



## Health professions education in Serbia: evaluation and measures for quality improvement through experiential education, interprofessional education, and teaching competencies development

Obrazovanje zdravstvenih radnika u Srbiji: procena i mere za unapređenje kvaliteta kroz praksu, interprofesionalno obrazovanje i razvoj nastavničkih kompetencija

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### Abstract

**Background/Aim.** Health professions education is facing emerging issues. A comprehensive situation analysis was performed among academic staff, healthcare practitioners, and healthcare science students to address and respond to new trends. The aim of the study was to investigate the attitude, perception, and the recognized needs towards experiential education (EE), interprofessional education (IPE), and teaching competencies development (TCD). The critical evaluation of the existing quality standards for further quality improvement in health professions education in Serbia was provided. **Methods.** The survey on EE, IPE, and TCD was conducted within the Reinforcement of the Framework for Experiential Education in Serbia (ReFEEHS) project, co-funded by the Erasmus+ program of the European Commission at four Serbian universities (the University of Belgrade, the University of Kragujevac, the University of Niš, and the University of Novi Sad). Four task groups were appointed to perform a desk review of the existing curricula, recommendations, and practices within each of the four health professions education (Medicine, Pharmacy, Dentistry, and Nursing) in Serbia and assess the level of compliance with relevant educational policies and practices in the European Union. **Results.** A total of 1,507 respondents completed the survey. A highly expressed positive attitude was found towards EE, IPE, and TCD among all the respondents. The majority of the respondents

(> 70%) shared that EE should be organized in real-life practice and involve students' work under the supervision of a qualified supervisor, as well as interactions with patients and healthcare professionals. About 90% of the respondents supported the inclusion of IPE teaching activities into EE, with 77% of students expressing high motivation to attend those classes, whereas 93% of academic staff was eager to deliver and teach joint IPE subjects. Only 20% of academic staff has already attended some TCD program, while 75% recognized the need for its organization. Moreover, 90% of healthcare practitioners have recognized that mentors/clinical supervisors also need additional skills for effective mentoring work within health science education. Based on the survey results, recommendations for improvement were given within three educational fields, healthcare science curricula, professional practice (traineeship), teaching staff, and regulations. **Conclusion.** The results derived from the survey served as a starting but also a vital point for higher education improvement in Serbia. All interested parties – academia, students, healthcare professionals, and regulatory bodies should collaborate on achieving improved, contemporary, and transformative health professions education.

**Key words:** delivery of health care; education; health personnel; professional competence; serbia; students; surveys and questionnaires; teaching.

### Apstrakt

**Uvod/Cilj.** Obrazovanje u oblasti zdravstva suočava se sa novim pitanjima. Da bi se odgovorilo na savremene zahteve

obrazovanja zdravstvenih radnika, sprovedena je sveobuhvatna situaciona analiza. Cilj istraživanja bio je da se istraže stavovi, percepcije i prepoznaju potrebe akademske zajednice, zdravstvenih radnika i studenata zdravstvenih

profesija, u odnosu prema učenju u realnom radnom okruženju, tj. nastavi u praksi (*experiential education – EE*), interprofesionalnom obrazovanju (*interprofessional education – IPE*) i unapređenju nastavničkih kompetencija (*teaching competencies development – TCD*). Radi daljeg unapređenja u oblasti obrazovanja, za zdravstvene radnike u Srbiji obezbeđeno je kritičko vrednovanje postojećih standarda kvaliteta. **Metode.** Istraživanje je sprovedeno u okviru projekta *Reinforcement of the Framework for Experiential Education in Serbia* (ReFEEHS), ko-finansiranog od strane Erasmus+ programa Evropske komisije na četiri univerziteta u Republici Srbiji (Univerzitet u Beogradu, Univerzitet u Kragujevcu, Univerzitet u Nišu i Univerzitet u Novom Sadu). Određene su četiri radne grupe, sa zadatkom razmatranja trenutnih kurikuluma, preporuka i prakse u okviru svake zdravstvene profesije (medicina, farmacija, stomatologija, sestrinstvo), kao i procene njihove usklađenosti sa relevantnim preporukama i praksom u obrazovanju u Evropskoj uniji. **Rezultati.** U istraživanju je učestvovalo 1 507 ispitanika. Pozitivan stav prema EE, IPE i TCD zabeležen je među svim ispitanicima. Više od 70% ispitanika iskazalo je stav o tome da je potrebno organizovati EE, tj. nastavu u praksi u realnom radnom okruženju, što bi podrazumevalo stručni rad studenata pod nadzorom kompetentnog mentora, ali i interakciju sa bolesnicima, kao i interakciju sa zdravstvenim radnicima.

## Introduction

The quality of healthcare delivery has been acknowledged as one of the global imperatives of contemporary society. It assumes the provision of safe, effective, and patient-centered health services based on collaborative interprofessional practice<sup>1,2</sup>. Quality health professions education is one of the prerequisites to achieving the goals stated, including improved patient health outcomes and strengthened national health systems. However, it has been noted that “health professions education has not complied with the new global challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates”<sup>3</sup>.

As regulated professions with the anticipated mutual recognition of qualifications between the European Union (EU) member states, health professions (medical doctors, pharmacists, dental practitioners, and nurses) need to be compliant with specific and rigorous professional standards on the national and international levels. General standards and harmonized minimum training requirements are specified in the EU Directives 2005/36 and 2013/55 on the recognition of professional qualifications<sup>4,5</sup>, as well as the number of documents issued by the relevant national and international authorities and professional bodies<sup>6–10</sup>.

Higher education institutions (HEI) are expected to provide evidence of continuous quality improvement, which is regularly evaluated externally through study program accreditation. There is general agreement that the accreditation process can encourage institutional improvement<sup>11–13</sup>. However, in order to be meaningful,

Oko 90% ispitanika podržalo je uključivanje IPE nastavnih aktivnosti u kurikulum; 77% studenata izrazilo je motivisanost da prisustvuju zajedničkim predmetima, dok je čak 93% nastavnika i saradnika iskazalo volju da učestvuju u kreiranju i podučavanju nastavnih jedinica u okviru IPE. Prethodno je samo 20% nastavnika/saradnika pohađalo neki TCD program, dok je čak 75% prepoznalo potrebu za organizacijom tih programa; 90% zdravstvenih radnika smatralo je da su za efikasan mentorski rad u obrazovanju u oblasti zdravstvene nauke potrebne dodatne veštine mentora/kliničkih supervizora. Na osnovu sagledanih rezultata upitnika, date su preporuke za unapređenje visokog obrazovanja u okviru tri obrazovne oblasti budućih zdravstvenih radnika, koje se odnose na kurikulum, studentsku stručnu praksu/klinički staž, nastavno osoblje i regulatorne aspekte. **Zaključak.** Dobijeni rezultati korišćeni su kao polazna, ali veoma značajna tačka za unapređenje visokog obrazovanja u Srbiji. Sve zainteresovane strane – akademska zajednica, studenti, zdravstveni radnici i regulatorna tela, treba da sarađuju u cilju postizanja unapređenog i savremenog obrazovanja zdravstvenih radnika.

## Key words:

**zdravstvena zaštita; obrazovanje; zdravstveno osoblje; kompetencija, profesionalna; srbija; studenti; ankete i upitnici; učenje.**

this process should be based on a set of clearly defined, specific standards and procedures that reflect the societal needs and roles of each health profession. Complementary to general Standards and Guidelines for Quality Assurance in the European Higher Education Area<sup>14</sup>, leading international and national professional bodies and associations have issued guidelines and quality standards for study programs accreditation in Medicine, Pharmacy, Dentistry, and Nursing. Contemporary trends in health professions education emphasize the importance of quality experiential education (EE)/clinical practice in the real workplace environment, opportunities for interprofessional education (IPE) of all health science students, and continuing teaching competencies development (TCD) of academic staff and teacher practitioners/clinical supervisors engaged in health professions education.

In the Republic of Serbia (RS), National Entity for Accreditation and Quality Assurance in Higher Education is responsible for HEIs and study programs accreditation. Relevant standards and procedures are defined through general rules and regulations that include certain aspects of the various fields of study<sup>15–19</sup>. Although particularities of the individual fields of arts and science have been recognized to a certain extent, there is a need to further develop and implement profession-specific standards in line with the provisions of the EU Directive on recognizing professional qualifications and contemporary requirements and expectations, including EE of health science students in clinical practice, IPE and TCD of academic staff and teacher practitioners.

It has been recognized that, in order to introduce these advanced teaching and learning practices and improve the quality of health professions education in RS, explicit capacity building was necessary at both the institutional and regulatory levels. In order to address the emerging issues in health professions education, representatives of the four RS state universities (the University of Belgrade, the University of Kragujevac, the University of Niš, and the University of Novi Sad) in collaboration with four EU universities (the University of Dublin, the University of Lisbon, the University of Pecs, and the University of Medicine in Sofia) took the initiative for joint action which was elaborated and shaped into the project proposal titled “Reinforcement of the Framework for Experiential Education in Healthcare in Serbia” (ReFEEHS). The Project has been approved for co-funding by the Erasmus+ program KA2-Cooperation for innovation and the exchange of good practice–Capacity Building in the field of Higher Education in the selection year 2015.

In the present paper, outcomes of the comprehensive situation analysis performed based on the survey on the attitude, perception, and recognized needs of academic staff, healthcare practitioners, and healthcare science students towards EE, IPE, and TCD are presented, including the critical evaluation of the existing quality standards for further quality improvement in health professions education in the RS.

## Methods

### *Survey on experiential education, interprofessional education, and teaching competencies development*

ReFEEHS Survey on EE, IPE, and TCD was distributed online via Google Forms in February 2016. The survey was conducted at the four RS universities (the University of Belgrade: Faculty of Medicine, Faculty of Pharmacy, Faculty of Dentistry; the University of Kragujevac: Faculty of Medical Sciences; the University of Niš: Faculty of Medicine; the University of Novi Sad: Faculty of Medicine) with the support of the professional chambers, the professional associations, and the healthcare institutions. All responses were received anonymously.

Four sets of questions were designed to assess the following: the demographic profile of the respondents (age, gender, educational background, professional title/degree, postgraduate education, professional experience); perceptions and attitudes on EE; perceptions and attitudes on IPE; perceptions and attitudes on the need for TCD. Questions were designed as close-ended, with the possibility of choosing one or more offered answers, followed by a list of twelve statements describing medical teacher roles as defined by Harden and Crosby<sup>20</sup>. The five-point Likert scale has been employed to rate each of the potential roles as very important (5), important (4), moderately important (3), slightly important (2), and un-

important (1). The data obtained were extracted into an Excel worksheet (Microsoft Office Excel). Descriptive and inferential statistics were performed using SPSS software (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.). Qualitative data were presented as the number of respondents with percentage, whereas quantitative data were presented by median values with interquartile range (IQR) and total range (minimum-maximum). Mann-Whitney or Kruskal-Wallis test was used to test the difference in quantitative variables between two or among three groups of respondents, respectively, whereas the difference in proportions was tested using  $\chi^2$  or Fisher's exact test, where appropriate. A  $p$ -value  $< 0.05$  was considered statistically significant.

The sample size was calculated based on the estimated population of 5,000 academics in higher health education, 1,000 healthcare practitioners involved in students' learning in professional practice placements, and 15,000 health science students. The required number of respondents was estimated to be 357 academic staff, 218 healthcare practitioners, and 375 students (confidence level 95%; margins of error 5%).

### *Survey and measures for quality improvement*

Four task groups were appointed to perform a desk review of the existing curricula and practices in each of the four health professions education (Medicine, Pharmacy, Dentistry, and Nursing) in the RS and assess the level of compliance with the relevant educational policies and practices in the EU.

Professional task groups (medicine, dental medicine, pharmacy, and nursing) were composed of the representatives of the academic staff members from different EU and RS participating universities. Each task group collected and desk-reviewed available national and international documents (law, directives, guidelines, and national education policy), reports, and necessary information and performed comparative situation analysis for the eight participating universities.

Based on the outcomes of the desk review performed and insight gained, quality improvement recommendations have been drafted for each health profession, followed by the joint ReFEEHS Need for Change report<sup>21</sup>.

## Results

A total of 1,507 respondents completed the survey, with the highest proportion of students (57.9%), followed by academic staff (26.8%), and healthcare practitioners (15.3%). More than half of the academic staff (53.7%) was involved in medical students' education, whereas the majority of the students (43.5%) were attending pharmacy studies. About 80% of students were enrolled in the final year of undergraduate studies (fifth or sixth). More details on the descriptive characteristics of the study sample are presented in Table 1.

Table 1

Parameter	Study sample characteristics (n = 1,507)			p-value
	Academic staff (n = 404)	Healthcare practitioners (n = 231)	Students (n = 872)	
Age (years), median [IQR] (total range)	47 [40–54] (24–69)	42 [35–50] (26–64)	24 [24–25] (19–54)	< 0.001
Gender, n (%)				
female	273 (67.6)	191 (82.7)	665 (76.3)	0.002
Study program, n (%)				
medicine	217 (53.7)	-	293 (33.6)	< 0.001
dental medicine	77 (19.1)	-	173 (19.8)	0.737
pharmacy	78 (19.3)	-	379 (43.5)	< 0.001
nursing	13 (3.2)	-	16 (1.8)	0.124
other	19 (4.7) <sup>a</sup>	-	10 (1.1) <sup>b</sup>	< 0.001
University, n (%)				
Belgrade	135 (33.4)	-	393 (45.1)	< 0.001
Kragujevac	44 (10.9)	-	183 (21.0)	< 0.001
Niš	106 (26.2)	-	146 (16.7)	< 0.001
Novi Sad	119 (29.5)	-	149 (17.1)	< 0.001
Academic title, n (%)				
full professor	89 (22.0)	-	-	
associate professor	96 (23.8)	-	-	
assistant professor	133 (32.9)	-	-	
teaching assistant/associate	80 (19.8)	-	-	
Undergraduate degree, n (%)				
medicine	237 (58.7)	47 (20.3)	-	< 0.001
dental medicine	70 (17.3)	24 (10.4)	-	0.018
pharmacy	49 (12.1)	138 (59.7)	-	< 0.001
nursing	3 (0.7)	1 (0.4)	-	0.635
other	45 (11.1) <sup>c</sup>	20 (8.7) <sup>d</sup>	-	0.322
Postgraduate degree, n (%)				
PhD	370 (91.6)	62 (26.8)	-	< 0.001
MSc	186 (46.0)	40 (17.3)	-	< 0.001
postgraduate specialization	226 (55.9)	92 (39.8)	-	< 0.001
postgraduate diploma	28 (6.9)	35 (15.2)	-	0.001
Duration of professional practice (years), median [IQR] (total range)	20 [11–27] (0–40)	15 [8–23] (0–41)	-	< 0.001
Year of the undergraduate studies, n (%)				
1	-	-	3 (0.3)	
2	-	-	3 (0.3)	
3	-	-	10 (1.1)	
4	-	-	171 (19.6)	
5	-	-	397 (45.5)	
6	-	-	287 (32.9)	

**IQR – interquartile range.**

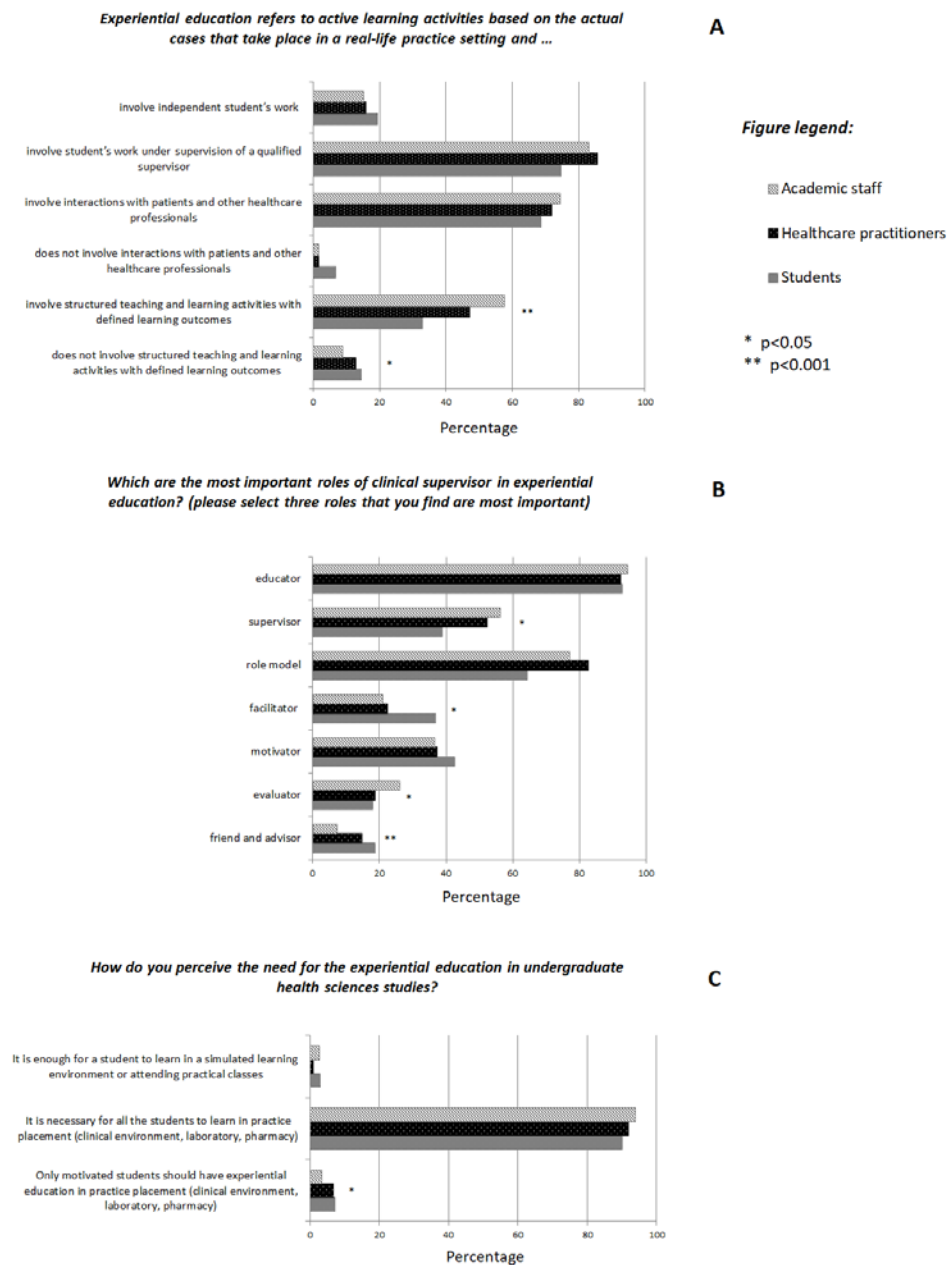
**a – study program special education and rehabilitation or all four study programs (medicine, dental medicine, pharmacy, nursing); b – study program pharmacy-medicinal biochemistry; c – undergraduate studies in psychology, special education and rehabilitation, biology, chemistry, mathematics, technical science (pharmaceutics), philology (English language); d – undergraduate studies in psychology, special education and rehabilitation, biology, chemistry, mathematics, technical science (pharmaceutics).**

### *Experiential education*

The majority of respondents (> 70%) shared the perception that EE should be organized in real-life practice and involve students' work under the supervision of a qualified supervisor and interactions with patients and other healthcare professionals (Figure 1A). However, disagreement was observed regarding EE curricular aspects. More than half of the academic staff (57.7%) perceived the necessity of a strict definition of learning and teaching activities, including learn-

ing outcomes, whereas only 33% of students support such an approach to the EE ( $p < 0.001$ ) (Figure 1A).

Educator and role model were recognized as the most important roles of EE supervisor by all three subgroups of participants, 92.6–94.6% and 64.4–77.2%, respectively (Figure 1B). Interestingly, students expected significantly more from supervisors as facilitators, friends, and advisers in comparison to academic staff and healthcare practitioners ( $p < 0.05$ ). Concurrently, academic staff saw the EE supervisor role in the evaluation as more significant compared to



**Fig. 1 – Attitudes towards experiential education.**

students and healthcare practitioners ( $p < 0.05$ ) (Figure 1B). The need for EE as an integral part of undergraduate health science studies is acknowledged by more than 90% of participants (Figure 1C).

The vast majority of healthcare practitioners (73.6%) reported the difference in professional competence between students who attended EE in practical placements and those who did not have such experience during their undergraduate studies. The following specific differences were recognized by the following proportion of healthcare practitioners: professional knowledge (55.4%), responsibility at the working place (51.1%), independence in professional practice (44.6%), self-esteem (37.7%), communication with patients (24.7%), and relations with colleagues (19.0%). However,

despite acknowledged positive features of EE, healthcare practitioners stated the following available time for students: plenty of time, 0.9%; enough time, 46.8%; not having enough time, 49.4%; not having time at all, 2.6%.

#### *Interprofessional education*

The main aspects of IPE were recognized well by the majority of respondents. A higher proportion (77.4%) of correct answers regarding IPE definition was recorded among students, in comparison to healthcare professionals (74%) and academics (68.1%),  $p < 0.05$ . A conclusive agreement was reached with 88.5% of students and 92% of healthcare practitioners and academics related to joining IPE activities

**Table 2****Attitudes towards interprofessional education (IPE), experiential education (EE) and teaching competencies development (TCD)**

Attitude	Academic staff (n = 404)	Healthcare practitioners (n = 231)	Students (n = 872)	p-value
<b>IPE</b>				
Which of the following statements better describes the IPE of health science students?				
IPE occurs when two or more professions learn with, from, and about each other to improve collaboration and the quality of care.	275 (68.1%)	171 (74.0%)	675 (77.4%)	0.002
IPE occurs when students, within their study program, learn about other professions to improve collaboration and the quality of care.	129 (31.9%)	59 (25.5%)	194 (22.2%)	0.001
Do you think that EE should include some IPE teaching activities?				
yes	372 (92.1%)	214 (92.6%)	772 (88.5%)	0.061
Are you interested in jointly attending theoretical or practical lessons with other health science students?				
yes	-	-	673 (77.2%)	
Are you interested in planning and delivering teaching for joint subjects on two or more study programs in health science?				
yes	376 (93.1%)	-	-	
<b>TCD</b>				
Have you attended any TCD program, course, or education?				
yes	81 (20.0%)	-	-	
Is there a TCD program available at your faculty/university?				
yes	105 (26.0%)	-	-	
Is there a need for a TCD program?				
yes	304 (75.2%)	-	-	
Do you think you need additional skills for mentoring work with students/interns (e.g., assessment of their professional competencies/knowledge during practice, skills needed for successful communication between mentor and student, etc.)?				
yes, numerous skills are definitely needed	-	56 (24.2%)	-	
yes, some skills are needed	-	149 (64.5%)	-	
no, a mentor with active professional practice has all skills needed for EE	-	25 (10.8%)	-	
Would you attend a program/education devoted to TCD?				
yes, I am very interested	-	166 (71.9%)	-	
yes, but only if the employer requires	-	44 (19.0%)	-	
no, I am not interested in those activities	-	20 (8.7%)	-	

within EE. Furthermore, about 77% of students reported their interest in attending IPE, while 93% of the academic staff was eager to prepare and deliver IPE units (Table 2).

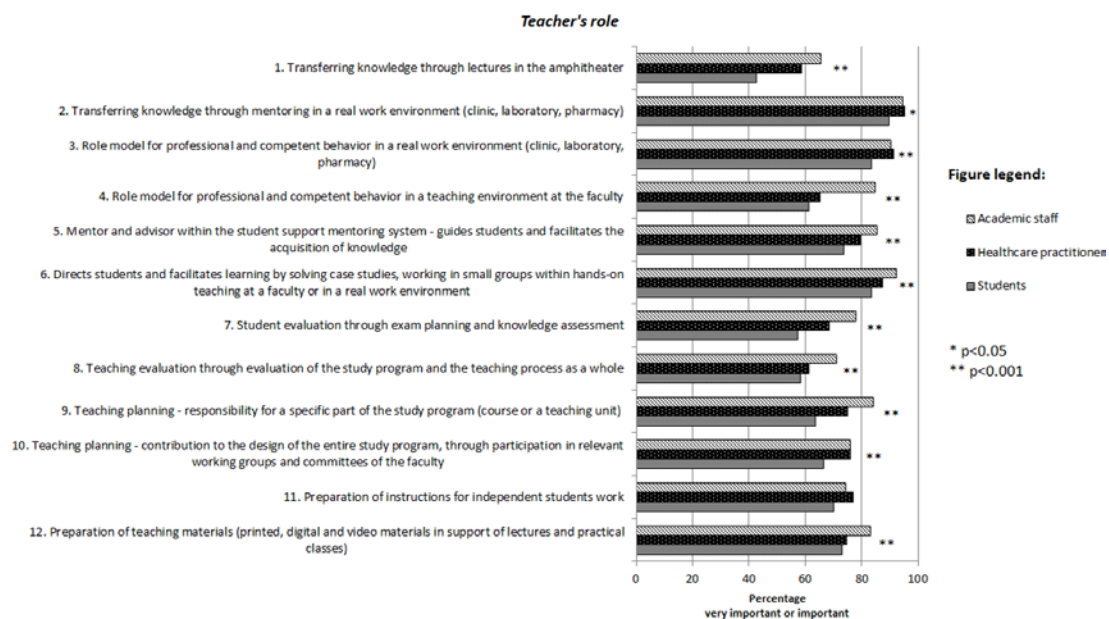
#### *Teachers' roles and teaching competencies development*

High grades were attained in the assessment of teacher roles. Over 50% of respondents evaluated eleven out of twelve roles as important or very important (Figure 2). However, academic staff stated significantly higher importance of the majority of roles compared with the rest of the contributors, particularly the students.

The following three roles were identified as the most valued by all three subsamples: "Transferring knowledge through mentoring in a real work environment", "Role model for professional and competent behavior in a real work environment",

and "Directs students and facilitates learning by solving case studies, working in small groups within hands-on teaching at a faculty or in a real work environment". The first role, "Transferring knowledge through lectures in the amphitheater", was the least valued by all three groups of respondents – seen as important or very important by 65.1% of academic staff, 58.3% of healthcare practitioners, and 42.6% of students.

Only 20% of academic staff has already attended some TCD program, course, or education, whereas 26% reported that a TCD program was available at their faculty or university. Three-fourths of academics (75.2%) recognized the need for organizing a TCD program, and 71.9% expressed high interest in attending such a program (Table 2). Moreover, even 90% of healthcare practitioners have recognized that mentors/clinical supervisors also need additional skills for effective mentoring work within health science education (Table 2).



**Fig. 2 – Perceptions of teacher's role in health professions education.**

### *Follow-up of the ReFEEHS*

The need for changing the recommendations for improvement was given within three educational fields, healthcare science curricula, professional practice (traineeship), teaching staff, and regulations.

In the second year of the project outputs follow-up, all six recommendations for curricular improvement were adopted completely or at least partially. Introducing an IPE course established at all participating HEIs in RS is among the main curricular innovations. Three generations have successfully completed the course until now, including almost six hundred students, with the highest number, 287, being from the University of Belgrade.

However, follow-up of the curricular outputs pointed out several critical issues which should be additionally reinforced. Complete adoption of EU directives 2005/36 and 2013/55 requirements, dominantly in study programs and practical training duration, are particularly important for pharmacy, dentistry, and nursing curricula. There is only one pharmacy study program and one dentistry program in the RS completely harmonized with the requirements of EU directives in the abovementioned fields. Moreover, the use of students' feedback in the development of the educational process should be improved through the monitoring of the received feedback implementation level. Finally, although active student participation in curricula evaluation and development is highly recommended, this is only partially attained through their membership of the curricula committee at several HEIs.

The level of implementing the ReFEEHS recommendations for professional practice (traineeship), teaching staff, and regulations improvement was also analyzed. Development and adaptation of common standards and requirements for professional practice are one of the major project outputs reached for all study programs. However, there are some dif-

ferences in implementing defined standards between different HEIs since the learning experience within students' professional practice is still not completely comparable at the national level. Innovative elements within the field of professional practice include the implementation of Objective Structured Clinical Examination at the pharmacy study program (the University of Belgrade) and the foundation of two simulated labs (the University of Belgrade and the University of Novi Sad) equipped with manikins acquired through the project.

One of the advanced project outcomes is the development of the formal program for TCD and its implementation at the University of Belgrade and the University of Niš. Since the establishment of the program, two generations involving 49 academic staff and 19 teacher practitioners at the University of Belgrade and one generation of 16 academic staff at the University of Niš have completed the program.

### **Discussion**

To the best of our knowledge, this is the first large-scale study conducted to explore the attitudes of academic staff, healthcare professionals, and students related to three pivotal aspects of contemporary healthcare professions education – EE, IPE, and TCD. In order to address the fast-changing landscape of healthcare, which will be even more prominent in the coming years, it was necessary to strongly encompass education, practice, and science<sup>22</sup>.

### *Experiential education*

EE is defined by the Association for Experiential Education as “a philosophy that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop peo-



ple's capacity to contribute to their communities" <sup>23</sup>. The current research pointed out that the attitudes of the study participants are compliant with the abovementioned definition and other publications <sup>24-29</sup>. However, quite a low number of academic staff (57.7%), healthcare professionals (47.2%), and students (33%) recognized it as important to define structured teaching and learning activities, including learning outcomes. A lack of structured approach to delivering the EE activities might lead to inequality in EE teaching activities delivery among academic staff and supervisors, who are relied on their personal experience, attitude, and daily professional responsibilities. In this situation, reaching expected learning outcomes could be seriously jeopardized. These concerns gathered the ReFEEHS project team members into four EE working subgroups (medicine, dentistry, pharmacy, and nursing), with the main tasks to identify EE competency-based outcomes, develop EE educational contents and resources, develop/reinforce EE curricula, and design and adopt EE Quality Assurance (QA) documents. All tasks are completed and published within the QA Standards for Student Professional Practice Placement in Health Professions Education <sup>30</sup>.

Along with EE teacher practitioners' roles assessed as the most important by all study participants (educator, role model, and motivator), some contrary attitudes of academics compared to students were recorded. The role of supervisor and evaluator was the most valued by the academics, and the lowest by the students, whereas facilitator, friend, and adviser was the role of the highest importance for students and the lowest for academics. Converging different attitudes and expectations from both sides is essential in reaching constructive communication, a positive learning atmosphere, and defined EE learning outcomes.

#### *Interprofessional education*

Assessing the knowledge and attitudes towards IPE, a forward-looking and driving approach was found among all the participants. As a matter of fact, IPE attracted high interest among the interviewees. Further, both academics and students expressed a very high level of interest in preparing, teaching, and attending the IPE course. Consequently, an IPE working group was established to develop and introduce IPE courses at all participating HEIs in the RS. EU Consortium partners contributed through presentations of their IPE curricula and discussions of various models for course development and implementation. In order to ensure a consistent quality of IPE teaching activities, the Interprofessional Education Handbook was published in October 2018 <sup>31</sup>.

#### *Teaching competencies development*

The research results pointed out the necessity for TCD within healthcare education in Serbia. Accordingly, the TCD working group has been appointed with the main task of developing and implementing the TCD program. At the beginning of this process, 12 members of the RS academic staff were enrolled in the external, international postgraduate

courses in health professions education provided by the University of Dundee and the International Association of Medical Education. They serve as a driving force for the Teaching Certificate in Health Professions Education development. Additionally, EU partner institutions (dominantly Trinity College Dublin) hosted academic staff from RS within the Teaching & Learning Center to discuss TCD program development. The program was designed and approved by the Senate of the University of Belgrade (February 2018) as continuous professional education for academic staff and teacher practitioners. Moreover, the TCD working group developed recommendations and guidelines for TCD and evaluation in the RS, compiled in the document entitled "Teaching competencies development and evaluation: Guidelines for quality health professions education" <sup>32</sup>.

#### *ReFEEHS project outputs follow-up*

Results of the ReFEEHS project outputs follow-up, two years after the project ended, pointed out some important issues for further improvement and identified the main challenges for healthcare professions education in the RS. Particularly important items are those related to the harmonization with EU directives 2005/36 and 2013/55 on the recognition of professional qualifications. It is very clear that the overall study program duration has to be extended up to the required number of hours for dental (5,000 hrs) and nursing (4,600 hrs) education at three HEIs <sup>4</sup>. Additionally, pharmacy students' traineeship has to be extended up to six months at three HEIs <sup>4</sup>. Without the implementation of these requirements, harmonization with EU directives will not be completed, while recognition of the professional qualifications of graduates from Serbian HEIs will be further aggravated.

Recommendations related to reinforcement and QA of healthcare students' professional practice are, in most cases, only partially or even not at all fulfilled. That presents a threat to reaching common and comparable learning outcomes for healthcare graduates and, accordingly, the potential cause of gaps in acquiring an equable level of healthcare at the national level. Therefore, harmonizing professional practice issues (e.g., the adoption of the national framework for professional practice experience, ensuring comparable learning experiences for all students, etc.) for each study program is essential to be attained in the future.

Finally, the main challenges for improvement in the upcoming years will be establishing relevant quality standards for professional practice, which should be recognized by the National Rules and regulations on accreditation standards, as well as remodeling the state exams in the RS in order to be focused on practical skills and knowledge. Although recommendations related to the abovementioned fields were given four years ago, there has been no evident progress until now. QA Standards for Student Professional Practice Placement in Health Professions Education defined and adopted within the ReFEEHS project could be particularly useful in developing national standards for professional practice. This guideline involves well-developed recommendations organized within six standards, including curriculum, competency-based



learning outcomes, teaching methods, learning outcomes assessment, practical placement sites, and students' obligations and responsibilities<sup>30</sup>.

ReFEEHS project follow-up results have also shown some important progress and innovations in healthcare curricula achieved during the project and maintained after the project completion. Among these outputs, there is the establishment of the IPE courses, which present a base for underpinning interprofessional and collaborative practice defined as "the foundation for high quality, safe, and compassionate care, which is truly integrated and person-centered"<sup>33</sup>. Additionally, the introduction of the formal program for TCD designed explicitly for academic staff and teacher practitioners involved in healthcare professions education presents advanced output. It brings the universities that implemented such courses to the list of a limited number of EU universities that established such programs.

#### *Strengths and limitations of the study*

A broad questionnaire was applied in data collection, providing an in-depth understanding of three pivotal aspects of contemporary healthcare professions education, EE, IPE, and TCD, expressed by main partners in the higher education process, academic staff, healthcare professionals, and students. Moreover, four healthcare professions (medical doctors, dentists, pharmacists, and nurses) were involved, thus increasing the validity and generalizability of our results.

Among the 1,507 respondents, students were more frequent, with a share of 58%, which may reflect their motivation to influence and foster the changes in higher education curricula. Moreover, about 80% of student respondents were enrolled in the final years of undergraduate studies, which provides more relevant information on students' needs and concerns. Further, almost equal distribution among academic staff was found for different academic ranks (teaching assistant/associate, assistant professor, associate professor, full professor), which may reduce the study bias in expressing their attitude. Healthcare professionals were, on average, highly experienced, with a median duration of professional practice of 15 years (IQR 8-23); they are thus also considered a good representative sample.

Applied methodology with anonymized data collection enabled us to assess and contrast beliefs between the academic staff, healthcare professionals, and students (pairwise). Not only were attitudes explored within one focus group in the higher education process, but also was the insight into others' needs and concerns provided. Covering different points of view, a summary of current practice, challenges, as well as recommendations for improvement were retrieved from the responses.

It could be supposed that participants in the current study are those particularly enthusiastic and motivated to improve healthcare education in the RS. Accordingly, one should be careful with the generalization of the results, despite recognizing a high number of participants as interested parties. However, no differences could be explored between health professions since nursing was represented by a small

number of students and practitioners. Nursing is not well-established in higher education in Serbia, having a relatively small number of students enrolled per year. Additionally, representatives of the regulatory bodies, such as important stakeholders in the researched fields and their attitudes, are missing in the current study, which could significantly affect the overall study results.

The results of the current study should be interpreted in line with the abovementioned strengths and limitations.

#### **Conclusion**

The results derived from the ReFEEHS survey on EE, IPE, and TCD served as a starting but also a crucial point for higher education improvement in the RS. All interested parties – academy, students, healthcare professionals, and regulatory bodies should collaborate on achieving improved, contemporary, and transformative health professions education. Implementing the reinforced EE and IPE will contribute to the long-term continuous improvement of the professional competencies of health science students, graduates, and experienced practitioners. It is anticipated that through the reinforced EE, students will develop professional and personal competencies needed for continuing professional development as self-centered lifelong learners. The introduction of IPE activities will form a foundation for future interprofessional collaborative practice, which is perceived as the preferable model for healthcare delivery. Attainments within EE and IPE will be braced by the improvement of teaching competencies. The Teaching Certificate in Health Professions Education may serve as a teacher/mentor/preceptor portfolio in applying contemporary principles and standards of quality assurance in academic teaching and delivering professional/clinical practice for health professionals – medicine, dental medicine, pharmacy, and nursing. The explored aspects of EE, IPE, and TCD represent the major interconnected trends in contemporary health professions education. The obtained results should serve as guiding principles to continuously work on and monitor the improvement of health professions education and healthcare delivery in our system. Barriers between education, policy, and clinical practice should be actively investigated, recognized, and appropriately addressed to improve the health of the community as the ultimate goal.

#### **Acknowledgement**

This research was conducted within the Reinforcement of the Framework for Experiential Education in Serbia (ReFEEHS) project No: 561644-EPP-1-2015-1-RS-EPPKy A2-CBHE-JP, supported by the European Commission ((EACEA) and co-funded by the Erasmus+ program. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Also, the research was supported by the Ministry of Education, Science, and Technological Development, the Republic of Serbia, through a Grant Agreement with the



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Received on October 5, 2020

Revised on August 29, 2022

Accepted on September 1, 2022

Online First September 2022