



HEALTH POLICY AND SYSTEMS

Nurses' Sociodemographic Background and Assessments of Individualized Care

Ewa Idvall, PhD, RNT¹, Agneta Berg, PhD, RNT², Jouko Katajisto, MSocSci³, Rengin Acaroglu, PhD⁴, Maria Deolinda Antunes da Luz, PhD⁵, Georgios Efstathiou, PhD, RN⁶, Maria Kalafati, PhD⁷, Nevin Kanan, PhD⁸, Helena Leino-Kilpi, PhD, RN⁹, Chryssoula Lemonidou, PhD¹⁰, Evridiki Papastavrou, PhD¹¹, Merdiye Sendir, PhD¹², & Riitta Suhonen, PhD, RN¹³

1 Professor, Faculty of Health and Society, Malmö University and Skåne University Hospital, Malmö, SWEDEN

2 Professor, Kristianstad University, Department of Health and Society, Kristianstad, and Faculty of Health and Society, Malmö University, SWEDEN

3 Senior Lecturer, University of Turku, Department of Mathematics and Statistics, Turku, FINLAND

4 Associate Professor, Istanbul University, Florence Nightingale School of Nursing, Istanbul, TURKEY

5 Associate Professor, Unidade de Investigação e Desenvolvimento em Enfermagem (ui&de), Escola Superior de Enfermagem de Lisboa (Nursing research and development Unity ui&de), Lisboa, PORTUGAL

6 Special Teaching Staff, Cyprus University of Technology, Department of Nursing, School of Health Sciences, Limassol CYPRUS

7 Researcher, National and Kapodistrian University of Athens, Faculty of Nursing, Athens, GREECE

8 Professor, Istanbul University, Florence Nightingale School of Nursing, Istanbul, TURKEY

9 Professor and Chair and Nurse Manager, University of Turku, Department of Nursing Science, Hospital District of Southwest Finland, Turku, FINLAND

10 Professor, National and Kapodistrian University of Athens, Faculty of Nursing, Athens, GREECE

11 *Beta Tau*, Assistant Professor, Cyprus University of Technology, Department of Nursing, School of Health Science, Limassol, CYPRUS

12 Associate Professor, Istanbul University, Florence Nightingale School of Nursing, Istanbul, TURKEY

13 *Beta Tau*, Professor, University of Turku, Department of Nursing Science, Turku, FINLAND

Key words

Individualized care, nurse, sociodemographic variables, modeling, cross-cultural

Correspondence

Dr. Riitta Suhonen, University of Turku,
Department of Nursing Science,
Lemminkäisenkatu 1 2nd floor, 20014 Turku,
Finland.
E-mail: suhonen.riitta@kolumbus.fi

Accepted July 12, 2012

doi: 10.1111/j.1547-5069.2012.01463.x

Abstract

Aim: The aim of this study was to explore the association between nurses' characteristics (educational level, country, work title, gender, type of work, age, and length of working experience) and their assessments of individualized care.

Design: A cross-sectional comparative survey using questionnaires was employed to sample nurses from seven countries.

Methods: Data were collected from orthopedic and trauma nurses from Cyprus, Finland, Greece, Portugal, Sweden, Turkey, and the United States ($N = 1,163$, response rate 70%) using the Individualized Care Scale-Nurse (ICS-Nurse) and a sociodemographic questionnaire in 2008. Data were analyzed using descriptive statistics and general linear models.

Results: When compared with practical nurses, registered nurses, length of working experience, and the country of the nurses were associated with assessments of the support of patient individuality in specific nursing activities (ICS-A-Nurse) and country assessments of individuality in the care provided (ICS-B-Nurse). The background and experience within nursing teams together with the country affect the delivery of individualized care.

Conclusions: Overall, our findings suggest that nurses' personal attributes have important effects on their assessments of individualized nursing care that will be useful when making context-dependent recruitment decisions.

Clinical Relevance: The characteristics of nurses contribute to the care delivered in healthcare organizations. Recognition of these nurse-related factors may help nurse leaders in the development and management of clinical practice.

Although the quality of nursing care is important in the determination of patient outcomes and safety, meaningful improvements have been disturbingly slow to develop (Burhans & Alligood, 2010). One aspect of quality in nursing is individualized care, which means a type of nursing care delivery in which nurses take into consideration factors such as patients' personal characteristics, their clinical condition, their personal life situation, and their preferences in order to promote patient participation in decision making (Suhonen, Gustafsson, Katajisto, Välimäki, & Leino-Kilpi, 2010a). Individualized care from nurses' points of view can be measured by the extent they support patient individuality through specific nursing activities or by the extent they perceive the care they provided to their patients was individualized (Suhonen et al., 2010a). This relevance to nurses is also important (Costello, 2001; Burhans & Alligood, 2010). A careful examination of the associations between individualized care and nurses' backgrounds and experience may help in the development of nursing care, nurse performance in clinical practice, and quality of healthcare services generally. Additionally, research into this area may lead to other effective quality improvement approaches.

There is not much evidence about the impact of nurses' sociodemographic variables on individualized care. The identification of these sociodemographic variables in association with nurses' perceptions of care quality is useful for the strategies designed to improve patient care (Chappell, Reid, & Gish, 2007; Curry, Porter, Michalski, & Gruman, 2000). Nurses' personal characteristics do not operate in clinical practice in isolation, and it is unreasonable to ignore the joint effects of personal characteristics when investigating how personal attributes are associated with perceptions of the delivery of individualized care.

Background

Individualized care is one of those phenomena that is theoretically useful (Cox & Roghmann, 1984; International Council of Nurses [ICN], 2006), politically and strategically important globally (ICN, 2006; World Health Organization [WHO], 2007), philosophically idealised (European Council of Nursing Regulators, 2008) but not necessarily clinically manifested (Caspar & O'Rourke, 2008). There may be many reasons for this, and it is thought that healthcare professionals' assessments of individualized care, facilitated by international policies that standardize nursing care (Organisation for Economic Cooperation and Development [OECD], 2004; WHO, 2007) and the prioritization of appropriate research into nursing science (Ross, Smith, Mackenzie, & Masterson, 2004), can help in the development of clinical practice. Orthopedic and trauma nursing was of interest because the surgi-

cal care process exemplifies standardized care pathways representing universal similarities, but where individuality of patients may be lost due to the strict processes.

The individualization of care takes into account the client's individuality whilst facilitating their ability to determine interpersonal approaches and health-illness management actions (Cox & Roghmann, 1984). Individualized care was defined in terms of nursing care that takes into account patients' personal characteristics, their clinical condition, personal life situation, and preferences with regard to participation in decision making (Suhonen et al., 2010a).

Previous studies have discussed the impact of nurses' background variables on their assessments of quality of care attributes (e.g., Duclos, Gillaizeau, Colombet, Coste, & Durieux, 2008; Kubsch, Hansen, & Huyser-Eatwell, 2008). However, few studies have investigated the relationship between the care provider background and experience and individualized care (O'Brien, 1999; Redfern, 1996; Suhonen, Välimäki, & Leino-Kilpi, 2009). In these few studies the respondents' background and experience have been studied most often within univariate analyses that fail to recognize the influence of each background characteristic on the other's (Koopmans, 1987). To circumvent this, sociodemographic variables should be examined using multivariate methods.

Some national studies have investigated nurses' background variables in association with their perceptions of individualized care. These include training and education associated with knowledge skills and professional values, work title, work role and occupational group, gender differences, age, and length of clinical experience (Berg & Hallberg, 1999; Curry et al., 2000; Walker, Porter, Gruman, & Michalski, 1999). Redfern (1996) and Waters and Easton (1999) found that nurses' skills and knowledge increase with education, and the level of these is positively associated with nurses' ability to individualize care. This is supported by Kubsch et al. (2008), who reported that the highest level of perceived professional values is found among registered nurses (RNs) and undergraduate nursing students.

With regard to culture, a survey by Lucero, Lake, and Aiken (2009) described variations in nursing care quality across hospitals in Pennsylvania (USA), and there have been some multinational studies that demonstrate wider between-country differences (Suhonen et al., 2011). These studies demonstrate the need to take cultural variance into account when considering nurses' perceptions of individualized care.

Walker et al. (1999) found that there was a substantial discordance between the perceptions of RNs and certified nursing aides about individualized care, demonstrating that work title, work role, and the occupational group

of the nurse may also have an impact on nurses' perceptions of individualized care. This finding is supported by Kubsch et al. (2008), who found that organizational position and work title have an impact on the assessment of the quality of information given to patients. Lastly, using the Individualized Care Instrument (Caspar & O'Rourke, 2008), nursing aides compared with RNs and practical nurses reported higher levels of communication between staff and patients in their role.

In terms of gender differences, Lee, Chen, and Yang (2010) found that some caring behaviors differ between male and female colleagues, and this was supported by Ekstrom (1999), who found that expectations of caring behaviors were significantly lower than their female counterparts. Although these findings were not related to individualized care per se, they do indicate differences between the ways the two groups conceptualize care.

The age of nurses and their perceptions of assessments of care are more mixed. Chappell et al. (2007) reported that younger nurses are more likely to highly rate communication between staff and patients than older nurses. However, Duclos and colleagues (2008) researched the quality of information delivered to inpatients and reported that older healthcare professionals, including physicians, nurses, and nurses' assistants, perceived the quality of care to be higher than younger professionals.

Finally, nurses' length of clinical experience has been reported to have a positive impact on their ability to deliver individualized patient care (O'Brien, 1999; Redfern, 1996; Waters & Easton, 1999). However, although experience is a necessity, it is not a sole condition for expertise because not all experienced nurses are experts (Christensen & Hewitt-Taylor, 2006; Ericsson, Whyte, & Ward, 2007; McHugh & Lake, 2010). Additionally, McHugh and Lake (2010) found that organizational culture significantly influenced clinical nursing expertise.

Some of the specific research evidence for an association between sociodemographic variables and nurses' assessments of individualized care described in the preceding paragraph are descriptive and correlational in nature, providing only preliminary evidence. Additionally, there is some contradictory evidence, cited in a large Finnish study (Suhonen, Gustafsson, Katajisto, Välimäki, & Leino-Kilpi, 2010b) that analyzed the individualized care perceptions of 544 nurses using the general linear model. Results suggested there was no association between nurses' background variables and their assessments of individualized care delivery.

In summary, most studies of nurses' assessments of individualized care took place in the 1990s at a national level (Suhonen et al., 2009), and there is a lack of strong evidence about how nurse characteristics

affect the assessments of the individualized care that nurses deliver. Overall, nurse characteristics and individualized care have some impact on nurses and care outcomes (Suhonen et al., 2009), but this is inconclusive due to the level of analyses in many of the studies. This current multinational study considers the impact of nurses' characteristics and the delivery of individualized care using multivariate analyses. This adds strength to and broadens the understanding about how individualized care is affected by nurses and the context in which the care is delivered.

Aim

The aim of this study was to explore the association between nurses' characteristics, including educational level, country, work title, gender, type of work, age, and length of work experience, and their assessments of individualized care.

Methods

Design, Settings, and Sample

A cross-sectional comparative study design was employed to collect data using questionnaires from a purposive sample of nurses in winter of 2008–2009. Of the 1,663 nurses contacted, 70% responded. The sample was recruited from orthopedic and trauma inpatient wards of hospitals in seven countries, including Cyprus, Finland, Greece, Portugal, Sweden, Turkey, and the state of Kansas in the United States (**Table 1**). These countries represent northern, eastern, southern, and western parts of Europe, Turkey, and Kansas (USA). The overall nursing context was orthopedic and trauma nursing, and the organization of such services in healthcare was assumed to be similar, providing comparable samples across the participating countries and state.

A power analysis was conducted, and a sample size of a minimum of 133 completed questionnaires was required from each country, resulting in an α of .01, a power of .90, and a significant difference of at least ± 0.5 between the means in the items. Participants were eligible for the study if they (a) were RNs or practical nurses (Simoens, Villeneuve, & Hurst, 2005; practical nurse refers to nurses having a lower level of nursing skills than RNs. These nurses receive a shorter period of specialized nursing education, typically with 3 years' education at the secondary school level, and have limited duties and rights. Practical nurses are required to register with a licensing body. Practical nurses were used where there were too few RNs); (b) worked in adult, acute orthopedic surgical or trauma inpatient wards; (c) participated in

Table 1. Number of Hospitals, Wards, Respondents, and Response Rates by Country

Country	Cyprus	Finland	Greece	Portugal	Sweden	Turkey	USA, Kansas
No. of respondents	150	233	147	147	180	156	150
Response rate (%)	88	80	82	88	74	89	35
No. of hospitals	5	9	2	2	6	7	3
No. of wards	7	15	9	4	7	22	27
No. of respondents, pilot	30	26	25	30	45	31	27

direct patient care; and (d) were able to complete the questionnaires independently. The questionnaires were written in the official language of each participating country.

Measure

The Individualized Care Scale-Nurse version (ICS-Nurse; Suhonen et al., 2010a, 2010b, 2011) was used. This questionnaire has two-parts. The ICS-A-Nurse measures the extent the nurses perceive they support patient individuality through nursing activities. The ICS-B-Nurse measures the extent the nurses perceive the care provided by the nurse for the patients was individualized. The items in the ICS-A-Nurse are concerned with the ways nurses assist their patients. Nurses give their opinion about how well each statement corresponds to their usual ways of providing nursing care. The items in the ICS-B-Nurse are concerned with the nursing care the nurses provided in the last shift. An example of corresponding items follows. In the ICS-A-Nurse, the item "I make an effort to find out how their illness or health condition affects them" corresponds to the ICS-B-Nurse item "In providing care to my patients I took into account how their illness or health condition has affected them." Both parts of the ICS-Nurse have 17 positively worded items and utilizes a 5-point Likert scale (1 = *strongly disagree*, 2 = *disagree to some extent*, 3 = *neither agree nor disagree*, 4 = *agree to some extent*, 5 = *strongly agree*). The ICS-A-Nurse and ICS-B-Nurse each consists of three subscales: (a) seven items related to clinical situation, including physical and psychological care needs, fears and anxieties, abilities or capacities, health condition, meaning of illness, reactions or responses to illness, and feelings or affective states; (b) four items measuring personal life situation, including life situation in general and daily activities, habits or preferences, cultural background or traditions, family involvement, and earlier experiences of hospitalization; and (c) six items related to decisional control over care, including knowledge about illness and treatment, making choices and having alternatives,

decision making, expressing own views, opinions, wishes, or making proposals.

The ICS-Nurse was developed and tested in a sample of 544 Finnish nurses (Suhonen et al., 2010a) for the measurement of nurses' perceptions of individualized nursing care. In that study, the psychometric properties supported the validity and reliability of the scale with Cronbach's α coefficients of .88 (ICS-A-Nurse) and .90 (ICS-B-Nurse). Average interitem correlations were all acceptable against the criteria of $r > .30$, and a Principal Components Factor Analysis produced a three-factor solution supporting the conceptual basis of the ICS-Nurse.

In addition to the ICS-Nurse questionnaire, sociodemographic data were collected that assessed nurses' educational level, such as school level, vocational education, diploma in nursing, bachelor's degree, master's degree or higher, work title including practical nurse, RN, or RN with specialization, gender, work status including full-time, part-time, or casual employment, age, and length of clinical work experience in years.

Translation Procedures

The translation into the different language versions of the ICS-Nurse questionnaire followed international recommendations (Sousa & Rojjanasrirat, 2011). This included forward translation from the source to the target language, back-translation from the target to the source language (with two different official translators), a review, and finalization of the source and translated versions. This was done by a group of three researchers. A pilot test was done of the translated version in each participating country (see **Table 1**). As a result of the pilot testing, the wording of the Kansas-American version of the ICS-Nurse was slightly revised, establishing semantic and conceptual equivalence between the translations.

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 the specific national standards prevailing in that country. Healthcare organizations, including an authorized committee of the Ministry of Health Cyprus along with the university medical faculties and hospitals in Finland, Greece, Turkey, and Kansas (USA), approved the study. Separate ethical approval was not required in Sweden and Portugal. Researchers, research assistants, or study nurses then informed the participants about the study, orally and in writing. Potential participants received a questionnaire with written information about the study, its significance,

Table 2. Nurses' Sociodemographic Background Variables

	<i>n</i>	Mean% (<i>SD</i>)
Age, mean (<i>SD</i>) ^a	1,155	37.3 (11.3)
Length of working experience [□]	1,144	13.0 (10.7)
Gender, <i>n</i> ^b	1,163	
Male, <i>n</i> (%)	128	12
Female, <i>n</i> (%)	965	88
Highest education	1,146	
Vocational nurse education	198	18
Diploma in nursing	452	41
Bachelor's degree	426	39
Master's degree or higher	17	2
Work as	1,150	
Practical nurse	179	17
Registered nurse	834	76
Specialized nurse	80	7
Type of work	1,151	
Full time	962	88
Part time	123	11
Casual	8	1

Note. Number of responses vary because of missing data.

and ethical issues, such as anonymity and voluntary participation. Informed consent was then obtained orally. Participants received an envelope with instructions about where to send the completed questionnaires. Questionnaires were returned in sealed envelopes to the contact persons in Cyprus, Greece, Turkey, and Portugal, placed in designated locked boxes in Kansas (USA) and Finland, and mailed using prepaid envelopes in Sweden.

Data Analysis

Data were analyzed using SPSS 16.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics including frequencies and percentages, means, standard deviations (*SD*), and 95% confidence intervals (*CI*) were used to describe the sample and study variables (**Table 2**). The normality distribution of the sum scores of the ICS-Nurse was analyzed using the Shapiro-Wilk test. Based on this test, the scales were not normally distributed. However, because the sample size was large, the distribution was treated as if it were normal, evoking the central limit theorem and enabling the use of parametric tests (Koopmans, 1987).

The significance of the background factors was defined at scale level (ICS-A-Nurse and ICS-B-Nurse) using general linear models and in terms of five categorical factors (gender, highest education, work title, type of work, and country of work) and two continuous factors (age and length of work experience). In this way, the test for an individual factor was controlled by the other six factors (**Table 3**). Analysis continued with pairwise comparisons

Table 3. General Linear Models of the Impact of the Nurses' Sociodemographic Variables on the Individualized Care Scale (ICS)-A-Nurse and ICS-B-Nurse

	Support of individuality (ICS-A-Nurse)		Individuality in care provided (ICS-B-Nurse)	
	<i>F</i> (<i>df</i>)	<i>p</i>	<i>F</i> (<i>df</i>)	<i>p</i>
Corrected model	5.43(16)	<.001	5.82(16)	<.001
Intercept	1344.7(1)	<.001	1161.3(1)	<.001
Highest education	3.23(3)	.022	1.36(3)	.253
Work title	5.61(2)	.004	4.75(2)	.009
Country	5.48(6)	<.001	8.00(6)	<.001
Gender	0.001(1)	.935	0.04(1)	.834
Type of work	0.89(2)	.413	1.29(2)	.275
Age	0.04(1)	.846	0.006(1)	.937
Length of working experience	4.93(1)	.027	2.45(1)	.118

using Bonferroni tests (**Table 4**). A *p* value of .05 was interpreted as statistically significant.

Results

Participants

The majority of the nurses in the different countries were female. Cyprus had the highest percentage of male nurses (27%) and Finland the lowest (2%). In Sweden, Greece, and Finland, the nurses' mean age was over 40 years, and Turkey had the lowest mean age of about 30 years. In Sweden, 54% of the nurses worked full time, while in the other countries this was over 90%, with the exception of Kansas (USA), which had a full-time working population of 84%. In Greece and Sweden, the proportion of RNs and specialized nurses was below 50%, the rest being practical nurses. All the participants in Cyprus and Turkey were RNs (see **Table 2**).

Background

The analyses showed that the differences were in nurses' highest education (*p* = .022), work title (*p* = .004), length of working experience (*p* = .027), and country of work (*p* < .001; see **Table 3**). In pairwise comparisons using Bonferroni tests (see **Table 4**), nurses with a diploma in nursing rated the support of patient individuality higher than those with vocational education (*p* = .023). With regard to work title, practical nurses rated the support of patient individuality higher than RNs (*p* = .027). Between-country differences were also found. The Greek nurses rated the support of patient individuality higher than Swedish (*p* = .004), Turkish (*p* = .005), and Cypriot (*p* < .001) nurses. Spearman's ρ correlation

Table 4. Pairwise Comparison (Bonferroni) of the Nurses' Sociodemographic Variables

	Support of individuality, ICS-A-Nurse				Individuality in care provided, ICS-B-Nurse			
	<i>n</i>	Mean	95% CI	<i>p</i> for pairwise Bonferroni	<i>n</i>	Mean	95% CI	<i>p</i> for pairwise Bonferroni
Highest education								NS
Vocational education/Ens	198	3.91 ^a	3.73–4.09	^a 0.023	197	3.93	3.74–4.13	
Diploma in nursing/RNs	452	4.16 ^a	4.00–4.31		449	4.10	3.93–4.26	
Bachelor's degree/RNs	426	4.12	3.96–4.27		425	4.07	3.90–4.24	
Master's degree or more	17	4.24	3.96–4.53		17	4.20	3.89–4.50	
Work title								NS
Practical nurse	179	4.22 ^b	4.02–4.42	^b 0.027	178	4.15	3.94–4.37	
Registered nurse	834	3.98 ^b	3.83–4.13		830	3.95	3.79–4.11	
Registered nurse with specialization	80	4.12	3.93–4.31		80	4.11	3.91–4.32	
Gender				NS				NS
Female	965	4.11	3.96–4.26		961	4.08	3.92–4.24	
Male	128	4.11	3.93–4.27		127	4.07	3.88–4.25	
Type of work				NS				NS
Full time	962	4.19	4.10–4.28		958	4.18	4.09–4.28	
Part time	123	4.14	4.01–4.27		122	4.13	3.98–4.27	
Casual	8	3.99	3.62–4.37		8	3.91	3.51–4.31	
Country								
Cyprus	136	3.99 ^c	3.80–4.17	^c <0.001	136	3.99 ^f	3.79–4.18	^f 0.004
Finland	226	4.12	3.96–4.29	^d 0.004	226	4.05 ^g	3.87–4.23	^g 0.004
Greece	139	4.29 ^{c,d,e}	4.11–4.46	^e 0.005	139	4.21 ^{h,i}	4.02–4.39	^h 0.001
Portugal	140	4.07	3.89–4.26		139	3.88 ^{h,j}	3.69–4.08	ⁱ 0.04
Sweden	161	4.04 [#]	3.86–4.21		159	4.12	3.93–4.30	^j < 0.001
Turkey	147	4.02 [□]	3.84–4.21		145	3.97 ^{h,k}	3.77–4.16	^k < 0.001
USA (Kansas)	144	4.22	4.05–4.39		144	4.30 ^{f,g,j,k}	4.12–4.48	

Note. NS = not significant. a,b,c,d,e,f,i,j,k Pairwise comparison differences between countries pointed out.

between the length of nurses' work experience and the ICS-A-Nurse was .162 and was also statistically significant ($p < .001$).

Individuality in the Care Provided (ICS-B-Nurse) by Background

The impact of nurses' background factors on their assessments of individuality in the care provided (ICS-B-Nurse) was analyzed. Work title ($p = .009$) and country of work ($p < .001$) were statistically significant variables in explaining differences in nurses' assessments (see **Table 3**). In the Bonferroni pairwise comparison, the respondent's country of work remained the only explanatory factor. There were differences in nurses' assessments of individuality in the care provided between Kansas (USA) and Finland ($p = .004$), between Kansas (USA) and Portugal ($p < .001$), between Kansas (USA) and Turkey ($p < .001$), and between Kansas (USA) and Cyprus ($p = .004$), with the nurses in Kansas (USA) rating individuality in the care provided the highest of the

participating countries. There were also statistically significant differences between Greece and Turkey ($p = .04$) and between Greece and Portugal ($p = .001$), indicating that Greek nurses rated individuality in the care provided higher than their comparators (see **Table 4**).

Discussion

The results revealed how nurses' sociodemographic variables are associated with their assessments of individualized care. Considering the ICS-A-Nurse overall, the level of nurses' education (diploma in nursing and bachelor's degree compared with vocational education), work title (practical nurses and RNs with specialization compared with RNs), length of work experience, and country of work were statistically significantly associated with their assessments of the support of patient individuality within specific nursing activities. Regarding the ICS-B-Nurse overall, only country of work was statistically significantly associated with the participants' assessments of individuality in the care they provided to their patients.

This finding is new, since previous studies have used single variables and univariate analysis.

Previous studies also supported the association of higher levels of education with higher perceptions of individualized care; this has been found to be an important driving force for the development of individualized patient care (Berg & Hallberg, 1999; Walker et al., 1999). In the current study, this same association was found between the lowest educational level (vocational school education) and those having a diploma in nursing as well as between bachelor's degree and the lowest educational level. Perceptions of nurses with a bachelor's degree were found to differ from the others, supporting previous findings (Kubsch et al., 2008). While there seemed to be an association between higher education and better assessments of individualized care, assessments of individualized care from nurses with a master's degree did not differ from those with lower educational qualifications. This may have been due to the small sample size of the master's degree group ($n = 17$).

The difference in nursing care delivered may also be influenced by the type of nurse training completed and differences in nurses' educational level (McHugh and Lake, 2010; Papastavrou, Lambrinou, Tsangari, Saarikoski, & Leino-Kilpi, 2009). Despite efforts to unify nurse education within Europe (Davies, 2008), the majority of qualified nursing personnel in Greece and Sweden were trained within a vocational system, whereas in Cyprus, Finland, and Portugal the participants followed an academic route, attaining mainly diplomas and bachelor's degrees. In Kansas (USA), all nurses had bachelor's degree. However, in these countries, older nursing education followed a variety of models; thus, there are nurses with different educational backgrounds currently working in the units (Simoens et al., 2005).

In the current study, practical nurses (with education of a year less than RNs) compared with RNs scored higher in support of patient individuality, which concurs with earlier work (e.g., Caspar & O'Rourke, 2008; O'Rourke, Chappell & Caspar, 2009; Walker et al., 1999), which highlights better outcomes with higher education. There may be several reasons for this. First, practical nurses may overestimate the level of care they provide as compared with the level of care that they believe, erroneously, should be provided (ICN, 2006; Thompson, Melia, Boyd, & Horsburgh, 2006). Second, not all of the participating countries have practical nurses who work with RNs proficient in the implementation of individualized care (Brown Wilson, 2009). Third, practical nurses usually take care of patients' basic needs and spend more time with patients, facilitating better staff-patient communication than RNs, who spend more time organizing care (Caspar & O'Rourke, 2008; O'Rourke et al., 2009; Walker

et al., 1999). Finally, there may be cultural differences between the different grades of nurses, which demonstrate different role responsibilities in nursing practice (Pang et al., 2003). These different role responsibilities may diffuse the spread of support for patient individuality across the work roles.

Previous studies have pointed out several other predictors, for example, experience and personal characteristics, of improved assessment of individualization of care (Chappell et al., 2007; McHugh & Lake, 2010; Papastavrou et al., 2009). In the current study there was a positive albeit weak correlation between the length of clinical work experience and the assessment of patient individuality in specific nursing activities, supporting earlier findings (O'Brien, 1999; Redfern, 1996; Waters & Easton, 1999).

Country is also a strong predictor of nurses' assessment of nursing care attributes (Pang et al., 2003; Suhonen et al., 2011). Although nursing has many universal core elements, the individual foci of nursing research and practice may be perceived differently by healthcare professionals within different cultures (Chiang-Hanisko, Ross, Ludwick, & Martsof, 2006). Additionally, even where there is harmonization of nursing curricula (Davies, 2008), the different cultural systems in individual countries may produce nurses with different practical competencies.

Nurses' age was not significantly associated with the study variables, contradicting earlier findings (Chappell et al., 2007; Duclos et al., 2008). This finding may be true because the principle of individuality is rooted in the nursing profession (Thompson et al., 2006). Similarly gender has not been significantly associated with the study variables (Ekstrom, 1999; Lee et al., 2010). The current study concurs with this previous work, but in the current study gender differences may reflect the low proportion of male nurses (except for Cyprus, with a relatively high proportion [$n = 40$, 27%] of male nurses).

McHugh and Lake (2010) found that when individual characteristics were controlled, the hospital context significantly influences clinical nursing expertise in use. Additionally, ability in individualized care delivery is affected by personal qualities and is also considered to reflect a person's ethical stance (Suhonen et al., 2009). The results of the current study support these earlier findings and may be useful in the development of individualized nursing care in different healthcare contexts.

The results support several recommendations for clinical practice, including support for individual nurses in their academic education and their quest to use individualized care knowledge and skills for the benefit of patients. Nurse leaders may also wish to assess nursing staffs' characteristics in selection processes. It follows that

the results of the current research are important for the development of clinical nursing practice and education and the improvement of working conditions.

In terms of research method, the use of multidimensional measures to assess factors, such as the impact of nurses' and patients' personal characteristics in relation to the organizational context and the level of individualized care delivered, may help to develop a more robust conceptualization of individualized nursing care and related factors (Suhonen et al., 2010b).

Overall, our findings suggest that both individuals and healthcare contextual factors have important effects on nurses' assessments of individualized nursing care, which must be considered when making context-dependent decisions about the attributes of individual nurses during recruitment processes. Future research might consider a closer, longitudinal examination of individual characteristics of nurses related to their working environment to identify mechanisms that influence the delivery of individualized care.

Limitations

The use of purposive samples in the participating countries reduces the level of representation provided by the nurses in the national samples. In mitigation of this, a close examination of the sample in context demonstrates adequate representation. First, the choice of orthopedic surgical and trauma wards throughout the study facilitated comparability and data homogeneity. Second, representativeness was increased by the geographical features of the makeup of the national samples. For example, in Cyprus, the sample frame included all nurses working in the orthopedic surgical and trauma inpatient wards on the island. In Greece, Portugal, and Turkey, the samples were taken from specialist hospitals in the respective largest city of each country. The sample therefore included patients from a wide geographical area. In Finland and Sweden, the samples incorporated two different large hospital districts (Finland) or county areas (Sweden), which meant that once again samples of nurses were obtained from large geographical areas in these countries. Lastly, representativeness was assisted by the largely satisfactory response rate, with the exception of Kansas (USA), which had a response rate of 35% and was similar to earlier studies reported in the United States (Tzeng, 2010).

The multicultural dataset, made further heterogeneous by the variety of participating countries (Lucero et al., 2009), represents the views of European nurses, as well as nurses in Turkey and Kansas (USA). To some extent, these results demonstrate the explanatory power to model the sociodemographic data of the nurses in rela-

tion to their perceptions of the delivery of individualized care. The sociodemographic data were analyzed so that the effect of separate nurses' characteristics on individualized care could be identified. When amalgamated, this multivariate simultaneous modeling with all the sociodemographic variables studied adds to our understanding about how these background factors interact.

Conclusions

Orthopedic surgical and trauma nurses' education, role responsibilities and work title, longer work experience, and culture, as defined by the country of work of the participants, were associated with the participants' assessments of the support of patient individuality in specific nursing activities and the individualized care culture. The results may be useful in the development and management of clinical practice. Further research is needed to determine how these factors (education, role responsibilities and work title, length of working experience, and cultural differences), work together to influence the delivery of individualized care. In addition, the different educational levels of nurses should be explored in detail.

Acknowledgments

The authors acknowledge the contribution of our research partner Valmi D. Sousa, PhD, RN, Associate Professor from the University of Kansas School of Nursing, Kansas City, Kansas, United States, who died during the reporting phase of the study. We also acknowledge the help of Norman Rickard, MSc, BSc, RN, in the construction of the language of this paper. This study was funded by the Research Foundation for Nursing Education, Forssa Health Care District's special grant-in-aid (EVO), and the Finnish Cultural Federation, which are gratefully acknowledged.

Clinical Resources

- Individualised Care Project, ICProject Web-page: http://www.med.utu.fi/hoitotiede/tutkimus/tutkimusprojektit/ic_project/index.html
- Person-centred care –Health foundation; <http://www.health.org.uk/areas-of-work/topics/person-centred-care/>

References

- Berg, A., & Hallberg, I. R. (1999). Effects of systematic clinical supervision on psychiatric nurses' sense of coherence, creativity, work-related strain, job satisfaction and view of

- the effects from clinical supervision: A pre-post test design. *Journal of Psychiatric and Mental Health Nursing*, 6, 371–381.
- Brown Wilson, C. (2009). Developing community in care homes through a relationship-centred approach. *Health and Social Care in the Community*, 17, 177–186.
- Burhans, L. M., & Alligood, M. R. (2010). Quality nursing care in the words of nurses. *Journal of Advanced Nursing*, 66, 1689–1697.
- Caspar, S., & O'Rourke, N. (2008). The influence of care provider access to structural empowerment on individualized care in long-term-care facilities. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences*, 63B, S255–S265.
- Chappell, N. L., Reid, R. C., & Gish, J. A. (2007). Staff-based measures of individualized care for persons with dementia in long-term care facilities. *Dementia*, 6, 527–547.
- Chiang-Hanisko, L., Ross, R., Ludwick, R., & Martsolf, D. (2006). International collaboration in nursing research. *Journal of Research in Nursing*, 11, 307–322.
- Christensen, M., & Hewitt-Taylor, J. (2006). From expert to tasks, expert nursing practice redefined? *Journal of Clinical Nursing*, 15, 1531–1539.
- Costello, J. (2001). Nursing older dying patients: Findings from an ethnographic study of death and dying in elderly care wards. *Journal of Advanced Nursing*, 35, 59–68.
- Cox, C. L., & Roghmann K. J. (1984). Empirical test of the interaction model of client health behavior. *Research in Nursing & Health*, 7, 275–285.
- Curry, L., Porter, M., Michalski, M., & Gruman, C. (2000). Individualized care: Perceptions of certified nurse's aides. *Journal of Gerontological Nursing*, 26(7), 45–51.
- Davies, R. (2008). The Bologna process: The quiet revolution in nursing higher education. *Nurse Education Today*, 28, 935–942.
- Duclos, A., Gillaizeau, F., Colombet, I., Coste, J., & Durieux, P. (2008). Health staff perception regarding quality of delivered information to inpatients. *International Journal for Quality in Health Care*, 20, 13–21.
- Ekstrom, D. N. (1999). Gender and perceived nurse caring in nurse-patient dyads. *Journal of Advanced Nursing*, 29, 1393–1401.
- Ericsson, K. A., Whyte, J., & Ward, P. (2007). Expert performance in nursing: Reviewing research on expertise in nursing within the framework of the expert-performance approach. *Advances in Nursing Science*, 30, E58–E71.
- European Council of Nursing Regulators. (2008). *Code of ethics and conducting of european nursing*. Retrieved April 20, 2011, from http://www.fepl.org/userfiles/file/FEPL_Code_of_Ethics_and_Conducts.170908.pdf
- International Council of Nurses. (2006). *The ICN code of ethics for nurses*. Geneva, Switzerland: Author.
- Koopmans, L. H. (1987). *Introduction to contemporary statistical methods* (2nd ed.). Boston: PWS Publishers.
- Kubsch, S., Hansen, G., & Huyser-Eatwell, V. (2008). Professional values: The case for RN-BSN completion education. *Journal of Continuing Education in Nursing*, 39, 375–384.
- Lee, L. C., Chen, C. G., & Yang, Y. O. (2010). The affect of gender on caregiving: A study of male nurses. *Hu Li Za Zhi*, 57, 77–81.
- Lucero, R. J., Lake, E. T., & Aiken, L. H. (2009). Variations in nursing care quality across hospitals. *Journal of Advanced Nursing*, 65, 2299–2310.
- McHugh, M. D., & Lake, E. T. (2010). Understanding clinical expertise: Nurse education, experience, and the hospital context. *Research in Nursing & Health*, 33, 276–287.
- O'Brien, A. J. (1999). Negotiating the relationship: Mental health nurses' perceptions of their practice. *Australian New Zealand Journal of Mental Health Nursing*, 8, 153–161.
- Organisation for Economic Co-operation and Development. (2004). *Towards high-performing health systems. OECD Health Project. OECD Publications 2*. Paris, France: Publication Services.
- O'Rourke, N., Chappell, N. L., & Caspar, S. (2009). Measurement and analysis of individualized care inventory responses comparing long-term care nurses and care aids. *Gerontologist*, 49, 839–846.
- Pang, S. M., Sawada, A., Konishi, E., Olsen, D.P., Yu, P.L., Chan, M.F., & Mayumi, N. (2003). A comparative study of Chinese, American and Japanese nurses' perceptions of ethical role responsibilities. *Nursing Ethics*, 10, 295–311.
- Papastavrou, E., Lambrinou, E., Tsangari, H., Saarikoski, M., & Leino-Kilpi, H. (2009). Student nurses experience of learning in the clinical environment. *Nurse Education Practice*, 10, 176–182.
- Redfern, S. (1996). Individualised patient care: Its meaning and practice in a general setting. *NTrresearch*, 1, 22–33.
- Ross, F., Smith, E., Mackenzie, A., & Masterson, A. (2004). Identifying research priorities in nursing and midwifery service delivery and organisation: A scoping study. *International Journal of Nursing Studies*, 41, 547–558.
- Simoens, S., Villeneuve, M., & Hurst, J. (2005). *Tackling nurse shortages in OECD countries. OECD health working papers no 19*. Organisation for Economic Co-operation and Development. Retrieved from <http://www.oecd.org/dataoecd/11/10/34571365.pdf>
- Sousa, V. D., & Rojjanasrirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice*, 17, 268–274.
- Suhonen, R., Gustafsson, M-L., Katajisto, J., Välimäki, M., & Leino-Kilpi, H. (2010a). Individualised Care Scale–Nurse version: A Finnish validation study. *Journal of Evaluation in Clinical Practice*, 16, 145–154.
- Suhonen, R., Gustafsson, M-L., Katajisto, J., Välimäki, M., & Leino-Kilpi, H. (2010b). Nurses' perceptions of

- individualised care. *Journal of Advanced Nursing*, 66, 1035–1046.
- Suhonen, R., Papastavrou, E., Efstathiou, G., Lemonidou, C., Kalafati, M., da Luz, MD, . . . Leino-Kilpi H. (2011). Nurses' perceptions of individualised care: An international comparison. *Journal of Advanced Nursing*, 67, 1895–1907.
- Suhonen, R., Välimäki, M., & Leino-Kilpi, H. (2009). The driving and restraining forces that promote and impede the implementation of individualised nursing care: A literature review. *International Journal of Nursing Studies*, 46, 1637–1649.
- Thompson, I. E., Melia, K. M., Boyd, K. M., & Horsburgh, D. (2006). *Nursing ethics* (5th ed.). Edinburgh, UK: Elsevier-Churchill Livingstone.
- Tzeng, H. M. (2010). Perspectives of staff nurses of the reasons for and the nature of patient-initiated call lights: An exploratory survey study in four USA hospitals. *BMC Health Services Research*, 26(10). Retrieved from <http://www.biomedcentral.com/1472-6963/10/52>. doi:10.1186/1472-6963-10-52
- Walker, L., Porter, M., Gruman, C., & Michalski, M. (1999). Developing individualized care in nursing homes: Integrating the views of nurses and certified nurse aides. *Journal of Gerontological Nursing*, 25(3), 30–35.
- Waters, K. R., & Easton, N. (1999). Individualized care: Is it possible to plan and carry out? *Journal of Advanced Nursing*, 29, 79–87.
- World Health Organization. (2007). *People-centred health care. A policy framework*. Geneva, Switzerland: WHO Press.