




# Validation of the Hospital Ethical Climate Survey for older people care

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**Riitta Suhonen, Minna Stolt and Jouko Katajisto**

University of Turku, Finland

**Andreas Charalambous**

Cyprus University of Technology, Cyprus; University of Turku, Finland

**Linda L Olson**

North Park University School of Nursing, USA; National Council of State Boards of Nursing (NCSBN), USA

## Abstract

**Background:** The exploration of the ethical climate in the care settings for older people is highlighted in the literature, and it has been associated with various aspects of clinical practice and nurses' jobs. However, ethical climate is seldom studied in the older people care context. Valid, reliable, feasible measures are needed for the measurement of ethical climate.

**Objectives:** This study aimed to test the reliability, validity, and sensitivity of the Hospital Ethical Climate Survey in healthcare settings for older people.

**Design:** A non-experimental cross-sectional study design was employed, and a survey using questionnaires, including the Hospital Ethical Climate Survey was used for data collection. Data were analyzed using descriptive statistics, inferential statistics, and multivariable methods.

**Participants and research context:** Survey data were collected from a sample of nurses working in the care settings for older people in Finland ( $N = 1513$ ,  $n = 874$ , response rate = 58%) in 2011.

**Ethical considerations:** This study was conducted according to good scientific inquiry guidelines, and ethical approval was obtained from the university ethics committee.

**Results:** The mean score for the Hospital Ethical Climate Survey total was 3.85 (standard deviation = 0.56). Cronbach's alpha was 0.92. Principal component analysis provided evidence for factorial validity. LISREL provided evidence for construct validity based on goodness-of-fit statistics. Pearson's correlations of 0.68–0.90 were found between the sub-scales and the Hospital Ethical Climate Survey.

**Discussion:** The Hospital Ethical Climate Survey was found able to reveal discrimination across care settings and proved to be a valid and reliable tool for measuring ethical climate in care settings for older people and sensitive enough to reveal variations across various clinical settings.

**Conclusion:** The Finnish version of the Hospital Ethical Climate Survey, used mainly in the hospital settings previously, proved to be a valid instrument to be used in the care settings for older people. Further studies are due to analyze the factor structure and some items of the Hospital Ethical Climate Survey.

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**Corresponding author:** Riitta Suhonen, Department of Nursing Science, University of Turku, Lemminkäisenkatu 1, 2nd Floor, 20014 Turku, Finland.

Email: suhonen.riitta@kolumbus.fi; riisuh@utu.fi

## Keywords

Care settings for older people, ethical climate, instrument, validity, work environment

## Introduction

As defined by Olson,<sup>1</sup> an ethical climate is one in which organizational practices and conditions promote discussion and resolution of decisions with ethical content. Ethical climate is not static, but presents itself as a dynamic construct that prospectively can be changed, for example, by healthcare leaders.<sup>2–5</sup>

Different terms to describe the ethical climate have been used, such as ethical organizational climate, ethical culture, moral climate, ethical environment, the ethical dimension of the organizational culture and ethical work environment.<sup>6</sup> Recently, the research interest towards ethical climate has increased as well as the body of the relevant literature. The literature has revealed the complexity of the concept and its possible influences toward many aspects of the organization.

Therefore, ethical climate, having shared values in organization, is considered as a hallmark of a healthy work environment<sup>7</sup> and has been associated with various aspects of clinical practice and nurses' jobs. These aspects include nurses' job satisfaction,<sup>8,9</sup> turnover intentions,<sup>10–12</sup> retention,<sup>7</sup> moral distress,<sup>13–16</sup> organizational commitment,<sup>17</sup> and well-being in general.<sup>5</sup> However, research studies on the effects of ethical climate on these factors are conflicting and at best insufficient,<sup>18</sup> and thus do not allow for drawing any safe conclusions on these associations. Therefore, there is need for more research on this topic in order to further explore these associations on one hand and on the other hand to come up with ways that can facilitate the development of ethical climate.

The starting point of developing or changing an ethical climate lays in Victor and Cullen's<sup>19</sup> statement that the "behavior of individuals produces an organization's ethical climates." Therefore, employees learn through formal and informal socialization processes what is correct to contribute to this organizational ethical climate.<sup>19</sup> In any case, to have knowledge of the impact of these processes, one needs to measure their outcome in ethical climate terms. The complexity and variability of the concept within an organization calls for reliable and valid measures that are designed to elicit objective measurements such as the Hospital Ethical Climate Survey<sup>1</sup> (HECS) developed in the United States. However, there is need for the cultural validation and assessment of the psychometrics and feasibility in other countries.

Considering the variability of the organizational culture between different countries and also care settings, that are characterized by different shared assumptions, beliefs, and values, there was a need for translation, cultural adaptation, and validation of the HECS in the Finnish language within the specificities of healthcare settings for older people. Care for older people can be implemented in acute care hospitals or in long-term care. Acute care is delivered in different levels of hospitals, regional or central, and in healthcare centers. In the Finnish healthcare system, long-term care institutions refer to nursing and residential care facilities that provide accommodations and long-term care as a package. This could happen in different organizations: municipal health center hospitals managed by general practitioners, sheltered housing units with 24-h assistance, and residential homes. Sheltered housing units with 24-h assistance are meant for older people who may need staff on hand round the clock (nursing homes), and residential homes provide institutional care for older people as a social service.<sup>20</sup>

The exploration of the ethical climate in the care settings for older people is highlighted in the literature<sup>21</sup> that emphasizes on the specificities faced by the older people needing care for their multiple health problems and the many ethical challenges these care needs pose on the nurses in order to effectively care for them. A mismatch between resources and facilities and the needs of older persons is in itself an ethical problem, and there is a body of empirical evidence on ensuring sound ethical decision-making in this clinical

area.<sup>21</sup> These challenges create ethically difficult situations for the nurses who are called upon to balance an ethically burdensome nursing care and an ethical climate in healthcare environments that tends to be disempowering and undervalues older patients.<sup>22,23</sup> The inability to effectively manage the influx of ethical situations in older people can be a constant source of stress for the nurse providing the care, and this combination of factors can possibly set in motion thoughts of turnover, experiences of low job satisfaction, and low overall well-being.

Given the projected increase in the aging of the population to 16.1% in 2050<sup>24</sup> and the respective need for an increase in the availability and provision of care services<sup>25</sup> and facilities, a strategic plan will be needed in order to attract but most importantly retain qualified nursing staff in the care settings for older people.<sup>12,26</sup> The provision of care for older people is a labor-intensive and burdensome activity, and younger newly graduated nurses tend to exclude this kind of care as a work career option.<sup>27</sup> Given the fact that the ethical environment<sup>17,28</sup> can also have a negative impact on the nurses working in these settings, specific actions should also be focused on this topic as to provide an ethical environment where nurses can be nurtured in a way that allows the resolution of any ethical challenges.

### *Ethical climate*

Olson<sup>1</sup> has shown that nurses experience the ethical climate of their practice environment through their perceptions of organizational practices. “Ethical climate provides the context in which ethical behavior and decision-making occurs” (p. 346).<sup>1</sup> Several definitions of ethical climate can be found in the literature. Olson<sup>29</sup> defined ethical climate as nurses’ perceptions of how ethical issues at the workplace are handled, and that it refers to individual perceptions of the organization that influences attitudes and behavior and serves as a reference for employee behavior. Victor and Cullen<sup>19</sup> defined organizational ethical climate (pp. 51–52) as an organization’s “shared perceptions of what is ethically correct behavior and how ethical issues should be handled.” Later, Hart<sup>10</sup> described the ethical climate as “the organisational conditions and practices that affect the way difficult patient care problems, with ethical complications, are discussed and decided” (p. 174).

Based on a theoretical framework drawn from three ethical theories, Victor and Cullen<sup>19,30</sup> constructed the Ethical Climate Theory (ECT) that characterizes ethical criteria, namely, egoism, benevolence (utilitarianism), and principle (deontology). The ECT represents a descriptive map of ethical decision-making and actions within an organization by drawing on the principles of philosophical and sociological theory. As part of the ECT, the ethical criteria are those used to distinguish and form the three basic organizational ethical climates and are related to the work of Kohlberg<sup>31</sup> on moral development. This is indicated by the similarity of Kohlberg’s three levels of ethical standards employed by individuals in ethical development to egoism, benevolence, and principle. Explicit, egoism is the construct that mainly refers to the person itself, while the other two are concerned with the well-being of others. Therefore, egoism refers to behavior concerned primarily with self-interest behavior, while benevolence and principle encompass those processes and decisions aiming to achieve the greatest good for the people.<sup>32</sup> The three ethical criteria are not found in balance in the organization, but on the contrary, empirical evidence has demonstrated that one criterion will eventually prevail and ultimately define the organization’s ethical climate.<sup>32</sup>

Hart<sup>10</sup> in a cross-sectional study of randomly selected registered nurses (n = 463) found association between a negative ethical climate with registered nurses’ decisions to leave the nursing profession. Corley et al.<sup>13</sup> in a study with 106 nurses from two large medical centers in the state of Virginia, USA, examined the relationship between the ethical environment and nurse moral distress. They found that moral distress was the reason reported by one in every four nurses for leaving a position. Elpern et al.<sup>33</sup> in a descriptive study of 28 nurses working in a medical intensive care assessed the level of nurses’ moral distress and explored possible negative implications. Nurses in their majority reported that moral distress adversely affected job

satisfaction, retention, psychological and physical well-being, self-image, and spirituality. Filipova<sup>34</sup> in a cross-sectional survey of 656 nurses working in various skilled nursing facilities revealed the presence of five ethical climates, indicating that creating an ethical climate is a dynamic process that is dependent on various organizational factors. Significant differences were also found in registered and licensed practical nurses with regard to egoistic and independence ethical climates. Schluter et al.<sup>18</sup> in a systematic review of ethical climates and moral distress impact on nurses' turnover and shortages concluded that although there may be a logical consistency in this argument, it is not rigorously substantiated by the data presented.

Ethical climate is seen, as shown above, as an integral part of the healthcare organization's successful actions/culture, and a positive ethical climate seems to lead to decreases in nurses' responses to morally distressing situations.<sup>16</sup> The need to assess the ethical climate has also increased, and some measures have been developed in the course of time: the Ethical Climate Questionnaire<sup>30,35</sup> (ECQ), the Ethics Environment Questionnaire<sup>36</sup> (EEQ), and the HECS.<sup>1</sup> The HECS has been used in cultures other than the United States, where it was originally developed, including Canada,<sup>14</sup> Sweden,<sup>15,16</sup> Turkey,<sup>37</sup> and several other countries. The HECS covers the areas where ethical conflicts usually appear, namely, relationships with peers, patients, managers, organization, and physicians.<sup>38</sup> The complexity and number of ethical problems may increase in the near future and needs consideration.<sup>21</sup> For these reasons, the HECS was translated into Finnish language and tested empirically in the care settings for older people.

Given the importance of ethical climate in healthcare organizations and its impact on issues affecting the well-being of nurses, the assessment of this concept becomes imperative and a prerequisite for creating and promoting optimal work environments. It has been stated that possibly the ethical working environment is the strongest facilitator of organizational commitment.<sup>28</sup> Therefore, providing advantages for organizations in their competition for skilled healthcare workers and nursing professionals is important in an age of tightening resources.

## Aims

The aim of this study was to (a) test the reliability, validity, and sensitivity of the HECS in Finnish healthcare settings for older people; and (b) to compare nurses' perceptions of ethical climate in four different types of in-patient units with the goal of identifying whether different ethical climates exist. The ability of the instrument to discriminate (or demonstrate differences between mean perceptions between climates) climate differences was used as a validity criterion that makes it appropriate for this type of work.<sup>39</sup>

## Methods

### *Design, sample, and settings*

A non-experimental cross-sectional study design was employed to survey a sample of nurses working in care settings for older people. All nurses who were working in the vicinity of a large city in Southern Finland and its organizations' 62 units were recruited to the study (N = 1513). The following care settings for older people were used: acute care hospitals' in-patient wards (1 university hospital, 2 regional hospitals, and 1 city hospital; 12 units, n = 136), municipal health center hospitals' in-patient wards (18 units, n = 313), and sheltered housing units with 24-h assistance, including nursing homes (17 units, n = 255) and residential homes (15 units, n = 170). In acute care hospitals, older people are cared for like any other patients, and based on the statistics, older people are the large user group of acute care hospitals' in-patient services.<sup>40</sup> Municipal health center hospital offers long-term care managed by general practitioners. Sheltered housing units with 24-h assistance are meant for older people who may need staff on hand round the clock and are

typically organized in nursing homes; client pays separately for the accommodation and any services utilized. In residential homes, people are living in their own residencies, and staff is only on duty during the day.<sup>20</sup>

Potential participants were recruited on the basis of the following inclusion criteria: (a) registered nurse, licensed practical nurse, or nurse auxiliary; (b) working in the care settings for older people; and (c) participated in direct patient care. A sample size of at least 150 nurses from each facility was needed for between-setting comparison, based on power calculation using NQuery Advisor (alpha of 0.01 with a power of 90%) and estimating a response rate of 70%.

## Measure

The HECS instrument was developed to measure how hospital nurses perceive the ethical climate of their work setting.<sup>1,6,29</sup> It consists of 26 items that are in the format of organizational practices that together constitute an environment in which nurses perceive they can participate in ethical decisions and act in situations where they confront difficult patient care problems and/or situations in the workplace. The 26 items are organized into five sub-scales according to key relationships, namely, relationships with peers (4 items), patients (4 items), managers (6 items), hospital/organization (6 items), and physicians (6 items). These sub-scales are assessed on a 5-point Likert-type scale (ranging from 1 = almost never true to 5 = almost always true). These five sub-scales provide a way to identify the areas in which to focus organizational interventions to improve the ethical climate; however, they are not meant to stand alone. The HECS is therefore viewed as measuring a uni-dimensional construct, that of ethical climate. A total score can be calculated and the higher the score the more positive the ethical climate. The content of the HECS is based on deductive reasoning using concept analysis of ethical climate.<sup>29</sup> Initial construct validity of the original American English scale was assessed using confirmatory factor analysis.<sup>1</sup> Internal consistency reliability using Cronbach's alpha was 0.91 for the total scale.<sup>1</sup> Subsequent research has confirmed the reliability of the HECS. The HECS has been used in several studies, both in the United States<sup>1,11</sup> and internationally.<sup>6,15,37</sup>

*Translation of the HECS.* The translation of the questionnaire was based on the internationally recommended protocol of forward-back translation. Therefore, a standard forward-back translation from US English to Finnish of the HECS was performed by two different official translators. A group of three monolingual nursing researchers examined the semantic equivalence of the different translated and back-translated versions and compared them with the original.<sup>41</sup> Conceptual and content equivalence was attained by collaborating (e-mailing) with the copyright owner and developer of the instrument. Technical equivalence with the original scale was ensured by using paper and pencil completion of the questionnaire. The HECS was piloted in a sample of 70 nurses to reveal any conceptual and possibly cultural misinterpretations that have been overlooked during the translation process. Internal consistency homogeneity using Cronbach's alpha coefficient was 0.90 for the HECS and for the sub-scales: HECS peers, 0.61; HECS patients, 0.69; HECS managers, 0.94; HECS hospital/organization, 0.71; and HECS physicians, 0.80.

## Analysis

Data were analyzed using the SPSS 20.0 software (IBM corporation). Descriptive statistics (frequencies, percentages, mean, standard deviation (SD)) were used to examine the item and sub-scale characteristics and socio-demographic variables of the respondents. Cronbach's alpha values were calculated for the examination of internal consistency reliability, as well as item analysis. Item to total (criterion  $r > 0.30$ ), average inter-item, and inter-item correlations ( $0.30 \leq r \leq 0.70$ ) were calculated and evaluated against the criteria

set.<sup>42</sup> Pearson's product-moment correlations were calculated to investigate the association between the sub-scale and the total HECS. Exploratory factor analysis was computed using principal component analysis (PCA) using Promax rotation with Kaiser Normalization (Annotated SPSS Output 2012).<sup>43</sup> PCA was used for an item level evaluation and an examination of how the items form the sub-scales. In addition, structural equation modeling using LISREL 8.7 with Maximum Likelihood Method<sup>44</sup> was used to examine the structure of theoretical construct under the HECS. This method provides a view to structure, the interplay of the scales in the sum-variable level, and support construct validity and theoretical framework of the scale. The following analyses were used for the estimation of the model: chi-square with degrees of freedom and p-value, and a relative likelihood ratio (RLR), the ratio of the chi-square value to the number of degrees of freedom. There is no consensus on what values constitute a good fit,<sup>45</sup> but RLRs of approximately 3 or lower are considered indicative of a good fit.<sup>46</sup> In addition, the root mean square error of approximation (RMSEA) was used. RMSEA values of <0.2 with sample sizes of more than 500 may indicate that the data do not underfit the model.<sup>47</sup> As chi-square statistics are known to be affected by a large sample size,<sup>48</sup> additional goodness-of-fit indices (GFIs) were used: the GFI and the comparative fit index (CFI). A value of 0.90 of these indices indicates a good fit of the model to the empirical data.<sup>49</sup> Finally, the amount of unexplained variance, or the error, of each endogenous variable was evaluated using root mean square residual (RMR) and the standardized root mean square residual (SRMR). In well-fitting models, these values should be under 0.05.<sup>50</sup> The critical N (CN) was also calculated. The sample was large ( $n = 874$ ), and based on the central limit theorem, normal distribution assumption is not necessary to be tested. However, while computing, the analysis test of homogeneity of variance was tested (Levene statistics = 1.451,  $p = 0.227$ ). Differences (discriminant ability of the HECS) between the care settings were investigated using one-way analysis of variance (ANOVA, F-value, degrees of freedom, and p-value) for the level of the total HECS scale (all dependent) as well as multivariate analysis of variance (MANOVA, F-value, Pillai's Trace p-value) for the sub-scales of the HECS.

### *Ethical considerations and data collection*

This study was conducted according to good scientific inquiry guidelines.<sup>51</sup> Ethical approval was obtained from the university ethics committee (ETMK 24/2011, 12.12.2011). Permissions to collect the data were obtained from the chief administrators of the hospitals and from the chief administrator of city's social- and healthcare services regarding the primary healthcare centers and nursing and residential homes. Researchers informed the nurse leaders and nurse managers at an organizational or ward level about the study's purpose and protocols. Each ward manager distributed the questionnaires to all those nurses who worked in the units and fulfilled the inclusion criteria. Each nurse was given a questionnaire, a cover letter informing them about the purpose of the study, voluntariness, anonymity, and instructions on how to complete and return the questionnaire. In order to facilitate the return process and increase the response rate, an empty envelope where to seal the completed questionnaire was supplied to the nurses. A reminder was sent to each unit after 2 weeks from the distribution of the questionnaires. Nurses returned the completed questionnaires to the letter boxes in each unit, and the researchers fetched the questionnaires from the units. Return of the completed questionnaire was considered as an informed consent to participate in the study.

## **Results**

### *Respondents*

A sample of 874 nurses out of the 1513 responded to the survey, giving the response rate of 58%. Most of the respondents were female (95%) with a mean age of 42 years ( $SD = 12.6$ , range = 18–68). Around two-

thirds of the respondents (63%) were licensed practical nurses, 28% were registered nurses (28%), and 9% were nurse auxiliaries (9%). The majority had a full-time job (94%), while the rest had part-time (4%) or per diem (2%) job. The nurses worked in the acute care hospital (16%), municipal health center hospitals (36%), nursing homes (29%), or residential homes (19%).

### *Descriptive statistics*

The mean score for the HECS total was 3.85 (SD = 0.56, range = 1–5). The highest mean score for a single sub-scale was 4.29 (SD = 0.55) for the HECS Peers, and the lowest (3.58, SD = 0.71) was for the sub-scale HECS Physicians. Missing data were low, ranging from 1.1% to 3.3% (n = 874) (Table 1).

### *Reliability of the HECS*

Internal consistency reliability by Cronbach's alpha coefficient was 0.92 for the HECS total, and ranged from 0.58 to 0.92 for the five sub-scales (Table 1). Item analysis revealed that in four out of five sub-scales, all item to total correlations were higher than the minimum criteria ( $r > 0.30$ ). In the HECS Patients, one item, no 2—"Patients know what to expect from their care" ( $r = 0.291$ ), did not fulfill these criteria, and warrant some further examination and possible revision. Inter-item correlations in the sub-scales were in an acceptable range interchangeably, the best being HECS peers with 100% of acceptable (based on the criteria  $0.30 \leq r \leq 0.70$ ), HECS managers and HECS hospital 93% in each, but 67% for HECS physicians and 50% for HECS patients.

### *Construct validity of the HECS*

Construct validity of the HECS was examined using PCA with Promax rotation and Kaiser normalization,<sup>52,53</sup> structural equation modeling (LISREL),<sup>54,55</sup> and correlations of predicted relationships between the dimensions and construct components (domains).<sup>56</sup>

PCA was generated for the 26-item scale in a sample of 874 nurses working in care settings for older people. Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy supported the adequacy of sample size for the analysis (KMO = 0.928). Bartlett's test of sphericity ( $\chi^2 = 9763$ ,  $df = 325$ ,  $p < 0.000$ ) concluded that the strength of the relationship among variables is strong and possibilities to proceed a factor analysis for the data was supported.<sup>43</sup> PCA revealed that five components accounted for 60.7% of the variance in the HECS. As the five dimensions of HECS were interrelated, a solution with Promax (oblique) rotation was generated. With the correlations at an acceptable level (0.30–0.80 in absolute values), PCA is highly effective because the model clusters together subsets of highly inter-correlated variables.<sup>56</sup> The item correlations (communalities) in PCA initial extraction for HECS ranged from 0.40 to 0.79.

The criteria for component extraction were (a) Kaiser's criterion of an eigenvalue of 1.00 or greater and (b) a minimum of 5% variance per component. PCA produced a five-component solution with eigenvalues of 9.332–1.107, and their variances were between 35.9% and 4.3%. Two criteria were set for the examination of the Promax rotated solution: (a) coefficients equal to or larger than 0.40 were used to identify a significant loading on a factor, and (b) a difference between factor loadings on an item at 0.20 or greater was judged to be appropriate (Table 2). All the loadings were larger than 0.4, ranging from 0.51 to 0.91. The loadings pointed out a clear pattern in some of the components, for example, HECS Managers, HECS Hospital, and HECS Physicians, but, for example, the pattern was not so clear in the sub-scales HECS Peers and HECS Patients.

Structural equation modeling using LISREL provided evidence for the construct validity of the HECS. The chi-square statistics ( $\chi^2 = 82.92$ ,  $df = 5$ ,  $p < 0.001$ ) was not statistically significant, and the RMSEA

**Table 1.** Descriptive statistics of HECS sub-scales, Cronbach's alpha, and item analysis.

Variable	n	n of items	Mean (SD)	Minimum	Maximum	Cronbach's alpha coefficient	Pearson's correlation <sup>a</sup>	Item to total r > 0.30 %	Inter-item 0.3 < r < 0.7 %	Average inter-item correlation
HECS Total	869	26	3.85 (0.56)	1.77	5	0.92		25/26, 96%	169/325, 52%	0.323
HECS Peers	868	4	4.29 (0.55)	1.0	5	0.74	0.716*	4/4, 100%	6/6, 100%	0.412
HECS Patients	867	4	3.96 (0.54)	1.0	5	0.58	0.680*	3/4, 75%	3/6, 50%	0.267
HECS Managers	868	6	3.94 (0.87)	1.0	5	0.92	0.821*	6/6, 100%	14/15, 93%	0.646
HECS Hospital	868	6	3.64 (0.67)	1.0	5	0.81	0.895*	6/6, 100%	14/15, 93%	0.403
HECS Physicians	869	6	3.58 (0.71)	1.77	5	0.78	0.814*	6/6, 100%	10/15, 67%	0.375

HECS: Hospital Ethical Climate Survey; SD: standard deviation.

<sup>a</sup>Pearson's Product Moment Correlation between sub-scale and HECS total.

\*p &lt; 0.01.



**Table 2.** Principal component analysis of HECS.

Variable	Communality	Component 1	Component 2	Component 3	Component 4	Component 5
<b>Peers</b>						
HECS1: My peers listen to my concerns about patient care	0.623	0.034	0.185	0.717	-0.160	0.055
HECS10: My peers help me with difficult patient care issues/problems	0.642	0.043	0.195	0.693	-0.027	-0.056
HECS18: I work with competent colleagues	0.539	-0.179	0.678	0.301	-0.081	-0.051
HECS23: Safe patient care is given on my unit	0.492	-0.137	0.733	-0.005	-0.038	0.194
<b>Patients</b>						
HECS2: Patients know what to expect from their care	0.567	-0.127	0.130	0.120	0.58	0.708
HECS6: Nurses have access to the information necessary to solve a patient care issue/problem	0.520	0.068	-0.213	0.589	0.257	0.280
HECS11: Nurses use the information necessary to solve a patient care issue/problem	0.444	0.013	0.157	0.542	0.018	0.144
HECS19: The patient's wishes are respected	0.587	-0.136	0.730	0.084	-0.079	0.290
<b>Managers</b>						
HECS3: When I'm unable to decide what's right or wrong in a patient care situation, my manager helps me	0.705	0.903	-0.162	0.082	-0.111	0.126
HECS7: My manager supports me in my decisions about patient care	0.752	0.912	-0.180	0.121	0.020	-0.003
HECS12: My manager listens to me talk about patient care issues/problems	0.748	0.885	-0.141	0.144	0.025	-0.049
HECS15: My manager is someone I can trust	0.707	0.733	0.218	-0.095	0.013	-0.103
HECS20: When my peers are unable to decide what's right or wrong in a particular patient care situation, I have observed that my manager helps them	0.731	0.803	0.092	-0.011	-0.002	0.006
HECS24: My manager is someone I respect	0.733	0.745	0.265	-0.177	-0.028	-0.054

(continued)

**Table 2.** (continued)

Variable	Communality	Component 1	Component 2	Component 3	Component 4	Component 5
<b>Hospital</b>						
HECS4: Hospital policies help me with difficult patient care issues/problems	0.527	0.374	0.136	0.022	-0.064	0.509
HECS8: A clear sense of the hospital's mission is shared with nurses	0.493	0.058	0.531	0.293	-0.083	-0.054
HECS13: The feelings and values of all parties involved in a patient care issue/problem are taken into account when choosing a course of actions	0.471	0.171	0.420	0.168	0.083	0.077
HECS16: Conflict is openly dealt with, not avoided	0.566	0.298	0.542	-0.068	0.078	-0.158
HECS21: There is a sense of questioning, learning, and seeking creative responses to patient care problems	0.525	0.130	0.544	0.105	0.107	-0.100
HECS25: I am able to practice nursing on my unit as I believe it should be practiced	0.528	0.105	0.628	-0.055	0.011	0.183
<b>Physicians</b>						
HECS5: Nurses and physicians trust one another	0.750	-0.042	0.092	-0.013	0.825	0.086
HECS9: Physicians ask nurses for their opinions about treatment decisions	0.694	0.010	-0.141	-0.027	0.888	0.000
HECS14: I participate in treatment decisions for my patients	0.397	0.028	-0.074	0.336	0.476	-0.155
HECS17: Nurses and physicians here respect each others' opinions, even when they disagree about what is best for patients	0.628	-0.051	0.643	0.251	0.058	-0.271
HECS22: Nurses and physicians respect one another	0.788	-0.66	0.175	-0.077	0.842	0.031
HECS26: Nurses are supported and respected in this hospital	0.621	0.192	0.623	-0.220	0.141	0.142
Eigenvalues		9.332	2.330	1.774	1.232	1.107
% of explained variance		35.9	9.0	6.8	4.7	4.3
Cumulative % of explained variance		35.9	44.9	51.7	56.4	60.7

Source: Copyright Olson.<sup>6</sup>

HECS: Hospital Ethical Climate Survey.

**Table 3.** Comparison of the HECS scales between different care settings for older people.

Variable	Acute care hospital		Primary health center		Nursing home		Residential home		F (df) <sup>a</sup>	p-value
	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)		
HECS total	135	3.79 (0.51)	313	3.79 (0.58)	253	3.89 (0.54)	168	3.93 (0.55)	3.1 (3)	0.026
HECS Peers	135	4.31 (0.46)	313	4.28 (0.57)	252	4.27 (0.57)	168	4.35 (0.55)	0.86 (3)	0.464
HECS Patients	135	4.05 (0.47)	312	3.95 (0.57)	252	3.90 (0.53)	168	3.99 (0.57)	2.30 (3)	0.076
HECS Managers	135	3.71 (0.94)	313	3.90 (0.87)	252	4.02 (0.81)	168	4.07 (0.88)	5.37 (3)	0.001
HECS Hospital	135	3.54 (0.66)	313	3.56 (0.71)	252	3.72 (0.62)	168	3.78 (0.65)	6.46 (3)	<0.001
HECS Physicians	135	3.61 (0.61)	313	3.50 (0.73)	253	3.64 (0.69)	168	3.60 (0.75)	2.23 (3)	0.083

HECS: Hospital Ethical Climate Survey; SD: standard deviation; MANOVA: multivariate analysis of variance.

<sup>a</sup>One-way analysis of variance (ANOVA, F-value, degrees of freedom (df) and p-value); HECS total examined also using MANOVA,  $p < 0.001$ , Pillai's Trace.

was 0.13 (90% confidence interval (CI) = 0.11–0.16). However, due to the large sample size, other GFIs were examined: the GFI = 0.96 and the CFI = 0.97 providing evidence for the model fit to the data. Finally, the amount of unexplained variance, or the error, of each endogenous variable was evaluated using RMR (0.016) and the SRMR (0.041). The CN was 168.01. In the parameter level examination, the estimates (t-value and  $R^2$ ) were as follows: Peers—0.38 ( $t = 22.35$ ,  $R^2 = 0.48$ ); Patients, 0.35 ( $t = 20.14$ ,  $R^2 = 0.41$ ); Managers, 0.61 ( $t = 22.40$ ,  $R^2 = 0.49$ ); Organization, 0.61 ( $t = 32.54$ ,  $R^2 = 0.83$ ); and Physicians 0.51 ( $t = 23.67$ ,  $R^2 = 0.53$ ).

Construct validity was tested by computing Pearson's *correlation coefficients* between the sub-scales and HECS total to test the associations suggested in the model hypotheses and to determine the existence, type, and strength of the associations.<sup>56,57</sup> Pearson's product-moment correlations of 0.68–0.90 were found between the sub-scales and the HECS total and were all statistically significant at the level of 0.01 (Table 1).

### Discriminant ability of the HECS

The HECS detected differences between care settings in total ( $p = 0.026$ ) and its sub-scales HECS Managers ( $p = 0.001$ ) and HECS Organizations ( $p < 0.001$ ) (Table 3). As the HECS instrument included several sub-scales distinguishing possible several ethical climates types, MANOVA was also computed. MANOVA provided support for detected differences between the care settings ( $p < 0.001$ ) supporting the instrument's ability to differentiate care settings.

## Discussion

This methodological study was conducted to validate the Finnish version of the HECS, an originally American English language instrument in the care settings for older people. As this is an instrument developed primarily to measure nurses' perceptions of the ethical climate of their organizations' working environment, it was decided by the researchers to test it in various older people's institutions. The choice of the clinical settings echoed the international concerns of staff reduction, increased turnover, and reluctance of newly registered nurses to choose working in these clinical settings.<sup>21</sup> Additionally, it is evident in the literature that nurses working in these settings face multiple challenges deriving from their working environment.<sup>38</sup> Drawing on the findings of preceding studies, the need for evaluation of the ethical climate was pointed out. However, a valid instrument was needed. This enables to identify any aspects of the care that have a negative influence on the ethical climate as these were acknowledged by the nurses. Furthermore, as each

national healthcare system has differences, there was a need to investigate the applicability of the questionnaire to other groups of nurses apart from the registered ones and different culture than originally used in the validation study of the HECS. Therefore, although the HECS was initially developed for registered nurses<sup>1</sup> and subsequently has also been tested in this group of nurses,<sup>37</sup> the current study has tested the instrument with different levels of nurses, including Licensed Practical Nurses and Nurse Auxiliaries. This aspect has not been previously evaluated and prospectively suggests that the level of nurse education/training can potentially influence people's perspectives on ethical climate;<sup>9</sup> however, further testing should follow in order to better understand this influence. Furthermore, as ethical climate is "shared perceptions of what is ethically correct behavior and how ethical issues should be handled,"<sup>19</sup> it is not appropriate to concentrate only on nurses' perceptions of ethical climate or other similar working environment factors, as a group of people, regardless to what professional group they belong, create a climate together. The Finnish version of the HECS proved to be valid and reliable, and able to differentiate nursing staff's perceptions of ethical climate in different care settings for older people.

In our study, the HECS produced higher mean scores (3.85, SD = 0.56) in the Finnish sample compared to those previously found in the United States (3.70, SD = 0.55)<sup>11</sup> and Canada (3.48, SD = 0.61).<sup>14</sup> In our study, the best assessments were found for the HECS Peers sub-scale and the lowest for the HECS Physicians. One reason for this finding might be that the physicians are present into the differing timeframe at the different settings. For example, in the acute care settings, physicians are available for most of the time. Instead, the nursing homes are run by the nurse leaders, and the physicians have a more consultative role. Although there were not between-setting differences between nurses' assessments in the HECS Physicians, the focus of the assessment is in different role in these settings. This could also give some ideas about the functionality of the scale. Furthermore, based on the item analysis, item to total correlation of one item remained under the criteria of >0.30 and warrants possibly a slight revision.

Internal consistency reliability by Cronbach's alpha proved to be high, being 0.92 for the total HECS corresponding well with the previous alpha coefficient of 0.91,<sup>1</sup> 0.95,<sup>10</sup> and 0.93.<sup>11</sup> The PCA revealed that five components were present in the scale as in the original, and these five components accounted for 60.7% of the variance in the HECS. On one hand, this was a strong evidence for factorial validity.<sup>58</sup> On the other hand, the factor structure of the scales did not provide full support for the five extracted components as they exist in the original scale. The difference may be due to the different population and sample used in this study. Further studies are needed using a homogeneous sample, to validate the factorial validity.

Confirmatory factor analysis using LISREL provided evidence for construct validity (the model fit) based on goodness-of-fit statistics: the GFI = 0.96 and the CFI = 0.97. However, the chi-square statistics did not provide evidence for the model, being statistically significant model (where the null hypothesis is that the model fits to the data). This may be due to the large sample size, which is known to have an effect on chi-square statistics.<sup>49</sup> Pearson's product-moment correlations of 0.68–0.90 were found between the sub-scales and the HECS total providing evidence for the strong associations between the scales and the total HECS, supporting also construct validity. ANOVA and MANOVA revealed that the HECS was able to differentiate care settings, meaning that the HECS is able to differentiate ethical climate in different contexts (supposing there are different ethical climates), confirming the results by Bahcecik and Oztürk<sup>37</sup> in the Turkish environment.

This study comes as a response to the scarcity of relevant studies in the field of ethical climate in care settings for older people. Studies of this kind are necessary to better understand how the various aspects of the ethical climate impact on the nurses' perspectives and responses. Previous studies in this field<sup>59</sup> have revealed the controversy and complexity of encapsulating in detail the affected areas of practice as well as how the ethical perceptions might result in nurses leaving their jobs or performing on a lower level than expected. An important aspect that emerged was that ethical climate differed significantly among clinical settings that provide seemingly the same type of care and to the same group of patients, but under different

organizational conditions. However, although this is not a new finding in the literature, based on the participating settings in this study, we can claim that the differences found could be attributed to the different leadership styles assumed or organizational factors influencing also ethical climate. Leadership style has been acknowledged in the literature as a contributing factor to varying ethical climates.<sup>4,60,61</sup>

Ethical climate should not be treated differently than the organization itself, as it constitutes a concept that derives from it and at the same time defines it;<sup>36</sup> therefore, the domain of organizational behavior needs re-visiting. Robbins and Judge<sup>62</sup> defined the organizational behavior as the understanding, prediction, and management of human behavior in organizations that investigates the impact that individuals, groups, and structure have on behavior within an organization, and then applies that knowledge to improve an organization's effectiveness. This is important with regard to utilizing these findings in the clinical care settings for older people and deciding on measures and policy that can positively influence and promote ethical climate. However, change in concept is completely different from change in practice. Therefore, there needs to be congruency between caring missions (indicated on a macro level) and caring practices (on a micro level). Shirey<sup>2</sup> has stressed the nurse leader's role in this effort to bring the change to the level of clinical practice, to the level that each nurse lives and works on a daily basis. This bottom-up change strategy not only ensures that change is taking place at the level of the nurse and by the nurse but it also increases the likelihood of its success.<sup>63</sup>

### *Limitations and methodological considerations*

This study is not without limitations. Although a large sample was achieved, this represented a 58% response rate. The study was conducted within one city area. However, it offered a variety in terms of the care settings for older people that were included. Although this was not a national study, one can claim that the level of nurses and the types of care settings included are representative of what is offered and provided in other regions of Finland. As the samples differed from the samples with which the HECS was originally developed, the results here are preliminary. Furthermore, the results derived from different cultures cannot be directly compared.

### *Implications*

This is a major contribution to the relevant literature since it makes this instrument applicable to nurses with a variety of education/training levels and allows for a more comprehensive view on ethical climate, as most clinical settings are quite heterogeneous as to their nursing staff. It also allows for inter-group comparisons which eventually lead to a nurse level made-to-measure strategy as to promote ethical climate in their work environment, taken the fact that different groups have different problems and needs. On a clinical level, the acknowledgment of negative aspects of the care that can impact on the ethical climate of the older people settings allows for the nurse managers to act upon these to help change these working environments. The testing of the questionnaire in various levels of nurses allows for a multilevel approach in relation to the evaluation of the ethical climate in these settings by incorporating the perspectives expressed not only by the registered nurses but also by the nurse auxiliaries and the licensed practical nurses.

### **Conclusion**

The results of this study demonstrated that the Finnish version (as this was produced within the scopes of this study) of the HECS is a valid, reliable, and sensitive instrument that can be used in the various care settings for older people as to elicit nurses' perceptions of ethical climate. This tool could be useful for nurse leaders to evaluate the working environment from the staff's point of view, and to develop and implement

strategies for improvement. However, it is also necessary to develop strategies and collaborative processes to develop working environment<sup>64</sup> and social interaction in the care settings for older people, especially ethical climate. This could help to enhance newly graduated nurses' attitudes and intentions to work in care settings for older people.

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### Conflict of interest

The authors state that there is no conflict of interest.

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