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The attitude and experience of the Serbian Medical Society members about the clinical practice guidelines

Искуство и став чланова Српског лекарског друштва о водичима добре клиничке праксе

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SUMMARY

Introduction/Objective The Academy of Medical Sciences of Serbian Medical Society carried a survey on clinical practice guidelines (CPGs) among doctors, members of the Serbian Medical Society (SMS) with the aim of examining use and attitude of doctors on CPGs.

Methods We obtained the addresses of 2876 members of 20 SMS sections randomly-selected from a total of 62 SMS sections. Out of all invited members 482 (16.8%) responeded. Self-administered questionnaire survey consisted of 21 questions that included demographic information, sources of informing and doctors' experience with CPGs, their use and barriers to CPGs use.

Results Among the 482 responedents there were significantly more women (64.1%) than men, majority were aged 45–60, 411 (85.3%) of them were employed in public health institutions and most were specialists. Respondents were informed about CPGs at meetings (30.9%), from the literature (16.3%), from both sources (17.5%), during studies (20%), but 7% of them were not informed so far. Almost all (452) respondents agree that CPGs are useful, 150 use national, 76 international and 213 both. During the last year, 101 (21%) of respondents did not use any CPGs. The main reasons for not using the CPGs are lack of information and difficult access to CPGs.

Conclusions The respondents consider CPGs useful for practice. Lack of information about CPGs and access to them was found as the main barrier for their use. It obligates the continuous preparation of CPGs and regular and efficient notification of doctors about them.

Keywords: clinical practice guidelines; survey; attitude; barriers

САЖЕТАК

Увод/Циљ Академија медицинских наука Српског лекарског друштва спровела је анкету о водичима добре клиничке праксе (водичи) међу члановима Српског лекарског друштва (СЛД) са циљем да се испита употреба и став лекара о водичима.

Методе У секретаријату СЛД добили смо адресе 2876 чланова 20 секција СЛД које су случајно одабране од укупно 62 секције. Од позваних лекара одговорила су 482 (16,8%). Упитник, који су самостално попуњавали учесници, се састојао од 21 питања о демографским карактерстикама учесника, изворима информације о водичима, употреби и препрекама за примену водича.

Резултати Међу 482 лекара, учесника у анкети било је више жена (64,1%) него мушкараца, већина је била узраста од 45–60 година, 411 (85,3%) је било запослену у установама у јавној својини, већина су били специјалисти. Учесници су информисани о водичима на састанцима (30,9%), из литературе (16,3%), из оба ова извора (17,5%), током студија (20%), а 7% није до тада информисано о водичима. Готово сви (452) учесници су сагласни да су водичи корисни, 150 користи националне, 76 интернационалне, а 213 и једне и друге водиче. Током претходне године 101 (21%) учесник није користио ниједан водич. Као главни разлог некоришћења навели су необавештеност и неприступачност водича.

Закључак Лекари, учесници анкете сматрају да су водичи корисни у пракси. Као главне узрок некоришћења водича навели су недовољно обавештавање о новим водичима и неприступачност водича. То обавезује на континуирану израду водича и редовно обавештавање лекара о њима.

Кључне речи: водичи добре клиничке праксе; анкета; став лекара; препреке

INTRODUCTION

The rapid development of medical science in recent decades is accompanied by an extremely large number of published papers from various fields of medicine. Hence, one of the biggest challenges is the transfer of scientific results into practice. Clinical practice guidelines (CPGs)

are one of the tools that help to respond to that challenge. As CPGs are required to be consistent with evidence-based medicine, all guideline recommendations should be evidence-based. The authors of the CPGs find this evidence in the results of large multicenter studies, meta-analyses, and other studies that have determined that a particular diagnostic method is reliable or a particular therapeutic method is effective. In the CPGs, evidence from the literature is summarized into recommendations that enable safe, effective, ethical, and standardized health care. The World Health Organization defines evidence-based CPGs as "a set of recommendations to support informed decision-making on the desirability of carrying out specific interventions at clinical or public health level, since these guidelines provide a basis for selecting and prioritizing, among a set of possible interventions, the most appropriate" [1].

In 1990, the Institute of Medicine (US) defined in the instruction for the preparation of the CPGs that "practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances" [2]. Since then, numerous CPGs have been published worldwide by national and international association of health care professionals, reference health care institutions and policy makers. In Serbia, national CPGs has been issued by the Ministry of Health since 2001, and more than 50 CPGs have been published so far. In recent years, and especially during the COVID-19 epidemic, the creation of the CPGs has stalled. With the aim of ensuring continuous development of the CPGs, the Ministry of Health entrusted the Academy of Medical Sciences of the Serbian Medical Society (Academy) to organize and manage the development of the CPGs.

Our national CPGs are developed in accordance with the principles stated in the aforementioned document of the Institute of Medicine (US) [2], as well as in the Appraisal of Guidelines for Research and Evaluation II (AGREE II) [3]. However, the development and

publication of quality CPGs do not imply that they will be applied in clinical practice. Numerous papers have been published since the 1990s on the experience, interest, attitudes of doctors of various specialties on CPGs, as well as on the strategies of CPGs implementation and factors influencing the use of CPGs [4-8]. Although CPGs have been issued in Serbia for over 20 years, there have been no examinations of doctors' use and opinions about the CPGs. Therefore, the Academy carried out a survey on CPGs among doctors, members of the Serbian Medical Society (SMS) with the aim of examining how many doctors used CPGs and what was their attitude and experience about CPGs.

METHODS

From the SMS secretariat, we obtained the addresses of 2876 members of 20 SMS sections randomly-selected from a total of 62 SMS sections. A self-reported cross-sectional survey among these doctors from different branches of medicine was carried out. The invitation to participate in the survey was sent via email with a link to the survey developed using Jotform platform. The email stated the purpose of the survey and pointed out that it was anonymous and voluntary. The invitation was sent on December 19, 2023 and repeated on January 15 and 26, 2024. Pre-testing of the questionnaire was carried out to check whether the questions were understandable and acceptable and whether any question was missing. Twenty doctors of different specialties were included in the pretest, thereafter several questions were corrected.

The survey tool was developed by authors who have experience in developing guidelines and survey methodology, while researching the literature and incorporating experience from previous studies into the survey development process. [5, 7, 8]. The questionnaire consisted of 21 questions. The first ones were related to the demographic characteristics of the participants and their institutions, followed by questions about the use of the CPGs, their characteristics, as

well as sources of informing doctors about CPGs. The answers to the questions could be: 1) yes or no, 2) choice of one of the five-point Likert scale statements (1 = strongly agree; 5 = strongly disagree), 3) choice of several offered options. Textual answers could be given to two questions.

Statistical analysis was performed in SPSS software version 17.0 (SPSS Inc., Chicago, IL, USA). Data were presented as numbers and percentages. The chi-square or Fisher's exact test was used to evaluate differences between groups with a p value for significance of 0.05.

Ethics: The study was approved by Ethical Board of Serbian Medical Society (No 01/2290; Nov. 24, 2025).

RESULTS

Out of 2876 SMS members invited to participate in the survey, 482 (16.8%) responded and most of respondents were specialists in various fields of medicine (Table 1). There were significantly more women than men both among non-specialists and among specialists. The biggest difference in the proportion of women and men was found among participants from health centers (82.3% vs. 17.7%). Almost five times more female than male doctors work in health centers, while the majority of male doctors were employed in university clinics and general hospitals. About half of all participants were aged 45-60 and only in the subgroup of residents the majority were aged between 31 and 45. Most of the participants (411-85%) were employed in public health institutions (Table 1).

When asked how they got information about the CPGs, one third of respondents answered that they got it at meetings. It was significantly the most common type of information compared to the others mentioned, which were almost equally distributed (Table 2). Thirty-three (7%) of

respondents were not informed about CPGs so far. Such a distribution can also be seen in subgroups formed according to gender and age. Nevertheless, in the small subgroup of participants under the age of 30 an equal number of respondents received information about CPGs during undergraduate studies as well as in other possible ways. It can also be noted that a higher percentage of participants younger than 45 were uninformed about CPGs compared to older ones but the difference was not significant ($p=0.07$). Those employed at university institutions differ from others, because the number of those informed at meetings and from the literature differs insignifactly, but a significantly smaller number was informed during the studies ($p < 0.03$)

The 452 (93.6%) of respondents agreed that CPGs enable doctors to make appropriate decisions in the prevention, diagnosis, and treatment of diseases. The following responses were received to questions about the characteristics of the CPGs: 438 (90.9%) agree that each recommendation in the CPGs should be clearly highlighted and accompanied by concise explanations; 288 (59.8%) answered that online CPGs are more acceptable than printed ones (Table 3).

When asked which CPGs the participants use, 150 (31.1%) of them answered that they use national CPGs, 76 (15.8%) international, 213 (44.2%) both national and international. While the largest percentage of doctors of medicine and residents use national CPGs (52.3% and 40%), doctors of science and professors use more international ones (30.4% and 27.8%, data not presented). When asked about the CPGs use by the participants, 43 (8.9%) answered that they do not use CPGs. However, during the last year, 101 (21%) of respondents did not use any CPGs. The largest percentage of them answered that the reason was that they were not informed about the CPGs from their profession (48.5%) or that they could not easily access CPGs (25.7%). Even 385 (79.9%) of respondents did not know that the national CPGs are

available on the website of the Ministry of Health and Academy (Table 4). A similar percentage of respondents agreed that regular presentation of the new national CPGs at meetings is necessary (Table 3).

Respondents had the opportunity to give textual answer about how the use of the CPGs could be improved. The majority insisted on better information about the CPGs. Also, they emphasized the importance of regular updates of the CPGs and the creation of concise CPGs with clearly highlighted recommendations and algorithms that help their use. When asked which CPGs are missing, the most frequent answers (at least 10% of respondents) are lack of national CPGs from gynecology and obstetrics, pediatrics, anesthesia, rare disease, palliative treatment.

DISCUSSION

Academy of Medical Sciences of Serbian Medical Society (Academy) carried out a self-reported cross-sectional survey among member of SMS with the aim of checking the use of CPGs and the attitude of doctors about them. Out of a total of 482 respondents, 452 (93.8%) agreed that CPGs enable doctors to make appropriate decisions in the prevention, diagnosis, and treatment of diseases. The respondents are most often informed about CPGs at meetings and from literature but 33 (6.8%) of them had not received information about CPGs so far. About 75% of respondents use national CPGs, whether they use only national (31.1%) or both national and international (44.2%). Forty-three (8.9%) respondents answered that they do not use CPGs, but when asked if they used any CPGs during the past year, even 101 (21.0%) of respondents gave a negative answer. As the most common reason for not using the CPGs was lack of information about CPGs and difficulties to access them.

Out of the 2876 SMS members to whom email was sent asking them to participate in the survey, 482 (16.8%) responded. That is a lower response rate compared to those presented in similar surveys. However, it can be noted that the response to the survey on CPGs was higher in 1990s [4, 5, 9] than in the last few years [10, 11, 12]. Most of the respondents in our survey were employed and therefore burdened with numerous obligations, and the number of different surveys is constantly increasing, so this can justify the low response rate. Nevertheless, the proportion of doctors in the sample according to gender, age and employment institutions is consistent with the proportions in the health system of Serbia published by the Institute of Public Health of Serbia [13]. Respondents are mostly informed about CPGs at meetings (30.9%) and from the literature (16.3%) or from both of those sources (17.5%). Although some other authors formulated the answers to the questions on CPGs awareness a little differently compared to our questionnaire, the data about information among their respondents was similar to ours [5, 14].

About 94% of our respondents believe that CPGs are useful for diagnosing and treating patients. A similar answer was obtained in other studies [5, 9, 14, 15]. and only a small percentage of respondents in both our and these studies believe that CPGs are not useful. The answers about the use of CPGs are not in concert with the positive opinion about their usefulness obtained by majority of our respondents. While 8.9% answered that they do not use CPGs at all, even 21% did not use any CPGs during the past year. In previously published surveys, answers about the use of CPGs were defined differently. However, in several published surveys, the percentage of respondents who do not use or rarely use CPGs is about 20%, i.e. the same as in our survey, but the percentage of those who often use the CPGs is about 40% [5, 14, 15]. As the percentage of doctors who rarely use CPGs is not negligible, special attention was paid to this problem [9, 14–20]. The most common reason for not using CPGs in our and several other surveys [9, 14, 18], as well as in one analysis of 37 surveys [17]

was lack of the awareness and the inability to access CPGs. Even 80% of our respondents did not know website where national CPGs are available. Among the other barriers to using the CPGs that we and others have found are lack of time, poor applicability, uselessness in practice, reduction of the doctor's autonomy, oversimplification as “cookbook”, low knowledge on CPGs [6, 9, 14, 16–21]. In the textual answers participants of our survey insist on better availability and information about CPGs and publishing of CPGs from areas for which there were no national CPGs. Opinions about CPGs format, printed or electronic, are equally distributed.

Our survey showed that doctors trust the CPGs recommendations, they are interested in national CPGs and their regular updates, but they lack timely notification about new national CPGs. Respecting the opinion of the survey participants, Academy took the following measures.

1. In cooperation with Republics expert commissions (consisted of experts from certain fields), Academy engaged medical experts to create new CPGs/update existing ones, particularly in the field with the most interest.

2. The instructions for creating CPGs were innovated and precisely defined [22], with the aim of making them not only in accordance with generally accepted recommendations and rules [3, 23] but also clear and easy to understand and apply.

3. Associations of doctors, institutes for public health, as well as the management of health institutions participate in regular notification of doctors about new CPGs.

4. CPGs are readily available on multiple physician-known websites

5. Academy organize the promotion of each new CPGs as well as the presentation of the CPGs at doctors' meetings and congresses.

The study has some limitations. The response rate is low, so even though the sample consists of doctors of different specialties and ages, this is a limitation of the study. Also, we do not have data on the characteristics of doctors who did not answer the questionnaire. In addition, it is a cross-sectional study and it would be important to repeat the survey in order to see the effects of the measures we have taken to improve implementation of the CPGs.

CONCLUSION

This first survey on CPGs in Serbia showed that doctors are interested in CPGs, especially national ones, and that they consider them useful for practice. Lack of information about CPGs and access to them was found as the main barrier for their use. The interest in national CPGs and their regular updating obliges all responsible to continuously carry out the measures for improvement the implementation of the CPGs.

Conflicts of interest: None declared.

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Table 1. Respondent characteristics

Variables	Total number	Employed in				Title				
		University clinic	General hospital	Health center	Other	MD	Resident	Specialist	Dr Sc	Professor
Responded, number (% of total number)	482	161 (33.4%)	110 [a] (22.8%)	181 (37%)	30[a] (6.2%)	44 (9.1%)	35 (7.3%)	249[b] (51.7%)	65 (13.5%)	89 (18.5%)
Sex, number (%)*										
Males	173 (35.9%)	76 [a] (47.2%)	54 (49.1%)	32 (17.7%)	11 (36.7%)	8 [b] (18.2%)	15 (42.9%)	75 [b] (29.0%)	30 (54.5%)	45 (50.6%)
Females	309 (64.1%)*	85* (52.8%)	56* (50.9%)	149[a]* (82.3%)	19* (63.3%)	36* (81.8%)	20* (57.1%)	174 [b,]* (67.2%)	35* (45.4%)	44* (49.4%)
Age, years (%)[c]										
≤ 30	7 (1.5%)	2 (1.2%)	2 (1.8%)	3 (1.7%)	0	2 (4.5%)	4 (11.4%)	1 (0.4%)	0	0
31–45	101 (21.0%)	34 (21.1%)	33 (30.0%)	31 (17.1%)	3 (10%)	13 (29.5%)	20** (57.1%)	48 [b] (19.3%)	15 (23.1%)	5 (5.6%)
46–60	256 (53.1%)**	93 (57.8%)**	54 [a] (49.1%)**	94 (51.9%)**	15 (50%)**	16 (36.4%)	11 (31.4%)	133 [b,]** (53.4%)	36 ** (55.4%)	60 [b,]** (67.4%)
61–70	99 (20.5%)	24 (14.9%)	21 (19.1%)	47 [a] (26,0%)	7 (23.3%)	11 (25.0%)	0 [b]	60 [b] (24.1%)	11 (16.9%)	17 (19.1%)
> 70	19 (3.9%)	8 (5%)	0 [a]	6 (3.3%)	5 (1.7%)	2 (4.5%)	0 [b]	7 (2.8%)	3 (4.6%)	7 (7.9%)
Employed in, number (%)										
Public health institution	411[#] (85.3%)	150 [#] (93.2%)	96[#] (87.2%)	146 [#] (80.7%)	19[#] (63.3%)	37[#] (84.1%)	32[#] (91.4%)	211[#] (84.7%)	58[#] 89.2(%)	73[#] (82.0%)
Private health institution	42 (8.7%)	1 (0.6%)	9 (8.1%)	29 [u] (16.2%)	3 (10.0%)	4 (9.1%)	3 (8.6%)	25 (10.0%)	4 (6.2%)	6 (6.7%)
Pensioners	29 (6.0%)	10 (6.2%)	5 (4.5%)	6 (3.3%)	8 (26.7%)	3 (6.8%)	0	13 (5.2%)	3 (4.6%)	10 (11.2%)

Data are presented as number and percentage of the number of respondents from the subgroup indicated in the column header except for the first row,
MD - Doctor of Medicine
*significant ($p < 0.05$) differences between males and females;
**significant difference in relation to other age groups;
[#]significant difference compared to other institution of employment;
[a]significant difference ($p < 0.05$) in relation to the other three employment institutions;
[b]significant difference in relation to other titles;
[c]significant difference ($p < 0.05$) compared to other employees in private health institution

Table 2. Sources of informing survey participants about clinical practice guidelines (CPGs)

Information about the CPGs obtained:	Number	Undergraduate study	Postgraduate study	Meetings	Literature	Meeting s& Literature	All 1–5	None
Total number (%)	482 (100%)	49 (10.2%)	54 (11.2%)	152 (31.5%)*	80 (16.6%)	86 (17.8%)	28 (5.8%)	33 (6.8%)
Sex, number (%)								
Males	173	20 (11.6%)	14 (8.1%)	50 (28.9%)*	31(17.9%)	34 (19.7%)	14 (8.1%)	10 (5.8%)
Females	309	29 (9.4 %)	40 (12.9%)	102 (33.0) *	49 (15.9%)	52(16.8%)	14 (4.5%)	23 (7.4%)
Age, years (%)								
≤ 30	7	2 (28.6%)	0	2 (28.6%)	0	0	2 (28.6%)	1 (14.3%)
31–45	101	19 (18.8%)	9 (8.9%)	29 (28.7%)*	16 (15.8%)	9 (8.9%)	9 (8.9%)	10 (9.9%)
46–60	256	23 (8.9%)	34 (13.3)	79 (30.9%) *	44 (17.2%)	46 (18.0%)	14 (5.5%)	16 (6.3%)
61–70	99	5 (5.1%)	11 (11.1%)	33 (33.3%)*	16 (16.2%)	26 (26.3)	3 (3.0%)	5 (5.1%)
> 70	19	0	0	9 (47.4%)*	4 (21.1%)	5 (26.3%)	0	1 (5.3%)
Employed in, number (%):								
University inst.	161	24 (14.9%)	16 (9.9%)	40 (24.8%)	33 (20.5%)	23 (14.3%)	15 (9.3%)	10 6.2%)
General hospital	110	12 (10.9%)	10 (9.1%)	41 (37.3%)*	14 (12.7%)	19 (17.3%)	4 (3.6%)	10 (9.1%)
Health center	181	21 (11.6%)	25 (13.8%)	61 (33.7%)*	58 (32.0%)	37 (20.4%)	8 (4.4%)	10 (5.5%)
Other	30	2 (6.7%)	3 (10.0%)	9 (30.0%)	7 (23.3%)	5 (16.7%)	1 (3.3%)	3 (10.0%)

Data are presented as number and percentage of total number of respondent group presented in this row

*significant difference ($p < 0.05$) in relation to all other sources of informing presented in this row

Table 3. Selected questionnaire responses about the importance and characteristics of clinical practice guidelines (CPGs)

Questions	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
CPGs enable doctors to make appropriate decisions in the prevention, diagnosis, and treatment of diseases.	278 (57.5%)	174 (36.1%)	16 (3.3%)	9 (1.9%)	5 (1%)
CPGs should contain clearly highlighted recommendations, concise explanations complemented by algorithms.	284 (58.9%)	154 (32%)	22 (4.6%)	17 (3.5%)	5 (1%)
Easy to-find online CPGs are more acceptable than printed ones.	101 (21%)	187 (38.8%)	120 (24.9%)	22 (4.6%)	52 (10.8%)
Regular presentation of new national CPGs at meetings is necessary.	324 (67.2%)	133 (27,6%)	16 (3.3%)	8 (1.7%)	1 (0.2%)

Data are presented as number and percentage of the total number of respondents

Table 4. Questionnaire responses on the use of clinical practice guidelines (CPGs)

Question	Yes
So far you have used[a]	
National CPGs	150 (31.1%)
International CPGs	76 (15.8%)
Both national and international	213 (44.2%)
You have not used any CPGs	43 (8.9%)
Have you used any CPGs at least once during the last year?	381 (79%)[a]
You didn't use the CPGs during the past year because	101 (21%)[a]
You were not informed about the CPGs from your profession	49 (48.5%)[b]*
You could not easily access a CPGs from your profession	26 (25.7%)[b]*
There are no new national CPGs in your profession	10 (9.9%) [b]
You feel that the CPGs cannot be helpful in your practice	10 (9.9%)[b]
You do not have time to read CPGs	6 (5.9%)[b]
Are you aware that national CPGs are available on the website of the Ministry of Health and Academy	385 (79.9%)[a]

Data are presented as number and percentage of:
[a]total number of respondents;
[b]number of respondents who did not use the CPGs during the past year
*significantly different in relation to other reasons for not using CPGs
Academy – Academy of Medical Sciences of Serbian Medical Society

