

ORIGINAL PAPER

THE ASSOCIATION OF PRIMARY HEALTHCARE NURSES' PERCEIVED STRESS WITH ORGANIZATIONAL CULTURE AND CLIMATE IN A TEAM CONTEXT

Nijole Galdikiene¹, Paula Asikainen², Ilmari Rostila³, Philip Green⁴, Sigita Balčiūnas⁵, Mika Helminen⁶, Tarja Suominen³¹Department of Nursing, Faculty of Health Sciences, Klaipeda State University of Applied Sciences, Lithuania²Satakunta Hospital District (Pori), Nursing Science, Health Sciences, Faculty of Social Sciences, Tampere University, Finland³Faculty of Social Sciences, Tampere University, Finland⁴University of Tennessee, Knoxville, Tennessee, USA⁵Public Administration Department, Social Research Center, University of Šiauliai, Lithuania⁶Science Centre, Pirkanmaa Hospital District, Faculty of Social Sciences, Tampere University, Finland

Received December 31, 2018; Accepted July 9, 2019. Copyright: This is an open access article distributed under the terms of the Creative Commons Attribution International License (CC BY). <http://creativecommons.org/licenses/by/4.0/>

Abstract

Aim: The aim of the present study was to describe the association between primary healthcare (PHC) nurses' perceived stress and organizational culture and climate in a team context. **Design:** A descriptive, cross-sectional correlation study. **Methods:** 29 teams in 18 PHC centers situated in one Lithuanian county participated in the study. A total of 187 nurses completed the Expanded Nursing Stress Scale, while 344 healthcare professionals (including nurses) responded to the Organizational Social Context questionnaire. **Results:** Absolute values of Spearman's rho correlation coefficients between 0.19–0.24 ($p < 0.01$) were found when examining the association of nurses' stress with organizational culture and climate across PHC teams. Whether the culture was resistant or proficient seemed to have associations with some of the stress factors experienced by nurses. Additionally, how the whole team reported stress or functionality in their organizational climate seemed to be associated with perceived stress of nurses. **Conclusion:** Investigating the organizational culture and climate experienced by PHC teams may help identify manageable problems and decrease stress experienced by nurses. The study also allows the possibility of nursing scholars using the study's designs and instruments for further investigation of teams.

Keywords: cross-sectional correlation study; descriptive, organizational climate; organizational culture; nurse stress; primary healthcare.

Introduction

Nurses working in primary healthcare have numerous responsibilities in all aspects of healthcare. These include the delivery of healthcare, disease prevention, and the education of patients and staff. Nurses, in particular, have a core role in caring for long-term, often life-long, symptoms and diseases (Al Sayah et al., 2014). However, the use of nurses in the provision of care varies widely with practice sites (Poghosyan, Nannini, Clarke, 2013).

Lithuanian primary healthcare nurses' responsibilities have increased in the last two decades (Kontrimiene et al., 2013), but many work as before in what we might describe as a hierarchical relationship with general practitioners, and thus, traditional paternalistic attitudes to treatment can be perceived to exist among

nurses (Cody 2003). Nurses may act as assistants to physicians, with a lesser degree of professional autonomy, and primary healthcare teams have been reported as not working collaboratively (Bartuškaitė, Butkevičienė, 2013). Primary healthcare centers may vary from big centers with a number of departments and more than 100 healthcare professionals, to smaller centers with fewer departments and perhaps only a single healthcare professional (e.g. a primary healthcare nurse) working there (Jaruseviciene et al., 2013).

Primary healthcare is delivered by teams of healthcare professionals, including nurses. The World Health Organization (2003) define a team as being a group of professionals with a specific role in patient care. Herein, a team is understood as being a group of professionals who work together on a daily basis. They have the same goal, work in the same environment, and fall under the same manager (Glisson, James, 2002). Thus, teamwork in primary

Corresponding author: Nijole Galdikiene, Department of Nursing, Klaipeda State University of Applied Sciences, Jaunystes str. 1, LT – 91274, Klaipeda, Lithuania; e-mail: nijole.galdik@gmail.com

healthcare is complex – patients' care needs are not simple, may vary considerably and last for their entire lifespan (Brown et al., 2011).

It has previously been demonstrated that professionals working in a range of healthcare sectors experience high levels of occupational stress (Dollard et al., 2012; Chatzigianni et al., 2018). Stress may have an adverse effect, not only on the professionals' physical health, but also on their psychological health (Lee et al., 2013; Sarafis et al., 2016) and the overall performance of the healthcare organization (Davey et al., 2009). There are several definitions of stress, but a commonly used definition is offered by Lazarus, Folkman (1984), who define stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being".

In primary healthcare, a number of occupational stressors experienced by nurses have been reported. The most stressful situations for nurses working in primary healthcare settings include heavy workload and complex care needs (Shimeles, 2010; Graham et al., 2011). Al Rasasi et al. (2015) and Chatzigianni et al. (2018) have found that increasing demands of patients and families, encounters with death and dying, and uncertainties concerning treatment are the main stressors faced by nurses. Situations in which nurses have disagreements with medical professionals and other nurses, and situations which involve issues of inadequate preparation have been recognized as being stressful for nurses (Bailey, Jones, Way, 2006), and violence in the workplace and the community, and the higher psychological demands of the nursing workplace have also been flagged as causes of stress (Glumbakaite et al., 2007). Various other reasons have been identified as leading to work-related stress among primary healthcare nurses, such as job strain and low social support (Opie et al., 2010), lack of control over work issues, and poor management (Adib-Hajbaghery, Khamechian, Alavi, 2012).

Occupational stress has been found to correlate with some elements of the organizational social context of the work place. These elements include, for example, poor social relations and job prospects, and bureaucracy (Clarke, 2006). Organizational structure is recognised as one possible element that causes stress in the nursing profession. Typically, organizations may be seen as working in complicated and multi-level ways (Mathieu, Taylor, 2007). The origins of work stress can be seen to be influenced by these different levels, and may stem, for example, from the overall organization, the work unit, and/or the individuals with whom the person is working (Dollard et al., 2012).

Organizations vary in regard to their organizational culture and climate. The concepts culture and climate may be seen as synonymous, but in this study they are regarded as separate constructs. Organizational culture is seen as the way things are done in organizations (i.e. structure, collective-level values and norms). Organizational climate is seen as the way the members of these organizations perceive and experience the environment in which they carry out their everyday work (James et al., 2008). According to Glisson and James (2002), the organizational climate consists of individual experiences, and is therefore a psychological attribute. Organizational culture on the other hand is an attribute of an organization, either as a system or as a collective. Maun et al. (2014) state that there is growing international focus on the management of organizational culture to improve healthcare. Furthermore, an optimal workplace culture is reported to be a central requirement in order for nurses to experience valuable and relevant learning in their own workplace (Davis, White, Stephenson, 2016).

Organizational climate and culture have been defined as the main focus of investigation in the healthcare area, because of their impacts on the provider, the patient, and on organizational outcomes (Glisson, Williams, 2015). Most of the attributes of organizational climate in the nursing profession have previously been discussed in the context of hospital settings. In these studies, a poor organizational climate for hospital nurses is reported to be associated with poor-quality care, nurses' dissatisfaction with their job, nurse turnover, and even nurse burnout. Unfavourable outcomes have also been reported in primary healthcare settings (Poghosyan, Nannini, Clarke, 2013), correlating with the quality of patient care. For example, poor communication and a lack of support have been named as factors which prevent nurses from using their potential to provide highest quality care for their patients (Poghosyan, Nannini, Clarke, 2013).

However, despite these background studies, there is no existing research which has examined these broad relationships in the social context of primary healthcare, within a single study. Thus, there is a gap in our knowledge as to how, for example, organizational culture, organizational climate, and nurses' occupational stress are related to each other.

Aim

The aim of this study was to investigate the association between primary healthcare nurses' perceived stress with organizational culture and climate in a team context. The level of stress was investigated among

nurses, and the organizational culture and climate were explored among the members of primary healthcare teams (including nurses).

Methods

Design

The present study used a descriptive, cross-sectional, correlational study design (Burns, Grove, 2009).

Sample

The study was conducted among 29 purposively selected teams, acting in 18 primary healthcare centers situated in one western Lithuanian county. The inclusion criterion for the participants was to be providing client care as part of a multidisciplinary team in a primary healthcare center. It should be noted that although the concept of primary healthcare center teams is widely acknowledged in Lithuanian health policy (Supreme Council of Lithuania, 1991), there is no formal framework for how such teams should practice.

The total population of healthcare professionals invited to participate in the study was 1,096 (579 nurses, and 517 others healthcare professionals). The response rate was 32%, yielding a total study sample of 344 participants, consisting of 187 nurses and 157 other healthcare professionals. These other specialists comprised physicians, physiotherapists, dentists, dental assistants, and various other practitioners. The respondents worked across 29 teams in total, and were drawn from 18 different primary healthcare centers.

The teams that the respondents worked in were also considered, and are understood in this context to be a group of professionals who share the same task, work together on a daily basis, and have a common workspace within the healthcare center. In the study, the size of each team varied from six to 24 healthcare professionals.

Data collection

Data collection was carried out using the Expanded Nursing Stress Scale (ENSS) developed by French et al. (2000), and the Organizational Social Context (OSC) questionnaire (Glisson, James, 2002). The ENSS scale was completed by nurses ($n = 187$), and the OSC questionnaire was completed by all 344 participants of the study (both nurses and other healthcare professionals, $n = 344$). In order to collect the study data, the researcher organized team meetings conducted during work time. The respondents sealed their completed questionnaires in envelopes, which were then collected by the researcher in attendance.

The 59-item original ENSS has nine subscales which are presented in Table 2. The respondents expressed how stressful they found the featured situations using a scale from 1 (never stressful) to 4 (extremely stressful), or 0 (does not apply). A previous Cronbach's alpha value for the scale has been reported at 0.96 (French et al., 2000). In this study, the Cronbach's alpha for ENSS was also high, at 0.92. In order to adapt the ENSS instrument for Lithuanian primary healthcare nurses, a factor analysis was performed. After revision, four items were eliminated from the stress subscales, and a total of 55 items were used for data analysis. The number of items in each subscale can be seen in Table 2.

The OSC questionnaire includes 105 items with three social context domains: Organizational culture, Organizational climate, and Morale. For this study, only the first two domains, with 88 items, were used. Organizational culture is structured into three dimensions: Rigidity (14 items); Proficiency (15 items) and Resistance (13 items). *Rigid* organizational cultures indicate that service providers (like healthcare professionals) have little diplomacy and flexibility, the organization is in control, and employees carefully follow strict bureaucratic rules and regulations. In *proficient* organizational cultures it is expected that service providers will put the well-being of their clients first, and that the professionals will be competent and in possession of the most up-to-date knowledge. In *resistant* organizational cultures service providers tend to demonstrate minimal interest in new ways to provide service to their clients, and meet any attempts at change with criticism and apathy (Glisson, 2007).

Organizational Climate is measured in three dimensions: Stress (20 items), Engagement (11 items) and Functionality (15 items). *Stressful* organizational climates exist where employees are emotionally exhausted from their work, are overloaded at work, and their job responsibilities cause conflicts to arise. In *engaged* organizational climates, employees are able to do many beneficial things on their own initiative, they remain interested in their work professionally and personally, and are concerned about their own clients. *Functional* climates imply that employees feel they work in cooperation with others, they receive the help they need from colleagues and administrators to do their work well, and that they also understand how they can work successfully in their own organization (Glisson, 2007). A five-point Likert scale was used to evaluate all the dimensions, from 1 (not at all), and 2 (to a slight extent), to 5 (to a very great extent).

The OSC was originally developed to assess the social context of mental health and social service organizations (Aarons et al., 2012; Glisson, Green, Williams, 2012). It has also been used to measure social context in public health services, where the Cronbach alphas for the culture scales ranged from 0.60 to 0.82, and climate scales 0.77 to 0.91 (Rostila et al., 2011). In this study, the value for Culture Rigidity was 0.86, for proficiency 0.89, and for Resistance 0.94. In the Stress dimensions, the value for Stress was 0.89, for Engagement 0.91, and for Functionality 0.89.

The ENSS scale and the OSC questionnaire were translated into Lithuanian from English using the reverse-translation method (Maneesriwongul, Dixon, 2004; Parahoo, 2014). The instrument translations were negotiated by the researcher and translators, and also by a panel of healthcare professionals, comprising a nurse, a psychologist and a nurse manager. To verify the content validity of the instruments, both questionnaires were piloted in four healthcare professional teams from three primary healthcare centers located in different counties to those that were under investigation. In this pilot phase, a total of 59 healthcare professionals (including nurses) responded to the OSC measurement system, and 23 nurses completed the ENSS questionnaire. Only minor linguistic changes relating to Lithuanian language constructions were made as a result of the pilot testing.

Data analysis

SPSS Statistics software version 21.0 was used for data analysis. A Spearman's rho correlation coefficient was used to analyze the relationship between the stress factors, organizational culture and organizational climate (Polit, Beck, 2014). The variables (stress factor, organizational culture and organizational climate) had a skewed distribution. The organisations which participated in this study have varying numbers of healthcare professionals working in them, ranging from six to 200. As some organizations had more teams and team members than others, we decided to conduct the team analysis only when the size of the teams was comparable.

According to their organizational culture and climate expression, teams were divided into three clusters. Ward's method was used to form hierarchical clustering with Euclidean distance used as a measure of similarity (Rencher, Christensen, 2012). The differences between clusters relating to nurses experiencing stress were assessed using the Kruskal Wallis and eta-squared tests. Non-parametric statistical procedures were chosen as the data did not fit the normal distribution.

Results

More than half (54%) of those who responded were nurses (n = 187). Other healthcare professionals accounted for 46% (n = 157). Most (56%) of the nurses were under 50 years of age, 37% of whom were aged from 41 to 50 years old (Table 1). Two thirds of the nurses (77%) had more than 20 years' work experience in healthcare. Their primary healthcare experience was also long, with half of the nurses having worked in this context for more than 20 years. Half of the healthcare professionals who completed the OSC measurement questionnaire were over 50 years old and nearly one third (30%) were aged between 41 to 50 years. Two thirds of the healthcare professionals (74%) had over 20 years' work experience in healthcare, and around half (48%) had worked for more than 20 years in primary healthcare.

Different organizational cultures and climates existed in the primary healthcare center teams. These differences were significant with regard to the rigidity and resistance seen in their organizational culture. Differences in organizational climate were reported, relating to stress and functionality.

Very weak positive correlations (absolute values of Spearman's rho correlation coefficients between 0.19–0.24; $p < 0.01$) were observed between stress factors reported by nurses and the organizational culture and climate of the primary healthcare center teams in which they worked (Table 2). Regardless of whether the culture was resistant or proficient, it seemed to have associations with some of stress factors experienced by nurses. Furthermore, the way the whole team reported stress or functionality in their organizational climate seemed to be associated with the stress experienced by nurses.

In more resistant cultures, nurses experienced more stress from conflicts with physicians, problems with their managers, and problems experienced with patients and their families. In this context, their overall stress experience was greater. In less proficient cultures, nurses experienced more stress from inadequate preparation, and problems with their supervisors.

When the organizational climate was experienced as stressful by the team, the nurses within the team also seemed to experience stress in certain situations, such as when they felt preparation was inadequate, or when they experienced problems with their peers and their supervisors. Stress was also apparent when nurses experienced uncertainty concerning the delivery of treatment, and in the overall level of stress they experienced. If the organizational climate was less functional, it seemed to be associated with increased experience of stress for nurses regarding inadequate

Table 1 Demographic characteristics

Characteristics	Healthcare professionals, n (%)	Nurses, n (%)
Age	n = 336	n = 183
≤ 40	65 (19.3)	35 (19.1)
41–50	101 (30.1)	67 (36.6)
≥ 51	170 (50.6)	81 (44.3)
Gender	n = 343	n = 187
women	328 (95.6)	187 (100)
men	15 (4.4)	
Working years in healthcare	n = 342	n = 185
≤ 10	32 (9.3)	8 (4.3)
11–20	59 (17.2)	34 (18.4)
21–30	111 (32.5)	71 (38.4)
≥ 30	140 (41)	72 (38.9)
Working years in primary healthcare	n = 323	n = 176
≤ 10	76 (23.5)	36 (20.4)
11–20	89 (27.5)	55 (31.3)
21–30	90 (27.9)	54 (30.7)
≥ 30	69 (21.1)	31 (17.6)
Current position at organization	n = 344	n = 187
nurse	187 (54)	187 (100)
physician	106 (30.8)	
physiotherapist	12 (3.5)	
dentist	8 (2.3)	
dental assistant	16 (4.7)	
other	15 (4.4)	

Table 2 Spearman correlation between nurses' stress factors (at individual level) and organisational culture and climate at team level (n = 29), (except when analysing Discrimination n = 26)

Subscales	Items	Rigidity	Proficiency	Resistance	Stress	Engagement	Functionality
death and dying	7	0.085	-0.019	0.130	0.068	-0.003	-0.054
conflict with physicians	4	0.085	-0.127	0.206**	0.178*	-0.036	-0.187*
inadequate preparation	3	0.002	-0.213**	0.137	0.199**	-0.180*	-0.189**
problems with peers	6	-0.008	-0.173*	0.119	0.232**	-0.165*	-0.238**
problems with supervisors	7	0.126	-0.190**	0.224**	0.236**	-0.127	-0.234**
workload	8	-0.022	-0.089	0.105	0.129	-0.076	-0.111
uncertainty concerning treatment	9	0.115	-0.129	0.177*	0.193**	-0.128	-0.154*
patients and their families	8	0.075	-0.086	0.213**	0.143	0.019	-0.162*
discrimination	3	-0.059	-0.092	0.136	0.083	-0.022	-0.129
stress (overall)	55	0.059	-0.177*	0.193**	0.203**	-0.101	-0.216**

*Correlation is significant at the level < 0.05; **Correlation is significant at the level < 0.01

preparation. Stress was also associated with problems nurses perceived with their peers and supervisors, and, again, with the overall stress they experienced. However, no statistically significant correlations between the stress factors of death and dying, workload, or discrimination and the organizational culture and climate of the teams were found.

To evaluate perceived stress of nurses when working in primary healthcare professional teams with different organizational cultures and climates, we separated the groups of teams according to their culture and climate variables (Table 3). Three clusters (team groups) were identified. The first cluster (11 teams, 181 healthcare professionals, including 86

nurses) was characterized by a culture that was relatively low in positivity and a more positive climate. The second cluster (12 teams, 118 health professionals, including 68 nurses) was characterized by a culture that was relatively high in positivity and a highly positive climate. The third cluster (six teams, 45 healthcare professionals, including 33 nurses) was characterized by a culture relatively low in positivity and a less positive climate. The differences between clusters were statistically significant for both culture [$\chi^2(2) = 238.2$; $p < 0.001$; $\eta^2 = 0.69$], and climate [$\chi^2(2) = 188.2$; $p < 0.001$; $\eta^2 = 0.34$].

In Table 3, we can see differences between clusters when evaluating the stress dimensions: conflict with

physicians, inadequate preparation, problems with peers, and problems with supervisors. The data shows that in teams with a relatively low positive culture and less positive climate, the primary healthcare nurses experienced a higher level of stress in all of the dimensions listed above. Although the differences

between the clusters are small, they are still statistically significant. Comparing clusters 1 and 3, we can see that they differ in terms of the stress experienced by nurses in the dimensions of conflict with physicians, inadequate preparation, problems with peers, and problems with supervisors.

Table 3. Stress experienced by nurses in teams with different organisational cultures and climates (Kruskal Wallis test results)

Stress scale	Cluster	n	mean rank	median	$\chi^2(2)$	p	η^2
death and dying	1	84	88.9	2.00	1.0	0.597	0.006
	2	66	92.0	2.17			
	3	33	99.8	2.29			
conflict with physicians	1	86	88.2	2.00	9.4	0.009	0.050
	2	68	88.9	2.00			
	3	33	119.6	2.25			
inadequate preparation	1	85	93.4	2.00	8.19	0.017	0.044
	2	68	83.3	1.67			
	3	33	114.8	2.00			
problems with peers	1	86	97.6	1.37	9.19	0.010	0.049
	2	67	88.5	1.33			
	3	33	118.9	1.67			
problems with supervisors	1	84	90.5	2.00	7.04	0.030	0.038
	2	68	85.5	1.86			
	3	33	114.7	2.00			
workload	1	84	91.6	1.75	1.61	0.448	0.009
	2	67	88.6	1.75			
	3	33	102.7	1.86			
uncertainty concerning treatment	1	86	91.0	2.00	4.11	0.128	0.022
	2	68	89.5	2.00			
	3	33	111.1	2.00			
patients and their families	1	86	91.5	2.00	4.07	0.131	0.022
	2	68	88.9	2.00			
	3	33	111.0	2.14			
discrimination	1	39	43.8	1.33	2.38	0.314	0.027
	2	33	39.2	1.00			
	3	13	50.3	2.00			
stress (overall)	1	86	90.4	1.87	8.15	0.017	0.044
	2	68	86.8	1.83			
	3	33	118.2	2.03			

Discussion

The study found significant but very weak correlations between some of the nurses' occupational stress factors and the organizational culture and organizational climate of the primary healthcare teams in which they worked. Nurses seemed to have experienced most stress when working in a more resistant or less proficient organizational culture, and also in situations in which the organizational climate

of the team was seen as stressful, and when the functionality of the organizational climate was low. Changing a culture can pose great challenges; nevertheless, this new evidence could have international significance.

In a more resistant culture, primary healthcare nurses mostly felt stressed in cases where they had problems with managers, conflicts with physicians, and faced difficult situations with patients and their families. As

Glisson (2007) reported, healthcare professionals who worked in a resistant organizational culture were not as interested in change, and tended to silence efforts at change with criticism and apathy. The number of bureaucratic constraints found in primary healthcare and the presence of a vertical hierarchical structure may explain why nurses experience problems with supervisors and physicians, and feel stressed as a result. Notably, from an international perspective, a strong nursing profession does not yet exist in all European countries.

A study by Bailey, Jones, Way (2006) focused on the hierarchical relationship that exists between doctors and nurses, and the inherent conflict in this dyad. A traditional hierarchical relationship between nurses and physicians continues to exist in Lithuanian primary healthcare (Jaruseviciene et al., 2013). Employees being in less powerful positions can pose a barrier to conflict resolution (Brown et al., 2011). In the context of this study, Lithuanian nurses are dissatisfied with the relationship they have with physicians, but they do not currently have the power to resolve the conflicts which arise in the workplace. However, developments in both the nursing profession and also in the provision of healthcare services in Lithuania offer hope. Bartuškaitė and Butkevičienė (2013) reported in their study that Lithuanian primary healthcare teams tend not to work collaboratively, and this is primarily due to a working and professional culture that has yet to grant nurses similar levels of professional responsibility to those of nurses working in other European States, a restriction of decision making powers to professions and levels which tend to exclude nurses, and limitations on nurses' freedom of choice and their working/professional autonomy.

Our study showed that when nurses worked in teams with a less proficient culture they were more stressed in cases of inadequate preparation or when they experienced problems with their managers. In proficient cultures, the healthcare professionals consider the health and well-being of each of their clients as a priority, and the professionals are seen to be competent (Glisson, 2007). The reason why nurses in this study felt stress in teams with a less proficient culture may be explained by the high demands of competence that team members working in such environments are subjected to. In this context, the major stressors highlighted by Chatzigianni et al. (2018) can be seen as stemming from the higher psychological demands posed by their work. In primary healthcare, professionals take care of clients from all age groups, and often in close connection with the client's families.

Nurses working in teams in which the climate was seen as stressful reported their own experiences of stress mostly in situations involving problems with managers and peers, inadequate preparation, and uncertainty regarding treatment. Stressful climates in which service providers are emotionally exhausted as a result of their work and are unable to perform their needed tasks (Glisson, 2007) can be a source of communication difficulties. Inter-professional communication is a very important component of teamwork, and some of a primary healthcare nurse's responsibilities involve the coordination of care among team members by means of continuous communication (Al Sayah et al., 2014). Brown et al., (2011) reported sources of conflict in primary healthcare teams, including role boundary issues, scope of practice, and accountability. In their study, four key barriers to conflict resolution in multidisciplinary teams were found: workload and a lack of time; people in less powerful positions; a lack of recognition or motivation to address conflict; and avoiding confrontation for fear of causing emotional discomfort to other team members.

Inter-professional interactions have previously been reported as being problematic in Lithuanian healthcare (Bartuškaitė, Butkevičienė, 2013). Thus, if these inter-professional interactions are inefficient or a cause of nurse stress (as our study suggests), this may explain why nurses feel isolated and stressed when making decisions about patient care, why they can feel inadequately prepared for challenging situations they face in their role, or why they experience uncertainty concerning patient treatments. On the other hand, poor communication and a lack of support have been identified as factors preventing nurses from fully utilizing their skills and knowledge to provide high quality patient care (Sarafis et al., 2016; Chatzigianni et al., 2018).

When nurses worked in teams in which the climate was found to be less functional, their higher levels of stress were associated with situations in which they had problems with their managers and peers, and also problems with inadequate preparation. However, in functional climates, employees receive the cooperation and help they need from co-workers and administrators to do a good job (Glisson, 2007). Primary healthcare nurses provide care in the patient's home, as well as in healthcare centers, and as such, there is some degree of autonomous decision making. However, the overall degree of autonomy may vary depending on which primary healthcare center the person works in (Poghosyan, Nannini, Clarke, 2013). Autonomous decision making is especially important for nurses who work remotely; however, nurses working in remote regions are also reported to

experience high levels of occupational stress (Opie et al., 2010), needing to make individual decisions and often working alone. In the primary healthcare center setting, being autonomous allows staff to use their professional judgment, based on their own expertise and clinical knowledge. However, this may still be found to be stressful if nurses feel that they do not have either adequate preparation to undertake the tasks they perform, or receive insufficient cooperation from their supervisors and peers.

In this study, no statistically significant correlations were found between the organizational culture and climate experienced by the team and the stress factors of death and dying, workload, and discrimination. Previous studies have reported the most stressful situations for primary healthcare nurses as being associated with their workload (Graham et al., 2011), and also encountering death and dying (Al Rasasi et al., 2015; Sarafis et al., 2016). However, no correlations between these factors and organizational culture or climate were seen in this study.

Although very weak, positive correlations were observed while exploring primary healthcare, nurses reported stress with their organizational culture and climate at a team level. It could be argued that measuring stress considers only one aspect of nurses' working experience, and that this is perhaps more of an individual feeling. However, existing research has also reported team stress (Dollard et al., 2012). Therefore, how the group evaluates their culture and climate may be an important area for future investigation, in particular, looking at whether the group's perspectives may predict certain outcomes.

When evaluating the stress dimensions of conflict with physicians, inadequate preparation, problems with peers and problems with managers, the differences between the clusters show that in primary healthcare teams with a relatively low positive culture and less positive climate, primary healthcare nurses experienced a higher level of stress in all of the dimensions mentioned. Apart from the dimension of inadequate preparation, all of the dimensions could be seen to be a measure of the interpersonal relationships that existed within the team (e.g., between nurses/physicians, nurses/supervisors, and nurses/nurses). Clusters 1 and 3 show that they differ in terms of the stress experienced by nurses in the dimensions of conflict with physicians, inadequate preparation, problems with peers, and problems with supervisors. This can be explained by the fact that, despite having a similar organizational culture, team clusters 1 and 3 have a different organizational climate. All of this accrued information is especially important for higher level managers, as within

organizations it is important to note that teams function differently and their outcomes may also differ. Thus, the actions taken towards developing team function should also be different.

Limitation of study

It is appropriate that we address some study limitations. Firstly, different population samples were examined using different tools. The OSC tool was used for assessing a primary healthcare center team's domains of organizational culture, organizational climate (although a third domain of morale was not used in this study), whilst the ENSS tool was used for assessing nurse stress on a more individual level. Altogether, 29 teams participated in the study, with team sizes varying from six to 24 members. All of the team members were invited to participate in the data collection meetings led by the researchers, although not all participated. Additionally, some of the teams were smaller than others because of the relative size of the public healthcare centers they were housed in. However, this is an unavoidable naturally-occurring phenomenon.

A strength of the study is that every public primary healthcare center in the county/geographical area was invited to participate in the study (Polit, Beck, 2014), and responses were drawn from 29 primary healthcare teams, 18 separate healthcare centers, and 344 individual respondents. However, although the overall sample is quite large numerically, there is still scope for larger and more representative studies to be conducted in the future.

To the best of our knowledge, this is the first study utilizing this kind of design to investigate group level organizational culture and climate and its connection with stress. Given the lack of previous studies, this study may be seen as a pioneer study. The instrument developed by Glisson et al. (2015) was used for the first time by our research team to investigate this issue in Europe. Both of the instruments used in the study showed good psychometric performance.

Conclusion

A team-friendly organizational environment is closely connected to the incidence of less stressful situations for nurses, and this study result is in line with the findings of previous literature. The role of colleagues and the manager is central in creating a positive social context in the workplace and offering support. Teamwork is highlighted as the core issue here. Furthermore, the study establishes the possibility of other nursing scholars using the featured instruments and analyzing the results based on teams. Other nursing researchers may therefore use this study

as a useful example of how they may consider investigating team-level issues in a various contexts and gain a different understanding of the social context and its connections in healthcare.

Overall, the study found statistically significant, albeit low, correlations between nurses' stress factors and a primary health teams' organisational culture and climate. It highlights the need to further analyze the issue with new and larger samples, and also to establish the impact that the relationship between organizational culture, organizational climate, and stress may have on nursing and professional outcomes.

Ethical aspects and conflict of interest

Ethical approval was requested and granted by the Ethical Committee of the Klaipeda State University of Applied Sciences. Each primary healthcare center involved in the study granted permission for the research. The researchers attended data collection meetings and offered relevant information about the study both orally and in written format, as well as confirming the confidential nature of study participation (World Medical Association, 2013). The study was carried out on the basis of voluntary participation, and the participants were fully informed of the use and purpose of data collection.

Acknowledgments

All participating primary healthcare professionals are kindly acknowledged.

Author contributions

Concept and design (NG, TS), data collection (NG), analysis and interpretation of data (SB, MH, NG, TS), drafting of the manuscript (NG, TS), critical revision of the manuscript (TS, IR, PA, PG), final completion of the article (NG, TS).

References

Aarons GA, Glisson C, Green PD, Hoagwood K, Kelleher KJ, et al. The research network on youth mental health. The organizational social context of mental services and clinician attitudes toward evidence-based practice: a United States national study. *Implementation Science*. 2012;7(1):56–70.

Adib-Hajbaghery M, Khamechian M, Alavi NM. Nurses' perception of occupational stress and its influencing factors: a qualitative study. *Iranian Journal of Nursing and Midwifery Research*. 2012;17(5):352–359.

Al Rasasi A, Al Faisal W, El Sawaf E, Hussain H, Wasfy A. Work-related stress among nurses working in Dubai, a burden for healthcare institutions. *American Journal of Psychology and Cognitive Science*. 2015;1(2):61–65.

Al Sayah F, Szafran O, Robertson S, Bell NR, Williams B. Nursing perspectives on factors influencing interdisciplinary

teamwork in the Canadian primary care setting. *Journal of Clinical Nursing*. 2014;23(19–20):2968–2979.

Bailey P, Jones L, Way D. Family physician/nurse practitioner: stories of collaboration. *Journal of Advanced Nursing*. 2006;53(4):381–391.

Bartuškaitė M, Butkevičienė E. Public attitudes towards health policy and alternative health care in Lithuania. *Public Policy and Administration*. 2013;12(1):94–107.

Brown J, Lewis L, Ellis K, Stewart M, Freeman TR, Kasperski MJ. Conflict on interprofessional primary healthcare teams – can it be resolved? *Journal of Interprofessional Care*. 2011;25(1):4–10.

Burns N, Grove SK. *The practice of nursing research. Appraisal, synthesis and generation of evidence*. 6th ed. Missouri: Saunders Elsevier; 2009.

Chatziagianni D, Tsounis A, Markopoulos N, Sarafis P. Occupational stress experienced by nurses working in a Greek regional hospital: a cross-sectional study. *Iranian Journal of Nursing and Midwifery Research*. 2018;23(6):450–457.

Clarke SP. Organizational climate and culture factors. *Annual Review of Nursing Research*. 2006;24:255–272.

Cody WK. Paternalism in nursing and healthcare: central issues and their relation to theory. *Nursing Science Quarterly*. 2003;16(4):288–296.

Davey MM, Cummings G, Newburn-Cook CV, Lo EA. Predictors of nurse absenteeism in hospitals: a systematic review. *Journal of Nursing Management*. 2009;17(3):312–330.

Davis K, White S, Stephenson M. The influence of workplace culture on nurses' learning experiences: a systematic review of qualitative evidence. *JBIM Database of Systematic Reviews and Implementation Reports*. 2016;14(6):274–346.

Dollard MF, Opie T, Lenthall S, Wakerman J, Knight S, Dunn S, Rickard G, MacLeod M. Psychosocial safety climate as an antecedent of work characteristics and psychological strain: a multilevel model. *Work & Stress*. 2012;26(4):385–404.

French SE, Lenton R, Walters V, Eyles J. An empirical evaluation of an expanded Nursing Stress Scale. *Journal of Nursing Measurement*. 2000;8(2):161–178.

Glisson C, James LR. The cross-level effects of culture and climate in human service teams. *Journal of Organizational Behavior*. 2002;23(6):767–794.

Glisson C. Assessing and changing organizational culture and climate for effective services. *Research on Social Work Practice*. 2007;17(6):763–747.

Glisson C, Green P, Williams NJ. Assessing the Organizational Social Context (OSC) of child welfare systems: implications for research and practice. *Child Abuse Neglect*. 2012;36(9):621–632.

Glisson C, Williams NJ. Assessing and changing organizational social contexts for effective mental health services. *Annual Review of Public Health*. 2015;36:507–523.

Glumbkaitė E, Kalibatas J, Kanapeckienė V, Mikutienė D. Pirminė sveikatos priežiūros centruose dirbančių slaugytojų streso ir psichologinių reikalvimų darbe sąsajos su streso pasekmėmis. *Gerontologija*. 2007;8(1):31–38. (in Lithuanian)

Graham KR, Davies BL, Woodend AK, Simpson J, Mantha SL. Impacting Canadian public health nurses' job satisfaction. *Canadian Journal of Public Health*. 2011;102(6):427–431.

James LR, Choi CC, Ko C-HE, McNeil PK, Minton MK, Wright MA, Kim K. Organizational and psychological climate: a review of theory and research. *European Journal of Work & Organizational Psychology*. 2008;17(1):5–32.

Jaruseviciene L, Liseckiene I, Valius L, Kontrimiene A, Jarusevicius G, Lapão LV. Teamwork in primary care:

- perspectives of general practitioners and community nurses in Lithuania. *BMC Family Practice*. 2013;14:118.
- Kontrimienė A, Andriuškevičūtė L, Radzevičūtė S, Liseckienė I, Bumblytė I, Valius L, Jaruševičienė L. Bendruomenės slaugytojų funkcijos pirminėje sveikatos priežiūroje: bendruomenės slaugytojų ir šimos gydytojų požiūriu. *Lietuvos Bendrosios Praktikos Gydytojas*. 2013;17(4):218–224. (in Lithuanian)
- Lazarus RS, Folkman S. *Stress, appraisal and coping*. New York: Springer; 1984.
- Lee JH, Nam SK, Kim A-R, Kim B, Lee MY, Lee SM. Resilience: a meta-analytic approach. *Journal of Counseling & Development*. 2013;91(3):269–279.
- Maneesriwongul W, Dixon JK. Instrument translation process: a methods review. *Journal of Advanced Nursing*. 2004;48(2):175–186.
- Mathieu JE, Taylor SR. Framework for testing meso-mediational relationships in organizational behavior. *Journal of Organizational Behavior*. 2007;28(2):141–172.
- Maun A, Engström M, Frantz A, Brämberg EB, Thorn J. Effective teamwork in primary healthcare through a structured patient–sorting system – a qualitative study on staff members’ conceptions. *BMC Family Practice*. 2014;15:189.
- Opie T, Dollard MF, Lenthall S, Wakerman J, Dunn S, Knight S, Macleod M. Levels of occupational stress in the remote area nursing workforce. *Australian Journal of Rural Health*. 2010;18(6):235–241.
- Parahoo K. *Nursing research: principles, process and issues*. 3rd ed. New York: Palgrave Macmillan; 2014.
- Poghosyan L, Nannini A, Clarke S. Organizational climate in primary care settings: implications for nurse practitioner practice. *Journal of the American Association of Nurse Practitioners*. 2013;25(3):134–140.
- Polit DF, Beck CT. *Essentials of nursing research: evidence for nursing practice*. 8th ed. Philadelphia: Lippincott Williams & Wilkins; 2014.
- Rencher AC, Christensen WF. *Methods of multivariate analysis*. 3rd ed. New York: Wiley-Interscience; 2012.
- Rostila I, Suominen T, Asikainen P, Green P. Differentiation of organizational climate and culture in public health and social services in Finland. *Journal of Public Health*. 2011;19(1):39–47.
- Sarafis P, Rousaki E, Tsounis A, Malliarou M, Lahana L, Bamidis P, Niakas D, Papastavrou E. The impact of occupational stress on nurses’ caring behaviours and their health-related quality of life. *BMC Nursing*. 2016;15(56):1.
- Shimeles A. Community based health insurance schemes in Africa: the case of Rwanda. *African Development Bank Group. Working Paper 120*. PMID: 11979211; 2010 [cited 2018 Dec 16]. Available from: <https://www.afdb.org/fileadmin/uploads/afdb/Documents/Procurement/Project-related-Procurement/WORKING%20120%20word%20document%200AA.PDF>
- Supreme Council of Lithuania. *Lithuanian national conception of health 1991*. Vilnius. Decree NoI-1939 [cited 2018 Dec 16]. Available from <https://www.e-tar.lt/portal/lt/legalAct/TAR.66813A09EB5B> (in Lithuanian)
- World Health Organization. *Primary healthcare. Main terminology*. 2003. [cited 2018 Dec 16]. Available from: <http://www.euro.who.int/en/health-topics/Health-systems/primary-health-care/main-terminology>
- World Medical Association. *Declaration of Helsinki – Ethical principles for medical research involving human subjects*. 64th WMA General Assembly. 2013, Fortaleza, Brazil. [cited 2014 May 5]. Available from: <http://www.wma.net/en/30publications/10policies/b3/>