

ORIGINAL RESEARCH

Nurses' perceptions of individualized care: an international comparison

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Abstract

Aim. This paper is a report of a study of internationally-based differences in nurses' perceptions of individualized care in orthopaedic surgical in-patient wards.

Background. Individualized care is valued in healthcare policy, practice and ethical statements as an indicator of care quality. However, nurses' assessments of individualized care are limited and comparative cross-cultural studies on individualized nursing care are lacking.

Methods. A descriptive comparative survey was used to sample orthopaedic surgical nurses ($n = 1163$) working in 91 inpatient wards in 34 acute hospitals in Finland, Cyprus, Greece, Portugal, Sweden, Turkey and the United States of America. Data were collected between March and November 2009 using the Individualized Care Scale-Nurse and analysed using descriptive and inferential statistics.

Results. Nurses in different countries perceived that they supported patients' individuality generally and provided individualized care during nursing activities. Although the highest scores were in support of patients' individuality in the clinical situation both through nursing provision and nurses' perceptions of individuality, there were between-country differences within these scores. Generally, the Greek and American nurses gave the highest scores and the Turkish, Cypriot and Portuguese nurses the lowest.

Conclusions. Between-country differences found may be attributed to differing roles of nurses, care processes, healthcare systems and/or the ways nursing care is defined and organized. As this was the first time the Individualized Care Scale-Nurse was used in an international context, the results are formative and indicate the need to continue studies in this area.

Keywords: cross-cultural, cross-cultural comparison, individualized care, nurses, nursing, questionnaire

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Introduction

The principle of individualized nursing care is broadly accepted worldwide among healthcare professionals (ICN 2006a,b, Thompson *et al.* 2007) and is of global concern (ICN 2006b). Stakeholders assert that health outcomes associated with individualized care are essential for healthcare quality (e.g. OECD 2004, WHO 2005, 2007). However, empirical assessments of individualized care provision in the nursing literature are limited (Suhonen *et al.* 2009a) and are neither acknowledged nor integrated into healthcare development plans (OECD 2004).

Background

The concept of individualized nursing care

Individualized care takes into account patients' personal characteristics and preferences (Radwin & Alster 2002, Suhonen *et al.* 2004, Weiner 2004, Chappell *et al.* 2007) promoting patient participation and decision-making in their care (Suhonen *et al.* 2004, 2005). The concept of individualized care includes three domains: the clinical situation, the personal life situation and decisional control over care (Suhonen *et al.* 2004, 2005, 2010b). Considering these three domains in order, patients are individuals who express their experiences of hospitalization differently (Suhonen *et al.* 2004, Chappell *et al.* 2007). Patients' clinical and personal life situations and background have an effect on this reaction to hospitalization and care delivery (Suhonen *et al.* 2004, Weiner 2004). Decisional control refers to the individual's expectations of having the power to participate in making decisions and obtaining adequate information (Beaver *et al.* 2007).

Individualized care results when a nurse perceives the patient as a unique individual (Radwin & Alster 2002, Chappell *et al.* 2007) and tailors care to the patient's experiences, activities, emotions and perceptions at that particular time (Radwin & Alster 2002, Suhonen *et al.* 2005). Patients feel that their individuality is genuinely recognized and taken into account (Suhonen *et al.* 2004, 2005) when individualized care is practised through a consistent caring relationship (Chappell *et al.* 2007).

Individualized care facilitates positive outcomes for patients (Mulrow *et al.* 2004, Suhonen *et al.* 2008a), such as success in rehabilitation (Mulrow *et al.* 2004), recovery (Frich 2003) and satisfaction with nursing care (Acaroglu *et al.* 2007). Individualized care also increases the motivation and work satisfaction of nursing staff (Lake & Friese 2006, Tellis-Nayak 2007), and the delivery of individualized care meets necessary ethical requirements (e.g. ICN 2004,

Thompson *et al.* 2007, Code of Ethics and Conducting of European Nursing 2008). However, even though the evidence supporting the use of individualized care is available, nurses do not seem to be universally convinced of the need for individualized care in their day-to-day practice (Caspar & O'Rourke 2008, Caspar *et al.* 2009).

Cross-cultural nursing care development and research opportunities

National and international policies aim to standardize health care and nursing care in a global context (OECD 2004, WHO 2007). Professionals' assessments can help in this development of care practice (OECD 2004, WHO 2005, 2007). However, daily care practice differs worldwide (DeKeyser *et al.* 2002, Sprung *et al.* 2003, Suhonen *et al.* 2008b) and between countries (Pang *et al.* 2003, Schopp *et al.* 2003a, Scott *et al.* 2003, Suhonen *et al.* 2003, Välimäki *et al.* 2008). For example, Pang *et al.* (2003) reported cultural differences in nurses' perceptions of role responsibilities relevant to nursing practice and a national variation in the quality of nursing care (Lucero *et al.* 2009). Variations in nurses' perceptions of individualized care across hospitals and wards have also been identified (Suhonen *et al.* 2010b). Some of these variations may be caused by nurse working under different legislations (Suhonen *et al.* 2009b). These variations would be less important were it not for global travel and the facility for European citizens to be treated throughout the European Union (EU) requiring healthcare professionals to be competent to treat patients, of different cultures, in a culturally sensitive manner (e.g. Jones *et al.* 2004, Directive 2005/36/EC 2005).

Although nursing has many universal core elements, the individual focus of nursing research and practice may have different connotations in different cultures and be perceived differently by healthcare professionals (Im *et al.* 2004, Chiang-Hanisko *et al.* 2006). These differences pose challenges to the promotion of international developments in healthcare practice and international scholarly efforts in nursing in Western countries.

Previously, between-country differences in nurses' assessments of patient autonomy (Scott *et al.* 2003, Suhonen *et al.* 2003), informed consent (Schopp *et al.* 2003b) and privacy (Schopp *et al.* 2003a) have been identified. These differences were mainly on a North-South European axis. However, these studies are not enough because cross-cultural comparative nursing research in different social and political contexts is an important means of determining how changes in healthcare systems could lead to better outcomes for patients (Nolan *et al.* 2007, Suhonen *et al.* 2009b). Cross-national and cross-

cultural studies are valuable in at least three areas. First, cross-national studies about the impact of restructuring inpatient care on patient outcomes might yield valuable information about hospital redesign and re-engineering, as well as informing national planning about the numbers and types of nurses needed in the future (Sochalski *et al.* 1997). Secondly, cross-cultural research could form the basis of the systematic monitoring of care quality and best care practices (Skevington 2002, OECD 2004). Thirdly, cross-cultural studies might also provide theoretical insights into the universality of nursing care as a concept (Suhonen *et al.* 2009b) and the level of multi-cultural relevance (Im *et al.* 2004, Chiang-Hanisko *et al.* 2006). However, in such studies, there is a need to be mindful of the diversity of the population to ensure the applicability of research findings (Sidani *et al.* 2010). Such research requires culture-sensitive methods and measures (Skevington 2002) that enable comparisons to be made between the different cultural groups (Sidani *et al.* 2010).

Currently, no studies could be located comparing different perceptions of individualized nursing care in a cross-cultural study design. This study, across seven culturally different countries, representing the North, South, East and West of Europe and the United States of America (USA), goes some way to redress this balance.

The study

Aim

This paper is a report of a study of internationally based differences in nurses' perceptions of individualized care in orthopaedic surgical inpatient wards. The following research questions were set:

- Are there any differences in nurses' perceptions of individualized nursing care between countries?
- Are there any differences in nurses' assessments about how they generally support patients' individuality in care, based on the ICS-A-Nurse?
- Are there any differences in nurses' assessments of individuality in care they provide to patients, based on the ICS-B-Nurse?

Design

A descriptive, comparative survey design was used.

Sample

This study surveyed nurses working in acute orthopaedic and surgical inpatient wards in Cyprus, Finland, Greece,

Portugal, Sweden, Turkey and the USA. Nurses were included in the study if they: (1) were Registered Nurses or Licensed Practical Nurses (Licensed Practical Nurses were used where there were too few RNs), (2) worked in a university, state, central, regional or private hospital, (3) worked in one of the adult acute orthopaedic surgical inpatient wards of the hospitals included in the study, (4) participated in direct patient care, (5) voluntarily participated in the study and (6) were able to respond to the questionnaire, written in the official language of the country, independently. Nurses' aides or assistants who were neither registered nor had formal nursing education were excluded.

A total of 133 completed questionnaires from each country were needed for the comparison to have sufficient power ($\alpha = 0.01$, power 90%) (NQuery Advisor). Calculations assumed that a change or difference of ± 0.5 between the means in the items of the ICS-Nurse is clinically important.

A convenience sample of 1163 nurses were recruited between March and November 2009 from 91 orthopaedic surgical inpatient wards in 34 acute hospitals in Cyprus (N of distributed questionnaires = 171, n of returned questionnaires = 150, 88%), Finland (N = 293, n = 233, response rate 80%), Greece (N = 180, n = 147, 82%), Portugal (N = 170, n = 147, 88%), Sweden (N = 243, n = 180, 74%), Turkey (N = 176, n = 156, 89%) and the USA (N = 430, n = 150, 35%) (Table 1).

Measure

Data were collected using a demographic questionnaire and the Individualized Care Scale-Nurse (ICS-Nurse) (Suhonen et al. 2010a,b). The demographic questionnaire was used to collect background information: age, gender, highest education, work role, length of working experience and type of work. The ICS-Nurse is a two-part scale that assesses nurses' perceptions of individualized care in two dimensions. The ICS-A-Nurse is a 17-item five-point Likert-type scale

(1 = strongly disagree, 2 = disagree to some extent, 3 = neither agree nor disagree, 4 = agree to some extent, 5 = strongly agree) designed to explore nurses' perceptions about how nurses support patient individuality generally through nursing activities. The ICS-B-Nurse is also a 17-item five-point Likert-type scale exploring the extent to which nurses' perceive that the care they provide to patients is individual. Both scales consist of three sub-scales with positively worded items: (1) clinical situation (ClinA and B, seven items), (2) personal life situation (PersA and B, four items), and (3) decisional control over care (DecA and B, six items). Higher scores mean a greater support of the concept of patient individuality generally and a greater provision of individualized care.

ICS-Nurse validity and reliability

Previously, in a Finnish nurses' study (Suhonen et al. 2010a), the internal consistency reliability using Cronbach's alpha coefficient for the ICS-A-Nurse was 0.88 (sub-scales ranged from 0.72 to 0.83) and for the ICS-B-Nurse 0.90 (sub-scales ranged from 0.73 to 0.84). Average inter-item correlations were all acceptable, $r > 0.30$. A Principal Components Analysis (Varimax rotation with Kaiser's normalization) produced a three-factor solution supporting the conceptual basis of the ICS-Nurse and explaining about 52% of the variance in the ICS-A-Nurse (55% in the ICS-B-Nurse) (Suhonen et al. 2010a). Structural equation modelling using LISREL supported the content and construct validity of the ICS-Nurse (Suhonen et al. 2010a).

Translations of the ICS-Nurse and pilot testing

Different language versions of the ICS-Nurse were produced using a standard forward-back translation method and two official translators (Maneesriwongul & Dixon 2003). Each international partner was responsible for the translation procedure. In each country, the translation and validation

Table 1 Data collection and number of nurses, acute care beds and hospital beds in the participating countries

	Cyprus	Finland	Greece	Portugal	Sweden	Turkey	USA
Data collection for the study							
Number of hospitals	5	9	2	2	6	7	3
Number of wards	7	15	9	6	7	22	27
Country statistics							
Number of nurses/1000 inhabitants (WHO 2006)	3.76	14.33	3.86	4.36	10.24	1.70	9.37
Number of nurses/1000 inhabitants 2006 (OECD Health Data 2009)	–	10.3	3.2	4.8	10.8	1.7	10.5
Acute care beds/1000 inhabitants 2006 (OECD Health Data 2009)	–	3.8	3.9	2.9	2.2	2.5	2.7
Acute care beds/1000 inhabitants 2007 (OECD Health Data 2009)	–	3.7	–	2.8	2.1	2.7	–
Hospital beds/1000 inhabitants 2006 (OECD Health Data 2009)	–	7.0	4.8	3.5	–	2.7	3.2
Hospital beds/1000 inhabitants 2007 (OECD Health Data 2009)	–	6.7	–	3.5	–	2.8	3.1

processes were documented, evaluated and agreed following standard procedures (Beck *et al.* 2003, Maneesriwongul & Dixon 2003). The different translated versions were analysed and evaluated at a national level by at least two senior researchers. The content and clarity of the items were discussed in detail (Willgerodt 2003) in an international research group (Sidani *et al.* 2010) using the British-English version of the ICS to find 100% agreement for semantic equivalence (see Beck *et al.* 2003).

Pilot studies incorporating translated questionnaires were conducted using convenience samples in the orthopaedic and trauma settings of each participating country: Cyprus ($n = 30$, response rate 100%), Finland ($n = 26$, 70%), Greece ($n = 25$, 83%), Portugal ($n = 30$, 75%), Sweden ($n = 45$, 68%), Turkey ($n = 31$, 69%) and the USA ($n = 27$, 45%). These pilot studies tested the data collection protocol and checked that the instructions and wording of the items were clear. Based on the pilot studies, the wording of three ICS items was minimally revised in the American-English version of the ICS-Nurse.

Ethical considerations and data collection

The study protocol was evaluated by the Ethics committee of the University of Turku (Finland). Each participating country obtained ethical approval and permission for data collection from nurses according to their specific national standards. Ethical approval was obtained from an authorized committee of the ministry of Health (Cyprus) or university medical faculties and hospitals (Greece, Turkey, USA). Separate ethical approval was not needed in Sweden and Portugal. Permission for data collection was also obtained from the chief administrators of the healthcare organisations. Participants were informed about the study orally and/or in writing, and informed consent was orally sought by the researchers, research assistants or study nurses. Participant nurses received a questionnaire with written information about the study and its significance, ethical issues such as anonymity, and the option to withdraw from the study at any time without penalty, an envelope and where to send the completed questionnaires. Completed questionnaires, sealed in an envelope, were returned to the contact persons on the wards (Cyprus, Greece, Turkey and Portugal), put in designated locked boxes (USA and Finland) or sent using prepaid envelopes by mail (Sweden). A returned questionnaire was considered as an informed consent.

Data analysis

Data were analysed using SPSS 16.00 (SPSS Inc., Chicago, IL, USA). Descriptive statistics, such as frequencies, means,

standard deviations (SD) and 95% confidence intervals (CI) were used to describe the sample and study variables. Eight sum-variables (ICS-A-Nurse, ClinA-N, PersA-N, DecA-N, ICS-B-Nurse, ClinB-N, PersB-N and DecB-N) were formed by counting the item scores and dividing the total sum by the number of items in each of the sub-scales to obtain average scores. Inferential statistics were used to examine whether the national samples differed by the background characteristics of the participants in a cross-country comparison. Numerical variables (age, length of working experience) were compared using one-way analysis of variance (ANOVA with Tuckey's HSD or, if the variances were not equal by the Brown Forsythe test, with Tamhane's *post-hoc* test, F , degrees of freedom with P -value). Categorical variables (gender, highest education, work title and type of work) were compared using chi square statistics (Pearson's χ^2 , degrees of freedom with P -value). ANOVA was also used for the evaluation of raw sub-scale means of different countries.

All the differences in sociodemographic characteristics, by country, reached statistical significance at $P < 0.001$. Therefore, the ICS-Nurse sum variables were standardized by the nurses' sociodemographic data. Univariate Analysis of Covariance (ANCOVA, F -value with degrees of freedom and P -value) was used to standardize the effect of background factors and to compute estimated marginal means for cross-country comparison (Munro 1997, Burns & Grove 2005). Pairwise multiple comparisons were computed using the Bonferroni test. Cronbach's alpha values and item analyses were computed to examine the internal consistency reliability of the scales. A P -value of ≤ 0.05 was considered statistically significant in all the association tests.

Validity of the study

Internal consistency reliability using Cronbach's alpha values was adequate for each version of the ICS-Nurse. Chronbach's alpha values for the ICS-A-Nurse (ICS-B-Nurse in parenthesis) Finnish measure was 0.88 (0.87), Cypriot 0.92 (0.92), Greek 0.95 (0.84), Portuguese 0.91 (0.90), Swedish 0.88 (0.88), Turkish 0.91 (0.91) and American 0.95 (0.93). Each national data set was obtained from nurses working in similar and typical in-patient wards of acute hospitals. The sample representation was slightly different and the number of hospitals and wards varied by country. The Cypriot data represent the total nursing population working in the orthopaedic wards of the public hospitals throughout the island. For some countries, the data were collected from only two or three hospitals in densely populated cities (Greece, Portugal, USA), whereas the Finnish and Swedish data were

Table 2 Nurses' sociodemographic background variables and their between-country comparison

	Cyprus		Finland		Greece		Portugal		Sweden		Turkey		USA		Parameter	P value	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%			
Gender*	148		231		146		146		177		156		149		86.4 (6)	<0.001	
Male		27		2		18		21		6		4		11			
Female		73		98		82		79		94		96		89			
Highest education	145		232		146		145		173		156		150		7.8 (18)	<0.001	
Vocational nursing educ		1		7		56		1		50		15		0			
Diploma in nursing		92		53		43		25		38		28		3			
Bachelor's degree		6		38		0		73		11		52		96			
Masters degree or more		1		2		1		1		1		5		1			
Work as	147		233		142		146		177		155		150		4.6 (12)	<0.001	
Registered assistant PN, ENs		0		6		54		7		51		0		3			
Registered nurse		92		73		39		92		48		96		87			
Specialized nurse		8		17		7		1		1		4		10			
Type of work	148		233		146		146		175		153		150		3.1 (12)	<0.001	
Full-time		96		90		99		99		54		98		84			
Part-time		4		9		1		0		46		2		11			
Per/diem		0		1		0		1		0		0		5			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Age, mean (SD) [†]		34.3	11.3	40.6	11.1	40.1	9.8	32.2	9.7	43.1	11.1	30.4	7.3	38.2	12.2	33.7 (6)	<0.001
Experience of nursing, total [†]		12.4	11.6	15.1	9.9	16.0	9.0	8.7	8.3	16.9	12.8	9.0	7.9	10.4	10.6	18.1 (6)	<0.001

The number of responses varies because of missing data.

*Chi square statistics, Pearson's χ^2 , degrees of freedom (d.f.), P value.

[†]ANOVA, F-value with degrees of freedom (d.f.), P value.

collected from multiple smaller (regional) hospitals in less densely populated areas (Table 1).

Results

Respondents

The mean age of the respondents ranged from 30.4 (SD 7.3) to 43.1 years (SD 11.1). The youngest nurses were from Turkey and the oldest from Sweden. Most nurses were female, but there were also many male nurses in Cyprus, Greece and Portugal. Many in the nurse sample had worked in health care for a long time and most of them worked on a full-time basis (Table 2). The sociodemographic background variables differed statistically and significantly by country as examined by chi square statistics or ANOVA.

Support of patient individuality in general (ICS-A-Nurse) and between-country differences

Nurses perceived that their work supported patient individuality well generally during nursing activities [Sub-scale ICS-A-Nurse Mean 3.96 (SD 0.48)–4.30 (SD 0.53)] (Table 3). The Turkish nurses gave the lowest and the Greek nurses the

highest scores. From the sub-scales in the ICS-A-Nurse, all but the American nurses perceived that their work supported the patient's individuality highest in the clinical situation. The American nurses' highest scores showed support for individuality in patients' decisional control. ANOVA showed between-country differences in the clinical situation, the personal life situation and in decisional control sub-scales.

After controlling for nurses' demographic information using ANCOVA (Table 4), there was a statistically significant difference between nurses' perceptions in the general support of patient individuality during nursing activities (ICS-A-Nurse), for the subscales personal life situation and decisional control, but not the clinical situation. In *Post-hoc* analyses using Bonferroni test, these differences in the ICS-A-Nurse were found to be between Greece and Cyprus ($P < 0.001$), Greece and Sweden ($P = 0.04$) and Greece and Turkey ($P = 0.005$). In the Personal life situation (PersA), sub-scale differences were found between Greece and the other countries and between Portugal and Finland ($P = 0.001$), Portugal and Turkey ($P < 0.001$), and finally, USA and Turkey ($P = 0.047$). In Decisional control (DecA), differences were found between USA and Cyprus ($P < 0.001$), Portugal ($P < 0.001$) and Sweden ($P = 0.001$), Greece and Cyprus

Table 3 Descriptives of the Individualized Care Scale sum-variables

Questionnaire Scale (range)	Cyprus (<i>n</i> = 150) Mean (SD)	Finland (<i>n</i> = 233) Mean (SD)	Greece (<i>n</i> = 147) Mean (SD)	Portugal (<i>n</i> = 147) Mean (SD)	Sweden (<i>n</i> = 180) Mean (SD)	Turkey (<i>n</i> = 156) Mean (SD)	USA (<i>n</i> = 150) Mean (SD)	<i>F</i> (d.f.)	<i>P</i> value*
Support of patient individuality ICS-A	3.99 (0.60)	4.14 (0.45)	4.30 (0.53)	4.05 (0.52)	4.04 (0.45)	3.96 (0.48)	4.17 (0.67)	7.7 (6)	<0.001
Clinical situation A	4.24 (0.60)	4.39 (0.42)	4.36 (0.51)	4.26 (0.56)	4.32 (0.40)	4.16 (0.48)	4.26 (0.70)	4.0 (6)	0.001
Personal life situation A	3.74 (0.77)	3.67 (0.72)	4.25 (0.71)	3.93 (0.65)	3.64 (0.69)	3.50 (0.71)	3.85 (0.80)	17.8 (6)	<0.001
Decisional control A	3.87 (0.69)	4.17 (0.53)	4.28 (0.61)	3.87 (0.62)	3.97 (0.58)	4.04 (0.52)	4.27 (0.72)	12.7 (6)	<0.001
Individuality in care provided ICS-B	3.97 (0.63)	4.09 (0.49)	4.25 (0.53)	3.87 (0.60)	4.15 (0.47)	3.93 (0.52)	4.25 (0.70)	10.9 (6)	<0.001
Clinical situation B	4.23 (0.67)	4.30 (0.45)	4.30 (0.51)	4.21 (0.56)	4.44 (0.43)	4.12 (0.53)	4.30 (0.73)	4.9 (6)	<0.001
Personal life situation B	3.68 (0.76)	3.55 (0.79)	4.21 (0.70)	3.52 (0.84)	3.55 (0.80)	3.60 (0.71)	3.97 (0.83)	18.3 (6)	<0.001
Decisional control B	3.85 (0.70)	4.19 (0.54)	4.22 (0.58)	3.70 (0.71)	4.20 (0.53)	3.94 (0.56)	4.39 (0.74)	22.5 (6)	<0.001

*One-way analysis of variance ANOVA, *F*-value, degrees of freedom (d.f.) with *P* value.

(*P* < 0.001), Portugal (*P* < 0.001) and Sweden (*P* = 0.002), Finland and Portugal (*P* = 0.005) and Cyprus (*P* = 0.002).

Individuality of care provided to patients (ICS-B-Nurse) and between-country differences

Nurses perceived that the care they provided to their patients was individualized (Table 3). The American and Greek nurses gave the highest scores (Mean 4.25, SD 0.70) and the Portuguese nurses the lowest (Mean 3.87, SD 0.60). In the overall scores by sub-scales, the following trend was revealed. Nurses perceived that the care provided took account of patient individuality in the clinical situation (ClinB Mean range 4.12–4.44) in all countries except the USA. Similar to the situation in ICS-A-Nurse, nurses perceived that decisional control was most realized in the care provided. ANOVA revealed between-country differences in all the sub-scales.

After controlling for nurses' demographic information using ANCOVA (Table 4), between-country differences (pairwise comparison by Bonferroni test) were demonstrated between USA and the other countries, namely Cyprus (*P* = 0.004), Finland (*P* = 0.004), Portugal (*P* < 0.001) and Turkey (*P* < 0.001) over the whole of the ICS-B scale. There were also differences between Greece and Portugal (*P* = 0.001) and Greece and Turkey (*P* = 0.04). In the Clinical situation (ClinB) sub-scale, the only difference found was between Sweden and Turkey (*P* = 0.02). In the Personal life situation (Pers-B) sub-scale, *post-hoc* analyses revealed differences between Greece and other countries, namely Cyprus (*P* < 0.001), Finland (*P* < 0.001), Portugal (*P* < 0.001), Sweden (*P* < 0.001) and Turkey (*P* < 0.001). In addition, differences were found between the USA and Finland (*P* < 0.001), Portugal (*P* < 0.001), Sweden (*P* < 0.001) and Turkey (*P* = 0.011). In the decisional control (DecB)

sub-scale, *post-hoc* analyses (Bonferroni test) revealed differences between the USA and Cyprus (*P* < 0.001), Finland (*P* = 0.003), Portugal (*P* < 0.001) and Turkey (*P* < 0.001). There were also differences between Greece and Cyprus (*P* = 0.003), Greece and Portugal (*P* < 0.001), Sweden and Cyprus (*P* = 0.006) and Sweden and Portugal (*P* < 0.001). Finnish nurses' scores were higher compared with those of Cypriot (*P* = 0.002) and Portuguese (*P* < 0.001) nurses and Turkish nurses' scores were higher compared with those of Portuguese (*P* = 0.008) nurses.

Discussion

Limitations and methodological considerations

Some limitations need to be taken into account when interpreting the results. First, although all participating countries employed the same data collection protocol, the protocol worked slightly differently. Convenience samples were used in most countries, but the Cypriot sample contained the whole eligible population of nurses. Second, the response rates ranged from 35% to 89%. The response rate in the USA sample was low, similar to other studies conducted in the USA (e.g. Tzeng 2010). Third, there were slight differences in the timing of the data collection; for example, the Greek data were collected 6 months later than in other countries. Fourth, due to the differences and the development stages of nursing educational systems in the different countries, nurses with different levels of nursing education participated in the study causing a reduction in sample homogeneity. The range of nursing experience within the samples was large (Table 2) causing difficulties categorizing registered nurses with current EU directives (Directive 2005/36/EC 2005). However, all the participants carried out

Table 4 Between-country comparison of nurses' perceptions of individualized care

Questionnaire Scale (range)	Cyprus		Finland		Greece		Portugal		Sweden		Turkey		USA		F (d.f.)	P value
	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)			
Support of patient individuality ICS-A	3.99 (3.80-4.17)	4.12 (3.96-4.29)	4.29 (4.11-4.46)	4.07 (3.89-4.26)	4.04 (3.86-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	4.22 (3.84-4.21)	5.5 (6)	< 0.001
Clinical situation A	4.24 (4.06-4.43)	4.39 (4.23-4.56)	4.32 (4.14-4.50)	4.31 (4.13-4.49)	4.31 (4.13-4.48)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	4.23 (4.05-4.41)	1.7 (6)	0.126
Personal life situation A	3.79 (3.54-4.03)	3.69 (3.46-3.91)	4.33 (4.09-4.58)	4.03 (3.78-4.27)	3.75 (3.52-3.99)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	3.62 (3.38-3.99)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	3.62 (3.38-3.87)	15.2 (6)	< 0.001
Decisional control A	3.82 (3.61-4.03)	4.1 (3.91-4.29)	4.21 (4.0-4.42)	3.84 (3.63-4.05)	3.91 (3.71-4.11)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	4.05 (3.71-4.11)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	4.05 (3.84-4.26)	11.0 (6)	< 0.001
Individuality in the care provided ICS-B	3.99 (3.79-4.18)	4.05 (3.87-4.23)	4.21 (4.02-4.39)	3.88 (3.69-4.08)	4.12 (3.93-4.30)	3.97 (3.77-4.16)	3.97 (3.77-4.16)	3.97 (3.77-4.16)	4.12 (3.93-4.30)	4.12 (3.93-4.30)	3.97 (3.77-4.16)	3.97 (3.77-4.16)	4.30 (4.12-4.48)	4.30 (4.12-4.48)	8.0 (6)	0.04
Clinical situation B	4.26 (4.06-4.45)	4.29 (4.11-4.47)	4.27 (4.08-4.46)	4.25 (4.05-4.44)	4.41 (4.23-4.60)	4.16 (3.96-4.35)	4.16 (3.96-4.35)	4.16 (3.96-4.35)	4.41 (4.23-4.60)	4.41 (4.23-4.60)	4.16 (3.96-4.35)	4.16 (3.96-4.35)	4.36 (4.17-4.54)	4.36 (4.17-4.54)	2.3 (6)	0.03
Personal life situation B	3.78 (3.52-4.05)	3.57 (3.32-3.82)	4.23 (3.97-4.49)	3.62 (3.35-3.88)	3.59 (3.33-3.84)	3.72 (3.45-3.99)	3.72 (3.45-3.99)	3.72 (3.45-3.99)	3.59 (3.33-3.84)	3.59 (3.33-3.84)	3.72 (3.45-3.99)	3.72 (3.45-3.99)	4.07 (3.82-4.33)	4.07 (3.82-4.33)	15.7 (6)	< 0.001
Decisional control B	3.80 (3.59-4.01)	4.09 (3.89-4.29)	4.12 (3.91-4.33)	3.63 (3.42-3.85)	4.12 (3.91-4.32)	3.91 (3.69-4.13)	3.91 (3.69-4.13)	3.91 (3.69-4.13)	4.12 (3.91-4.32)	4.12 (3.91-4.32)	3.91 (3.69-4.13)	3.91 (3.69-4.13)	4.37 (4.17-4.58)	4.37 (4.17-4.58)	18.1 (6)	< 0.001

Analysis of covariance ANCOVA, F-value, degrees of freedom (d.f.) with P value.

similar nursing duties and therefore from that perspective, the sample was homogeneous.

Discussion of results

Nurses perceived that they support patient individuality through general nursing activities to a large extent, as has been indicated in earlier studies (e.g. Chappell *et al.* 2007, Suhonen *et al.* 2010b). There are, however, features of these results which demonstrate some of the challenges of the provision of individualized care (e.g. Anderson *et al.* 2003, Barry *et al.* 2005). These differences were found even where the sociodemographic variables were controlled by using the variables as covariates in the univariate analyses of covariance. Using multivariate analyses offered the possibility of examining these associations simultaneously and may have reduced the confounding variables (Munro 1997) within the nurses' background.

Many between-country differences and some general trends were identifiable in the data. Nurses from the Nordic countries and the USA tended to rate the ICS-Nurse variables with high scores, while nurses from the Mediterranean countries or Southern parts of Europe rated the variables with lower scores. One exception from this trend was Greece (Tables 3 and 4). Greek nurses gave the highest scores and Turkish nurses gave the lowest for supporting patient individuality during general nursing activities (ICS-A-Nurse). However, while assessing the individuality in the care provided (ICS-B-Nurse) during their most recent shifts in each of the countries, the parameter, levels of individuality, was scored lower. American nurses scored the provision of individualized care the highest and the Portuguese nurses the lowest. Previously, it has been found that, in a European context, there were differences on a North-South axis (e.g. Schopp *et al.* 2003a,b, Scott *et al.* 2003, Suhonen *et al.* 2003). Our results supported these earlier studies with the exception of the Greek results.

The differences found between the Greek and Swedish data were unexpected in relation to an earlier study about patients' assessments of individualized care (Suhonen *et al.* 2008b). However, this may be explained by the participation of Greek families, in addition to Greek nurses, in care provision. In addition, almost 100% of Greek nurses reported working full-time compared to 54% of Swedish nurses. Concerning the Turkish and Greek data, the difference may be influenced by cultural differences and/or the differing roles of healthcare personnel. In this study, the Turkish nurses were younger and less experienced than the Greek nurses. In addition, the results may be influenced by the number of nurses available for care provision (WHO

2006, OECD Health Data 2009). The number of registered nurses was the lowest in Turkey (Table 1).

Surprisingly, the differences between Greek and Cypriot data were statistically significant, even though these countries share the same cultural background and language. It may be that turbulent situations between Greeks and Cypriots over many centuries have influenced the evolution of differing perceptions, ideas and culture about health care (Georgiades 2001, Cyprus Popular Bank Cultural Centre 2006), and the healthcare system. In contrast to the Greek system, in Cyprus, there is only one level of nurse entitled to practice nursing, although nursing assistants and auxiliary nurses may be upgraded to 1st level nurses after additional studies. According to the literature, higher scores supporting the delivery of individualized care could have been expected from nurses with higher education (Suhonen *et al.* 2009a). However, the Cypriot nurse education system is in transition and the change of all nursing programmes to academic courses may explain the lower scores (Papastavrou *et al.* 2009). The Greek scores were high, but not consistent with the results obtained from previous cross-cultural comparative studies on nurses' perceptions of care (e.g. Schopp *et al.* 2003a,b, Scott *et al.* 2003, Suhonen *et al.* 2003) and on patients' perceptions of individualized care (Suhonen *et al.* 2008b). There may be several explanations for this. The results may reflect a combination of nursing shortages, an over-estimation of the level of individualized care provided (OECD Health Data 2009) (Table 1), the predominance, in some cases, of nursing assistants in the provision of care, a task-oriented care delivery system and high expectations of the patients.

Support of the Clinical situation (ICS-A) was the only sub-scale with no statistical differences between countries. These results confirm a high standard of individualized acute clinical care in all of the participating countries (Hancock *et al.* 2003, West *et al.* 2005, Suhonen *et al.* 2010b). Within this, the Swedish nurses, of whom around 50% are licensed practical nurses, perceived that they took into account of their patients' individual clinical situation in care provision (ICS-B-Nurse). Licensed practical nurses are employed to care for and about the patient, a role which differs from the registered nurses who have more overall responsibility for the nursing care delivered. Registered nurses, compared with nursing aides, have reported more formal and informal power in their work (Caspar & O'Rourke 2008) and in a Swedish study, assistant nurses reported a higher level of burnout resulting from a lower level of empowerment (Hochwalder 2008). It may be that the registered nurses, who are supposed to have more influence on the care provision based on their role (Caspar & O'Rourke 2008), do not take on this responsibility and the responsibility for care is put on

assistant nurses who suffer as a result. This increased level of burn-out, however, could be related to the education level or the part-time nature of the nurses' work. Around 43% of Swedish nurses work part-time (around 57% work full-time; Sveriges kommuner och landsting 2010). The result could also be due to the type of patient as, in an acute care environment, there is a need to concentrate on the physical care needs (Hancock *et al.* 2003, West *et al.* 2005).

Support of patient's personal life situation and the provision of care tailored to patients' personal life situation were areas in which patients' individuality was recognized least, a trend which was seen across the countries. Lack of this recognition might reflect the routinization of care and a low intensity and defective quality of interaction (Wadensten 2005, Chappell *et al.* 2007). This result supports previous results highlighting some challenges in individualized care provision (e.g. Anderson *et al.* 2003, Barry *et al.* 2005) and topics for the development of clinical practice. However, the Portuguese nurses reported that they generally supported the patients' personal life situation (PersA) through nursing activities, a high scoring area for them.

In all of the countries, nurses perceived that they supported patient's decisional control in care and that patients have decisional control over their care. However, the level of this perception varied across countries. The American nurses scored decisional control the highest. This result is important as patients' decisional control and participation are needed to individualize care (Suhonen *et al.* 2010a). Earlier findings have highlighted that nurses should become increasingly aware of the potential for facilitation and the creation of opportunities for patient participation (e.g. Beaver *et al.* 2007).

Focussing on the overall scores for ICS-B-Nurse and ICS-A-Nurse separately, there were differences in the number of nurses who said they provided individualized care during their most recent working shifts (ICS-B-Nurse) compared with the larger number who said they generally support patient individuality and identified individual issues (ICS-A-Nurse). This suggests that the nurses may think they provide individualized care, but if they really analyse their work, do not support individuality in the provision of care to the same extent. This result may be interpreted in terms of established aspects of nursing ethics and education. Individualized care has been considered to be virtuous and a fundamental value in nursing (Thompson *et al.* 2007). In this environment, individualized care becomes every nurse's duty. Nurses attain these strong values during training and sometimes view nursing practice (ICS-A-Nurse) through an idealistic lens. However, when nurses are asked to assess their own activities in care delivery (ICS-B-Nurse), they are able to use concrete practice issues to assist their decisions about the allocation of

What is already known about this topic

- Individualized care is valued by patients, facilitates the achievement of desired health outcomes for patients, increases nurses' work satisfaction and motivation and represents high ethical care standards.
- Individualized care has become a topical theme in discussions about healthcare systems and quality in many Western countries.
- Nurse professionals' assessments of the individualized care they deliver are limited in the nursing literature and there are no comparative cross-cultural studies on individualized nursing care.
- Cross-cultural research is needed to generate an evidenced theoretical base for the systematic monitoring of care quality and processes and to generate best nursing practices.

What this paper adds

- Different cultures and countries manage individualized care provision in diverse ways.
- There are between-country differences in nurses' perceptions of individualized care.
- There are support and motivation for international collaborative studies, which facilitate an understanding of individualized care delivery in global terms and help nurses to individualize the treatment and care of patients from different cultures.

Implications for practice and/or policy

- The information derived from this cross-cultural comparative study may be used in creating Europe-wide nursing education programmes, facilitating the development of clinical nursing, nursing management and nursing research and guiding policy making and quality development in healthcare organizations.
- The results of this study contribute to a common international understanding and consolidation of the concept of individualized nursing care leading to improved prospects of international implementation.
- The ICS-Nurse can be used for the evaluation of the quality of nursing care in different cultural societies.

scores. Based on these results, the ICS-Nurse can, overall, help raise topics for the development of individualized care in clinical practice, which will help reduce the difference between what the nurses think they do and their care

provision. Moreover, virtually all nursing conceptual models and theories emphasize individualized care and so this type of care can be seen in a conceptual and theoretical context, rather than solely as a philosophical value.

Between-country differences found may be attributed to a combination of the roles of healthcare personnel in the system, the care processes, the differing healthcare systems and the way nursing care is defined and organized. Further research is needed to explore the reasons for these differences as there is more work to be done to harmonize healthcare processes and activities across countries (ICN 2004, WHO 2006) and daily care delivery (DeKeyser *et al.* 2002, Pang *et al.* 2003, Sprung *et al.* 2003).

Implications for clinical practice and research

The ICS-Nurse may be used internationally by nurses, researchers and nurse managers to assess individualized care and to identify areas for improving the delivery of individualized care. International, cross-cultural nursing research is a powerful tool for the improvement of clinical nursing practice, education, management and the advancement of knowledge. Such studies should be carried out to improve European evidence-based healthcare development. There is a need for further studies to compare nurses' and patients' perceptions in different cultures and societies and thereby, develop an individualized care system. There is also need for further evaluation of the impact of nurses' characteristics and the support for, and provision of, individualized care.

Conclusions

According to this study, nurses perceived that they generally support patient individuality through nursing activities to a large extent. Some problems were also identified. Nurses should take their patients' personal life situation into account in a way that supports their individuality more often. Between-country differences were found in nurses' perceptions about individualized care. Nurses from the Nordic countries and the USA tended to rate the ICS-Nurse variables with high scores, whilst nurses from the Mediterranean countries and southern parts of Europe rated the variables with lower scores. One exception to this trend was Greece. Turkish nurses gave the lowest and the Greek nurses the highest scores for generally supporting patient individuality during nursing activities. American nurses scored the provision of individualized care the highest and the Portuguese nurses the lowest.

There is a need to work together across countries to identify health priorities, define indicators, produce guidelines and recommendations, foster exchanges of good practice and

measure progress (Commission of the European Communities 2007). Using the information derived from this study may help develop orthopaedic surgical care processes increasing their transparency between countries and developing international concepts of best practice. International comparative and cross-cultural research is a powerful tool offering opportunities to develop international harmonization in nursing (Im *et al.* 2004, Suhonen *et al.* 2009b). Conversely, the conduct of such research is a challenging and personally demanding process.

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Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

RS, EP, CL, MK, EI, AB, RA, VS, MV & HLK were responsible for the study conception and design. RS, EP, GE, MK, MDAL, EI, AB, RA, MS & VS performed the data collection. RS, EP, CL, MK, MDAL, EI, AB, RA, MS, NK, VS & JK performed the data analysis. RS, EP, GE, MK, MDAL, EI, AB, RA, MS, NK, VS & JK were responsible for the drafting of the manuscript. RS, EP, CL, EI, NK, MV & HLK made critical revisions to the paper for important intellectual content. JK provided statistical expertise. RS obtained funding. RS, EP, CL & HLK provided administrative, technical or material support. RS, EP, CL, EI, NK, MV & HLK supervised the study.

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