Neuroendocrinology Letters Volume 36 Suppl. 2 2015
ISSN: 0172-780X; ISSN-L: 0172-780X; Electronic/Online ISSN: 2354-4716
Web of Knowledge / Web of Science: Neuroendocrinol Lett
Pub Med / Medline: Neuro Endocrinol Lett

Selected aspects of "safety culture" in hospitals of the Czech Republic

Iva Brabcová [1], Sylva Bártlová [1], Valérie Tóthová [1], Radka Prokešová [2]

1 University of South Bohemia in České Budějovice, Faculty of Health and Social Studies, Department of Nursing and Midwifery, České Budějovice, Czech Republic
2 University of South Bohemia in České Budějovice, Faculty of Health and Social Studies, Department of Legal Branches, Management and Economy, České Budějovice, Czech Republic

Correspondence to: Ing. Iva Brabcová, Ph.D.
University of South Bohemia in České Budějovice,
Faculty of Health and Social Studies, Department of Nursing and Midwifery,
U Výstaviště 26, 370 04 České Budějovice, Czech Republic
e-mail: brabcova@zsf.jcu.cz

Submitted: 2015-09-25 Accepted: 2015-10-22 Published online: 2015-12-12

Key words: **culture; safety; management; hospital; health care**

Neuroendocrinol Lett 2015; **36**(Suppl. 2):11–16 **PMID:** 26748521 NEL361015A02

Abstract

THEORETICAL BACKGROUND: Patient safety is a strategic goal of managers of all health care facilities in the Czech Republic. The development of a safety culture in the facility helps to ensure high quality health care.
GOAL OF THE SURVEY was to assess the safety culture with regard to patient safety and team cooperation. A partial goal was to confirm the hypothesis that team cooperation among health care staff significantly influences patient safety.
METHODOLOGY: 772 nurses took part in a quantitative survey. The respondents were nurses working shifts in inpatient departments of hospitals in the Czech Republic.
RESULTS: Patient safety was described as excellent by 17.5% of nurses. It is described as very good by 60.2% of nurses and described as acceptable by 20.5% nurses. 78% of respondents agreed with the statement that patient safety was never neglected at the expense of increased workload. More than 10% of nurses reported that there were problems with patient safety. 19.8% of respondents were reported that efforts to prevent errors were not practiced at their clinic, and, therefore, and only chance had prevent more errors from occurring. According to 64.9% of respondents, the staff on the wards supported each other and a similar number of respondents reported that they showed respect for each other (60.2%). Respondents reported that intra-ward support increased the degree of patient safety.
CONCLUSION: Results from the survey show that team cooperation is a precondition for providing safe patient care, which cannot be underestimated and must be refined and improved through good hospital management.

ORIGINAL ARTICLE

INTRODUCTION

Worldwide, patient safety is important topic in public health. It is estimated that in developed countries, one in ten patients comes to harm as a result of health care mistakes. Seven out of one hundred patients in the developed countries and 10 out of hundred patients from underdeveloped countries require treatment for nosocomial infections during or immediately after hospitalization. Annually, millions of patients come to harm in this way. Recently, more attention has started to be paid to improving the safety culture within hospitals. In 2002, the WHO member states accepted a

resolution on patient safety. Currently, patient health and quality represent one of the universal values of global health. In 2004, the WHO declared a World Alliance for Patient Safety (WHO 2004). The basic elements of the Alliance program include the prevention of infections related to health care, patient involvement in the efforts to ensure and improve their safety, development of a taxonomy of patient safety, support of research in the field of health care safety, and reinforcement of a non-repressive system of reporting adverse events (WHO 2004).

One of the options for increasing health care safety and minimizing inpatient risks was the introduction of the aptly named, *safety culture*, into practice. The safety culture of a health care facility is the sum of individual and group values, approaches, beliefs, competencies, and behavioral models. Safety culture is conditioned by a significant involvement of all staff, including managing staff, in patient protection. An institution that has a positive safety culture is characterized by open communication based on mutual trust. A place where people trust each other and have been persuaded regarding the meaningfulness and importance of being proactive in taking preventive measures, including the reporting of adverse events (Vincent 2010). An institution with a positive safety culture adheres to the philosophy that even the best workers can make serious mistakes and that blaming people for their errors will not influence their potential to make future mistakes. Most mistakes are unintentional and in many cases are linked to a system of shortcomings. In spite of a "non-punishing environment", the safety culture does not tolerate breaking protocols, e.g. negligence of required safety procedures. Disciplinary proceedings are always started in cases of reckless behavior, nonobservance of procedures, or failure to report adverse events. Generally, an institution with an established safety culture does not punish the staff for their mistakes, but does take action for failing to announce these mistakes. The conditions for establishing a safety culture are based on (1) the staff being persuaded that they will not be punished for their mistakes, (2) support for open communication about errors, and (3) management being open to suggestions about the actual causes of errors (Roberts *et al.* 2005; Škrla 2005).

The Agency for Healthcare Research and Quality (further just AHRQ) is the main US national organization dealing with the management and support of research that improves patient safety and health care quality. The AHRQ goal is to support safety cultures in hospitals and to improve the quality of the national health care system, by supporting accelerated introduction of research results into practice and policies. To this end the AHRQ has supported the development of a standardized methodology called the Hospital Survey on Patient Safety Culture through which safety culture can be assessed in a health care facility. This tool is important for the evaluation of a safety culture both within the whole institution and on individual wards. The basic dimensions of safety culture include e.g. reporting adverse events, a non-repressive management response to mistakes, management support for patient safety, and support for the idea of team work (Sorra and Nieva 2004). High quality and safe health care is based on multidisciplinary team cooperation. What is important is not only the mutual cooperation of individual team members but also across individual work groups. A friendly atmosphere in an institution has been shown to contribute to this (Venglářová *et al.* 2011). *Therefore, the main goal of the study was to evaluate safety culture in the area of team cooperation and to verify the prediction that patient safety increases with improved team cooperation.*

In accordance with research objectives, the following partial goals were set:

1. To assess *the nurses perception in patient safety*.
2. To assess *the level intra-ward and inter-ward team cooperation*.
3. To verify *the interdependence of nursing team cooperation and the degree of patient safety*.

MATERIAL AND METHODS

Research was carried out using quantitative methods, using guided dialogues. Safety culture was evaluated using a standardized questionnaire called the Hospital Survey on Patient Safety Culture (Sorra and Nieva 2004). The use of the standardized methodology was approved by the Agency for Healthcare Research and Quality, AHRQ. A double translation of the questionnaire was performed prior to use in the Czech Republic. Information was collected through the INRES agency inquiry network. The questioners were trained prior to conducting the survey. Data processing used SASD 1.4.10 and SPSS 16.1 statistical software. The degree of the dependence of the selected variables was determined using the chi-square test and correlation analysis. The p value was set at <0.05.

The sample consisted of 772 general nurses working shifts on inpatient wards of hospitals in the Czech Republic. When forming the selected sample, the basic indicator of representativeness was the number of general nurses in the individual regions of the Czech Republic. In the scope of the survey, which was performed in the latter half of 2013, general nurses from all regions of the Czech Republic were interviewed, in numbers that reflected nurse distribution by region (ÚZIS 2013). Deviation from the basic sample did not exceed 0.3% relative to classification by region. Therefore, the conclusions are representative of general nurses from across the Czech Republic with respect to individual regions.

RESULTS

The first goal of the study was to assess *nurse perception of patient safety.* Nurses were asked their opinions regarding patient safety in their workplace. Patient

safety was viewed as excellent by 17.5% of nurses, as very good by 60.2% of nurses, as acceptable by 20.5% of nurses, while 1.8% of nurses evaluated it as poor or insufficient.

A wider evaluation of *patient safety* by nurses was described using the four following complementary items:

1. Patient safety was never neglected at the expense of workload or time constraints.
2. On our ward there are problems with patient safety.
3. It is just good luck that more serious mistakes have not been made.
4. Our procedures and work system are reliable from the point of view of mistake prevention.

In the answer to the question whether nurses were able to ensure patient safety even under greater workloads and time constraints, more than three quarters (78%) of respondents completely agreed or agreed with the statement that patient safety had never been neglected at the expense increased workloads. More than 10% of nurses believed that there were problems with patient safety and nearly one fifth (19.8%) of nurses agreed with the statement steps to prevent mistakes were not present on their ward and, as a result, few serious errors was just a matter of good luck. The last evaluated item dealt with the question whether procedures or a work system were used to reduce or prevent errors. Nearly three quarters of respondents (70.0%) agreed that such procedures existed.

The goal of the second part of the study was to assess the level of team cooperation both intra-ward and inter-ward and to confirm the relationship between patient safety and nurse cooperation.

The area of safety culture called *Team Cooperation* was assessed using 6 items:

1. Staff from my ward provide each other with mutual support.
2. If a great deal of work has to be done, we work as a team so that it can be managed quickly.
3. On my ward, staff show each other mutual respect.
4. If one part of the ward is very busy, others provide help.
5. Hospital wards do not cooperate well.
6. It is often unpleasant to cooperate with staff from other wards.

According to 64.9% of the respondents, staffs on wards support each other. A similar number of respondents reported that, at times of increased workloads, they cooperated to help each other (71%). More than one half of the respondents (60.2%) agreed that employees showed respect for each other. The topic of inter-ward cooperation was explored by one item in the questionnaire "If one part of the ward is very busy, others provide help". Nearly one half of the addressed nurses agreed with this statement (48.3%). More than one half of the nurses expressed satisfaction with the degree of intra-ward cooperation (59.3%), and 55.8% respondents said they were willing to cooperate with staff from other wards.

Tab. 1. Relationship between patient safety and selected areas of safety culture (composite scores).

Degree of the patient safety			**r^2 [%]**
Management support in the area of health care safety	Correlation	0.418	**17.5**
	Significance	0.000	
	N	759	
Good team cooperation	Correlation	0.334	**11.2**
	Significance	0.000	
	N	760	
Good atmosphere among the team	Correlation	0.323	**10.5**
	Significance	0.000	
	N	760	

The linear correlation between the degree of patient safety and team cooperation can be interpreted using data in Table 1, which shows the proportion of the explained variability – i.e. the percentage of those in whom the connection can be explained by means of the variable. With regard to the character of the variables, the comparison of the following features was performed by means of a correlation analysis. Due to the character of the questionnaire and the number of questions, it was necessary to form a composite score from the items bound to individual areas of safety culture. The condition for these composite scores was the reliability of the items. The reliability was ensured by performing a reliability analysis i.e., calculation of Cronbach's alpha coefficient (the acceptable degree was 0.6–0.9) and by calculation of the total correlation coefficient for the item and the particular score amounting to a value of at least 0.2; otherwise the item had to be excluded as irrelevant.

Positive correlations were confirmed between the degree of patient safety and management evaluation with regard to health care safety, team cooperation, and a good psychological atmosphere in the workplace.

DISCUSSION

The improvement of patient safety is directly proportional to the willingness of health care staff to change their view of problems related to errors. The great majority of the public have the false idea that doctors and nurses are faultless. The key to solving safety problems is to understand how individual groups of health care professionals approach patient safety and how they perceive the principles of a safety culture. It's been shown that information regarding perception of patient

safety by health care staff contributes to changes resulting in improved levels of patient safety (Listyowardojo *et al.* 2011).

Wagner *et al.* (2013) performed a survey focused on the safety culture in hospitals in the USA, the Netherlands, and Taiwan. Their survey was focused on an assessment of the degree of patient safety perceived by health care staff. Most of the American respondents (73%) evaluated the level of their workplace, with regard to the patient safety, as excellent (25%) or very good (48%). More than one half of the respondents from the Netherlands (63%) and Taiwan (51%) described the level of their workplace as acceptable. According to a study by Al-Ahmadi (2010) in Riyadh, Saudi Arabia, standards for patient safety were also evaluated as excellent or very good by more than one half of the nurses (60%) and as acceptable by a third of all respondents (33%). These results are similar to the results from a Swedish study by Nordin *et al.* (2013), where 58.9% of nurses evaluated patient safety as very good or excellent. In our study, 60.2% of Czech nurses evaluated patient safety as very good. Patient safety was perceived as acceptable by one fifth of nurses (20.5%) and almost one fifth of Czech nurses stated that patient safety was at an excellent level (17.5%). Results from the above mentioned studies show that patient safety is generally perceived by health care professionals from various countries in a similar way, i.e. as good.

Nurses often work under time pressure and must complete multiple tasks relatively quickly, which can increase the risk of errors. Therefore, it was positive to discover that three quarters of nurses confirmed that patient safety was never neglected at the expense of increased workload or time constraints. On the other hand, one tenth of respondents admitted that there were problems with patient safety and nearly one fifth of nurses felt that errors were not proactively prevented in their workplace, and, therefore, it was just good luck that had prevent more serious errors from occurring. These results call attention to some problems in patient safety management in Czech hospitals. High demands are placed on nurses with regard to work organization; therefore, it is important that systems and processes are reliable and contain preventive mechanisms to avoid mistakes. The last item evaluated with regard to the perception of patient safety was the question regarding whether or not any procedures or work systems were used on wards to ensure the prevention of errors. Nearly three quarters of nurses (70.0%) agreed that such procedures existed, i.e. standard recommended procedures were available for minimizing the risk of errors.

Similar results were also found by Al-Ahmadi (2010). The perception of general safety was evaluated using four items on the questionnaire, which were the same as in our survey. Arab nurses indicated that patient safety was never neglected at the expense of workload or time constraints (63%) and that the procedures and systems used in their departments were reliable (70%). On the other hand, approximately one third of the respondents indicated that only chance had prevented more serious errors from occurring. In addition, 43% of respondents admitted that problems with patient safety existed on their wards.

A good psychological atmosphere in the workplace, perfect team communication, good interpersonal relationships among the team members, maturity and cooperation of the group and, last but not least, a supportive management style were necessary for teams to function effectively. Understanding, trust, mutual support, and mutual respect form the basis for an effective team (Trešlová and Chloubová 2010). According to Kollárik (2011), team maturity and cooperation are conditioned by strong emotional bonds among team members, a positive outlook toward work, mutual understanding, and cooperation in dealing with problems. It was positive to note that a significant number of respondents reported that staff supported and respected each other and cooperated within their team.

The development and maintenance of competitiveness of a health care institution depends on the performance of the whole institution. Health care teams represent the basic organizational units of the whole institution (Molek 2008). Good inter-cooperation is a precondition for ensuring continuity of medical and nursing care, e.g. cooperation ensures effective, timely handover of information across individual wards (Bártlová 2013). Marx and Vlček (2014) found that during the course of hospitalization, a number of wards and employees participate in patient care and the health care provider must ensure that continuity of care through mutual coordination and cooperation across individual wards exists, e.g. in the case of patient transfers or laboratory or diagnostic examinations.

Our survey found that nurse satisfaction relative to inter-ward cooperation was lower than their satisfaction relative to intra-ward cooperation. Hospital management faces an important task of establishing and refining a system of continuous care across all hospital wards. One of the basic characteristics of the safety culture is removing boundaries, and emphasizing that patient safety needs to be priority for all staff. Responsibility for patient safety needs to extend beyond wards and departments, to encompass the entire hospital. It is essential that all staff continuously look for potential risks that could threaten patient safety and have the flexibly to establish corrective and preventive measures (Parand *et al.* 2014; Prokešová *et al.* 2014). Ongoing patient safety education of medical, nursing and other health care staff working within a team is another important aspect for improving patient safety. Training in team cooperation using simulations and model situations is becoming more topical (Leape and Berwick 2005; Trešlová 2012). Patient involvement in their own safety has also been increasing. Health care professionals should encourage and motivate patients to cooperate with the health

care teams taking care of them (Bártlová *et al.* 2014; Brabcová *et al.* 2014; Macrae and Vincent 2014).

In his survey, Manser (2009) emphasis good teamwork as a basis for patient safety and high quality health care. Our study focused on the perception of team cooperation by respondents and the influence of teamwork on work quality and patient safety. A positive correlation was confirmed between the degree of patient safety and the evaluation of the hospital, its teamwork, and a good psychological atmosphere in the workplace. More exactly, if nurses can speak openly about the risks patients face on their wards and can suggest prevention methods to avoid repeated mistakes that are discussed among the team, patient safety was, in their opinion, increased (Trešlová 2010). Respondents reported the degree of patient safety was also increased when hospital management created an atmosphere that supported patient safety and made patient safety its highest priority. Furthermore, patient safety increased with better psychological atmospheres (i.e., when positive emotional relationships prevail in the workplace, together with a friendly, open atmosphere within the team and at the workplace) (see Table 1).

CONCLUSION

The idea of promoting a safety culture within health care systems is a never ending process. Changing the approach of medical and nursing staff, including hospital management, toward patient safety is a long-term issue. An open and fair safety culture limits the individual's responsibility for errors, promotes open communication and team cooperation across all wards, and corrects system failures that have resulted in errors. A safety culture is based on a culture of being non-accusatory coupled with a culture that is able to learn from its mistakes. This approach to mistakes results in a culture of flexibility and mutual trust in which health care professionals trust each other, confide in each other, and are able to take steps to change risky procedures (Vincent 2010; Vincent and Amalberti 2015). It was positive to discover that respondents in our survey generally evaluated the degree of patient safety as good and were satisfied with the degree of teamwork, particularly on their own wards.

Conflict of interest

The authors report no conflicts of interest.

ACKNOWLEDGEMENT

This research was conducted with the support of the Internal Grant Agency of the Ministry of Health of the Czech Republic and was associated with project reg. no. NT 14133 called "Increasing of nursing care safety".

REFERENCES

1 Al-Ahmadi TA (2010). Assessment of patient safety culture in Saudi Arabian hospitals. Qual Saf Health Care. **19**: e17. doi:10.1136/qshc.2009.033258.
2 Bártlová S (2013). Týmová spolupráce ve zdravotnictví [Team work in health system]. In: Vévoda J. *et al.* Motivace sester a pracovní spokojenost ve zdravotnictví [Motivation of nurses and work satisfaction in health system]. Praha: Grada, pp. 40–63 (Czech).
3 Bártlová S, Tóthová V, Brabcová I, Prokešová R, Kimmer D (2014). The hospitalized patient as a partner in the survey on safe care in the Czech Republic. Neuroendocrinol Lett. **35**(Suppl. 1): 5–10.
4 Brabcová I, Bártlová S, Tóthová V, Prokešová R (2014). The possibility of patient involvement in prevention of medication error. Kontakt. **16**: e65–e70.
5 Kollárik T (2011). Sociálna psychológia + psychológia práce + sociálna psychológia práce? [Social psychology + psychology of work + social psychology of work?]. Bratislava: Univerzita Komenského v Bratislave, p. 401 (Slovak).
6 Leape L, Berwick D (2005). Five Years After To Err Is Human. JAMA. **293**(19): 2384–2390.
7 Listyowardojo TA, Nap RE, Johnson A (2011). Variations in hospital worker perceptions of safety culture. International Journal for Quality in Health Care. **24**(1): 9–15.
8 Macrae C, Vincent Ch (2014). Learning from failure: the need for independent safety investigation in healthcare. Journal of the Royal Society of Medicine. **107**(11): 439–443.
9 Manser T (2009). Teamwork and patient safety in dynamic domains of healthcare: a review of the literature. Acta Anaesthesiologica Scandinavica. **54**(2): 143–151.
10 Marx D, Vlček F (eds.) (2014). Akreditační standardy pro následnou péči [Standards of accreditation for subsequent care]. Praha: SAK, o. p. s., p. 148 (Czech).
11 Molek J (2008). Personalistika a řízení [Human resources management and management]. České Budějovice: Jihočeská univerzita v Českých Budějovicích, Zdravotně sociální fakulta (Czech).
12 Nordin A, Wilde-Larsson B, Nordström G, Theander K (2013). Swedish Hospital Survey on Patient Safety Culture – Psychometric properties and health care staff's perception. Open Journal of Nursing. **3**(8A): 41–50.
13 Parand A, Dopson S, Renz A, Vincent Ch (2014). The role of hospital managers in quality and patient safety: a systematic review. BMJ Open. 4:e005055
14 Prokešová R, Brabcová I, Bártlová S, Tóthová V (2014). Specifics of risk management in select medical facility. Kontakt. **16**: e256–e262.
15 Roberts K, Madsen HP, Desai V, Van Stralen D (2005). A case of the birth and death of a high reliability healthcare organization. In: Qual Saf Health Care. **14**(3): 216–220.
16 Škrla P (2005). Především neublížit. [Primarily not to hurt]. Brno: NCO NZO, 162 p.
17 Sorra JS, Nieva VF (2004). Hospital Survey on Patient Safety Culture. AHQR Publication No. 04-0041. Rockville, MD: Agency for Health care Research and Quality. [online] [cit. 2014-02-27]. Available from: http://www. ahqr.gov/qual/patientsafetyculture/hospcult.pdf
18 Trešlová, M. (2012). Simulation, Debriefing and Safety in Nursing Education and Practice. In Sborník International Symposium Present and the Future of Nursing and Midwifery České Budějovice: Jihočeská univerzita v Českých Budějovicích, Zdravotně sociální fakulta, pp. 290–293.
19 Trešlová M, Chloubová I (2010). Komunikační dovednosti sester v multidisciplinárním týmu, sborník přednášek [Communication skills of nurses in multidisciplinary team]. In sborník XVI. Královéhradecké ošetřovatelské dny, Hradec Králové, pp. 29–31.
20 Trešlová M (2010). The Impact of Doctors and Nurses Communication on their Mutual Cooperation. In Nursing 100 Years after Florence Nightingale, Symposium proseedings, DEEK, Nyiregyháza, p. 57.

21 ÚZIS (2013). Všeobecné sestry v nemocnicích ČR: stav k 31. 12. 2013 [Nurses in hospitals in CR]. Praha: Ústav zdravotnických informací a statistiky. [online] [cit. 2013-06-09]. Available from: http://www.uzis.cz/rychle-informace/pracovnici-ve-zdravotnictvi-31-12-2013 (Czech).
22 Venglářová M, Myšáková L, Mahrová G, Laštovica M (2011). Sestry v nouzi [Nurses in need]. Praha: Grada (Czech).
23 Vincent Ch (2010). Patient Safety. 2nd ed. London: Wiley-Blackwell, 416 p.
24 Vincent Ch, Amalberti A (2015). Safety in healthcare is a moving target. BMJ Qual Saf. **24**(9): 539–540.
25 Wagner C, Smiths M, Sorra J, Huang CC (2013). Assessing patient safety culture in hospitals across countries. International Journal for Quality in Health Care. **25**(3): 213–221.
26 WHO (2004). World Alliance for Patient Safety. [online] [cit. 20140606]. Available from: http://www.who.int/patientsafety/worldalliance/en/