



Adverse event reporting in Slovenia – the influence of safety culture, supervisors and communication

Prijavljivanje neželjenih događaja u Sloveniji – uticaj svesti o njihovom značaju, rukovodećih struktura i međusobne saradnje zaposlenih

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Abstract

Background/Aim. The provision of safe healthcare is considered a priority in European Union (EU) member states. Along with other preventative measures in healthcare, the EU also strives to eliminate the “causes of harm to human health”. The aim of this survey was to determine whether safety culture, supervisors and communication between co-workers influence the number of adverse event reports submitted to the heads of clinical departments and to the management of an institution. **Methods.** This survey is based on cross-sectional analysis. It was carried out in the largest Slovenian university hospital. We received 235 completed questionnaires. Respondents included professionals in the fields of nursing care, physiotherapy, occupational therapy and radiological technology. **Results.** Safety culture influences the number of adverse event reports submitted to the head of a clinical department from the organizational point of view. Supervisors and communication between co-workers do not influence the number of adverse event reports. **Conclusion.** It can be concluded that neither supervisors nor the level of communication between co-workers influence the frequency of adverse event reporting, while safety culture does influence it from an organizational point of view. The presumed factors only partly influence the number of submitted adverse event reports, thus other causes of under-reporting must be sought elsewhere.

Key words: patient safety; medical staff; communication; culture; slovenia.

Apstrakt

Uvod/Cilj. Bezbedno pružanje zdravstvene nege smatra se prioritetom u zemljama članicama Evropske unije (EU). Osim drugih mera preventivne u zdravstvenoj zaštiti, EU čini napore da izbací sve uzroke koji oštećuju ljudsko zdravlje. Cilj istraživanja bio je da se utvrdi da li bezbednosna kultura, nadređeni i komuniciranje među saradnicima utiču na broj predatih izveštaja o bezbednosnim komplikacijama rukovodstvu kliničkog odeljenja i rukovodstvu ustanove. **Metode.** Istraživanje je sprovedeno kao studija preseka. Anketiranje je izvedeno u najvećoj slovenačkoj univerzitetskoj bolnici. Vraćeno je 235 anketa. Anketirani su saradnici zdravstvene nege, fizioterapije, radne terapije i radiološke tehnologije. **Rezultati.** Bezbednosna kultura utiče na broj izveštavanja o bezbednosnim komplikacijama rukovodstvu kliničkog odeljenja i to u pogledu organizacije. Komunikacija između saradnika i nadređenih ne utiče na broj izveštavanja o bezbednosnim komplikacijama. **Zaključak.** Može se zaključiti da ni rukovodeća struktura, ni nivo komunikacije i međusobne saradnje ne utiču na broj izveštavanja o bezbednosnim komplikacijama. Međutim, bezbednosna kultura utiče na prijavljivanje neželjenih događaja u pogledu organizacije. Pretpostavljeni faktori delimično utiču na broj predatih izveštaja o bezbednosnim komplikacijama zbog čega uzroke za izveštavanje treba tražiti i na drugim mestima.

Ključne reči: bolesnik, bezbednost; kadar, medicinski; komunikacija; kultura; slovenija.

Introduction

The provision of safe healthcare is considered a priority in European Union (EU) member states¹. Along with other preventative measures in healthcare, the EU also strives to

eliminate the “causes of harm to human health”². In EU member states, 8–12% of hospital patients experience an adverse event³. As noted by Robida⁴, a 2000 study by the Institute of Medicine found that 35,000 patients were harmed in the course of their treatment in public hospitals in Slove-

nia. More people – between 410 and 890 – die in hospitals than they do in traffic accidents. The Slovenian Patient Rights Act grants patients the right to proper, high-quality and safe healthcare⁵. The Ministry of Health confers the responsibility to provide systematic patient care and continuously improve its quality upon healthcare institutions⁶.

Robida⁷ defines safety as the minimisation of adverse events in patients during diagnostic procedures, treatment and rehabilitation; safety involves the prevention of harm to patients' health caused by the provision of healthcare, which should be to their benefit. According to UK Advisory Committee on the Safety of Nuclear Installations safety culture in an organization is defined as "the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management"⁸.

"An organization with a positive safety culture is characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures"⁸. As noted by Dobnik⁹, every organisation comprises individuals who communicate and attempt to solve problems and resolve interpersonal conflicts. Frequently, communication may fail. This is due to interference, which may be of emotional or social origin, rather than it being the result of lacking verbal skills. Conversation partners will often ignore each other due to being preoccupied with their own thoughts or because they are waiting their turn to share their opinions⁹. One of the responsibilities of the hospital management is ensuring employee satisfaction since, according to Golmajer¹⁰, the level of employee satisfaction affects the quality and efficiency of their performance. As noted by Robida⁴, healthcare professionals consider the safe treatment of patients their top priority. Every member of the staff should feel that they can participate in and contribute to safer performance and a higher quality of work. According to Donik¹¹, the most important factor in creating a good workplace atmosphere are senior professionals who are usually responsible for introducing innovations into the work environment, who know how to influence the behaviour and performance of individual members on a healthcare team, and can guide the actions of their staff to reach desired goals and fulfil a desired purpose with the aid of communication, motivation and their personality traits¹¹.

There are several definitions of adverse events (AE). Common to all definitions is that they define that AE occur during medical treatment, that they are accidental and that they are not caused by the patient's disease^{8,12,13}. Safety incidents can be categorized into two groups, namely: "adverse events" and "sentinel events". Adverse events are classified as unexpected event or circumstance which would have resulted, or may result in unnecessary damage to the patient such as: fall, pressure ulcer, burn, or missing patient...., while sentinel events, can be described as an unexpected event involving death or serious physical or psychological injury, or the risk of such an event¹⁴.

Data from 2011 show that in the largest Slovenian hospital 2,346 safety incidents were reported of which 49 reports

were classified as sentinel events. Among those sentinel events 19 cases of falls, which resulted in severe deterioration of health were included. Furthermore, a case of suicide (n = 1), complication relating to medications (n = 4), complications of invasive procedures (n = 5) and other complications (n = 20) which were the consequence of inappropriate referral of the patient or improper medical treatment such as an inadequate response times for cardio-pulmonary resuscitation, were included. As it can be noted, a higher rate of adverse events cases were reported (n = 2297). Most prevalent were falls and pressure ulcers. Also, other adverse events were included into statistics, such as the injury of health professionals with a sharp object, patient violence directed toward clinicians and others¹⁵. Breathnach et al.¹⁶ in their study find that the most common adverse events are fall or slip of the patient.

Studies suggest that a larger proportion of AE are being reported by nurses. Furthermore, Rowin et al.¹⁷ note that physicians reported incidents in only 1.1% of cases, of which dominant were sentinel events. Similarly Breathnach et al.¹⁶ in their study find that the physicians report about 4% of adverse events.

The system for management of safety incidents in an environment where the study was carried out aims at detecting and identifying adverse and sentinel events. It is not targeted at those involved, but into the events and its elimination. Safety incidents can be reported through information system; furthermore it is also possible to a report the event by written forms and/or oral by phone. Choosing the way of reporting event is left to a reporter (health professional). Also, reporting in full anonymity can be provided, it is possible to report event without identifying the participants and locations^{15,18}.

It was this that led us to study the situation in a specific clinical setting in Slovenia, since no studies which would look into the causes of reporting of adverse events (unexpected event or circumstance which would have resulted, or may result in unnecessary damage to the patient such as: fall, pressure ulcer, burn, or missing patient) in healthcare institution in Slovenia could be found upon reviewing the literature on the subject.

Based on the definition of the problem and theoretical issues, we formed the following hypotheses: H1 – The level of safety culture influences the frequency of adverse event reporting; H2 – The attitude of supervisors influences the frequency of adverse event; H3 – The level of communication between co-workers influences the frequency of adverse event reporting.

Taking into account these hypotheses, the aim of this study was to determine whether safety culture, supervisors and communication between co-workers influence the frequency of AE reporting.

Methods

Population and sample

A total of 235 health care professionals employed in different organizational units of the chosen medical institution in Slovenia participated in the survey. The following staff positions were included: health care assistants, registered nurses, occupational therapists, physiotherapists, radiological engineers

as those deal directly with the reporting and recording of the occurrence of adverse events and therefore we assume that they have the most useful information about studied phenomenon.

The survey was conducted between 4 June and 16 July 2012. Questionnaires were distributed in proportion to the number of employees and the number of individual staff positions at a particular clinic or department included in the survey. The respondents submitted completed questionnaires in sealed, enclosed envelopes to the researchers.

Data collection

Data and information were obtained through a standardized questionnaire The Hospital Survey on Patient Safety Culture published by the American Association for Healthcare Research and Quality (AHRQ) in November 2004.

It was designed to assess opinions of hospital staff about patient safety, adverse events and adverse event reporting. The questionnaire focuses on 12 key dimensions of patient safety culture, namely: communication openness, feedback and communication about error, frequency of error reporting, handoffs and transitions, management support for patient safety, non-punitive response to error, organizational learning–continuous improvement, overall perceptions of safety, staffing, supervisor/manager expectations and actions promoting safety, teamwork across units, and teamwork within the unit. The questionnaire also includes questions on patient safety grade and the number of adverse events reported in the past 12 months¹⁹.

The questionnaire was partially adapted to suit our empirical survey and is now divided into nine components (prevalent workplace, supervisors, communication, frequency of event reporting, patient safety grade, medical institution, the number of events reported, basic information or demographic information, comments) and contains 51 closed-ended items and one open-ended item. Respondents had to rate the closed-ended items or statements on a five-point Likert scale. The parts of the questionnaire concerning work areas, employees' roles (changes relates to the roles and names of roles) and adverse event reporting frequency (change from categorical variable to numerical variable) suit to our survey.

We performed systematic approach for questionnaire translation²⁰. Firstly, two authors (both native speakers of Slovene and professionally familiar with the topic) independently translated English version into Slovene version. Authors compared English and Slovene version of questionnaire and consensus was achieved. In the next step, a blind professional translators, translated questionnaire from Slovene to English. All the authors compared both versions of questionnaire and agreement on translation was achieved. Two healthcare professionals were asked to assess the understanding of the translated questionnaire. They found that questionnaire was clear.

The reliability of the measurement instrument was further tested using the Cronbach's coefficient which showed the instrument reliable (0.893; 52 items).

The survey received ethical approval from the Medical Ethics Committee of the Republic of Slovenia (No.: 34/02/12). The authors had no conflicts of interest to declare.

In presenting the model, we used the frequency distribution and presented data using cross tables. For question sets relating to safety culture, communication level and the overall situation in the hospital, we carried out a factor analysis using the Principal Axis Factoring (PAF) method, which served as the basis for determining dimensions. Factor analysis is used to uncover the latent structure of manifest variables. It reduces attribute space to a smaller number of factors²¹. Furthermore, we used the Bartlett's test ($\chi^2 = 812,88$; sig.: < 0.001) and the Kaiser-Meyer-Olkin (0.832) to measure the sampling adequacy to determine the suitability for factor analysis²¹. Both tests showed the sample suitable for factor analysis.

Dimensions were calculated as the average of the variables with higher weights on individual factors. Further, analysis of variance was used to assess the differences in average dimension values with respect to characteristics of respondents. When checking for multicollinearity between independent variables, Variance Inflation Factors (VIF) were also taken into account. The "R" has been used to determine the percent of the variance in the dependent variable, explained by the independent variables²¹. For regression analysis Student's *t*-test was used to test hypothesis in case beta coefficient was different from 0.

Results

Most respondents worked in one of the following three areas where the most serious adverse events could occur: surgery (24.3%), intensive care and therapy in any department (20.4%) and emergency (9.8%). Surveyed staff from the internal medicine department and the department of obstetrics and gynaecology accounted for 8.9% each. Respondents working in the department of paediatrics accounted for 7.7%, while other departments accounted for 4.3% each. The latter include rehabilitation departments, postoperative care units and employees working in several different hospital units. The remaining 6.8% of respondents work in other organizational units (Figure 1). Figure 2 shows that almost half (47.2%) of the surveyed professionals were health care assistants (secondary nursing school). Registered nurses accounted for a slightly smaller proportion (42.9%), and the remaining respondents include occupational therapists (0.9%), physiotherapists (6.1%), radiological engineers (1.3%) and others (1.7%).

Furthermore, the surveyed staff members were asked how long they had been employed in the department and in the institution, and how long they had worked in their profession. Thus, just under a third (31.9%) of the respondents had worked in their profession for more than 20 years, and a slightly smaller proportion (30.2%) in this institution for more than 20 years. Furthermore, in the surveyed medical institution there were no significant fluctuations among employees at the departmental level. Only few of those who worked in the institution for five years or less had changed departments, while 12.3% of the respondents who had worked in the institution for 6–10 years had changed departments. Among those who had worked in the institution for more than ten years, the proportions of those who had worked in the same department for the same number of years ranged from two thirds to just

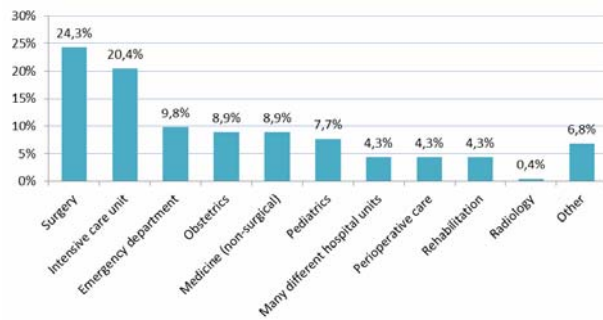


Fig. 1 – Work areas of the respondents in the hospital.

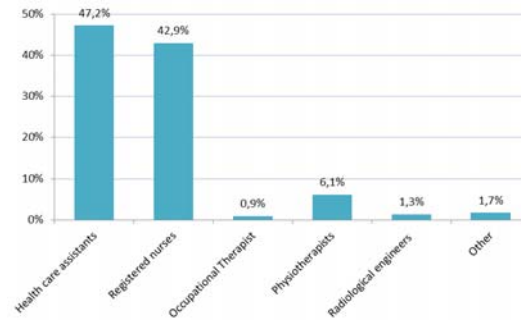


Fig. 2 – Staff position in the hospital.

over three quarters. If we generalize our findings from the sample of surveyed health professionals to the whole population, we can conclude that the studied population had significant experience in their work area, which was relevant in the context of the studied subject. It should also be noted that 96.1% of respondents had regular contact with patients.

In determining if and how the level of safety culture influenced the frequency of AE reporting we observed the following variables: independent variables as the dimensions of safety culture in a department (reciprocity and support, organization, systematic and efficient management of AE, and emphasizing personal responsibility). Table 1 shows that only 2.1% of variance in the frequency of AE reporting in the department could be explained by the influence of safety culture; this was a very small proportion, but this influence can nevertheless be confirmed statistically. If the degree of organization of a department is low, the frequency of AE reporting in the department is high and *vice versa* ($t = -2.784, p = 0.006$). Safety culture, especially regarding department organization, affects the frequency of AE reporting. Thus, the hypothesis was confirmed in this part. It should also be mentioned that VIF factors, which indicated the extent to which multicollinearity is present between independent variables, were close to 1, which means that there was no multicollinearity and thus the requirements for regression analysis were met. None of the dimensions of safety culture affected the frequency of AE reporting to the hospital management. The hypothesis was rejected in this part. Finally, we wanted to determine the influence of safety culture dimensions on the relationship between the frequency of AE reporting within the department and the frequency of AE reporting to the hospital management. None of the dimensions of safety culture affected the relationship between the frequency of AE reporting within the department and the frequency of AE reporting to the hospital management. The hypothesis was rejected in this part.

A total of 54% of the respondents felt they suffered from staff shortages; 77% of the staff reported working as a team in situations with increase in workload and limited time; and 53% of employees believed interpersonal relationships between staff respectful.

In our study 79% of respondents believed they actively carried out measures to improve safety. Fewer than half of the respondents believed that adverse events had led to positive changes.

This study found that 55% of respondents felt that they were lucky that no major AE occurred at their department;

40% agreed that there is a level of mutual assistance during work. A total of 29% of respondents felt that if an AE involving a patient was reported, the professional involved in the event, rather than the issue at hand, was singled out, while 50% disagreed with the statement and 21% had no opinion.

As a consequence, more than half of the staff members reviewed the efficiency of the improvement introduced after the AE had occurred. A total of 34% of the respondents felt that they sought to do too much over an insufficient period of time, while 57% claimed they never put a patient's safety at risk in order to be more efficient. Nearly 30% feared that their AE were being recorded in their personal files, while 31% had no opinion on the subject.

In determining if and how the attitude of supervisors influences the frequency of AE reporting we observed the following variables: the "supervisors' attitude towards employees" dimension is the independent variable (Table 2). It should be mentioned that VIF values was not taken into account in this analysis, because it was a simple regression analysis with a single independent variable. As it can be seen from Table 2, supervisors' attitude does not affect the frequency of AE reporting within a department. The hypothesis was rejected in this part ($p = 0.638$). Also, the analysis showed that supervisors' attitude did not affect the frequency of AE reporting to the hospital management ($p = 0.944$). The hypothesis was also rejected in this part. Also, the influence of supervisors' attitude towards employees on the relationship between the frequency of AE reporting within a department and the frequency of AE reporting to the hospital management could not be confirmed ($p = 0.88$). Therefore, the hypothesis was rejected.

In determining if and how the level of communication between co-workers influences the frequency of AE reporting we observed the following variables: the "level of communication at department" dimension as the independent variable. It should be mentioned that VIF values have not been taken into account in this analysis, because it is a simple regression analysis with a single independent variable. First, we want to determine the influence of communication on the number of AE reports in a department (Table 3). The results of this analysis presented in Table 3 show that the level of communication within a department does not affect the frequency of AE reporting to the head of a department ($p = 0.251$). We continued by determining if the level of communication in a department have influence on the number of AE reports submitted to the hospital management, and found no

Table 1

Influence of safety culture

Parameters	Dependent variable: frequency of AE reporting to the head of department (adjusted R square: 0.021)		Dependent variable: frequency of AE reporting to the hospital management (adjusted R square: 0.000)		Dependent variable: relationship between the frequency of AE reporting within a department and to the hospital management (adjusted R square: 0.000)	
	beta	p	beta	p	beta	p
Constant	5.431	0.053	2.564	0.051	0.098	0.835
Reciprocity, Support	0.491	0.297	0.129	0.547	-0.003	0.975
Organization	-1.625	0.006	-0.318	0.242	0.11	0.266
Systematic and efficient AE management	0.58	0.315	-0.015	0.954	0.072	0.506
Emphasizing personal responsibility	-0.399	0.472	-0.17	0.522	-0.058	0.532
			VIF	VIF	VIF	VIF
			1.291	1.257	1.200	1.272
			1.246	1.200	1.110	1.110
			1.448	1.397	0.72	1.372
			1.035	1.200	0.532	1.007

AE – adverse event; *p* – level of significance; beta coefficient – represents the difference in the predicted value of Y for each one-unit difference in X1; VIF – Variance Inflation Factor; R square: ratio of explained variance.

Table 2

Influence of supervisors' attitude

Parameters	Dependent variable: frequency of AE reporting in the department (R square: 0.00; F = 0.005; p: value of prob(F) = 0.944)		The frequency of AE reporting to the hospital management (R square: 0.000; F = 0.221; p: value of prob (F) = 0.638)		Relationship between the frequency of AE reporting within a department and to the hospital management (R square: 0.000; F=0.023; p: value of prob (F) = 0.880)	
	beta	p	beta	p	beta	p
Constant	3.954	0.003	1.515	0.014	0.453	0.061
Supervisors' attitude towards employees	-0.178	0.638	0.012	0.944	0.011	0.880

AE – adverse event; *p*: level of significance; beta coefficient – represents the difference in the predicted value of Y for each one-unit difference in X1; R Square – ratio of explained variance; F value – test of the overall significance of regression model, *p* = the value of prob(F) is the probability that all of the regression coefficients are zero.

Table 3

Influence of communication within a department

Parameters	Dependent variable: frequency of AE reporting in the department (R square:0.006; F = 1.326; p: value of prob(F) = 0.251)		Dependent variable: frequency of AE reporting to the hospital management (R square: 0.006; F = 1.393; p: value of prob(F) = 0.239)		Dependent variable: relationship between the frequency of AE reporting within a department and to the hospital management (R square: 0.008; F = 1.018; p: value of prob(F) = 0.315)	
	beta	p	beta	p	beta	p
Constant	1.687	0.254	0.766	0.263	0.209	0.459
Level of communication in a department	0.456	0.251	0.218	0.239	0.077	0.315

AE – adverse event; *p* – level of significance; beta coefficient – represents the difference in the predicted value of Y for each one-unit difference in X1; R square – ratio of explained variance; F value – test of the overall significance of regression model, *p* = the value of prob(F) is the probability that all of the regression coefficients are zero.

influence ($p = 0.239$). We also wanted to determine the influence of the level of communication on the relationship between the frequency of AE reporting within a department and the frequency of AE reporting to the hospital management and found the relationship could not be confirmed ($p = 0.315$).

Our study revealed that 11% of the department staff had never received feedback on changes and improvements made in the wake of an AE, while 27%, 34%, 19% and 9% received feedback rarely, occasionally, frequently or always, respectively.

We found that the staff members frequently speak out if they feel a patient might be at risk. In 66% of the time, the staff was notified of AE as they occurred at the clinical department. In 34% of AE, however, were unaccounted for and frequently remained unknown to the staff responsible for the safety of patients. This share was alarmingly high and those AE were at risk of being repeated. More than half (58%) of the staff always felt comfortable with inquiring as to the reasoning behind specific safety-related decisions and measures by senior staff. Those staff members feel accepted by their team, while this was not necessarily true for the significant portion of those not comfortable with such questions. A total of 67% of respondents reported having discussions within the department on AE prevention as a response to partial disregard of patient safety. A total of 65% of the respondents felt comfortable reporting irregularities, while this was occasionally true for 22% of the respondents and never true for 13% of the respondents, which indicated those irregularities repeated and may evolve into a major AE.

The statement that the “staff members feel comfortable speaking out about the safety of a patient at risk” had an above-average score ($AM = 4.0$). However, the staff tended to disagree rather than agree with the statement that they received feedback about improvements made in the wake of an adverse event ($AM = 2.9$).

Discussion

The phrase “adverse event” in itself implies it is an issue stemming from the environment (system) rather than an individual, while the word error has the connotation of an individual behind it. Therefore the Slovenian Ministry of Health recommends that the phrases professional and medical error no longer be used due to their frequent misuse and the implication that the incident is necessarily the fault of a professional²². However in using this definition a caution is needed, especially from the legal point of view, since error might not lead to AE²³. In 2014, Ristić Ignjatović et al.²⁴ focused on topic in proving medical errors and stresses out the importance in understanding the terminology and difficulties in proving errors. Furthermore, the authors reported a low rate of proven malpractice in Serbia. The authors pointed out several reasons for low rate; however, a possible under-reporting, false accusation of individual and system irregularities must also be taken into account. Clemmer²⁵ explains the rule 85/15, which states that 85% of unwanted events occur due to irregularities in the work system while only 15%

can be traced back to the individual. However, it must be stressed that an individual takes responsibilities for their acts but cannot take responsibility for the system at work.

All hypotheses postulate the effect of certain factors on the scope of AE reporting. Upon testing the Hypothesis 1, which postulates that the existence of a safety culture affects the number of AE reports, it could be confirmed that the degree of organisation at a hospital department has a negative effect on the scope of AE reporting to heads of department, but not to the hospital management. Operating under the presumption that the vast majority of AE is identified and reported within departments, it may be concluded that the degree of organisation decreases the scope of AE. The hypothesis could be confirmed.

The hypothesis 2 postulates, that the attitude of senior staff affects the scope of AE reporting. The hypothesis 3 postulates that the level of communication affects the scope of AE reporting. These two hypotheses could not be verified.

It has been noted that the fear of punishment and the lack of understanding that even the best make mistakes persists^{26, 27}. Half of the respondents in our study felt that they worked longer hours than what would be advisable to ensure the safety of patients. Kociper and Robida²⁸ believe that safety and quality in healthcare cannot be the sole responsibility of a single professional group, as safety and quality include both the professional liability of the staff on the team as well as the responsibility of the education and healthcare system. According to Golmajer¹⁰, workplace satisfaction of the staff affects the quality and efficiency of the work performed. A 2008 study on the situation in Slovenia by Andreja Strnad found that patients felt unprotected from medical errors. They saw the cause of this in the insufficient, inadequate communication, too limited medical staff and long wait times²⁹. When dealing with AE “secondary victims” of adverse events must not be forgotten³⁰. Studies find that those involved in an AE have to face it in silence, shame and frequently, isolation – despite an increased awareness of the stress they face among their colleagues^{30–32}. Also the fear of their chances of promotion being affected was one of the leading factors in concealing medical errors in China³³. The findings of our study show that the emphasis on personal responsibility in handling AE remains important. Numerous authors^{2, 25, 28, 34} believe that laying the blame for AE on individuals is counter-productive, since event analyses almost always reveal a weakness in the work or management system rather than one of the individual. Moutzoglou³⁵, in his study, which took place in 14 hospitals in Greece, finds that culture of reporting and personal discrediting are reasons which had negative impact on AE reporting by nurses. This again confirms that blame free reporting must be standard in safety culture.

Safety culture, in particular regarding the organisation of work at a clinical department, affects the frequency of AE reporting. In other words, the frequency of AE reporting rise as the degree of organisation at a department decreases. According to Crigger³⁶, such events are the result of deficiencies in the organisation of the work process and system as well as individuals. In order to establish patient safety business and or-

organisational system in a healthcare institution, the following factors must be controlled: strong leadership, practices based on scientific evidence, the maintenance of the just safety culture, staff training, patient cooperation, learning from errors, risk assessment and the evaluation of medical practice⁴.

Researchers Parker³¹, May and Plews-Ogan³² talk about a type of communication in healthcare in which senior staff is initially unresponsive to and dismissive of risks. Our study, however, shows that senior staff do pay attention to repeating AE and do implement suggestions for improving patient safety. The study also finds that the senior staff commends the staff members for their contributions to greater patient safety as well as that lower-ranking staff has corroborated the existence of such commendations and encouragement to act positively, which is highly promising since, according to Robida⁴, a healthcare professional who feels a sense of belonging to the team provides better care to patients and performs better. Employee satisfaction depends on whether employees have the chance of communicating orally and participating in decisions relating to their work³⁷.

Regarding the changes and improvements made in the field of an AE, our study reveals that more than half of respondents receive feedback never, rarely or occasionally despite the fact, that there is the existing evidence that shows learning from mistakes as the important and meaningful process for all included into event³². According to Seys et al.³⁰, it is of great importance that the professional involved in such an event, should be involved in studies, conferences and training in order to minimise the risk of repeating the event. Furthermore, recommendations have been made that the practice of reporting AE be bolstered by policy and support by healthcare professionals³⁸.

According to Weiss³⁹ the objective is to uncover, analyse and learn as much as possible from AE³⁹. AHRQ studies up to this point have revealed concerning results, which speaks to the urgency of establishing open communication at clinical departments. According to the American Association for Healthcare Research and Quality, an estimated 44,000 of 98,000 deaths in 1999 were the result of medical error⁴⁰. In 2000, every tenth patient in Europe suffered harm during treatment, according to The Hospitals for Europe's Working Party on Quality Care in Hospitals⁴¹.

It might also be concluded from the results of this study that not all AE are treated or analysed equally and differing levels of attention are paid to individual AE. Certain AE may be less important in a given moment in time. However, it should be kept in mind that major AE evolve from minor events, meaning that none should be disregarded. According to Sorra et al.¹⁹ previous recommendation was supported by the recommendation of the Institute for Health Care Improvement in 2006, which states that minor alterations with potential positive effects on the

safety culture should be prioritised over major changes with little to no potential to succeed.

Regular AE reporting would indicate that the staff is aware of the issue and wants to work towards eliminating any unnecessary consequences of treatment. Reporting an AE should be seen as a noble, mature act of a forward-thinking professional.

We aimed to compare findings from our study with other from neighbouring countries; however, there are no studies available on reporting on the prevalence of AE from southern European countries. More studies covering AE in south European countries and presenting the whole context of reporting are urgently needed.

Limitations of the study

There is limited literature available and very little literature focuses on Slovenia, where this area is still widely unexplored and has received more attention only in recent years. The most important limitation is the sensitive nature of this matter, which could discourage respondents from giving honest answers or even to give an answer at all. Main methodological limitations of this research is that the survey covered only one Slovenian medical institution and the sample was relatively small (n = 400). In sampling employees there was a risk of selection bias; the majority of various health professionals were included into the study, however physicians were not included. Moreover questionnaires were distributed by head nurses in clinical departments. Questionnaires were not administered to respondents personally by researchers, but by respondents' supervisors. Again, because of this reason it is possible that employees who feel distrust and fear sanctions did not give honest answers or answer at all.

Conclusion

Based on the survey results, we can conclude that neither supervisors, nor the level of communication between co-workers influence the frequency of adverse event reporting, while the safety culture does influence it from an organizational point of view.

The results of this survey, which is first of its kind carried out in Slovenia, have given us new insights into adverse event reporting, since the results are unexpected and show that further causes of under-reporting should be sought elsewhere.

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