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Title
Nursing and midwifery students’ perceptions of spirituality, spiritual care, and spiritual care competency: a prospective, longitudinal, correlational European study

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Dedication: we dedicate this paper to the late Professor Donia Baldacchino, University of Malta, who would have been an author on this paper has she lived.

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Keywords

midwifery education, nurse education, spirituality, spiritual care, spiritual care competency, spiritual care education

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Abstract
Background. Nurses and midwives care for people at some of the most vulnerable moments of their lives, so it is essential that they have the skills to give care which is compassionate, dignified, holistic and person-centred. Holistic care includes spiritual care which is concerned with helping people whose beliefs, values and sense of meaning, purpose and connection is challenged by birth, illness or death. Spiritual care is expected of nurses/midwives but they feel least prepared for this part of their role. How nursing and midwifery students can be prepared for spiritual care is the focus of this study.
Objectives. 1. To describe undergraduate nursing and midwifery students perceptions of spirituality/spiritual care, their perceived competence in giving spiritual care and how these perceptions change over time. 2. To explore factors contributing to development of spiritual care competency.
Methods. Prospective, longitudinal, multinational, correlational survey design. A convenience sample of 2193 undergraduate nursing and midwifery students (69% response rate, dropping to 33%) enrolled at 21 universities in eight countries completed questionnaires capturing demographic data (purpose designed questionnaire) and measuring perception of spirituality/spiritual care (SSCRS), spiritual care competency (SCCS), spiritual wellbeing (JAREL) and spiritual attitude and involvement (SAIL) on 4 occasions (start of course n=2193, year 2 n=1182, year 3 n=736, end of course n=595) between 2011-2015. Data were analysed using descriptive, bivariate and multivariate analyses as appropriate.
Results. Perceived competency increased significantly over the course of students' study which they attributed to caring for patients, events in their own lives and teaching/discussion in university. Two factors were significantly correlated with perceived spiritual care competency: perception of spirituality/spiritual care, where a broad view was preferable, and personal spirituality, where high spiritual wellbeing (JAREL) and spiritual attitude and involvement (SAIL) scores were preferable.
Conclusions. We have provided the first international evidence that perceived spiritual care competence is developed in undergraduate nursing and midwifery students and that students' perceptions of spirituality and personal spirituality contribute to that development. Implications for teaching and learning and student selection are discussed. The study is limited by attrition which is common in longitudinal research.

Background

The nursing and midwifery professions provide care for people across the lifespan trajectory in a diverse range of settings at significant times of their lives such as at birth and death. How they care for people at such times may leave a lasting impression, therefore, it is imperative that nurses/midwives have the necessary skills and competence to provide care that is safe, holistic and person-centered and is delivered with respect, dignity and compassion.

The European Commission (2010) highlights the importance of the spiritual, religious and cultural aspects of people's lives to their sense of wellbeing, and recommends that the caring professions are educated in this respect; nurses and midwives are obvious examples. The route to registration as a nurse/midwife in most countries is after a period of study at an academic institution involving a combination of academic study and clinical practice, each with their associated forms of assessment (e.g. International Council of Nurses 2012). Nurses/midwives are expected to be competent in caring for the whole person (body, mind and spirit e.g. Schuurmans 2012, International Confederation of Midwives 2014), but there is emerging international evidence indicating that they feel inadequately prepared for spiritual care (e.g. Schep-Akkerman and van Leeuwen 2009 [Netherlands], Egan et al 2017 [New Zealand]).

Educational preparation

The late 1990s saw an emerging rhetoric about the importance of the educational preparation of nursing and midwifery students for delivery of spiritual care (e.g. Ross 1996, McSherry et al 2008). Recently, Lewinson et al (2015) undertook a systematic review of the literature on spiritual care preparation in pre-registration nursing programmes internationally. The review identified 28 international studies which reinforces what is already known; that nurses and midwives feel least prepared for spiritual care and they want further training. The review also reported studies, limited by small sample sizes and cross-sectional design, suggesting that nurse education programmes may raise students' spiritual awareness and may develop their confidence in engaging with spiritual care (e.g. Attard 2014).

Over the last two decades, there has been a growing realization, underpinned by a strong evidence base, of the importance of spiritual care for health and wellbeing (e.g. Koenig at al 2012) reflected in its inclusion in the work of international health bodies (e.g. World Health Organization (WHO 2002), the European Association for Palliative Care [EAPC] http://www.eapcnet.eu/ no date). However, despite a proliferation of research indicating that spiritual care is important to patients/clients internationally (e.g. Balboni et al 2017, Selman et al 2017), the utilization and application of research findings within practice seems to be patchy outside of palliative care. For example, in England, a national audit (Royal College of Physicians, 2016) found that the 'personal, religious and spiritual beliefs' of people who were at end of life was consistently poorly addressed within acute hospitals. The reasons for this are unclear but two contributory factors may be staff feelings of inadequacy in dealing with spiritual issues and lack of training (RCN 2011a) of its membership. This sense of unpreparedness extends to Europe (Schep-Akkerman and van Leeuwen, 2009), New Zealand (n=472, Egan et al 2017) and to other healthcare professionals in Australia (n=437, Austin et al 2017). Answers to the questions raised by Ross back in 1996 (p40) about whether 'nurses who had been taught spiritual care were any better at giving it than those who were not' and about how spiritual care should be taught, have still not been adequately answered.

A possible explanation for this slow progress may be because spirituality assumes low priority in already packed education programmes (Lewinson et al 2015). This situation is not helped, for example in the UK, by mixed messages given by the professional regulatory body, the Nursing and Midwifery Council (NMC). The NMC states that nurses should be competent in spiritual care at point

of registration (NMC 2010), yet it is reluctant (Smith 2015) to include spirituality within its Code of Practice (NMC 2015), despite: calls for its inclusion (McSherry and Ross 2015); international evidence that spiritual care is important to patients (Koslander et al 2013) and pregnant women (Bélanger-Lévesque et al 2016); evidence (cited above) of benefits to health and wellbeing. In other countries, such as Norway (NSF 2016) and Denmark (Ministry of Higher Education and Science 2016) governments use terms like 'humanity', 'culture' and 'dignity' rather than 'spirituality'. Reluctance to embrace spirituality more explicitly may be because of the persisting misconception that spirituality is synonymous with religion making it professionally and politically contentious. Additionally, spirituality and spiritual care are not easy to measure so may not be valued by health care administrators whose focus is on measurable outcomes.

The meaning of spirituality

There has been considerable debate internationally across disciplines about the precise meaning of spirituality and the need for/possibility of reaching a definition (e.g. Swinton 2006). Internationally the WHO (2002) identifies 8 domains of spirituality which are reflected in definitions adopted in healthcare practice in the USA (Puchalski et al 2014), in the UK (RCN 2012) and in Europe by the EAPC. The EAPC offers the following definition which guided this investigation:

"Spirituality is the dynamic dimension of human life that relates to the way persons (individual and community) experience, express and/or seek meaning, purpose and transcendence, and the way they connect to the moment, to self, to others, to nature, to the significant and/or the sacred.' (http://www.eapcnet.eu/ no date).

Spiritual care is at the heart of everyday nursing/midwifery practice (Clarke 2013). It is a core value running through nursing/midwifery practice. Nurses/midwives have been calling for over two decades for education to prepare them for spiritual care (RCN 2011, Lewinson et al 2015). The questions of what that education should look like and what ingredients are necessary for development of spiritual care competency are as yet unanswered. Whilst spiritual care competences have been developed in the UK for chaplaincy (NHS Education Scotland, no date) and for palliative care (Marie Curie, no date), this work has just begun for nurses and midwives (Baldacchino 2006 [Malta], van Leeuwen et al 2009 [Netherlands], Attard et al 2014 [Malta]) and requires further development.

This paper reports the findings of a study which starts to shed some light on these questions. It builds on a previous cross-sectional pilot survey of 531 undergraduate nursing and midwifery students from four European countries (Ross et al 2014, 2016) which highlighted that personal spirituality of the student and how they view spirituality were factors correlated with their perceived competency in spiritual care. What is not currently known is whether these findings hold in a larger more culturally diverse student sample, whether spiritual care competency develops during preparatory nurse/midwifery courses of study, and what factors enhance development of competency.

Aims

1. To describe how nursing and midwifery students perceive spirituality and spiritual care and how this changes over time.
2. To describe how competent nursing and midwifery students perceive themselves to be in delivering spiritual care and how this changes over time.
3. To explore the factors contributing to development of perceived spiritual care competency.

Methods

The study was designed as a prospective, longitudinal, multinational, correlational survey.

Ethics

Prior to commencement of the study, ethical approval was obtained from ethics committees within participating universities and external organisations as required by each country. Participation was voluntary and anonymity and confidentiality were assured. No pressure was put on students to complete the questionnaires which were given out in class and could be handed back completed or blank.

Sample

The sample population was 3175 undergraduate nursing and midwifery students enrolled at 21 universities in eight countries in September 2011. A convenience sample of 2193 students was recruited from attendees in class by the authors, most of whom were involved in teaching these students, plus additional nurse lecturers for the multiple universities in the Netherlands (overseen by RvL) and Norway (overseen by TG), one to two weeks after verbal and written information about the study was given out by them. A paper set of questionnaires was completed at that point (n=2193) and during class at the start of years two (n=1182), three (n=736) (and four for Netherlands which had a four year course) and at the end of the course (n=595). Paper copies of the questionnaires were scored by the authors using an agreed scoring protocol which had been developed for the pilot study (Ross et al 2014).

The questionnaires

Students completed five questionnaires (Table 1) which were selected on the basis of fitness for purpose, validity and reliability from a review of the literature as previously described (Ross et al 2014).

Table 1 here

Analysis

Authors from each country scored the questionnaires and entered the data into identical SPSS files (PASW Statistics v18, used in the pilot). The eight files (one from each country) were emailed to ASA at the data analysis centre in the Netherlands where they were merged into one file by ASA who undertook the analysis with PJ using an agreed analysis protocol. Analysis was performed to detect differences/relationships in the measures according to demographic factors. For dependent variables with scale outcomes, t-test/Mann-Whitney tests (depending upon distribution of dependent variable) and One-Way ANOVA/Kruskal Wallace tests were used for comparisons between independent groups, while paired t-tests were used for comparisons between non-independent groups (Bland, 2006). Spearman tests were used to determine correlational relationships between variables.

To establish the extent to which demographic factors contributed to perception of spirituality/spiritual care (SSCRS), competence (SCCS), spiritual attitude/involvement (SAIL), and spiritual well-being (JAREL), multiple regression analysis was performed for dependent variables with scale outcomes, while logistic regression analysis was performed for dependent variables with binary outcomes (Bland, 2006).

Students who had completed the questionnaires at the start (first year) and at the end of their course were included in the analysis over time because they represented the end product of the nurse/midwifery education programme (n=351) and most regulatory bodies focus on competency at point of registration.

Results

The sample

Table 2 shows that 21 universities (14 secular, seven religious) from eight countries took part in the study. A total of 2193 students took part in year one from a possible 3175 giving an initial response rate of 69%. By the end of the study 595 students participated from a possible 1821 giving a response rate of 33%. The high reduction in response rate from initial to final survey was due to two centres withdrawing (Scotland after year two, an English centre after year one because of staff retirement), natural attrition from courses and many students being on placement and therefore difficult to reach. These figures reflect the challenges of undertaking longitudinal research. 351 students completed questionnaires both at the start and the end of the study and have been used in paired sample analysis. Further analysis (described as 'non-paired') was conducted that compared the initial sample with the final sample; while there is some overlap in membership of these groups there are some participants who provided data only initially or only finally and as such the comparisons have been performed considering the samples as independent, diminishing the power of the analysis.

Table 2 shows that on entry to the course the majority of the sample were female (88%) nursing students (96%), aged under 21 years (56%) and studying at secular universities (73%). The majority were religious (67%), mainly Christian (62%), and practised their life view daily or weekly (59%). Over half (57%) reported experiencing life events which were mostly negative (54%).

Table 2 here

Personal spirituality

Table 3 reports the mean scores on all measures, for those completing questionnaires at the start (n=2193) and end of the study (n=595) (non-paired) and for those completing questionnaires both at the start and at the end of the study (n=351, paired).

Table 3 here

JAREL spiritual wellbeing. The mean score for the entire sample at the start of the course was 4.2 (n=2193) and for the paired sample was 4.3 (n=351), meaning that they were classified as having moderate spiritual wellbeing, and there was no change over the duration of the course (Table 3).

SAIL. The mean score for the entire sample at the start of the course was 3.9 (n=2193) and 4.0 for the paired sample (n=351) and these scores increased very slightly by the end of the course in both groups (+0.2 in the non-paired sample and +0.1 in the paired sample, $p<0.01$, Table 3) and in all subscales. Using the binary cut-off point of >4 to indicate 'high' spiritual attitude/involvement, students narrowly missed out on being classified as 'high' at the start of their course, but were classified as 'high' by the end of the course.

***Perceptions of spirituality and spiritual care (SSCRS) and how this changes over time*.**
Table 3 shows that the mean SSCRS total score at the start of the study for the whole sample (n=2193) was 3.8 and 3.9 for the paired sample (n=351). Thus at the start of the course, students considered spirituality and spiritual care to be broader than just religion.

There was a very small but statistically significant broadening of perception of spirituality/spiritual care over time in the overall score in both groups (+0.2 in the unpaired sample and +0.1 in the paired sample, $p<0.01$). There was also a small but statistically significant broadening of perception in the subscales 'spirituality', 'spiritual care', 'religiosity' in both groups (+0.2 in the non-paired sample and +0.1 in the paired sample $p<0.01$) and in personal care for the paired sample (+0.1, $p<0.01$) but not for the non-paired sample (no change $p=0.02$).

Perceptions of competence (SCCS) in spiritual care delivery and how this changes over time
The mean SCCS score at the start of the study for the whole sample (n=2193) and the paired sample (n=351) was 3.6 indicating that students considered themselves to be only just competent in spiritual care at the start of their course (using the cut-off point of >3.5).

Table 3 shows that there was a small but statistically significant increase in perceived competence over time in both groups of +0.4 ($p<0.01$) and in each subscale in both groups. The most notable increases were in the subscales indicative of more specialised aspects of spiritual care where scores increased in both groups by 0.6 for 'assessment and implementation of spiritual care' and by between 0.5 and 0.6 for 'referral'. Increases of between 0.4 and 0.5 were also noted for 'professionalisation and improving the quality of spiritual care' and 'personal support and patient counselling'. The subscales 'attitude towards patients' spirituality' and 'communication' showed minimal improvement in both groups of between 0.1 and 0.2, but mean scores were high to start with (4.4 and 4.5 respectively) compared with the other subscales where the mean scores were lower to start with (3.1-3.6).

Factors contributing to spiritual care competency
Table 4 shows that the factors highly and consistently (at all four time points) correlated with perceived competence were: perception of spirituality/spiritual care (SSCRS, range 0.32-0.55, $p<0.01$), Spiritual Attitude and Involvement (SAIL, range 0.29-0.41, $p<0.01$) and spiritual wellbeing (JAREL, range 0.15-0.33, $p<0.01$). No clear picture emerged in relation to correlation of students' perceived competence with their practice of spiritual activities or experience of positive life events.

Figure 1 shows that students in the paired sample felt that caring for patients (63-72%) made the greatest contribution to their learning about spiritual care. Events in their personal lives (39-54%) and university linked activities, such as teaching and discussions in university/with other students, were important to a lesser extent (36-48%).

Table 4 and Figure 1 here

Factors contributing to CHANGE in spiritual care competency
Correlations were calculated between the personal factors shown in Table 4 and change in competency scores (SCCS) in the paired sample of 351 between the start and end of the study. Regression analysis highlighted that personal factors were of minor importance in change in competency.

Discussion

Perceived spiritual care competency

It is encouraging that students in our sample perceived themselves to be more competent than not in spiritual care at the start of their course, a finding which concurs with our pilot study (Ross et al., 2014). Perceived spiritual care competency also increased significantly over the course of students' studies (increase of 0.4). There are no studies that offer a direct comparison with these findings. Some studies reported that teaching programmes seemed to enhance nurses understanding and knowledge of spirituality and their practice of spiritual care, but most were limited by small sample sizes, lacked clarity in the rigour of the design, and were cross-sectional (Tiew and Creedy, 2011; Cooper et al., 2013; Attard et al., 2014). They also assumed that changes in enhanced understanding and practice were attributable to the teaching programmes, but they did not provide evidence for this. Our study offers the first such evidence by identifying that two factors, namely perception of spirituality/spiritual care and personal spirituality, correlated with development of perceived spiritual care competency in a multinational sample of nursing and midwifery students; and confirm our pilot study findings (Ross et al 2016).

Factors contributing to development of perceived spiritual care competency

Personal spirituality

Our finding that higher perceived spiritual care competency correlated with higher spiritual wellbeing (JAREL) and spiritual attitude and involvement (SAIL) is in keeping with other studies which have suggested a link between personal spirituality and attitude towards (e.g. Taylor et al., 2008) and perceived ability to give spiritual care (e.g. van Leeuwen et al., 2008; Cone and Giske 2017). The fact that students' personal spirituality (JAREL and SAIL) changed little over the course of their studies raises the question of whether we should be selecting students with high scores on these measures at course entry, and if so, what would represent a minimum score. In terms of the teaching and learning environment, reflective exercises focusing on own beliefs/values and how these impact on care, may be useful (but would require testing) in raising students self-awareness in light of evidence that health care professionals' beliefs and values may impact on care and treatment decisions (Seale 2010).

Perception of spirituality/spiritual care

Higher perceived spiritual care competency also correlated with viewing spirituality/spiritual care broadly, not just in religious terms. We report evidence that students' perceptions of these terms broadened further over the duration of their studies. Further analysis of our data is underway to ascertain if this happens to all students, or if there are some whose view does not broaden, who do not perceive themselves as being competent in spiritual care at point of registration and therefore for whom the offer of a place on a nursing/midwifery course may require careful consideration along with other evidence as part of the selection process.

Factors identified by students as important in their learning

Students in our sample attributed their development of spiritual care competency to a number of factors which provides educators with clues about how they might design education programmes to best facilitate this development. For example, highest on students' list was caring for patients which links with Giske and Cone's (2012) finding that the clinical encounter may open up opportunities for spiritual learning. The implications are that theoretical spirituality teaching might be better placed in years two or three of courses, by which time students have had clinical experience to draw upon. Scenarios and reflective exercises that focus on patient encounters may serve as useful learning

tools. University teaching and discussion in university/with other students were additional factors identified as important by students in learning about spiritual care, suggesting that tutorials and discussion forums, whether on-line or face to face, may be helpful.

Life events did not feature strongly in our analysis as a factor contributing to development of perceived spiritual care competency (positive life events was weakly correlated at three time points only $p<0.01$, Table 4). However, life events were identified by students as important in their learning about spiritual care and was also identified by Ross (1994) as important. Analysis of our sample's qualitative responses to this question may shed further light on this.

Further investigation is needed to determine: if spiritual care competency can be predicted; if students scoring low in competency improve and what contributes to improvement; if the study measures may be useful in student selection and which educational strategies are most effective in enhancing learning in spiritual care. Answers to these questions are being sought by nurse/midwifery educators across Europe as part of a three year Erasmus funded project. The project aims to develop an evidence based gold standard matrix for spiritual care education for undergraduate nurses andmidwives, an educational toolkit and a website to act as a hub for international engagement and dissemination of best practice (http://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details-page/?nodeRef=workspace://SpacesStore/763f7149-604f-4edb-a4a4-0cee162739b0). A measure of actual rather than perceived spiritual care competency is also needed.

Limitations

Attrition

A good response rate of 69% was obtained at the beginning of the study, dropping to 33% by the end. Attrition was high, a common problem in longitudinal studies (Gustavson et al 2012) and can inhibit generalisability. Reasons for attrition in our study included withdrawal of participating universities, natural attrition from courses and difficulty reaching students who were on clinical placement.

Diversity of life view

Our pilot study conducted in four countries highlighted the need to include more participants with a greater diversity of life view (Ross et al 2016), however this was only achieved to a limited extent by including a larger study sample derived from eight countries. Although our main study sample was less religious than our pilot sample (67% compared with 87% in the pilot) and non-religious activities were practised (70%; meditation, art, rest in nature, voluntary work) just as much as religious ones (73%; prayer, reading religious books, visiting religious places), there was still a predominance of Christian students with little representation from other religions. This may be a reflection of European nursing cohorts in general. Unfortunately we were unable to obtain European data of the religious/non-religious profile of student nurses to compare our sample with. However, our UK sample was very similar to that of the UK nursing and midwifery student profile from the most recent National Student Survey (which gathers feedback from UK final year undergraduate students about their experience of their courses) statistics; 53% of our sample were Christian compared with 44% nationally, 3% Buddhist compared with 2% nationally (Equality Challenge Unit 2011).

Conclusion

Following damning reports of poor healthcare, such as the Francis Report in England (The Mid Staffordshire NHS Foundation 2013), a great deal of attention has focussed on recruiting nursing and midwifery students with the right values (Health Education England 2014) so that they will be competent practitioners in both the art and science of nursing/midwifery at point of registration; spiritual care competency is one requirement. Our findings from a longitudinal multinational quantitative survey provide the first evidence that perceived spiritual care competency improved slightly but significantly over the course of our sample's studies and that a high sense of personal spirituality and a broad view of what spirituality/spiritual care were about were important factors in that improvement. The implications of these findings for student selection and for developing best practice in spiritual care education are being considered by nurse/midwifery educators in a three year European project.

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Table 1: Study measures

Measure	Details
Purpose designed demographic questionnaire	Questions asked about gender, age, educational background, religious affiliation/life view and practices, course of study (midwifery or nursing), and healthcare experience prior to start of the course.
JAREL Spiritual well-being Scale (Hungelman et al 1996)	JAREL measures spiritual wellbeing (both religious and existential domains) and contains 21 items scored on a 6 point scale within 3 subscales: faith/belief; life/self responsibility; life satisfaction/self actualization. Treated as a categorical variable, JAREL measures three levels of spiritual wellbeing: low (0-50); medium (51-84) and high (85-126).
Spiritual Attitude and Involvement List (SAIL, Meezenbroek et al 2008)	SAIL consists of 26 items arranged in 3 dimensions with 7 subscales: Connectedness to oneself (meaningfulness, trust, acceptance); to the environment/others (caring for others, connectedness with nature); to the transcendent (transcendent experiences, spiritual activities). Factorial, convergent and discriminant validity were demonstrated. Subscales showed adequate internal consistency and test-retest reliability. SAIL can be employed as a continuous measure ranging from 1 to 6 with higher scores indicating higher levels of spiritual attitude/involvement or it can be employed as a binary variable whereby high spiritual attitude/involvement is indicated by a mean SAIL score >4.
Spirituality & Spiritual Care Rating Scale (SSCRS, McSherry et al 2002)	SCCRS measures students' perceptions of spirituality and spiritual care with 17 items on a 5 point scale. A high overall score indicates a broader view of spirituality (i.e. inclusive of both religious and existential elements such as meaning, value, purpose, peace and creativity) and spiritual care which goes beyond simply facilitating religious rituals. Additionally it involves showing kindness and taking account of peoples' beliefs and values and dignity (McSherry et al 2002). The SSCRS has demonstrated Cronbach's alpha scores ranging from 0.64-0.84 in 42 studies in 11 countries.
Spiritual Care Competency Scale (SCCS, van Leeuwen et al 2009)	The measured students' perceived competence in giving spiritual care. It contains 27 items scored on a 5 point scale from 'completely disagree' (1) to 'completely agree' (5), therefore the highest possible competency score is 135 and the lowest is 27. There are 6 subscales measuring: assessment and implementation of spiritual care; professionalization and improving the quality of spiritual care; personal support and patient counselling; referral to professionals; attitude towards patients' spirituality; communication. The SCCS has good homogeneity, average inter-item correlations >0.25 and good test-retest reliability. It is valid and reliable (Cronbah's alpha domains range 0.56-0.82). The SCCS can be employed as a continuous measure of competency ranging from 1 to 5 with higher scores indicating higher levels of perceived competency or it can be employed as a binary variable whereby competency is indicated by a mean SCCS score across all questions >3.5.

Table2. Description of the sample at start and end of study

Characteristics		**Total start study [total in cohort] (n=2193 [3175])**	**Total end study [total in cohort] (n=595 [1821])**	**Total completing questionnaires at both start and end (n=351)**
Countries	Wales (1 centre-secular)	101 [107]	105 [105]	70
	England (3 centres-secular)	360 [855]	80 [491]	46
	Scotland (1 centre-secular)	301 [350]	-	-
	Malta (1 centre-secular)	198 [234]	88 [195]	69
	Netherlands (5 centres–2religious, 3 secular)	545 [604]	67 [260]	31
	Norway (8 centres–4 religious 4 secular)	526 [841]	197 [633]	108
	Sweden (1 centre-secular)	48 [90]	37 [68]	11
	Denmark (1 centre-secular)	114 [94]	21 [70]	16
		% of total	**% of total**	**% of total**
Gender	Female	88	89	91
Age	<21yr	56	11	57
Type of course	Nursing	96	96	95
	Midwifery	4	4	5
Type of university	Religious	27	27	41
	Secular	73	73	59
Education prior to study	High school + secondary level	60	56	62
	Vocational training and higher education	40	44	38
Health care experience	Prior to study / last year	55	62	50
Life view	Christian *	62	62	68
	Humanist	4	9	5
	Atheist	15	13	11
	Agnostic	6	5	4
	Muslim*	2	2	1
	Buddhist*	3	1	4
	Other	5	5	5
	No faith	3	3	2
Religious life view	Above*	67	65	73
Life event (positive or negative)	In last 3 years / last year	57	58	61
Positive life event	In last 3 years / last year	46	38	38
Negative life event	In last 3 years / last year	54	40	49
Practise spiritual activity (any)	Daily or weekly	59	67	64
Prayer	Daily or weekly	33	39	40
Meditation	Daily or weekly	10	13	11

Reading religious books	Daily or weekly	18	22	22
Visit religious places	Daily or weekly	22	25	30
Art	Daily or weekly	27	25	27
Rest in nature	Daily or weekly	23	34	27
Voluntary work	Daily or weekly	10	11	12

Table 3. Mean scores on questionnaires at start and end of study compared with (paired) T-test

	Start study (n=2193)	**End study (n=595)**	**Change (p-value T-test)**	**Start study (n=351)**	**End study (n=351)**	**Change (p-value paired T-test)**
JAREL	4.2	4.2	0.0 (0.08)	4.3	4.3	0.0 (0.88)
SAIL	3.9	4.1	+0.2 (0.00)	4.0	4.1	+0.1 (0.00)
SAIL – connection to self	4.4	4.5	+0.1 (0.00)	4.4	4.5	+0.1 (0.00)
SAIL – connection to others	4.6	4.8	+0.2 (0.00)	4.7	4.8	+0.1 (0.00)
SAIL – connection to the transcendent	2.9	3.0	+0.1 (0.00)	3.0	3.1	+0.1 (0.01)
SSCRS*	3.8	4.0	+0.2 (0.00)	3.9	4.0	+0.1 (0.00)
SSCRS – religious (rev)	3.8	4.0	+0.2 (0.00)	3.9	4.0	+0.1 (0.00)
SSCRS – spiritual	3.7	3.9	+0.2 (0.00)	3.8	3.9	+0.1 (0.00)
SSCRS – spiritual care	4.2	4.4	+0.2 (0.00)	4.3	4.4	+0.1 (0.01)
SSCRS – personal care	3.9	3.9	0.0 (0.02)	3.9	4.0	+0.1 (0.00)
SCCS	3.6	4.0	+0.4 (0.00)	3.6	4.0	+0.4 (0.00)
SCCS – assessment	3.3	3.9	+0.6 (0.00)	3.3	3.9	+0.6 (0.00)
SCCS – professional	3.1	3.5	+0.4 (0.00)	3.1	3.6	+0.5 (0.00)
SCCS – personal support	3.6	4.0	+0.4 (0.00)	3.6	4.1	+0.5 (0.00)
SCCS – referral	3.4	3.9	+0.5 (0.00)	3.3	3.9	+0.6 (0.00)
SCCS – attitude	4.4	4.5	+0.1 (0.00)	4.4	4.5	+0.2 (0.00)
SCCS – communication	4.5	4.6	+0.1 (0.00)	4.5	4.6	+0.1 (0.00)

**SSCRS with four reversed items*

Table 4. Correlation between personal factors and spiritual care competency (SCCS) each year

Personal Factors	**SCCS score at Start of study (n=2020) N=2193**	**SCCS score at Start yr2 (n=1182)**	**SCCS score at Start yr3 (n=736)**	**SCCS score at End study (n=595)**
Country	0.10**	-0.01	0.03	0.06
Type of university	-0.07**	0.06*	0.07	0.05
Gender	0.01	0.00	0.04	0.07
Age (< 20 / > 20 yr)	0.07**	0.07*	0.01	-0.04
Education (high / low)	0.05*	0.02	0.01	0.08
Health Care Exp (Y / N)	0.11**	0.00	0.01	-0.04
Life event (Y / N)	0.09**	0.03	-0.09*	0.08
Life event Pos (Y / N)	0.10**	0.09**	0.11**	0.07
Life event Neg (Y / N)	0.08**	0.04	0.04	0.05
Life view (rel / non rel)	0.03	0.10**	0.04	0.01
Practice prayer	0.03	0.13**	0.16**	0.07
Practice meditation	0.05*	0.08*	0.09*	0.02
Practice reading rel books	-0.06*	0.09*	0.19**	0.10*
Practice religious meeting	-0.03	0.11**	0.13**	0.01
Practice art	0.03	0.06	0.15**	0.08
Practice rest in nature	0.06*	0.07*	0.15**	0.03
Practice voluntary work	0.06*	0.10**	0.17**	0.04
SSCRS	0.32**	0.35**	0.49**	0.55**
SAIL	0.29**	0.38**	0.41**	0.40**
JAREL	0.15**	0.30**	0.33**	0.32**

**p-value < 0.05 **p-value <0.01*

Figure 1 Factors students said contributed to their learning in each year (n=351)