

The First Objective Structured Practical Examination (OSPE) in Pharmacy Teaching in Poland: Designing, Implementing and Assessing the Results

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ABSTRACT

Background: Education of pharmacy students in preparation for their profession is still changing. It is therefore important to improve students' skills necessary to provide pharmaceutical services according to the professional standards. One of the elements of the pharmacy curriculum is to teach and improve student's practical and interpersonal skills e.g. solving drug problems. OSPE (Objective Structured Practical Examination) is one of a broad family of structured and objectified examinations assessing practical, clinical, communication competencies. **Purposes:** The aim of our study was to prepare a tool to assess the knowledge and skills of 5th-year pharmacy students in the provision of pharmaceutical care services in pharmacies and to check whether the assumed learning outcomes were achieved during studies. **Methodology:** OSPE was designed and implemented in accordance with the education standards for the field of pharmacy. OSPE performance scores of 5th year pharmacy students at the Faculty of Pharmacy, Jagiellonian University Medical College in Poland were analyzed using descriptive statistics. **Findings:** OSPE consisted of six stations of which four stations with standardized patient. Standardized patient was used in stations: pharmaceutical interview, advice for self-medication, education about medicines, medical device education, identification and resolution of drug-related problems. OSPE was implemented in January and February 2019 and lasted 6 days. The students of the Faculty of Pharmacy were assessed in blocks of 2-2.5 hr a total of ten examiners. **Conclusion:** Objective Structured Practical Examinations can assess practical competence and communication skills. Appropriately designed stations make it possible to perform professional activities that reflect the real situations in pharmacy. Implementation of OSPEs may be an effective tool to assess the objective outcomes pharmacy students. Results can be used as a tool for enhancing lessons and may be considered valuable for further development OSPE.

Key words: Objective Structured Practical Examination, Pharmacy Students, Competence, Learning outcomes, Practical skills, Assessment, Pharmacy Education.

Submission Date: 28-11-2019;
Revision Date: 06-02-2020;
Accepted Date: 12-03-2020

DOI: 10.5530/ijper.54.3.106

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INTRODUCTION

Background and Purpose

At the turn of the decades, the pharmacy curriculum has been shifted from drug-centered to patient-centered. The changes in pharmacy teaching concerned with improving students' skills necessary to provide pharmaceutical services. Currently, education programs give students the opportunity not only to acquire knowledge but to develop practical and communication skills, which will be important in their

future professional work as a pharmacist.¹ Over the past twenty years, there has been a tendency to shift from a chemistry-based pharmacy, which has been focused on a medicinal product to the medicine-based pharmacy, which is more patient-oriented and to solve problems solutions in the treatment process.¹⁻³ American Association of Colleges of Pharmacy. All rights reserved. Objective. To compare United States and European Higher Education Area (EHEA) This process forced changes



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in pharmaceutical education, in which more and more attention will be devoted to developing skills, i.e. solving problems related to treatment or communication with the patient.⁴⁻⁶

The pharmacist is responsible for providing cognitive services and services to society.^{7,8} Cognitive pharmaceutical services are defined as professional services that are provided by pharmacists who use knowledge and skills to play an active role in supporting patient health by interacting with patient and representatives of other medical professions.⁹ Pharmaceutical services provided at the pharmacy include dispensing medicinal products, preparing pharmacy medicines and providing information on medicinal products.¹⁰ According to the law regulation in Poland,¹¹ practicing the profession of pharmacist also means providing pharmaceutical care services involving a documented process in which the pharmacist, working with the patient and the doctor and if necessary with representatives of other medical professions, supervises the proper course of pharmacotherapy in order to obtain specific effects, which improve the patient's quality of life (*definition Pharmaceutical Care*).¹¹ It is therefore reasonable that persons performing such pharmaceutical services should be prepared for this in the course of higher education.

In Poland, to become a licensed pharmacist, you must obtain a master's degree in pharmacy. The duration of pharmacy curricula in Poland is 5.5 years (including a six-month internship in a community pharmacy with the possibility of completing part of the internship in a hospital pharmacy).¹² The 6-month internship is an integral part of the pharmacy master's program.¹¹ purpose of the internship is to deepen knowledge and improve skills in the field of, among others, preparation of medicinal products, storage and dispensing of medicinal products, application of pharmaceutical care principles and ethical, legal and organizational norms of pharmacy profession.¹²

The pharmacist profession is a regulated health profession for which education is based on national standards established by the law act amended by the Ministry of Science and Higher Education. In Poland, there is an education standard, which is a set of rules and requirements for education.¹² The National Standards for Pharmacy Education Act consists of five parts: (I) general requirements, (II) general learning outcomes, (III) specific learning outcomes, (IV) organization of the process of education and (V) methods recommended to be used in the assessment process (VI). Learning outcomes are a set of knowledge, skills and social competencies obtained in the process of education

in the university system. The purpose of confirming the learning outcomes is to confirm the acquisition of specific qualifications necessary to practice a profession.^{3,12} During the course of studies, student's learning outcomes are verified on an ongoing basis. The document indicates some methods for verifying learning outcomes, including oral or written exams (essays, reports, structured questions and tests: MCQ - Multiple Choice Questions, MRQ - Multiple Response Questions) to verify the effects of knowledge. Direct observation of the student demonstrating the skill in standardized (simulated) conditions is a method of verifying the effects of social skills or competences and an example of its application is OSPE (*Objective Structured Practical Exam*).¹²⁻¹⁵ OSCE (*Objective Structured Clinical Examination*) / OSPE exams can shape both the course of education, be part of the teaching process, which gives students feedback on the degree of mastery of certain skills (formative exam), as well as be a tool for formal assessment of learning outcomes (summative assessment).¹⁶⁻¹⁸ The education of pharmacy students based on the European Qualifications Framework (EQF) requires the implementation of modern teaching methods that ensure that in the education process students will achieve knowledge, skills and social competencies necessary for future pharmacists. This entails also the need to change the methods of student assessment (e.g. OSPE).³

The goal of our project was to prepare a tool for assessing both the knowledge and skills of pharmacy students of the 5th year in the provision of pharmaceutical care services in pharmacies and checking in simulated conditions whether the learning outcomes assumed for this course have been achieved as well as compare and correlate the grade of the OSPE with the grades of the other courses connected to pharmaceutical care services. In January 2019, the Department of Social Pharmacy of the Jagiellonian University Medical College developed, conducted and implemented the OSPE exam as the final exam of the Pharmaceutical Care course for the fifth year. During the exam knowledge and skills on the pharmaceutical interview, identification and resolution of drug-related problems and documentation of pharmaceutical care were tested. It was the first exam conducted in pharmacy teaching in Poland.

METHODS AND SETTINGS

Process for OSPE development

First, an examination blueprint was developed to map learning objectives with the tasks included in the stations. The course coordinator developed a blueprint

including assignment of responsibilities, the structure of the exam and proposed workstations.

The next step was to organize several meetings with co-organizers of the Department of Social Pharmacy to discuss station development and prepare the assessment cases according to the blueprint. During preparations stations taken into consideration the educational and practical aims of the course including competencies, practical skills and learning outcomes for this course. It was assumed that all learning objectives related to the Pharmaceutical Care course should be covered by the exam and one station might have verified more than one learning outcome. Subsequently, draft scenarios were produced for 6 stations. The documentation for each station included checklists, scenarios for the standardized patient and instructions for the students. Each scenario included at least two different versions. Scenarios and checklists were validated. The examiners underwent training to establish a uniform assessment.

tOSCE software

We used the tOSCE software to assess students' skills during the exam. This software instantly adds up all total marks when a student completes a station. The software allows to: Evaluate the student during the exam, summing up automatic the number of points gained by the student and save the notes by the examiner. Examiners were trained sessions on how to use this software before OSPE. Each student had his own QR code which was scanned before the exam began.

Statistical Analysis

The quantitative data were analyzed using Statistica 13.1 software (StatSoft). The acquired data were recorded, coded and tabulated in the database. The non-parametric statistical test was carried out to analyze the data (Spearman rank correlation). The tests were analyzed at the significance level of $\alpha = 0.05$. The Spearman rank correlation was carried out in order to demonstrate the significance affecting the exam result from the Pharmaceutical Care course.

The results of OSPE were compared with the grades of the two obligatory courses for pharmacy students. These two courses, in our opinion, cover the learning objectives in the knowledge area, which are necessary to correctly provide pharmaceutical care services.

RESULTS

Setting of the exam

The OSPE exam was conducted among students 5th year of pharmacy in the Faculty of Pharmacy Jagiellonian University Medical College in Krakow. The exam completed/ended the pharmaceutical care course. The OSPE exam served for standardized assessment

of practical skills in simulated conditions and was organized in the form of 6 stations with specific tasks to be carried out within the prescribed time. All students performed the same tasks and were assessed according to the same criteria. The assessment of skills was performed by examiners using standardized scoring schemes (checklists).

One round of the exam

8 students, 5 examiners, 1 exam coordinator and 1 IT coordinator co-ordinating the flow of data from tOSCE participated in one block of the exam. For one day there were 3 rounds of the exam (24 students). Total duration of the round was 2 hr. The breaks between round were 30 min.

Format of the OSPE

The OSPE consists of six stations which were developed in order to verify the pharmacy student's practical skills. Stations 1-4 were carried out in separate rooms using standardized patient. Stations 5 and 6 were carried out in the computer room using documentation. On stations 1-4 was one examiner in each room using checklists to assess practical skills. On stations 5 and 6 were only present one examiner. Examiners at the stations were only observers and they did not answer and did not ask questions. The total duration block was 2 hr. Each station had a separate checklist, by means of which student was assessed. Several scenarios have been developed for each station. The main equipment of the station was table/desk, paper, pen, wall clock (details in Table 1).

The construction of the station let us to verify one or more learning objectives of the Pharmaceutical Care course. The detailed description of the station is presented in Table 1. The pass mark for each station was 50%. Students had to pass all stations to get a positive grade of the course.

Statistical analysis tools

108 students of the 5th year of pharmacy participated in the OSPE. The analysis covered 100% of the population taking part in the exam after the Pharmaceutical Care course. Quantitative features were assessed in the study. The analysis of each of them has its own specificity, consisting in the use of adequate statistical tools for comparisons. In order to characterize the structure of the studied variables, basic descriptive statistics were calculated in the form of location measures (arithmetic mean and quartiles) and variability (standard deviation). Table 2 presents a summary of student results at individual OSPE stations.

The highest average score was observed at Station 3 - $73.71\% \pm 11.91\%$, the value of the Quartile 3 showed that 25% had results above 82.61%. The Station 3 was a simulated patient station focused on education on medication. The lowest average score we observed at

Table 1: Detailed descriptions of stations.

No.	OSPE station	Brief description	Learning objectives*	Type of station	Scenarios (number)	Time stations [min]	Continuous assessment (during exam/in interaction with the patient) (Y/N) ¹
1	Pharmaceutical interview	The student has a task: Conducting a pharmaceutical interview with a patient in a way that allows to identify the patient and determination of drug needs within counselling in self-medication Materials: instruction for student Additional equipment: none	E.W13 E.U4 E.U29 E.U34	with standardized patient	3	15	Y
2	Advice for self-medication	The student has a task: Selecting an OTC medication for patient based on the attached information from interview providing the patient comprehensive advice regarding use within counselling in self-medication Materials: instruction for student including data from pharmaceutical interview Additional equipment: computer with internet connection	E.W13 E.U4 E.U29 E.U34	with standardized patient	3	15	Y
3	Education about medicines	The student has a task: Providing comprehensive information about the medicine for the patient (medication prescribed for the first time) Materials: instruction for student, SmPC ²	E.U4 E.U7 E.U35	with standardized patient	5	15	Y
4	Medical device education	The student has a task: Instructing the patient diagnosed with asthma how properly use the selected inhaler (including how and when to do inhalation, how to maintain the medical device, how to control the dose) Materials: instruction for student, SmPC ² Additional equipment: inhaler (with medicine)	E.U4 E.U7 E.U35	with standardized patient	5	15	Y
5	Identification of DRPs ³	The student has a task: Identification of drug-related problems (DRPs ³) have at its disposal paper documentation of a drug review containing data from pharmaceutical interview Materials: instruction for student, partially filled form of a drug review, drug compendium, PCNE (Pharmaceutical Care Network Europe), SmPC ² , list of preparations with prices Additional equipment: computer, Internet access	E.U33 E.U34 E.U36	with documentation	2	30	Y - in the use of information sources N - in the scope of the correctness of completing the documentation
6	DRPs ³ solving	The student has a task: On the basis of information FONT (medicine list, DRP ³) resolution drug-related problems (completing the electronic documentation) Materials: instruction for student and electronic patient documentation (DRP ³ in FONT), drug compendium, SmPC ² , list of preparations with prices, paper, pen, wall clock	E.U4 E.U33 E.U36	with documentation	2	30	Y - in the use of information sources N - in the scope of the correctness of completing the documentation

¹ Y - YES/N - No² SmPC (summary of product characteristics)³ DRPs – drug-related problems*Learning objectives according to the Regulation of the Minister of Science and Higher Education.¹²

E.W13 know and understand the rules for determining the patient's drug needs;

E.U4 (...) interview with the patient for advice a medicinal product in a pharmacy;

E.U7 identification and differentiation health information necessary in the pharmaceutical care process for patients with various chronic diseases;

E.U29 pharmaceutical consultation while dispensing the drug without a prescription (OTC);

E.U33 identification and classification of drug problems (...);

E.U34 identification of the patient's drug needs based on the analysis of the information obtained;

E.U35 patient education about his medications, his health and diseases;

E.U36 use of printed and electronic documentation tools pharmaceutical care.

Station 5, which was focused on identification on DRP. The average result on Station 5 was $59.37\% \pm 16.53\%$. The value of quartile 1 showed that 25% of pharmacy students had results below 52.00% and the value of quartile 3 allowed to state that only 25% had results above 68.00%. Table 3 shows a summary of student ratings for individual subjects.

The highest average score was noticed from the course Pharmaceutical care (average - 4.21). In the case of this subject, the largest percentage of grades were 4 and 4.5, which gave 87.96% of respondents. The lowest average students obtained 3.32 from the Pharmaceutical practice course, the dominant value was 3.5 and 4, obtained by 43 students, which constituted 39.81% of the respondents. Spearman rank correlation test was applied to assess courses from earlier years of study of pharmacy: (Pharmaceutical practice, Pharmacology and pharmacodynamics and Pharmacotherapy) in comparison to the final evaluation of the Pharmaceutical Care course. Statistical significance was accepted as $p < 0,05$. Pearson's correlation coefficient varied between 0.408 and 0.235. The detailed characteristics of the study group are presented in Table 4. An examination from the Pharmaceutical Care course turned out to be positively related to grades from Practical Pharmacy (weak positive correlation), Pharmacology and Pharmacotherapy (moderate positive correlation). The results of the statistical analysis indicate that the grade from the Pharmaceutical Care course is higher if the marks from the other three courses are higher.

DISCUSSION

Our study was the first experience of developing and implementing an OSPE from the Pharmaceutical Care course of the Faculty of Pharmacy Jagiellonian University Medical College. Until now, the condition for passing this course was the written preparation of a case-study that tested the student's knowledge. After careful analysis of the learning outcomes for this course, we decided that checking knowledge alone is not an adequate form of assessment. It is particularly important for us to develop an assessment method that

checks the practical skills of our students before entering the pharmacy.

Our OSPE consisted of 6 stations, including 4 stations with standardized patient. Another two stations assessing identification and resolution of drug-related problems included written or electronic documentation without simulated patient; each of these stations lasted 30 min. 108 students of Faculty of Pharmacy were assessed in blocks of 2-2.5 hr by 10 examiners. Each student was identified by ID card and individual QR code. 5 stations were marked on the spot. The evaluated students achieved good results at stations from 1 to 4. The problem appeared at stations 5 and 6 (identification and resolution of drug-related problems). Perhaps it was related to lots of stress which appeared on these stations or course prepared students in the least amount to achieve good results.

Analyzes of our research indicate that students on the exam from the Pharmaceutical Care course were rated best (exam grades in the range $\geq 4 < 5$) compared to other courses from the same group of major content (module E - Pharmaceutical Practice, which includes Pharmaceutical Care, Practical Pharmacy and Pharmacotherapy). The results of the exam in the Pharmaceutical Care course accounted for 87.96% of all fifth-year students in pharmacy. Weaker marks compared to the Pharmaceutical Care course, pharmacy students obtained on the course Pharmacotherapy, Pharmacology and Pharmacodynamics and Practical Pharmacy (grades in the range $\geq 3 < 4$). The condition of participation in the Pharmaceutical Care course is obtaining knowledge within the subjects implemented during the previous years of study, including the courses Pharmacotherapy, Pharmacology and Pharmacodynamics as well as Practical Pharmacy. The difference in the grades obtained by pharmacy students may indicate that the OSPE assessed students' competences (including practical skills) and knowledge that has been assessed in other courses still needs to be supplemented by them.

The experience in designing and implementing this type of exam had Kouti *et al.*¹⁹ OSPE exam consists of 6 different stations, related to reading prescriptions, identifying drugs, pharmacist's recommendations,

Table 2: Summary of students results at individual OSPE stations.

	Station 1	Station 2	Station 3	Station 4	Station 5	Station 6
Average score	72,03%	65,93%	73,71%	65,11%	59,37%	69,30%
SD	11,65%	11,13%	11,91%	11,16%	16,53%	19,67%
Quartile 1 (Q1)	65,13%	56,88%	65,22%	56,60%	52,00%	61,72%
Quartile 3 (Q3)	78,95%	72,50%	82,61%	72,22%	68,00%	84,38%

Table 3: Summary of student ratings for individual subjects.

Marks	Pharmacotherapy		Pharmacology and pharmacodynamics		Pharmaceutical practice		Pharmaceutical care	
	N	%	N	%	N	%	N	%
< 3	16	14,81	21	19,44	35	32,41	0	0,00
≥ 3 < 4	43	39,81	62	57,41	43	39,81	5	4,63
≥ 4 < 5	0	0,00	19	17,59	29	26,85	95	87,96
5	49	45,37	6	5,56	1	0,93	8	7,41
Average	3.49		3.37		3.32		4.21	

Table 4: Courses comparison: Pharmaceutical practice, Pharmacology and pharmacodynamics and Pharmacotherapy with Pharmaceutical Care based on the Spearman rank correlation test.

	N	R Spearman	t (N-2)	p
Pharmaceutical care and Pharmaceutical practice	108	0,234867	2,499403	0,013959
Pharmaceutical care and Pharmacology and pharmacodynamics	108	0,300099	3,254239	0,001522
Pharmaceutical care and Pharmacotherapy	108	0,407885	4,621079	0,000011
Spearman rank correlation test Statistical significance was accepted as $p < 0,05$				

patient education, drug information resources and drug usage instructions). Kouti *et al.*¹⁹ compared OSCE and conventional exams show and they didn't find no significant correlation between each station's score and the written test score.¹⁹ A similar experience in designing OSCE was conducted in Malaysia. OSCE exam was performed for the undergraduate pharmacy program.⁶ Awaisu et al. and his team recognized that OSCE is a method that could have a positive impact on providing pharmaceutical care services. Their students ascertained that OSCE is an appealing and practical method.⁶ Kristina SA²⁰ developed and implemented the OSCE exam, which consists of 7 stations. They assessed pharmaceutical skill practices covered clinical skills, compounding skills and management skills incorporated into the communication aspect. Their results showed that the OSCE scenario was relevant to real practice and had high fairness of the assessment.

ACKNOWLEDGEMENT

The authors wish to thank a member of the Department of Medical Education at Jagiellonian University Medical College for their necessary support and help throughout the performance of the exam.

CONFLICT OF INTEREST

The authors promise that they have no conflict of interest.

ABBREVIATIONS

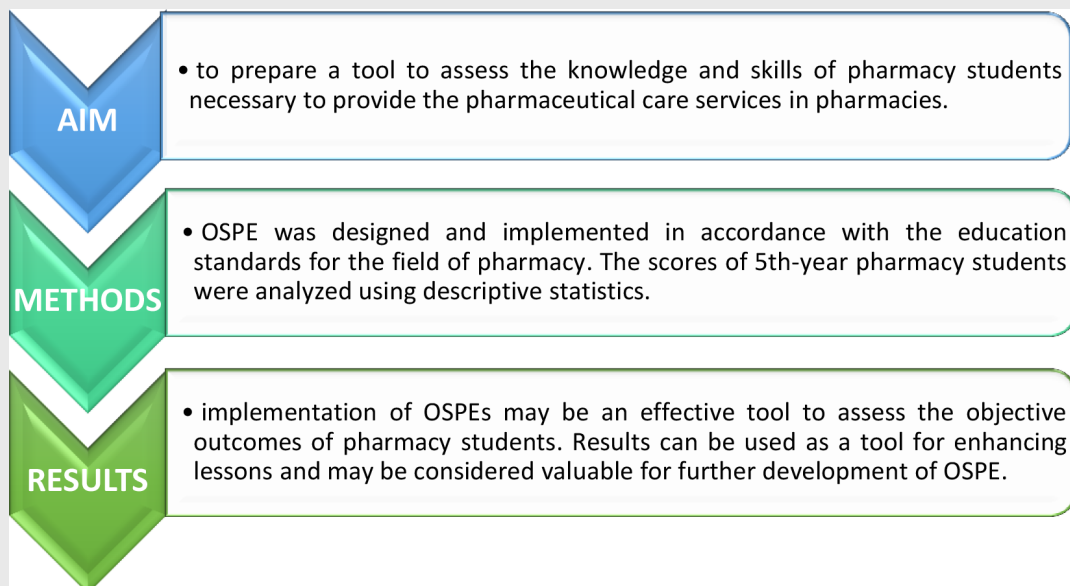
OSPE: Objective Structured Practical Examination;
OSCE: Objective Structured Clinical Examination;
DRP: Drug-related problem.

REFERENCES

1. Nunes-Da-Cunha I, Arguello B, Martinez FM, Fernandez-Llimos F. A comparison of patient-centered care in pharmacy curricula in the United States and Europe. *Am J Pharm Educ.* 2016;80(5). doi:10.5688/ajpe80583
2. Atkinson J. Heterogeneity of Pharmacy Education in Europe. *Pharmacy.* 2014;2(3):231-43. doi:10.3390/pharmacy2030231
3. Skowron A, Dymek J, Golda A, Polak W. Are We Ready to Implement Competence-Based Teaching in Pharmacy Education in Poland?. *Pharmacy.* 2017;5(4):25. doi:10.3390/pharmacy5020025
4. Michael S, Paul D, Ross E, Angela R. Traditional student, nontraditional student and pharmacy practitioner attitudes toward the use of standardized patients in the assessment of clinical skills. *American Journal of Pharmaceutical Education.* 2000;64(1):27-32.
5. Austin Z, O'Byrne C, Pugsley J, Munoz LQ. Development and validation processes for an objective structured clinical examination (OSCE) for entry-to-practice certification in pharmacy: The Canadian experience. *Am J Pharm Educ.* 2003;67(3):1-8. doi:10.5688/ajpe670376

6. Awaisu A, Mohamed MHN, Al-Efan QAM. Perception of pharmacy students in Malaysia on the use of objective structured clinical examinations to evaluate competence. *Am J Pharm Educ.* 2007;71(6):118. doi:10.5688/aj7106118
7. Ghayur MN. Pharmacy education in developing countries: Need for a change. *Am J Pharm Educ.* 2008;72(4):94.
8. Lakić D, Stević I, Odalović M, Vezmar-Kovačević S, Tadić I. Patients' willingness to pay for cognitive pharmacist services in community pharmacies. *Croat Med J.* 2017;58(5):364-71. doi:10.3325/cmj.2017.58.364
9. Roberts AS, Benrimoj SI, Chen TF, Williams KA, Aslani P. Practice change in community pharmacy: Quantification of facilitators. *Ann Pharmacother.* 2008;42(6):861-8. doi:10.1345/aph.1K617
10. The Pharmaceutical Law of 6th September 2001. Amendment 2019. Dz. U. 2001 Nr 126 poz. 1381. 2019;(126):1-367 (accessed on 24 October 2019).
11. Law of 9th April 1991 about pharmacy chambers. S. 1/44. 2019;(41):1-44. (accessed on 24 October 2019).
12. Regulation of the Minister of Science and Higher Education of 9th May 2012 on education standards for fields of study: Medicine, dentistry, pharmacy, nursing and midwifery as published in 2012, item 631. 2019. (accessed on 24 October 2019). <http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU2018000345/O/D20180345.pdf>. Accessed April 10, 2019.
13. Kowalski T, Skowron A, Nowakowski M. The Role and Suitability of the Objective Structured Practical Examination in Pharmacy Education in Poland. *Indian J Pharm Educ Res.* 2019;53(2):186-91. doi:10.5530/ijper.53.2.24
14. AlNazzawi AA. Dental students' perception of the Objective Structured Clinical Examination (OSCE): The Taibah University experience, Almadinah Almunawwarah, KSA. *J Taibah Univ Med Sci.* 2018;13(1):64-9. doi:10.1016/j.jtumed.2017.09.002
15. Skrzypek A, Szeliga M, Stalmach-Przygoda A, *et al.* The Objective Structured Clinical Examination (OSCE) from the perspective of 3rd year's medical students - a pilot study. *Folia Med Cracov.* 2017;57(3):67-75. <http://www.ncbi.nlm.nih.gov/pubmed/29263456>.
16. Vishwakarma K, Sharma M, Matreja PS, Giri VP. Introducing objective structured practical examination as a method of learning and evaluation for undergraduate pharmacology. *Indian J Pharmacol.* 2016;48(Suppl 1):S47-51. doi:10.4103/0253-7613.193317
17. Mate VH, Sahasrabudhe RA, Pandit VA, Beri SG. OSPE as the Tool to Assess Application of Pharmacology Knowledge of II MBBS Students: Teachers' Perceptions. *International Journal of Health Scientific Researches.* 2016;6(6):117-22.
18. Demirdamar R, Toklu H. The evaluation of prescription dispensing scores of the pharmacy students before and after the problem-based "rational drug use" course: Results of the two years experience. *Marmara Pharm J.* 2013;3(17):175. doi:10.12991/2013171312
19. Kouti L, Khezrian M, Eslami A, *et al.* Designing Objective Structured Clinical Examination in Basic Community Pharmacy Clerkship Course and Assessment of Its Relationship with Conventional Exam. *Journal of Pharmaceutical Care.* 2014;(1):1-4.
20. Kristina SA, Gustriawanto N, Rokhman MR, Aditama H, Sari IP. Students' first experience with objective structured clinical examination in a pharmacy school in Indonesia. *J Appl Pharm Sci.* 2018;8(9):102-6. doi:10.7324/JAPS.2018.8915

PICTORIAL ABSTRACT



SUMMARY

From the teacher's perspective, it seems that the OSPE exam in comparison to the other traditional methods of assessment can evaluate a lot of more learning outcomes, including social and professional skills. Appropriately designed stations make it possible to perform professional activities that reflect the real situations in pharmacy. OSPE is time-consuming and logistically complicated, but worth carrying out due to the possibility of assessing students' practical skills in simulated conditions. We consider the exam successfully.

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Cite this article: Dymek J, Kowalski T, Golda A, Polak W, Skowron A. The First Objective Structured Practical Examination (OSPE) in Pharmacy Teaching in Poland: Designing, Implementing and Assessing the Results. *Indian J of Pharmaceutical Education and Research*. 2020;54(3):572-9.