhile during the last 3 days (0–6)	4.4 (1.3) 22	4.6 (1.2) 61	0.091 <sup>b</sup>	83/85

SD: standard deviation.

<sup>a</sup>Mann–Whitney.<sup>b</sup>Pearson's chi-square.<sup>c</sup>Due to the editing of the questionnaire, there is a higher value missing.

We acknowledge that the significant positive effect of the SC training for healthcare professionals on the quality of care as reported by patients may be a short-term effect. We did not see a decrease of patients' and proxies' life issues, existential or spiritual distress. We believe there can be several reasons for this: (a) our study design did not direct us to select patients with a relative high score of spiritual distress, (b) nor was it aimed to evaluate a standardized intervention to decrease these patients' or proxies' high level of spiritual distress, (c) the mean levels of spiritual distress we found were relatively low, (d) an educational intervention on healthcare professionals is not likely to expect it to lower it any further and (e) the multidisciplinary guideline instructs to observe if the spiritual distress or existential crisis can be seen as the normal course of a spiritual process needing attention rather than extinction.

Our outcomes, as reported by palliative patients, correspond with international<sup>20,21</sup> and national<sup>24</sup> studies that found that patients highly value healthcare professionals' attention to their life questions and their existential and spiritual needs. In the post-intervention group, we were surprised by the higher mean scores on this item compared with the other groups. It is possible that patients' awareness of the importance of the spiritual dimension was raised because they were in wards that paid more attention to this dimension of care.

Although the Spiritual Attitude and Involvement List (SAIL) was not developed to measure short-term or long-term effects in clinical practice, it generated interesting information. In this study, palliative patients reported that the following themes were important ( $\geq 4$ ) to them: meaningfulness, trust, acceptance, caring for

others and connectedness with nature (see Table 3; sample description, SAIL). This study indicates that SC training in hospital staff can have a significant positive effect on sleep; however, further research is needed to explore this.

### Strengths and limitations

Providing palliative or comfort care to patients with advanced conditions is by its nature a multidisciplinary activity. Training of only one or two specialists in each team would have made the project vulnerable. The strength of this study was that it showed that a team approach can have significant effects on the quality of care as perceived by patients.

This study demonstrated the possibility of using quantitative research on the complex concept of training SC in trials. The measurement method selected, that is, adding questions to a symptom-oriented tool, was appreciated by the patients and showed quantifiable results. The combination of action research and quantitative research seemed to create opportunities for quality improvement efforts. We were able to generate quality improvement projects in almost a third of the teaching hospitals in our country and, as usually methods developed in our teaching hospitals are more easily disseminated than methods developed in university medical centres, we believe this study to be replicable and our results to be generalizable for many hospital settings.

The main limitation of this study was the sample size. Our target was 20–40 patients per training/intervention per hospital. We only reached the target minimum of 20 patients two times. There are five possible reasons for this: the lack of financial compensation for the nurses' work, the vulnerability of the small and rather new palliative consultation teams in the hospitals during the research period (two sites lacked a palliative team), their limited experience with research protocols, the relatively limited cooperation between the local researcher and the palliative consultation team in one site and finally the severe condition of a number of palliative patients on the wards during the assessment.

Quantitative research does not provide valid information about the content of patients' life issues and about the existential and spiritual needs of patients. Future research will need to involve qualitative methods to interpret the meaning of the quantitative measurable effects.

### Conclusion

SC education based on multidisciplinary guidelines is an important tool for quality improvement of PC. Future research should focus on optimizing the SC training to identify the most effective elements and on developing strategies to ensure long-term positive effects.

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### Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

### Ethical committee

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### References

1. Puchalski CM, Vitillo R, Hull SK, et al. Improving the spiritual dimension of whole person care: reaching national and international consensus. *J Palliat Med* 2014; 17(6): 642–656.
2. Van de Geer J and Leget CJW. How spirituality is integrated system-wide in the Netherlands Palliative Care National Programme. *Progr Palliat Care* 2012; 20: 98–105.
3. Leget C, Staps T, van de Geer J, et al. Richtlijn Spirituele zorg [Guideline spiritual care]. In: De Graeff A, van Bommel JMP, van Deijkck RHPD, et al. (eds) *Palliatieve zorg, Richtlijnen voor de praktijk* [Palliative care, guidelines for practice]. Utrecht: Vereniging van Integrale Kankercentra [Netherlands Comprehensive Cancer Organisation] VIKC, 2010, pp. 637–662.
4. Coördinatieplatform Zorgstandaarden en het Kwaliteitsinstituut [National Platform for Standards on Quality of Care], The Hague: Department of Healthcare (Min. VWS). *Zorgmodule Palliatieve Zorg 1.0*. (Care module for palliative care 1.0), 2013.
5. Taskforce Spiritual Care, European Association for Palliative Care. Taskforce spiritual care, related publications, 2016, <http://www.eapcnet.eu/Themes/ClinicalCare/SpiritualCareinPalliativeCare/RelatedPublications.aspx> (accessed 16 March 2016).

6. Centeno C, Lynch T, Donea O, et al. *EAPC Atlas Palliative Care in Europe 2013*. Milano: EAPC, 2013.
7. Brinkman A and Gootjes J. NPTN: palliative care comes under the spotlight in the Netherlands. *Eur J Palliat Care* 2009; 16: 151–153.
8. Grol R and Wensing M. *Implementatie, effectieve verbetering in de patiëntenzorg* [Implementation, effective improvement in patient care]. 5th ed. London: Reed Business, 2012.
9. Nolan S, Saltmarsh P and Leget C. Spiritual care in palliative care: working towards an EAPC Task Force. *Eur J Palliat Care* 2011; 18: 86–89.
10. Zwarenstein M, Treweek S, Gagnier JJ, et al. Improving the reporting of pragmatic trials: an extension of the CONSORT statement. *BMJ* 2008; 337: a2390.
11. Dutch Trial Register (Nederlands Trial Register), <http://www.trialregister.nl/trialreg/admin/rctsearch.asp?SC=1135> (accessed 18 May 2016).
12. Witkamp FE, van Zuylen L, van der Maas PJ, et al. Improving the quality of palliative and terminal care in the hospital by a network of palliative care nurse champions: the study protocol of the PalTeC-H project. *BMC Health Serv Res* 2013; 13: 115.
13. Boyd K and Murray SA. Recognising and managing key transitions in end of life care. *BMJ* 2010; 341: c4863.
14. Medical Centre Leeuwarden N. Supportive and Palliative Care Indicators Set (Ondersteunende en Palliatieve Zorg Indicatoren Set (OPZIS)), 2015, [https://www.mcl.nl/\\_library/44790/OPZIS%20MCL%202014.pdf](https://www.mcl.nl/_library/44790/OPZIS%20MCL%202014.pdf) (accessed 25 March 2016).
15. Koshy E, Koshy V and Waterman H. *Action research in healthcare*. London: SAGE, 2011.
16. Van de Geer J, Zock TH, Leget CJW, et al. Training spiritual care in palliative care in teaching hospitals in the Netherlands: a multicentre trial. *J Res Interprofessional Pract Educ* 2016; 6(1): 1–15.
17. Kuin AMM. *Competenties voor het bieden van spirituele zorg aan patiënten in de palliatieve fase en hun naasten*. Houten: Agora, 2009.
18. van Leeuwen RR. *Towards nursing competencies in spiritual care*. Groningen: Rijksuniversiteit Groningen, 2008.
19. Weiher E. *Das Geheimnis des Lebens berühren, Spiritualität bei Krankheit, Sterben, Tod. Eine Grammatik für Helfende*. Stuttgart, DE: Kohlhammer, 2011.
20. Mount Vernon Cancer Network. *Spiritual support steering group. Final report on spiritual support*. Stevenage, UK: Mount Vernon Cancer Network, 2007.
21. Leget C. Retrieving the Ars moriendi tradition. *Med Health Care Philos* 2007; 10: 313–319.
22. Utrecht Palliatie Centrum [Utrecht Palliation Centre]. *Utrecht Symptoom Dagboek* [Utrecht Symptom Diary], 2010, <https://www.iknl.nl/docs/default-source/Palliatieve-zorg-in-de-ziekenhuizen/utrecht-symptoom-dagboek.pdf?sfvrsn=0> (accessed 16 March 2016).
23. Tuinman MA, Gazendam-Donofrio SM and Hoekstra-Weebers JE. Screening and referral for psychosocial distress in oncologic practice: use of the Distress Thermometer. *Cancer* 2008; 113(4): 870–878.
24. Huber M. *Factsheet towards a conceptual framework relating to 'Health as the ability to adapt and to self manage'*. Driebergen: ZonMw, Louis Bolke Instituut, 2013.