

THE SAFETY CULTURE OF THE LJUBLJANA COMMUNITY HEALTH CENTRE'S EMPLOYEES

KULTURA VARNOSTI ZAPOSLENIH V ZDRAVSTVENEM DOMU LJUBLJANA

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ABSTRACT

Keywords:

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Introduction: Patient safety is one of the key aspects of healthcare quality and a serious global public health concern. Patient safety culture is a part of the patient safety concept. In Slovenia, primary care is easily accessible, and for medical care, it serves as a gatekeeper to hospital care. For several years, the quality and safety at the primary healthcare level have been the focus of several studies. The present study aimed to assess patient safety culture among all employees of the Community Health Centre Ljubljana.

Methods: We conducted a cross-sectional study in 2017 using the Slovene version of "Medical Office Survey on Patient Safety Culture" from the Agency for Healthcare Research and Quality. Mean percent positive scores on all items in each composite were calculated according to a user guide.

Results: The final sample contained 1021 participants (67.8% response rate), of which 909 (89.0%) were women. The mean age of the sample was 43.0±11.0 years. The dimensions most highly rated by the respondents were: teamwork and patient care tracking/follow-up. The lowest scores came from leadership support for patients' safety and work pressure and pace.

Conclusion: Patient safety culture in the Community Health Centre Ljubljana is high, but there are certain areas of patient safety that need to be evaluated further and improved. Our study revealed differences between professions, indicating that a customized approach per profession group might contribute to the successful implementation of safety strategies. Patient safety culture should be studied at national levels.

IZVLEČEK

Ključne besede:

varnost pacientov, kultura varnosti, družinska medicina, primarna zdravstvena raven, Slovenija

Uvod: Varnost pacientov je eden ključnih vidikov kakovosti zdravstvenega varstva in globalno javno zdravje zanjo resno skrbi. Del koncepta je tudi kultura varnosti pacientov. V Sloveniji je primarna raven lahko dostopna in služi kot vrata v sekundarno in terciarno zdravstveno raven in oskrbo. Že več let sta kakovost in varnost na primarni ravni zdravstvenega varstva v središču več raziskav. Namen te študije je bil oceniti kulturo varnosti pacientov v Zdravstvenem domu Ljubljana.

Metode: V letu 2017 smo izvedli presečno raziskavo z slovenske različice "Medical Office Survey on Patient Safety Culture" Agencije za raziskave in kakovost zdravstvenega varstva. V skladu z navodili za uporabo smo izračunali povprečne deleže pozitivnih ocen za vsak dimenzijo varnosti.

Rezultati: Končni vzorec je vseboval 1.021 zaposlenih (67,8-odstotna odzivnost), od tega je bilo 909 (89,0 %) žensk. Povprečna starost vzorca je bila 43,0 ±11,0 let. Najbolje ocenjeni dimenziji varnosti sta bili timsko delo in skrb za paciente. Najnižje ocene so izhajale iz podpore vodstva in delovnih obremenitev.

Zaključek: Trenutna kultura varnosti pacientov v Zdravstvenem domu Ljubljana je visoka, vendar obstajajo nekatera področja, ki jih je treba dodatno ovrednotiti in izboljšati. Naša raziskava je razkrila razlike med poklici, kar kaže, da lahko prilagojen pristop prispeva k uspešnemu izvajanju varnostnih strategij. Preučiti je treba kulturo varnosti pacientov na državni ravni.

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1 INTRODUCTION

Patient safety is one of the key aspects of healthcare quality and a serious global public health concern (1). It is defined as the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum (2). Patient safety culture is a part of the patient safety concept. It is defined as a product of attitudes, values, competencies and patterns of individual and group behaviour that determine healthcare in an organization (3). To improve patient safety, an important first step is to address and understand the safety culture of an organization. An understanding of the safety culture is vital to improve problematic practices or attitudes such as miscommunications, adverse events and non-punitive responses to errors, which can lead to improvements in the safety culture (4). For the past several years, safety culture has been one of the top priorities of the Slovenian Ministry of Health. A new system for managing safety deviations and safety risk is being established in 2021 (5). More and more studies are emerging regarding patient safety and safety culture in primary care (4, 6). Measuring safety culture can help in the identification of areas for improvement (4). A recent systematic review showed that patient care follow-up, communication openness and work pressure contribute significantly to improving patient safety in primary care (7).

In Slovenia, several studies have focused on quality and safety at the primary healthcare level, focusing on out-of-hours care, family practices and leadership staff (8-11). Safety culture has only been evaluated at the primary healthcare level in out-of-hours primary healthcare settings. These studies showed variations in safety culture factor scores that pointed to the need to unify working conditions (12-14).

The aim of the present study was to assess patient safety culture among all employees of the largest healthcare centre in Slovenia, the Community Health Centre Ljubljana. Our study is the first to evaluate patient safety culture at the primary healthcare level in Slovenia using the Medical office survey on patient safety culture (MOSOPS).

2 METHODS

2.1 Research design and setting

We conducted a cross-sectional study in the largest community health centre in Slovenia. This health centre provides healthcare services for the municipality of Ljubljana, with over 450,000 registered patients. It consists of eight units, which are located in separate buildings in various parts of Ljubljana. It has around 1500 employees of different healthcare backgrounds.

The study was approved by the National Ethics Committee (No. 107/07/16).

2.2 Participants

We invited all employees of Community Health Centre Ljubljana to participate in the study (physicians, dentists, healthcare assistants (HCA), registered nurses, management, administrative or clerical staff, clinical support staff and employees working at other positions) (N=1507).

2.3 Tools

We used the validated Slovenian version of MOSOPS (15). MOSOPS enables the measurement of patient safety culture at the primary level of healthcare, the detection of possible differences, assistance in understanding the safety of a particular organization, and an evaluation of the impact of specific interventions for improving patient safety culture (16-21). The survey seeks the opinion of healthcare professionals about 38 items in 10 different dimensions (domains C, D, E and F). The survey also includes questions that ask respondents about problems exchanging information with other settings and about access to care (domain A and B). In addition, respondents are asked to rate their medical office in five areas of healthcare quality (patient centred, effective, timely, efficient, and equitable) and to provide an overall rating on patient safety (domain G) (21).

Domain A and B includes 14 items which are answered on a scale from "daily" to "not in the past 12 months". Domains C to G are answered on a 5-point Likert scale (1 - strongly disagree, 5 - strongly agree). Domain C consists of four sub-domains (Teamwork, Work Pressure and Pace, Staff Training, and Office Processes and Standardization) and domain D of 3 sub-domains (Communication Openness, Patient Care Tracking/Follow-up, and Communication about Errors). Domain E should only be answered by employees without leadership function. Those with a leadership function should answer domain F, which has two sub-domains (Organizational Learning, and Overall Perceptions of Patient Safety and Quality). Domain G describes overall ratings on quality and patient safety (19). Permission to use this questionnaire was given by the Agency for Healthcare Research and Quality (AHRQ); permission was granted on June 8, 2016. AHRQ is an agency within the United States Department of Health and Human Services. Its mission is to produce evidence to make healthcare safer, better, and more accessible, equitable and affordable.

Data on demographic characteristics (gender, age, function, work experience, working hours, and location of work) was also collected.

2.4 Data collection

The survey was completed electronically; the link was sent to the participants' email addresses in February 2017.

A reminder was sent after two weeks. Participation was anonymous, as possible identifiers such as e-mail and IP address were removed by the administrative coordinator of the project. It was not possible for the researchers to link the participants to their responses.

2.5 Statistical analysis

We performed a univariate analysis with frequency distributions and descriptive statistics. For positively worded items, the percent positive response was the combined percentage of respondents who answered strongly agree or agree, or always or most of the time. Negatively worded items (C3, C6, C8, C10, C12, C14, D4, D7, D10, E1, E2, E4, F3, F4, and F6) were reversed so that higher scores always indicated a more positive evaluation of the safety culture. The overall patient safety rating was calculated as the combined percentage of respondents who answered very good or excellent. We calculated a percent positive score for each of the composites and the overall patient safety rating for each job position within each medical office.

We also made a bivariate analysis, namely a t-test for independent samples and a one-way analysis of variance, which shows the correlation between two variables. For multivariate analysis we used multiple linear regression.

3 RESULTS

3.1 Demographic characteristics

There were 1021 participants in the final sample (67.8% response rate), of which 909 (89.0%) were women (Table 1). The mean age of the sample was 43.0 ± 11.0 years, the mean time in their current post was 11.6 ± 10.1 years, and the mean number of weekly working hours was 36.0 ± 10.0 . The mean length of time they had been working at the current medical office location was 18.8 ± 12.0 years.

3.2 Attitudes to patient safety culture

The dimensions most highly rated by the respondents were: teamwork (79.6%), and patient care tracking/follow-up (77.8%). They were followed by overall perception of patient safety and quality (74.6%), communication about error (60.2%), staff training (55.9%), office processes and standardization (54.9%) and communication openness (43.9%). The lowest scores came from leadership support for patients' safety (39.2%) and work pressure and pace (11.5%).

The overall rating on quality had positive scores (percentage of 'very good' and 'excellent' responses) from 37.3% of respondents. Patient safety and quality of treatment were assessed as very good, and employees did not report any problems. The exchange of information with other services is mostly without any problems. Teamwork is graded well. Several more problems were

Table 1. Sample characteristics.

Variable	n (%)
Gender	
male	112 (11.0)
female	909 (89.0)
Medical office position	
Physician, dentist	277 (27.2)
Healthcare assistants	211 (20.7)
Management	34 (3.3)
Administrative or clerical staff	45 (4.4)
Registered nurse	295 (28.9)
Other clinical staff or clinical support staff ^a	127 (12.5)
Other position	31 (14.1)
Community Health Centre Ljubljana unit	
Center	209 (20.5)
Moste-Polje	222 (21.7)
Management	37 (3.6)
Šentvid	47 (3.6)
Vič-Rudnik	195 (19.1)
Bežigrad	129 (12.6)
Unit SNMP	38 (3.7)
Šiška	144 (14.1)

^a - e.g. clinical psychologist, radiological engineer, etc.

brought up in the field of education, i.e. performing tasks for which the staff is not trained. The work process was moderately well assessed. In terms of communication, patient care was best rated, and communication openness the least. Organizational learning has been highly rated, which means that they are being able to learn from mistakes or from work experience. Responders believed that management cares about patient care mistakes that happen over time and that it places a high priority on improving the patient care processes. On average, the respondents assessed the quality parameters as good. The focus on patient, performance, timeliness and effectiveness was well assessed. They considered fairness as very good.

3.3 Associations between the domains of safety culture and the respondents' characteristics

Bivariate analyses showed that some variables were associated with different domains (Table 2). On average, women assessed patient safety and quality of care better than men. Older workers (41 to 55 years old) assessed workload higher than younger ones (aged 26 to 40). Staff training was assessed better by employees over 55 years old than by younger ones. Management's support was evaluated better among older employees. Those who

worked fewer hours per week (from 5 to 16) graded the overall quality lower than those who worked more hours a week (22 to 40 hours per week). Patient safety and quality of care were better assessed by those employed at their current job for more than 11 years. Teamwork was assessed better by those employed for less than one year. Patient safety and quality of care are better assessed by those who have more work experience. Teamwork was also assessed better by those who had fewer than 3 years of working experience. Staff training and management support were assessed better by those with working experience of more than 16 years. Doctors assessed workloads lower than all other employee profiles. Doctors assessed communication openness better than healthcare assistants and registered nurses. Doctors assessed leadership support worse than employees on other positions. The overall quality assessment was on average higher among doctors than among registered nurses.

4 DISCUSSION

This was the first study investigating patient safety culture at a community healthcare centre in Slovenia. It showed that the teamwork and patient care scores were the highest and the workload score was the lowest among the employees. There are some differences in the individual domains of the safety culture by individual units of the Community Health Centre Ljubljana, age, office position and the time they have worked at the current location of the medical practise.

Women generally assessed patient safety and the quality of treatment higher than men. Firth-Cozens explained this because female primary care physicians engage in more communication, which can be considered patient-centred, and have longer visits than their male colleagues (22). Other studies also found differences by gender. The Polish study found that women rated certain domains significantly better (patient care tracking and follow-up, overall perception of patient safety and quality) (23). Men had better results in information exchange with other settings. In Spain, the following domains were evaluated better by female than by male participants: information

Table 2. Associations between patient safety culture and the characteristics of respondents.

Domain	Domain name	Statistically significant differences						
		gender	age	unit	time	length	service	position
A	Patient safety and quality of treatment	t=-2.173 p=0.030	ns	F=2.607 p=0.011	F=3.697 p=0.005	F=3.104 p=0.026	ns	ns
B	Exchange of information	ns	ns	F=5.540 p<0.001	ns	Ns	ns	ns
C1	Teamwork	ns	ns	F=3.243 p=0.002	ns	F=7.592 p<0.001	F=7.302 p<0.001	F=3.345 p=0.010
C2	Work pressure and pace	ns	F=5.193 p=0.001	F=9.109 p<0.001	ns	Ns	F=8.614 p<0.001	F=18.299 p<0.001
C3	Staff training	ns	F=6.350 p=0.000	F=4.180 p<0.001	ns	F=3.592 p=0.006	F=7.036 p<0.001	ns
C4	Office processes and standardization	ns	ns	F=6.722 p<0.001	ns	Ns	F=3.872 p=0.009	F=9.541 p<0.001
D1	Communication openness	ns	ns	F=2.799 p=0.007	ns	F=5.285 p<0.001	F=3.229 p=0.022	F=10.297 p<0.001
D2	Patient Care Tracking/ Follow-up	ns	ns	F=3.712 p=0.001	ns	Ns	ns	ns
D3	Communication about Errors	ns	ns	ns	ns	F=3.473 p=0.008	ns	F=3.428 p=0.009
E	Leadership support for patients' safety	ns	F=9.113 p<0.001	F=2.604; p=0.012	ns	F=2.401; p=0.048	F=8.781; p<0.001	F=6.690 p<0.001
G1	Overall ratings on quality	ns	ns	ns	F=4.229 p=0.001	Ns	ns	F=4.037 p=0.003

Legend: ns - non-significant; Unit - Ljubljana Community Health Centre unit; Time - number of on-site working hours per week; Length - length of time working at the current working position; Service: years of service; Position: Medical office position

exchange with other settings, work pressure and pace, staff training, office processes and standardization, patient care tracking/follow-up, leadership support for patient safety and overall perception of patient safety. However, it was men who had a slightly better score in overall rating on patient safety (24). The Dutch study found no significant differences between male and female healthcare providers in terms of mean factor scores (25).

Employees working part time compared to full-time graded the overall quality lower. Similar results were found in a Slovenian study regarding safety culture in out-of-hours primary care clinics (12). They concluded that employees working part-time might not be so confident in their performance, and thus perceive patient safety lower. Those with more working years assessed the safety and quality of care lower. More experienced workers might be more aware of potential safety problems.

Doctors generally estimated the overall quality of healthcare higher than nurses did. In Slovenia's primary care the doctors spend more time with the patients than nurses, which differs from secondary healthcare levels. Thus, doctors are likely to show strong awareness with respect to a multitude of patient safety aspects. This is in contrast to studies conducted at secondary and tertiary level where nurses scored the majority of patient safety culture aspects higher than doctors, most likely because spending more time with patients allows for better awareness of patient safety (26). Differences in the patient safety culture among the professional categories were also found in other studies (17, 27).

Teamwork was the highest-ranked domain (79.6%). In two studies carried out in Slovenian out-of-hours healthcare clinics and in a hospital setting, teamwork scored high (12, 28). Results correlate to the Slovenian study on ethical dilemmas in family medicine, where teamwork was assessed as well functioning (29). Teamwork is also a highly ranked domain in other countries (22, 25-29). Teamwork is a strategy for strengthening and promoting quality of care and healthcare practices in health systems (32). It is very important in primary care, as multi-professional healthcare stakeholders are involved in managing patients (12).

Our study showed that 60.2% of respondents expressed a positive view on communication about errors at their medical offices, which was the lowest score among all studies compared. Poland evaluated their communication about errors as the highest (80.96%) and Portugal the lowest (47%) (20, 23). Employees need to feel that they will not be blamed, punished or concealed for acknowledging errors (33, 34). There is a need to educate healthcare professionals on how to deal with errors made, teaching them about non-blaming, open and emphatic communication, and about complete and authentic apology and coping strategies (34). A positive safety

culture could help in encouraging honesty and fostering learning by balancing individual and organisational accountability to achieve better quality care.

43.9% of respondents had a positive view on communication openness. Communication openness seems to be of concern only in certain countries, which might be associated with differences in cultural background (4). A non-experimental cross-sectional study in a general acute hospital in Slovenia raised concerns about how to deal with patient safety problems. The problems may be related to blaming and shaming individuals rather than a systemic approach that encourages learning and aims to prevent adverse events (28, 35). Communication breakdowns, which both affect both safety culture and act as a contributing factor for incidents, must be emphasized and addressed (4).

The lowest scores were found for the leadership support for patients' safety (39.2%) and work pressure and pace (11.5%). Scores for both are the lowest among the countries that used MOPSOS questionnaire. Regarding work pressure and pace Poland (57.7%) and Yemen (57%) scored the highest, followed by American respondents (50%) and primary care offices in Ohio (37%) (21, 23, 30, 31). The lowest scores come from Spain (36%) and Portugal (25%) (20, 24). Regardless of the job position, staff feel rushed when taking care of the volume of patients that need to be seen and do not feel that there are enough staff to handle their patient loads and work effectively. On average, physicians rated work pressure and pace lower. A Slovenian study published in 2012 showed an average of direct physician-patient consultation/encounter of 7 minutes (36). This contrasts sharply with the typical duration in other European countries where most nations conduct 15-minute consultations, while the Scandinavian countries veer towards 20-25 minutes (37). The nations with 25 consultations or less a day find general practice manageable. The majority (60%) of Slovenian family doctors have 41-60 consultations per day and 19% have 61-80 (38). WHO evidence indicates a lower number of general practitioners in Slovenia compared with European Union (i.e. 49.78 vs 79.47 per 100,000 inhabitants) (39). The issue of insufficient staff and providers for the treatment of patients in primary care has also been raised in other studies (4). An appropriate work environment was characterised as one where workers were interrupted less often and is associated with better patient safety and less burnout. Lower workloads improve adherence to patient-safety principles (40).

There is a need for more detailed assessment of the factors contributing to workloads in primary care and of how these factors can be addressed and mitigated in order to develop interventions to improve the delivery of safe and efficient patient care (41).

The strength of this study is that it was conducted in a large community health centre, which resulted in a large sample to be used in our analyses. Moreover, this is the first study to use the Slovenian version of MOSOPS. The response rate was 67.8%, which is above the recommended response rate of 60% in research on patient safety culture (42).

There were however several limitations to this project. The Community Health Centre (CHC) Ljubljana is only one of many health centres throughout Slovenia and the sample does not accurately reflect Slovenian primary healthcare. CHC Ljubljana is stationed in an urban environment, while primary care in Slovenia is distributed within the both environments. The respondents may not have felt comfortable enough to express their safety concerns about the organization, although the risk was minimized by expressing confidentiality. The question still remains whether self-reporting questionnaires are suitable for measuring patient safety culture, as they only provide a snapshot of the culture at a certain point in time. As the majority of respondents were physicians and nurses, the results did not adequately reflect the perception of other respondents' groups. It would be beneficial to analyse the reasons why other professions did not readily participate. Although the response rate was high, there is no information on the characteristics of the non-respondents, so this could also be a source of bias. Based on their participation, they may have better awareness of patient safety climate than those that did not participate in the survey. In addition, the categories included staff from different specialities (e.g. family medicine, dentistry, gynaecology, emergency medicine, etc.). In the future, this additional information should be recorded and analyses carried out to determine whether there are differences between respondents within the categories. The results of the present study therefore must be interpreted carefully.

It would also be necessary to examine patient safety culture with other approaches. Trbovich and Griffin recommend triangulation of both quantitative and qualitative methods to achieve a more accurate assessment of the culture (43). Other techniques such as interviews, workshops and focus groups are recommended to put survey responses in context. Research using mixed methods would to help gain further insights into the patient safety culture and to reveal the differences observed between the occupational categories.

5 CONCLUSION

The current patient safety culture at the Community Health Centre Ljubljana is good, with a lot of room for improvement. It revealed variety between professions, indicating that a customized approach per profession group might contribute to successful implementation of safety strategies. Improving patient safety culture should also include all stakeholders (policymakers, healthcare providers and those responsible for medical education). Patient safety culture at the national level should be studied.

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CONFLICT OF INTEREST

The authors declare that no conflicts of interest exist.

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ETHICAL APPROVAL

The study was approved by the National Ethics Committee of the Republic of Slovenia (No. 107/07/16).

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