

The Eurasia Proceedings of Health, Environment and Life Sciences (EPHELs), 2022

Volume 6, Pages 1-5

**ICGeHeS 2022: International Conference on General Health Sciences**

## **Patient Safety Culture in Bulgarian Hospitals – A Web-Based Survey**

**Rumyana STOYANOVA**

Medical University of Plovdiv

**Rositsa DIMOVA**

Medical University of Plovdiv

**Miglena TARNOVSKA**

Medical University of Plovdiv

**Abstract:** Establishing a high culture of patient safety in hospitals is one of the main ways to prevent or reduce errors and improve the overall quality of healthcare. The aim of the study is to assess the perceptions on patient safety culture among healthcare specialists in Bulgarian hospitals. A national cross-sectional survey was conducted among 620 healthcare specialists. The study was conducted using the web-based Bulgarian Version of the Hospital Survey on Patient Safety Culture Questionnaire (B-HSOPSC). The B-HSOPSC includes 42 questions, grouped in 12 different dimensions measuring patient safety culture. No personal identification was possible of the participations in the survey using the e-platform. The data was analyzed with descriptive statistics and non-parametric tests. The results of the study show in general that the respondents demonstrate a positive attitude regarding patient safety culture. The dimensions “Staffing” and “Non-punitive response to error” are most problematic, as their percentage of positive response rates (PRRs) are lowest - 35.16% and 39.62%, respectively. However, “Handoffs and transitions” and “Overall perceptions of safety“ show the highest PRRs – 66.65% and 65.48%, respectively. From all participants, 74.7% have never reported an adverse event or error. Non-parametric tests did not find significant statistical differences in “Patient safety grade” between physicians and other health care specialists. Based on the evidence, the hospital managements need to focus on improving problem areas.

**Keywords:** Patient safety culture, Web-based survey, Quality medical care, HSOPSC

### **Introduction**

Developing a high culture of hospital patient safety is one of the main ways to prevent or reduce errors and to improve the total quality of medical care. Therefore, recently a number of more organizations encourage a safety culture as an effective approach to sustainable safety improvement (World Health Organization, 2022; Agency for Healthcare Research and Quality, 2022; Joint Commission International, 2020).

The safety culture is defined as “the product of individual and group values, attitudes, perceptions competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization’s health and safety management” (World Health Organization, 2009). One of the well known and useful tools for assessing patient safety culture worldwide is the Hospital Survey of Patient Safety Culture (HSOPSC), developed by the Agency for Healthcare Research and Quality (Sorra et al., 2016). The aim of the study is to assess the perceptions on patient safety culture among healthcare specialists in Bulgarian hospitals using the Bulgarian version of HSOPSC (B-HSOPSC).

---

- This is an Open Access article distributed under the terms of the Creative Commons Attribution-Noncommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

- Selection and peer-review under responsibility of the Organizing Committee of the Conference

©2022 Published by ISRES Publishing: [www.isres.org](http://www.isres.org)

## Method

A national cross-sectional survey was conducted among 620 healthcare specialists for period of one year. The study was conducted using the web-based translated, linguistic and cultural adapted B-HSOPSC and was part of the №11-2017 Project of the Medical University of Plovdiv. Using the e-platform, no personal identification was possible of the participations in the survey, nevertheless the present research was approved by the Medical University's research ethics committee, № 05/19.10.2017. The B-HSOPSC includes 42 questions, grouped in 12 different dimensions measuring patient safety culture. For the purposes of the study, the percentage of positive responses for each item was calculated. Then a score per dimension of the safety culture was calculated which corresponded to the average of the proportions of positive responses per item using the formula of the Agency for Healthcare Research and Quality (AHRQ). This formula is defined as "the total number of positive responses to the items in the patient safety dimension divided by the total number of items in each dimension (Westat et al., 2018). If the score was >75%, the dimension was considered as developed; 50% to 75%, the dimension needs to be improved; and <50%, the dimension was considered as undeveloped (Muftawu & Aldogan, 2020). The data was analyzed with descriptive statistics (mean, number and percentage) and non-parametric tests using the SPSS 23.0, and presented in the form of tables and figures.

Table 1. Work related characteristics of the respondents

<b>Work related details</b>	<b>N</b>	<b>%</b>	
Profession	Non specified	16	2.6
	Physicians	210	33.9
	Other health professionals	394	63.5
	Total	620	100.0
Surgery/Non-surgery units	Non specified	27	4.4
	Surgery units	160	25.8
	Non-surgery units	433	69.8
	Total	620	100.0
Years in hospital	Non specified	12	1.9
	< 1	44	7.1
	1-5	194	31.3
	6-10	146	23.5
	11-15	89	14.4
	16-20	54	8.7
	≥ 21	81	13.1
Total	620	100.0	
Years in department	Non specified	14	2.3
	< 1	42	6.8
	1-5	189	30.5
	6-10	134	21.6
	11-15	77	12.4
	16-20	63	10.2
	≥ 21	101	16.3
Total	620	100.0	
Ownership of the hospital	Non specified	47	7.6
	Governmental/municipal	361	58.2
	Private	212	34.2
	Total	620	100.0
Teaching hospitals	Non specified	50	8.1
	Yes	435	70.2
	No	135	21.8
	Total	620	100.0
Contact with patient directly	Non specified	19	3.1
	Yes. often	545	87.9
	No	56	9.0
	Total	620	100.0

## Results and Discussion

A total of 620 valid questionnaires were collected. The percentage of other health professionals was the highest - 63.5% (394), physicians represented 33.9% (210). Respondents from non-surgery units prevailed (69.38%), as well as from governmental or municipal hospitals – (58.2%). About 60.5% of the study participants had a work experience in department longer than 5 years and 87.9 % had direct contact with patients at the workplace. Other work related characteristics of the respondents are shown in Table 1. In general, the results show that the respondents demonstrate a positive attitude regarding patient safety culture (see Fig.1).

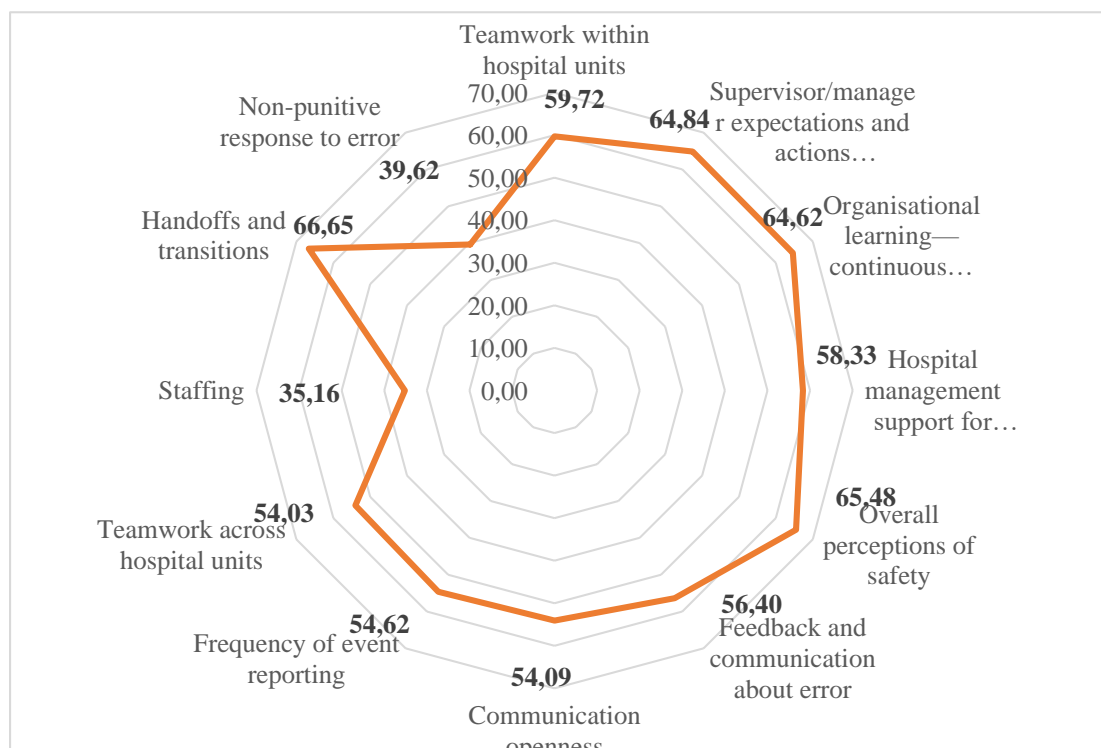


Figure 1. PRRs of the dimensions

The dimensions “Staffing” and “Non-punitive response to error” are most problematic, as their percentage of positive response rates (PRRs) are lowest - 35.16% and 39.62% (see Fig.1). Similar to our results was found in others studies. Aljaffary et al. reveal an even lower positive response score for the dimensions “Staffing” and Non-punitive response to error” respectively 20% and 21.4%, and explain these results with the lack of adequate number of staff and punitive attitudes towards error reports (Aljaffary et al., 2021).

Similar findings were also reported in a systematic review of 33 studies that assessed safety culture among healthcare professionals from 22 countries in different regions using HSOPSC (Reis et al., 2018). This proves that the punitive culture and staffing problems are common problems facing hospitals in different countries around the world. In nearly 70% of the studies included in the systematic review, the dimension "Non-punitive response to error" was scored as a weak (Reis et al., 2018).

The highest PRRs show the dimensions “Handoffs and transitions” and “Overall perceptions of safety” – 66.65% and 65.48%, respectively (see Fig.1). These results contradict the findings of the systematic review of 33 countries, where they are assessed as a problematic. The mean PRRs for the dimension “Handoffs and transitions” is 24.6–49.7% and for “Overall perceptions of safety”- 25–33.9% in the most of included studies there (Reis et al., 2018).

The high score of “Handoffs and transitions” in our study could be explained by the specifics of the post-communist countries: the persisting authoritarian and hierarchical management style, as well the presence of well-established co-ordination structures and mutual trust among healthcare specialists (Stoyanova et al., 2019).

Figures 2 and 3 show the overall assessment regarding “Patient safety grade” of the physicians and the other health professionals in their workplace.

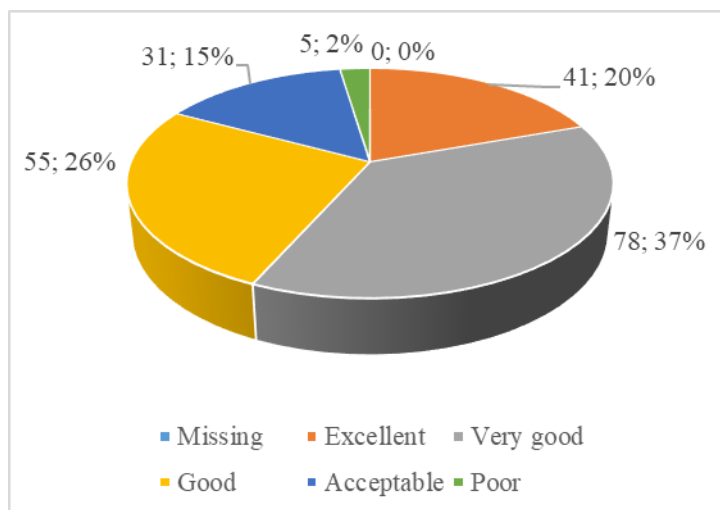


Figure 2. Patient safety grade according to Physicians

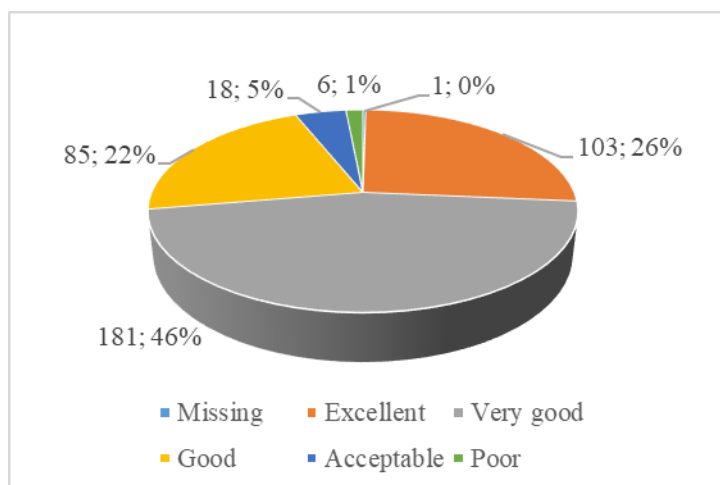


Figure 3. Patient safety grade according to other health professionals

Non-parametric tests did not find significant statistical differences in “Patient safety grade” between physicians and other health care specialists ( $P>0.05$ ). In this connection it was interesting to note that 74.7% of all participants have never reported an adverse event or error.

## Conclusion

The results of the survey revealed the most problematic areas related to the patient safety culture in Bulgarian hospitals. Based on these facts and evidence, the hospital managements need to focus on their improvement.

## Scientific Ethics Declaration

The authors declare that the scientific ethical and legal responsibility of this article published in EPHELS journal belongs to the authors.

## Acknowledgements or Notes

\* This article was presented as an oral presentation at the International Conference on General Health Sciences ( [www.icgehes.net](http://www.icgehes.net) ) conference held in Istanbul/Turkey on August 25-28, 2022

## References

- Agency for Healthcare Research and Quality. (2022, June). *About SOPS*. Rockville, MD. <https://www.ahrq.gov/sops/about/index.html>
- Aljaffary, A., Al Yaqoub, F., Al Madani, R., Aldossary, H., & Alumran, A. (2021). Patient safety culture in a teaching hospital in Eastern Province of Saudi Arabia: assessment and opportunities for improvement. *Risk Management and Healthcare Policy*, 14, 3783-3795.
- Joint Commission International, (2020). *Joint Commission International and National Association for Healthcare Quality collaborate to offer quality and patient safety training program for health care organizations*. <https://www.jointcommissioninternational.org/news-and-support/news/2020/01/joint-commission-international-and-national-association-for-health-quality-collaborate/>
- Muftawu, M., & Aldogan, E. (2020). Measuring patient safety culture: A study at a teaching hospital in Ghana. *Journal of Patient Safety and Risk Management*, 25(6), 250-258.
- Reis, C., Paiva, S. G., & Sousa, P. (2018). The patient safety culture: a systematic review by characteristics of hospital survey on patient safety culture dimensions. *International Journal for Quality in Health Care*, 30(9), 660-677.
- Sorra, J., Gray, L., Streagle, S., Famolaro, T., Yount, N., & Behm, J. (2016). *AHRQ Hospital survey on patient safety culture: User's guide*. Rockville, MD: Agency for Healthcare Research and Quality.
- Stoyanova, R., Dimova, R., Tarnovska, M., Boeva, T., Dimov, R., & Doykov, I. (2019). Comparing patient safety culture in Bulgarian, Croatian and American hospitals—preliminary results. *Medicine and Pharmacy Reports*, 92(3), 265-270.
- Westat, R., Sorra, J., Famolaro, T., Dyer, M., Khanna, K., & Nelson, D. (2018). *Hospital survey on patient safety culture: 2018 user database report*. Agency for Healthcare Research and Quality: Rockville, MD, USA.
- World Health Organization. (2009). *Conceptual framework for the international classification for patient safety*. [https://apps.who.int/iris/bitstream/handle/10665/70882/WHO\\_IER\\_PSP\\_2010.2\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/70882/WHO_IER_PSP_2010.2_eng.pdf?sequence=1&isAllowed=y)
- World Health Organization. (2022). *Consensus statement. Role of policy-makers and health care leaders in implementation of the Global Patient Safety Action Plan 2021–2030*. <file:///C:/Users/Admin/Downloads/WHO-UHL-IHS-PSF-2022.3-eng.pdf>

---

## Author Information

---

### Rumyana Stoyanova

Medical University of Plovdiv  
15A Vasil Aprilov blvd.  
4002 Plovdiv, Bulgaria  
Contact e-mail: [rumi\\_stoqnova@abv.bg](mailto:rumi_stoqnova@abv.bg)

### Rositsa Dimova

Medical University of Plovdiv  
15A Vasil Aprilov blvd.  
4002 Plovdiv, Bulgaria

### Miglena Tarnovska

Medical University of Plovdiv  
15A Vasil Aprilov blvd.  
4002 Plovdiv, Bulgaria

---

## To cite this article:

Stoyanova, R., Dimova, R. & Tarnovska, M. (2022). Patient safety culture in Bulgarian hospitals – a web-based survey. *The Eurasia Proceedings of Health, Environment and Life Sciences (EPHELS)*, 6, 1-5.