

THE IMPORTANCE OF TEAMWORK FOR THE PROVISION OF PATIENT SAFETY

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Submitted: 2017-08-04

Accepted: 2017-10-27

Published online: 2017-12-31

Abstract

Aim: The research aim was to find out how employees perceive patient safety in their workplace. We focused on the aspects of teamwork as the key factors in a security culture.

Methods: The AHRQ standardized questionnaire: “The Hospital Survey on Patient Safety Culture” (HSOPSC), was used to find out the respondents’ opinions. 331 healthcare practitioners were included in the research.

Results: The value of the composite score (37.37%) for the area of Team cooperation within hospital units was the second lowest in the total assessment. In the area of Teamwork within workplace, the composite score was 66.82% and in the Patient transfer dimension it was 75.20%. Our results confirm the trend of other studies, which show the results of the teamwork between hospital units to be one of the lowest.

Conclusion: In the successful development of a patient safety programme it is important for the managers to know the views of first-line workers. The results of the survey, expressed by the value of the composite score, indicate opportunities for improvement, which especially means supported interdisciplinary teamwork in our research.

Key words: patient safety; adverse event; safety culture; teamwork

INTRODUCTION

The relevance of effective teamwork increases in connection with increasing demands on provision of quality and safety care. As mentioned by Amalberti et al. (2005), considering the inter-disciplinary nature of health care and the need for cooperation between its providers, teamwork is essential for the provision of patient safety and the mitigation of errors. Teamwork is not an automatic consequence of a concentration of people, but depends on their competence and their will to collaborate in the interest of shared purpose. Hayesová (2005) recommends providing every team member with clear tasks and the resources. Further, the members shall know competence of the

others and create a communication channel for feedback, findings, outcomes and experience.

People make fewer errors while working in teams because the standardized processes give the team members a clear role and errors are carefully disclosed before an incident. A good working interdisciplinary team means that the team members trust each other and deal with the security fears of the others. The professionals should have been trained and be ready for teamwork, especially in difficult situations – they shall not focus only on individual responsibility that avoid higher safety (Hughes 2008).

The exchange of basic information and responsibility for patient care is an integral part of communication in health

care. The effective transfer of patients supports the transmission of critical information and ensures the continuity of care and treatment. The concept of transfer is difficult, it includes: communication between shifts, communication between employees of various categories, i.e. employees with various competences, communication between workplaces or care providers, but also the transmission of information through written or electronic records. The complexity and dissimilarities of a type of information affect the efficiency and effectiveness of transfer and also the security of patients (Hughes 2008, Lee et al. 2016).

The topic of the transmission of information associated with providing care has become so significant that the Joint Commission International (JCI) introduced a national patient safety goal concerning the areas of transfer, which came into operation in January 2006 (Hughes 2008). In 2012, the Ministry of Health of the Czech Republic joined this initiative. The duties for providers of healthcare services were set out in Section 47, Subsection 3, Letter b), of the Act No. 372/2011 Coll., on healthcare services and conditions of their provision. The methodology and requirements for fulfilment were published in the Věstník MZ No. 16/2015 as Resort Safety Goal 7 – Safe transfer of patients and Resort Safety Goal 6 – Safe communication.

This survey focused on the opinion of healthcare practitioners on the problems of team cooperation in connection with the provision of patient safety.

MATERIALS AND METHODS

Opinion detection was realized through a quantitative examination, by means of a standardized questionnaire of the Agency for Healthcare Research and Quality (AHRQ) – The Hospital Survey on Patient Safety Culture (HSOPSC) – issued in 2006 that consisted of 42 items on 12 dimensions of culture safety (AHRQ 2015). The respondents chose the answers on a 5-point Likert scale (from *Strongly Agree* to *Strongly Disagree* or from *Always* to *Never*). The survey was realized between November 2015 and May 2016.

The research file was made up of 331 healthcare practitioners. Participation in the

research was voluntary. The respondents received oral and written information concerning the research aim and the method of the questionnaire assessment. The research file is not representative. The basic demographic characteristics of the file that were followed within the survey included: type of workplace, education, the total length of practical experience, the length of practice in the present workplace and present specialization, usual duration of working time, job position and interaction with patients.

A total of 85.80% of the respondents were nurses working without any professional supervision. The respondents most often worked in the Intensive Care Units (19.64%) and Psychiatry departments (18.13%). The biggest group was formed by workers working in a workplace for 1–5 years (37.46%) and in the given profession for 11–15 years (23.87%). Most of the respondents (67.67%) stated a usual weekly working time of between 40–59 hours; 98% of the respondents were in a direct staff-patient interaction.

Questionnaires that were excluded from the statistical assessment were (1) not completed at all, or (2) included less than a half of answered items, or (3) included the same answers to all items. Descriptive statistics of demographic characteristics have been executed, and an average of positive results of individual items has been calculated. The composite score has been calculated through an average of all items of positive answers within a dimension by ARHQ methodology. The composite indicators combine aspects of a certain phenomenon to one numeric expression, so they include more information than individual indicators. A composite score value below 75% indicates an opportunity for improvement.

The responses of the respondents were tested depending upon average length of practice and the type of workplace through the non-parametric Kruskal–Wallis test. Statistical testing has been executed in the R programme (*R project version 3.0.2*).

RESULTS

The task of each healthcare practitioners is to provide safety environment for patients. This statement deals only with partial results,

especially with the dimensions: patient transfer and teamwork between departments and in the whole hospital.

The degree of patient safety in the workplace was evaluated positively (Excellent and Above Average) by 75.9% of respondents. Only 2.25% of respondents evaluated the degree of safety as Very Poor. The difference in security perception depending upon the length of practical service or achieved education is not statistically significant.

Report of adverse events and incomplete detected irregularities and learning from them contributes to increasing quality of provided care; 30.51% of the respondents stated 1–2 reported adverse events within the last 12 months, more than 10 of the reported events were mentioned by only 1.51% of the respondents.

The dimension of *Teamwork between hospital departments* was formed by 3 items. The composite score amounts to 37.37%.

A total of 2.79% of the respondents perceive cooperation between departments that need mutual cooperation as good (I strongly agree, I agree). 7.03% of the respondents positively perceive the operation of hospital units with the aim of providing the best possible patient care; 82.61% of the respondents do not agree with the opinion that mutual cooperation between departments is not good (I disagree, I strongly disagree), and 57.05% of the respondents do not perceive cooperation with the staff of the other department as unpleasant or negative (Table 1).

Table 1. Responses to the items in the dimension of *Teamwork between hospital departments*

Dimension items	Frequency of evaluation %				
	<i>Strongly agree</i>	<i>Agree</i>	<i>Undecided/ Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
F4 – Good cooperation between departments that need to cooperate	1.24	1.55	10.53	51.70	34.98
F10 – Departments cooperate very well with the aim of providing the best patient care	1.28	5.75	18.53	54.31	20.13
F02 – Departments do not cooperate very well	0.62	3.42	13.35	50.31	32.30
F06 – It is often unpleasant to work with the staff from the other departments	1.57	5.33	36.05	44.51	12.54

Respondents' answers to the items F2 and F6 show a statistically significant difference depending on the length of the practice (Table 2). The dependence of these two variables has been tested through the non-parametric Kruskal–Wallis test that proves a statistically significant relation between the length of respondents' practice and the items in the dimension of *Teamwork between hospital departments*. The calculated p -value in this case is $p = 0.000 \leq 0.05 = \alpha$ on a significance level of 5%. The respondents with a length of practice ≤ 1 year and 21 and more years, most often disagreed with the opinion on negative cooperation between the departments.

Groups of the respondents with a length of practice 21 and more years and ≤ 1 year, do not perceive collaboration with the staff of the other departments negatively either.

The dimension of *Teamwork within the workplace* was formed by 4 items. The composite score amounts to 66.82%. The respondents positively perceive (Strongly agree, Agree) mutual support in the workplace (71.82%) and mutual respect (64.22%). 81.27% of the respondents state their ability to work as part of a team when it is necessary to do a large amount of work. 50% stated that when one section is busy, the others help.

Table 2. Kruskal–Wallis test – dependence of the items in the dimension of *Teamwork between hospital departments* and the *Length of practice*

Length of practice	F4 – Good cooperation between hospital departments that need to cooperate	F10 – Hospital departments cooperate very well with the aim of providing the best patient care	F2 – Hospital departments do not cooperate well	F6 – It is often unpleasant to cooperate with staff from the other departments
≤1	3.73	3.87	2.22	2.43
1–5	3.40	3.47	2.63	2.64
6–10	3.26	3.41	2.88	2.51
11–15	3.30	3.59	2.75	2.59
16–20	3.49	3.35	2.87	2.76
21≤	3.62	3.56	2.55	2.26
Chi-square test	8.73	8.89	14.57	10.80
<i>p</i> -value	0.12	0.11	0.01	0.05

Respondents' answers to the items A1, A3 and A4 show a statistically significant difference depending on the type of workplace (Table 3). The dependence of these two variables has been tested by non-parametric Kruskal–Wallis test, which proves a statistically significant relation between a respondent's workplace and the items in the dimension of

Teamwork within workplace. The calculated *p*-value in this case is $p = 0.000 \leq 0.05 = \alpha$ on a significance level of 5%. The respondents from Traumatology department most often positively perceive mutual support in situations when it is necessary to do a large amount of work; they work as a team and respect each other.

Table 3. Kruskal–Wallis test – dependence of items in the dimension of *Teamwork within the workplace* and the type of workplace

Workplace	A1 – Workers in this department support each other	A3 – We work as a team when it is necessary to do a large amount of work	A4 – People respect each other in this department	A11 – When one part of the department is very busy, the other part helps them
Surgery	4.24	4.34	3.78	3.44
Internal departments	4.040816	4.142857	3.959184	3.291667
Intensive Care	3.815385	4.2	3.6	3.421875
Follow-up Care	4.060606	3.909091	3.8125	3.666667
Operating theatre, anaesthesia	4.266667	4.1875	3.666667	3.5625
Psychiatry	3.666667	3.833333	3.533333	3.37931
Traumatology	4.851852	4.925926	4.703704	3
Others	3.483871	3.774194	3.655172	3.225806
Chi-Square test	63.00	62.14	46.93	9.59
<i>p</i> -value	0.00	0.00	0.00	0.21

The dimension of *Patient transfer* was formed by 4 items. The composite score amounts to 75.20%.

In total, 74.44% of the respondents disagreed with the opinion that changes of services in their hospital are problematic for patients, and 86.68% of the respondents disagreed that important information on patient care can disappear within shift rotation. Information transmission between particular departments is perceived negatively as problematic by 57.05% of the respondents; 82.61% of the respondents state that information surprisingly disappears during patient transfer.

The answers of the respondents to the items F3, F5 and F7 show a statistically sig-

nificant difference depending on the length of practice (Table 4). The dependence of these two variables was tested by non-parametric Kruskal–Wallis test, which proved a statistically significant relation between a respondent's length of practice and the items in the dimension of *Patient transfer*. The calculated p-value in this case is $p = 0.000 \leq 0.05 = \alpha$ on a significance level of 5%. The respondents with 16–20 years of practice most often perceive the loss of information on patients during transport between departments. This group also most often perceives the loss of important information on patients during shift rotation and the occurrence of problems during information exchange between departments.

Table 4. Kruskal–Wallis test – dependence of items in the dimension of *Patient transfer* and the length of practice

Length of practice	F3 – Information on patient “surprisingly disappears” during patient transfer between departments	F5 – Important information on patient care “are lost” during shift rotation	F7 – Occurrence of problems during information exchange between hospital departments	F11 – Shift changes are problematic for patients in this hospital
≤1	1.39	1.50	2.09	2.32
1–5	1.97	1.89	2.33	2.04
6–10	1.85	1.92	2.48	2.14
11–15	1.94	1.61	2.32	2.05
16–20	2.13	1.97	2.79	2.19
21≤	1.83	1.86	2.24	2.36
Chi-square test	18.61	17.57	14.34	6.75
p-value	0.00	0.00	0.01	0.24

DISCUSSION

Several measure tools that have been widely used were developed to assess the culture of patient safety in the last decade. One of them is a standardized questionnaire of the Agency for Research and Quality in Health Service (AHRQ) in hospital research on patient safety (Halligan and Zecevic 2011, Zwijnenberg et al. 2016).

These measure tools support health care providers in dealing with safety culture and identifying the areas for improvement (Zwijnenberg et al. 2016).

Teamwork is based on the accurate definition of roles, mutual trust, early error detec-

tion and effective communication (Hayesová 2005, Hughes 2008).

A survey published by Mijakoski et al. (2015) showed that teamwork was connected with satisfaction at work and also to the lower “burnout” level of workers. Teamwork was a significant factor in the relationship between work requirements and work satisfaction. These findings support the idea of the coexistence of energy and motivational processes and work sources (i.e. team cooperation) and their influence on various relations, in particular: work requirements – burnout syndrome, involvement in work – work satisfaction. A high work demand leads to excessive emotional exhaustion. On the other hand, a lack

of work leads to depersonalization. Feelings of “burnout” are strongly affected by the frequency of perceived work demands and teamwork in hospital facilities. Despite this, teamwork significantly influences feelings of work satisfaction.

An analysis of a Belgian survey in the dimension of *Teamwork between hospital departments* reached the composite score 38% (range: 32–41%). On the contrary, the range of the dimension of *Teamwork within the workplace* obtained the highest composite score of 70% (range: 70–71%) (Hellings et al. 2007).

The results of the survey executed in French-speaking hospitals (Perneger et al. 2014) rate the assessment of the global safety degree as excellent (46.9%) and very good (39.2%). In the dimension of *Team cooperation between hospital departments* the composite score reached the value of 42.7%, and in *Teamwork within the workplace* it reached 79.4%.

The results of a Portuguese research show a big difference between particular hospitals. The dimension of *Teamwork between hospital departments* reached the composite score of 44%, while the dimension of *Teamwork within the workplace* had the total highest composite score – 70%, with a response between 54–78% (Eira et al. 2014).

Also, an extensive survey published by Adams-Pizarro et al. (2008) recorded a significantly higher score (73.5–83.1%) in the dimension of *Teamwork within the workplace* than in the dimension of *Teamwork between hospital departments* (38.2–52.1%). The total score in the dimension of *Teamwork within the workplace* remained unchanged (+0.6%) in repeated examinations. The total score for *Teamwork between hospital departments* decreased (–3.8%) when considerable difference between particular types of hospitals occurred.

Generally it is possible to state that the dimension of *Teamwork within the workplace* usually reaches a higher score than *Teamwork between hospital departments*. This trend is also evident in our results in terms of the dimensions; where a composite score of 66.82% and 37.37% was reached.

Castner et al. (2013) published survey results that showed the total rate of teamwork is connected to work control. The dimensions

of teamwork were perceived as better by those who had a high level of supervision. Because of the effect of team training preparation and practice supervision, the authors recommend taking teamwork into account in educational programmes. This survey contributes to a preliminary understanding of supervision of practice as a variable that should be further solved in policy, practice and research with the aim to strengthen teamwork.

A longitudinal survey published by Welp et al. (2016) emphasizes the significance of research of comprehensive causal relationships between teamwork, the emotional exhaustion of clinical workers and patient safety in the area of intensive care. The results show that emotional exhaustion in workers decreases the ability to contribute to effective teamwork which is fundamental in preserving patient safety. On the contrary, low emotional exhaustion increases quality and interpersonal teamwork.

The main finding of the retrospective survey published by Lee et al. (2016) was that effective information transfer, professional responsibility and responsibility for care were fundamental for a positive perception of patient safety. Feedback and communication about mistakes were positively connected with the transfer of information on patients; *Teamwork within the workplace* and the frequency of reported events were positively connected with personal responsibility during shift rotation, and *Teamwork between hospital departments* was positively connected with responsibility for patient transfer between units.

The evaluation of a group of accredited health facilities, performed by JCI in 2006, showed that at least 35% of the unwanted events were related to a detected irregularity during the information transfer associated with providing care or treatment. By the latest estimation, errors during transfer caused almost 80% of serious events in 2004 and 2014 (Lee et al. 2016).

The results of a Belgian survey in terms of the dimension of *Patient transfer* state the composite score of 36% out of 31–39% (Hellings et al. 2007). A similar value (35.3%) in this dimension was also published by Perneger et al. (2014). The extent of the dimension of *Patient transfer* belongs among the lowest, i.e. 41.4–49.8% at the first evaluation, and

37.3–47.9% at the repeated evaluation. The questions within the dimension were divided into two subgroups; one reflected internal transfer and the second reflected external transfer. A higher score was always achieved at the *Internal transfer* (Adams-Pizarro et al. 2008). Portuguese research states values of a composite score of 54% (Eira et al. 2014.) In comparison, Mikušová et al. (2012) state the composite score as 70% in this dimension (the second highest). Doctors had a more positive opinion than nurses in this dimension.

The results of our survey in this dimension reached the composite score of 75.20%, which was also the second highest value.

Limitations

The interpretation of our research results has some limitations. The size of the respondent file, the fact that it was limited to a group of healthcare practitioners, their membership in different organizations, and some other factors (e.g. data only collected in one period) can prevent generalization of the results because they may not be a sufficient reflection of the reality, especially where multidisciplinary cooperation is stressed. However, our data show a high rate of compliance with the results of other surveys.

CONCLUSION

Risk management becomes more important, it becomes a part of the coordinated activities of health care or nursing care, as well as a research topic with the aim of defining good practice and transferring it.

A teamwork culture makes it easy to transfer responsibility between a transferring workplace and a receiving workplace, and to express fears and clarify problems of a two-way conversation. A strong communication culture is typical with its openness and willingness of clinical workers to ask questions and provide feedback in order to make information transfer the most effective. Therefore, a strong culture of teamwork and a culture in which unwanted events are reported increase effective information transfer and personal responsibility. As a result of our research, one of the specific measures that can be proposed is the implementation of training in teamwork, focused especially on cooperation between workplaces and increasing professionalism. Employees' views of responsibility during patient transfer affect their perception of the level of patient safety at hospital. The use of known psychological relations between perception, attitudes and behaviour can improve the effectiveness of training focused on teamwork.

Intervention should consider the findings that quality teamwork means a lower occurrence of burnout syndrome and higher work satisfaction in the healthcare practitioners and also may improve the quality of patient care.

CONFLICT OF INTERESTS

The authors have no conflict of interests to disclose.

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