



Survey of the Opinions of the Graduated and Practicing Dentists in Bulgaria and Germany on the Topics of Patient Safety and Medical Error

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Abstract

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BACKGROUND: Patient safety and medical errors are issues that require research and strategies to deal with. The reasons for the occurrence of an adverse event should be sought among the quality of the received training, fatigue, ineffective communication, the culture of accusation, and the lack of an anonymous report register for training purposes.

AIM: The aim of the study is to survey and compare the opinion of the dentists in Bulgaria and Germany on topics related to patient safety and medical error.

MATERIALS AND METHODS: A survey with an anonymized questionnaire among dentists from randomly selected for the study purposes Regional Associations of settlements in the Republic of Bulgaria and Germany was used. Respondents answered 25 closed-ended questions divided into five panels: Demographic characteristics of the contingent, the role of study and postgraduate qualifications in acquiring knowledge of errors, willingness to share information about mistakes, factors of error, and culture of accusation. The obtained data were entered and processed with the statistical package IBM SPSS Statistics 20.0. The significance level of the null hypothesis is rejected at $p < 0.05$.

RESULTS: The largest relative share of respondents $-72.37\% \pm 2.64\%$, is women, in the age range 25–35 years $-48.60\% \pm 2.95\%$, and with work experience of 6–15 years $-34.27\% \pm 2.81\%$. Statistically significant differences between the contingents were observed in terms of knowledge acquired during the study of the issue of patient safety ($p = 0.005$), and whether the study provided sufficient preparation to avoid medical error ($p = 0.021$). Differences were also found in the data from the issues related to the communication with the patient and the recognition of one's own mistake ($p = 0.034$) or the mistake of their colleague ($p = 0.004$), as well as in terms of fatigue such as risk factor for an adverse event ($p = 0.000$). The exit data showed differences in the opinion of the two samples and on issues related to medical malpractice reporting and the role of professional organizations.

CONCLUSIONS: The majority of respondents believe that they were prepared during their training to identify the causes that could lead to medical errors and that the lack of regular breaks during work increases the risk of making a medical error. They would rather share with the patient an incident caused by themselves, but not one, caused by their colleagues. Respondents are of the opinion that the mistakes are not a sign of incompetence and the responsibility for the mistake lies with the dentist. Most respondents believe that an anonymous register of errors would be useful for their practice.

Introduction

The medical profession is not only humane but also high-risk, of great public importance. It is also legally regulated, subject to state control and the requirements for its practice are high, as even the slightest mistake can lead to adverse consequences and be fatal for the patient.

The problem of medical errors is not isolated for Bulgaria, but is observed worldwide. Therefore, it could be of great public interest to discuss and develop strategies to avoid medical errors, as well as to rely on the active participation of professional organizations in this process.

Examples of such strategies are creating a register accessible to all health professionals, where regular medical errors can be published and analyzed. This type of incident report could lead to the creation of a significant database of important educational nature and help identify and prevent medical errors [1].

Another strategy for improving the quality of medical and dental services could be postgraduate training to exchange knowledge and experience and upgrade professional experience and qualifications [2].

The improving of communication between the members of the medical team and the doctor-patient could also be considered as an important step for avoiding adverse events, as a large percentage of medical errors occur due to a communication problem [3], [4].

In-depth research and analysis of strategies for better and safer healthcare with minimization of medical errors and risks, the search for and implementation of effective and adequate measures to improve the safety of medical and dental care are key objectives that could prevent serious accidents during the treatment process.

Aim

The aim of the present study is to survey and compare the attitude of dentists who graduated and practice in Bulgaria and those who graduated and work in Germany in respect to topics related to patient safety and medical error.

Materials and Methods

The primary information needed for the purposes of the study was collected through a sociological method—a survey. An anonymized questionnaire in electronic version was used. The questionnaire was developed and translated by the surveyors. In January 2020, a pilot study was conducted involving 40 dentists from four regional cities—Sofia, Plovdiv, Varna, Burgas and 30 dentists from the states of Baden-Württemberg and Bavaria. It served to test and improve the methodology for gathering information, as well as to test the effectiveness of the chosen method of collecting information.

The main hypothesis is that the attitude of the dentists who studied and practice in Bulgaria and those who graduated and practice in Germany to topics related to patient safety and medical error is different.

Two identical questionnaires were used in Bulgarian and German, respectively. After giving preliminary instructions on the topic of the survey and how to fill in the questionnaire correctly, the respondents were asked to answer the 25 questions contained in it. The questions are divided into the following panels:

- Demographic data
- The role of study and postgraduate qualification in acquiring knowledge of mistakes
- Willingness to share information about mistakes
- Determining factors for making mistakes
- Culture of accusation
- Reporting medical errors.

All questions are of the closed answers type and the answers include

Likert's five-point scale

- No, I do not agree at all
- More likely Not
- I can't say
- More likely Yes

- Yes, I completely agree.
Alternative yes and no answers

The obtained data were entered and processed with the statistical package IBM SPSS Statistics 20.0. The significance level of the null hypothesis is rejected at $p < 0.05$. The following methods were applied:

1. Descriptive analysis - in tabular form, the frequency distribution of the considered signs, broken down by groups of research is presented.
2. Graphic analysis - to visualize the results.
3. Alternative analysis - to compare relative shares.
 - χ^2 test and Fisher's exact test - to test hypotheses about the existence of a relationship between the category variables.

The reliability of the questionnaire was established by assessing the internal consistency and by the test-retest method. In the correlation analysis, the Cronbach's coefficient α is 0.863, and the Spearman-Brown coefficient $r_{sb} = 0.732$ was calculated. Their high values confirm the reliability. The changing factors were studied using the Pearson (r) and Spearman-Brown (r_{sb}) coefficients. An item analysis was made, calculating the difficulty and discriminatory power of the questions.

Results

A total of 351 dentists took part in the study, all of whom answered the questions in the questionnaire. Out of the respondents, 137 (47.90% \pm 2.95%) completed their higher education in Bulgaria, and 149 (52.10% \pm 2.95%) completed and practice their profession in Germany. The data from these 286 participants served as grounds for the present study and were processed and analyzed. The remaining 65 questionnaires were excluded from the survey because they did not meet the basic criteria for respondents to have completed their studies in Bulgaria or Germany and to be working in the respective country.

Out of the respondents who participated in the online survey, 72.37% \pm 2.64% were women and 27.62% \pm 2.64% - men. The largest is the relative share of participants in the age range 25–35 years - 48.60% \pm 2.95%, and with work experience of 6–15 years - 34.27% \pm 2.81% (Table 1).

Out of the dentists participating in the survey, 31.11% \pm 2.74% have acquired a specialty, and 68.88% \pm 2.74% have none.

The second panel of the questionnaire surveys the opinions of already graduated dentists, whether the study prepared them to identify the causes of medical

error (Table 2).

Table 1: Demographic data

Age	Number (n)	Percentage	Sp
25-35	139	48.60	2.95
36-45	54	18.88	2.31
46-65	86	30.07	2.71
>65	7	2.45	0.91
Gender	Number (n)	Percentage	Sp
Female	207	72.37	2.64
Male	79	27.62	2.64
Work experience	Number (n)	Percentage	Sp
<5	71	24.83	2.55
6-15	98	34.27	2.81
16-30	43	15.03	2.11
>30	74	25.87	2.59
Total	286	100.0	-

The results of statistical tests of the first question showed that there is no statistically significant difference between the answers of the Bulgarian and the German contingent.

Asked whether they had acquired sufficient knowledge during their studies on patient safety topics, statistical analyses showed a statistically significant difference in the responses of the two samples. The medics from the Bulgarian sample expressed a more positive attitude with 21.89% ± 3.53% who had answered with Yes-3 times more than the German contingent with 6.71% ± 2.05%. The statistical analysis of the next statement from this part of the survey showed no statistically significant differences.

The third part of the questionnaire deals with the topic of communication between team members, as well as with doctor-patient communication (Table 3).

To the statement whether the attending physician is ready to share with the patient about the mistake made by themselves, the larger share of respondents from both the Bulgarian-42.34% ± 4.22% and the German contingent-46.30% ± 4.08% answered with "More likely Yes." The conducted statistical analysis proved statistically significant differences in the structure of the answers of the respondents from the two samples $\chi^2 = 10.44$; $p = 0.034$. When asked if they would admit a mistake made by their colleague, the majority in both samples gave a negative answer, in contrast to the statement that they would admit their own mistake. The result shows that the respondents from the German contingent for the most part maintain a neutral position with the answer "I can't say"-40.27% ± 4.02, while the same answer was given by almost half as much Bulgarians-21.17% ± 3.49.

From the analysis of the last question from this panel, whether the dentists can freely talk to their superiors about their medical errors, it is noticeable that in both samples the percentage of positive answers is extremely high.

The next panel of the questionnaire proves the opinion of dentists, whether fatigue and the lack of regular breaks during the shift affect the risk of medical error (Table 4).

Table 2: The role of study and postgraduate qualification in acquiring knowledge of medical errors and patient safety

Questions	Germany				Bulgaria				Total			
	1	2	3	4	1	2	3	4	1	2	3	4
No	3	5	1	124	6	4	4	110	9	9	5	234
%	2.01 ± 1.15	3.36 ± 1.48	0.67 ± 0.67	83.22 ± 3.06	4.38 ± 1.75	2.92 ± 1.44	2.92 ± 1.44	80.29 ± 3.40	3.15 ± 1.03	3.15 ± 1.03	1.75 ± 0.74	81.82 ± 2.28
More likely No	26	33	17	-	30	31	23	-	56	64	40	-
%	17.45 ± 3.11	22.15 ± 3.40	11.41 ± 2.60	-	21.92 ± 3.53	22.63 ± 3.58	16.79 ± 3.19	-	19.58 ± 2.35	22.38 ± 2.46	13.99 ± 2.05	-
I can't say	48	44	28	-	31	29	33	-	79	73	61	-
%	32.21 ± 3.83	29.53 ± 3.74	18.79 ± 3.20	-	22.63 ± 3.57	21.17% ± 3.49%	24.09% ± 3.65%	-	27.62% ± 2.64%	25.52% ± 2.58%	21.33% ± 2.42%	-
More likely Yes	56	57	87	-	51	43	54	-	107	100	141	-
%	37.58 ± 3.97	38.26 ± 3.98	58.39 ± 4.04	-	37.22 ± 4.13	31.39 ± 3.96	39.42 ± 4.17	-	37.41 ± 2.86	34.96 ± 2.82	49.30 ± 2.96	-
Yes	16	10	16	25	19	30	23	27	35	40	39	52
%	10.74 ± 2.54	6.71 ± 2.05	10.74 ± 2.54	19.71 ± 3.40	13.87 ± 2.95	21.89 ± 3.53	16.79 ± 3.19	19.71 ± 3.40	12.24 ± 1.94	13.99 ± 2.05	3.64 ± 2.03	18.18 ± 2.28
Total	149	149	149	149	137	137	137	137	286	286	286	286
%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Statistics:

1. $t(284) = -0.27, p = 0.788$ and $\chi^2 = 4.94; p = 0.294$
2. $t(284) = 1.89, p = 0.060; \chi^2 = 14.73; p = 0.005$
3. $\chi^2 = 11.61; p = 0.021$
4. $t(284) = 0.64, p = 0.523; \chi^2 = 0.42; p = 0.521$

The role of study and postgraduate qualification in acquiring knowledge of mistakes includes the following

1. My studies have prepared me to identify the causes of medical error
2. During my studies I managed to gain good enough knowledge about patient safety and medical error
3. My studies have prepared me to avoid medical errors
4. I have attended postgraduate qualifications on "Patient Safety" and "Medical Error"

Table 3: Communication between team members and doctor-patient communication

The communication between team members and doctor-patient communication includes the following questions:							Statistics:		
1. I am ready to share with the patient every mistake I made during their treatment							1. $\chi^2 = 10.44$; $p = 0.034$;		
2. I am ready to share with the patient every mistake made by my colleague during their treatment							2. $\chi^2 = 15.39$; $p = 0.004$;		
3. I am convinced that I can speak openly about my mistake with my superior							3. $\chi^2 = 4.62$; $p = 0.328$		
Answers	Germany			Bulgaria			Total		
Questions	1	2	3	1	2	3	1	2	3
No									
Count	0	8	2	6	14	1	6	22	3
%	0.0	5.37 ± 1.85	1.34 ± 0.94	4.38 ± 1.75	10.22 ± 2.59	0.72 ± 0.73	2.1 ± 0.85	7.69 ± 1.58	1.05 ± 0.60
More likely No									
Count	20	49	3	12	48	6	32	97	9
%	13.42 ± 2.79	32.89 ± 3.85	2.01 ± 1.15	8.76 ± 2.42	35.03 ± 4.08	4.38 ± 1.75	11.19 ± 1.86	33.92 ± 2.80	3.15 ± 1.03
I can't say									
Count	21	60	9	29	29	16	50	89	25
%	14.09 ± 2.85	40.27 ± 4.02	6.04 ± 1.95	21.17 ± 3.49	21.17 ± 3.49	11.68 ± 2.74	17.49 ± 2.25	31.12 ± 2.74	8.74 ± 1.67
More likely Yes									
Count	69	30	66	58	40	54	127	70	120
%	46.30 ± 4.08	20.13 ± 3.29	44.30 ± 4.07	42.34 ± 4.22	29.20 ± 3.88	39.42 ± 4.17	44.41 ± 2.94	24.48 ± 2.54	41.96 ± 2.92
Yes									
Count	39	2	69	32	6	60	71	8	129
%	26.17 ± 3.60	1.34 ± 0.94	46.31 ± 4.08	23.36 ± 3.61	4.38 ± 1.75	43.80 ± 4.24	24.83 ± 2.55	2.80 ± 0.98	45.10 ± 2.94
Total									
Count	149	149	149	137	137	137	286	286	286
%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The answers of the first question show that in both countries the prevailing attitude - (88.32% ± 2.74) positive answers for Bulgaria and (78.52% ± 3.36) for Germany - points out that the lack of regular breaks increases the risk of medical error. Statistically significant differences were found in the data of the two contingents to the second question - $\chi^2 = 20.09$; $p = 0.000$ and $t(284) = 4.39$, $p = 0.000$. Although in total the majority of both contingents gave a positive answer, the analysis shows that Bulgarian respondents are more emphatic in their opinion that fatigue increases the risk of medical errors.

As the low level of accusation culture is important part of patient safety strategies, those topic was addressed in the present study in the fifth panel (Table 5).

As to the statement that even the most experienced and competent specialists can make a mistake, there is no statistically significant difference in the structure of the answers between the two samples - $\chi^2 = 4.58$; $p = 0.205$ and $t(284) = 1.37$, $p = 0.173$. The respondents in both samples gave extremely high level of positive answers. The next two

statements from the panel are intended to examine the extent to which dentists see their responsibility in making a possible medical error and whether it is due to negligence on the part of the support staff or is solely the responsibility of the medical professional.

Statistical analysis of the question of whether most medical errors are due to negligence on the part of support staff showed a significant difference in the answers given $t(284) = -2.13$, $p = 0.034$ and $\chi^2 = 12.03$; $p = 0.017$. After extensive statistical tests of the claim whether an adverse event occurs due to negligence of the doctor, no statistically significant differences were found in the structure of the responses of the two contingents. The last question of the panel probes the respondents' opinion on whether making a medical error is a sign of incompetence. There were no statistically significant differences between the answers of the two contingents, and the processed data show that the majority of respondents preferred the answer "More likely No."

The last panel of the questionnaire shows the attitude of the respondents to their readiness to report the mistake (Table 6).

Table 4: Determining factors for making mistakes

Questions:					Statistics:	
1. Lack of regular breaks during the shift may increase the risk of medical error					1. $\chi^2 = 9.78$; $p = 0.04$; $t(280) = 2.01$, $p = 0.045$;	
2. Excessive fatigue can increase the risk of medical error					2. $\chi^2 = 20.09$; $p = 0.000$; $t(273) = 4.39$, $p = 0.000$	
Answers	Germany		Bulgaria		Total	
Questions	1	2	1	2	1	2
No						
Count	1	1	2	0	3	1
%	0.67 ± 0.67	0.67 ± 0.67	1.46 ± 1.02	0.0	1.05 ± 0.60	0.35 ± 0.35
More likely No						
Count	14	7	2	3	16	10
%	9.40 ± 2.39	4.70 ± 1.73	1.46 ± 1.02	2.19 ± 1.25	5.59 ± 1.36	3.50 ± 1.09
I can't say						
Count	17	19	12	5	29	24
%	11.41 ± 2.60	12.75 ± 2.73	8.76 ± 2.42	3.65 ± 1.60	10.14 ± 1.78	8.35 ± 1.64
More likely Yes						
Count	47	55	49	34	96	89
%	31.54 ± 3.81	36.91 ± 3.95	35.77 ± 4.10	24.82 ± 3.69	33.57 ± 2.79	31.12 ± 2.74
Yes						
Count	70	67	72	95	142	162
%	46.98 ± 4.09	44.97 ± 4.08	52.55 ± 4.27	69.34 ± 3.94	49.65 ± 2.96	56.64 ± 2.93
Total						
Count	149	149	137	137	286	286
%	100.0	100.0	100.0	100.0	100.0	100.0

Table 5: Culture of accusation

Culture of accusation and medical errors questions:					Statistics:							
1. Even the most experienced and competent professionals can make a mistake					1. $\chi^2 = 4.58$; $p = 0.205$; $t(284) = 1.37$, $p = 0.173$							
2. Most medical errors are due to negligence on the part of supporting staff					2. $\chi^2 = 12.03$; $df = 4$; $p = 0.017$; $t(284) = -2.13$, $p = 0.034$							
3. Most medical errors are due to negligence on the part of the doctor					3. $\chi^2 = 4.99$; $df = 4$; $p = 0.287$; $t(284) = -0.557$, $p = 0.578$							
4. Medical error is a sign of incompetence					4. $\chi^2 = 6.50$; $p = 0.165$; $t(284) = 1.31$, $p = 0.191$							
Answers	Germany				Bulgaria				Total			
Questions	1	2	3	4	1	2	3	4	1	2	3	4
No												
Count	0	22	6	21	0	34	10	21	0	56	16	42
%	0.0	14.77 ± 2.91	4.03 ± 1.61	14.09 ± 2.85	0.0	24.82 ± 3.69	7.30 ± 2.22	15.33 ± 3.08	0.0	19.58 ± 2.35	5.59 ± 1.36	14.69 ± 2.09
More likely												
No												
Count	1	61	36	89	2	61	38	67	3	122	74	156
%	0.67 ± 0.67	40.94 ± 4.03	24.16 ± 3.51	59.73 ± 4.02	1.46 ± 1.02	44.53 ± 4.25	27.74 ± 3.83	48.91 ± 4.27	1.05 ± 0.60	42.66 ± 2.92	25.87 ± 2.59	54.55 ± 2.94
I can't say												
Count	4	51	54	24	3	30	41	31	7	81	95	55
%	2.68 ± 1.32	34.23 ± 3.89	36.24 ± 3.94	16.11 ± 3.01	2.19 ± 1.25	21.90 ± 3.53	29.93 ± 3.91	22.63 ± 3.57	2.45 ± 0.91	28.32 ± 2.66	33.22 ± 2.79	19.23 ± 2.33
More likely												
Yes												
Count	51	15	47	15	32	9	37	15	83	24	84	30
%	34.23 ± 3.89	10.07 ± 2.47	31.54 ± 3.81	10.07 ± 2.47	23.36 ± 3.61	6.57 ± 2.12	27.01 ± 3.79	10.95 ± 2.67	29.02 ± 2.69	8.39 ± 1.64	29.37 ± 2.69	10.49 ± 1.81
Yes												
Count	93	0	6	0	100	3	11	3	193	3	17	3
%	62.42 ± 3.97	0.0	4.03 ± 1.61	0.0	73.00 ± 3.49	2.19 ± 1.25	8.02 ± 2.32	2.19 ± 1.25	67.48 ± 2.77	1.05 ± 0.60	5.94 ± 1.40	1.05 ± 0.60
Total												
Count	149	149	149	149	137	137	137	137	286	286	286	286
%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The purpose of the first question was to examine the extent to which respondents would report an error that did not lead to negative consequences for the patient. After the analysis of the received answers, a statistically significant difference in their structure was found ($\chi^2 = 13.72$; $p = 0.008$), as the dentists from Germany gave higher number of negative answers - 46.98% ± 4.09 compared to those from Bulgaria - 34.30% ± 4.06.

The next statement examined the respondents' opinion on whether the reporting of a medical error could be used for training purposes. The conducted statistical tests proved a significant difference in the structure of the answers - $\chi^2 = 14.41$; $p = 0.006$.

The next question is related to the need for an anonymous register in which already made mistakes can be published and which register should be accessible to all dentists. The statistical analysis of the data did not reveal a significant difference in the structure of the answers ($\chi^2 = 9.03$; $p = 0.060$). The last statement in the questionnaire examines whether the role of professional organizations is vital in respect to organizing and promoting trainings, courses, seminars, lectures, etc. on the topic of "Patient Safety" and "Medical Error."

The obtained results showed statistically significant differences in the structure of responses $\chi^2 = 21.97$; $p = 0.000$, $t(284) = 3.58$, $p = 0.000$. Despite the statistical differences, the majority of the specialists from both countries have given a positive answer - 75.18% ± 3.69 of the surveyed Bulgarians and 67.79% ± 3.83 of the surveyed Germans.

Discussion

The exit data from the performed analyses can be summarized by the fact that, in general, the majority

of respondents believe that they have received good training to recognize and avoid the causes of medical error. This conclusion corresponds to the results of similar international studies, also showing a positive self-assessment of the knowledge of patient safety and a good understanding of the problems associated with medical error, which is commendable for the quality of education [5], [6], [7], [8], [9], [10]. Despite the opinion of the respondents, that they had acquired sufficient knowledge during their studies on patient safety and medical errors topics, the necessity of curricular developments regarding these problems should be considered as a key strategy to improve patient safety. This statement is supported by the results of a survey conducted among medical students in Germany in 2014 [11].

Adverse events and medical errors are topics that have been widely discussed and studied in recent decades. Public attention on this issue is growing with each passing year, as it endangers patient safety and can lead to serious health and financial damage, both to the victim and to the entire health system [12], [13].

Many studies have shown that one of the leading reasons for medical errors is ineffective communication between members of the medical team [14], [15], [16]. This problem is also addressed in a study among specialists working in intensive care units, and the results show that the poor collaboration and communication between doctors and nurses often leads to physical suffering for the patient, prolonged hospital stays and increased usage of resources [17], [18], [19]. Another study shows that during the performance of 421 surgical operations, in 30% of cases there have been communication errors, and one-third of them have endangered patient safety by increasing stress among nurses or disrupting work routines [15]. Other studies have shown a link between good collaboration and communication in the doctor-nurse team and the positive outcome of the

Table 6: Reporting medical errors and the role of professional organizations

Questions	Germany				Bulgaria				Total			
	1	2	3	4	1	2	3	4	1	2	3	4
No	21	0	3	4	12	3	7	0	33	3	10	4
Count	14.09 ± 2.85	0.0	2.01 ± 1.15	2.68 ± 1.32	8.76 ± 2.42	2.19 ± 1.25	5.11 ± 1.88	0.0	11.54 ± 1.89	1.05 ± 0.60	3.50 ± 1.09	1.40 ± 0.69
%												
More likely No	49	2	11	14	35	0	12	3	84	2	23	17
Count	32.89 ± 3.85	1.34 ± 0.94	7.38 ± 2.14	9.40 ± 2.39	25.55 ± 3.73	0.0	8.76 ± 2.42	2.19 ± 1.25	29.37 ± 2.69	0.70 ± 0.49	8.04 ± 1.61	5.94 ± 1.40
%												
I can't say	42	10	23	30	47	20	33	31	89	30	56	61
Count	28.19 ± 3.69	6.71 ± 2.05	15.44 ± 2.96	20.13 ± 3.29	34.31 ± 4.06	14.60 ± 3.02	24.09 ± 3.65	22.63 ± 3.57	31.12 ± 2.74	10.49% ± 1.81%	19.58% ± 2.35%	21.33% ± 2.42%
%												
More likely Yes	37	89	60	59	34	59	36	36	71	148	96	95
Count	24.83 ± 3.54	59.73 ± 4.02	40.27 ± 4.02	39.60 ± 4.01	24.82% ± 3.69	43.07 ± 4.23	26.28 ± 3.76	26.28 ± 3.76	24.83 ± 2.55	51.75 ± 2.95	33.57 ± 2.79	33.22 ± 2.79
%												
Yes	0	48	52	42	9	55	49	67	9	103	101	109
Count	0.0	32.21 ± 3.83	34.90 ± 3.90	28.19 ± 3.69	6.57 ± 2.12	40.15 ± 4.19	35.77 ± 4.10	48.91 ± 4.27	3.15 ± 1.03	36.01 ± 2.84	35.31 ± 2.83	38.11 ± 2.87
%												
Total	149	149	149	149	137	137	137	137	286	286	286	286
Count	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
%												

Statistics:

- 1. t (284) = 2.55, p = 0.011; $\chi^2 = 13.72$; p = 0.008
- 2. t (284) = -0.44, p = 0.661; $\chi^2 = 14.41$; p = 0.006
- 3. t (284) = -1.55, p = 0.123; $\chi^2 = 9.03$; p = 0.060
- 4. t (284) = 3.58, p = 0.000; $\chi^2 = 21.97$; df = 4; p = 0.000

- Questions:
- 1. I do not need to report a mistake that did not lead to negative consequences
 - 2. Medical error reporting can be used for training purposes
 - 3. It is necessary to create an anonymous register for reporting medical errors
 - 4. Professional organizations play a key role in organizing and promoting courses, seminars, lectures, etc., on the topic of "Patient Safety" and "Medical Error"

treatment, that is, significantly lower mortality rates, higher patient satisfaction, and lower re-admission rates [20], [21], [22].

In the present study, the problem of communication between team members as well as doctor-patient communication has also been addressed. The analyzed data show that the interviewed dentists would rather share with the patient about an incident caused by themselves, but would not comment on one through the fault of their colleague. Another conclusion that can be drawn is that the respondents from the German contingent for the most part maintain a neutral position with the answer "I can't say." - 40.27% ± 4.02, while the same answer was given by almost 2 times fewer Bulgarians - 21.17% ± 3.49. 33.58% ± 4.03 of the respondents in Bulgaria gave a positive answer, with 12.10% ± 1.28 more than those from Germany. This shows that dentists who graduated and work in Bulgaria are more likely to admit to the patient a mistake made by their colleague, and this can be interpreted as having a higher culture of trust and openness.

The question related to the communication with superiors is characterized by an extremely high percentage of positive answers - a total of 83.21% ± 3.19 for Bulgaria and 90.60% ± 2.39 for Germany. This shows a very good level of communication between the members of the medical team for both countries, as well as presence of trust in respect to superiors.

A survey conducted among dentists, dental students and patients at the University of Freiburg shows that according to all groups of respondents, communication is a very important aspect of the work of any dentist, and most respondents do not even think that this topic should also be studied in the curriculum [23]. This could be achieved through lectures with practical exercises, such as role-playing games with standardized patients [24], [25].

The current study addresses the issue of lack of regular breaks and fatigue as a risk factor for adverse events. From the analysis it can be concluded that the relative share of dentists-who believe that the lack of regular breaks during work, as well as fatigue due to emergency labor, increase the risk of medical error - is higher both in Bulgaria and in Germany. A similar conclusion can be reached in other studies, too. A meta-analysis on "The impact of the burnout syndrome on patient safety" [26] compares data from studies to data on whether fatigue and psycho-emotional exhaustion of medical staff threatens patient safety. The results reveal that fatigue has a negative impact on the work process and teamwork, and this affects patient safety. This relationship has been observed in 60% of cases and is associated with unfavorable treatment outcomes as well as dissatisfaction among patients and their families [27]. Other studies point out that the work environment as a source of stress and extra pressure and the lack of organization contribute most to increased levels of fatigue, and hence the risk of medical error [28].

The topic of reporting medical errors and the resulting negatives and positives is often discussed in the world literature. Most studies have argued that implementing reporting systems in health facilities is one of the most successful teaching methods [29], [30]. On the other hand, fear of prosecution stops many people from deciding to share their mistakes. It is difficult to analyze the incidents that have occurred and to improve safety [31], [32], [33]. It is unknown to what extent the "culture of accusation" is present in the daily lives of health professionals and how this affects the reporting of medical errors. In any case, research shows that reporting systems detect only 10% of all adverse events in hospitals, with non-reporting of incidents being the norm rather than exception [34]. According to many authors, when individual "culprits" are identified, the ability to identify the real causes of serious incidents is lost [35] and this creates a fear and culture of accusation, which situation, in turn, acts as a barrier for anyone wishing to report a mistake.

From the exit data of the present study it can be concluded that the dentists from Bulgaria and Germany have expressed quite similar views on the topic of "culture of prosecution," and most of them believe that even the best specialists can be wrong and that this is not a sign of incompetence. Slight discrepancies are observed in the answers regarding the faults of the supporting staff, as the German dentists have expressed a more neutral position compared to the Bulgarian contingent, but with both groups, the negative answers take the highest share, 62.24% \pm 2.87, with only 9.44% \pm 1.73 positive responses. Contrary to this conclusion, to the statement whether a medical error is the result of negligence on the part of a doctor, both, Bulgarian and German respondents gave significantly more positive answers, a total of 35.31% \pm 2.83 of all respondents.

The next group of questions from the questionnaire shows the attitude of the respondents in respect to their readiness to report mistakes. The basis of the statistical analysis is the conclusion that respondents in Germany would rather report a medical error, even when it did not cause harm to the patient, and that according to respondents from both samples reporting medical errors can serve for training purposes. The need to create a register for reporting medical errors was supported by 75.17% \pm 3.54 of the respondents from the German sample and 62.04% \pm 4.15 from the Bulgarian sample. These results are supported by other studies proving that the reporting of medical errors and adverse events is considered one of the leading initiatives to improve patient safety and the cause is supported by many American, European and global organizations [36], [37], [38]. The implementation of such systems would improve patient safety through better understanding by medical staff of the nature and occurrence of medical error [39], monitoring, and evaluating the functioning of the system and its changes, promoting a safety culture.

Conclusions

On the grounds on the obtained data, it can be concluded that the respondents from the Bulgarian sample expressed a more positive attitude toward the acquired knowledge on the topics of "Patient Safety" and "Medical Error" during the study as compared to their German counterparts.

The surveyed medical specialists would rather share with the patient about an incident caused by themselves, but would not comment on one through the fault of their colleague.

The lack of regular breaks during work, as well as fatigue due to overtime work increases the risk of medical errors.

Respondents are of the opinion that even the best specialists can make mistakes and that this is not a sign of incompetence. The responsibility for the mistake lies with the dentist, not the supporting staff.

There is a large relative share of respondents who believe that an anonymous register of errors would be useful for their practice.

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