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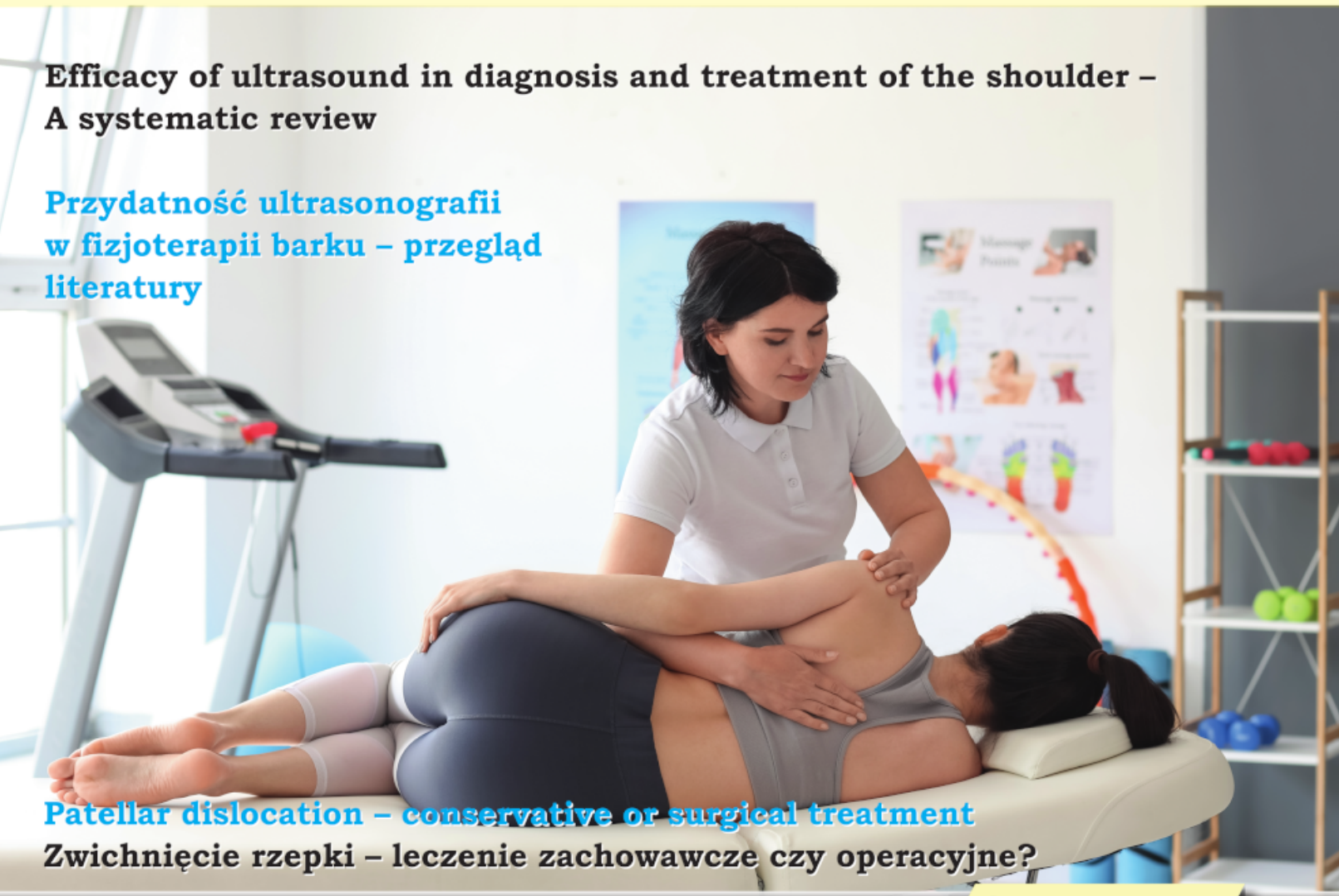

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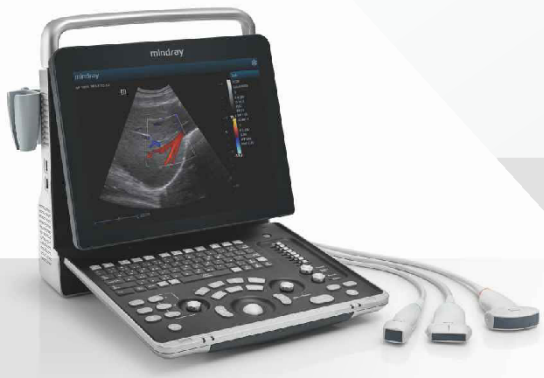

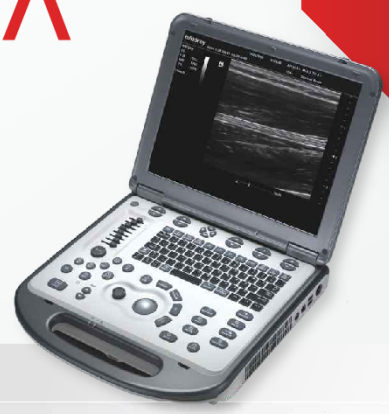

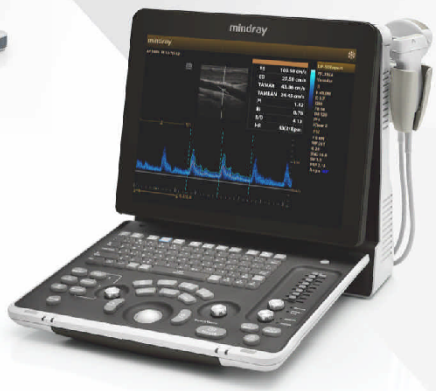

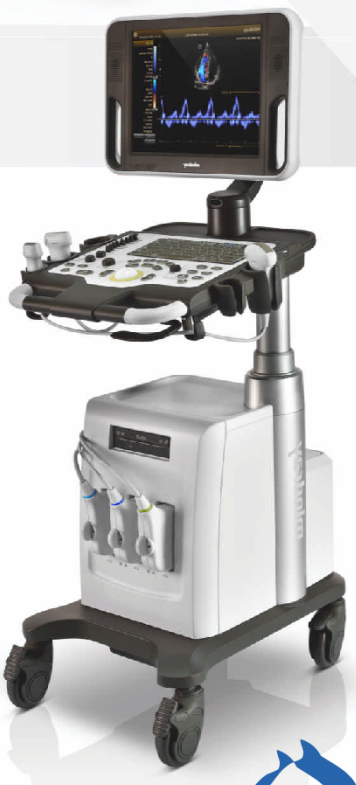

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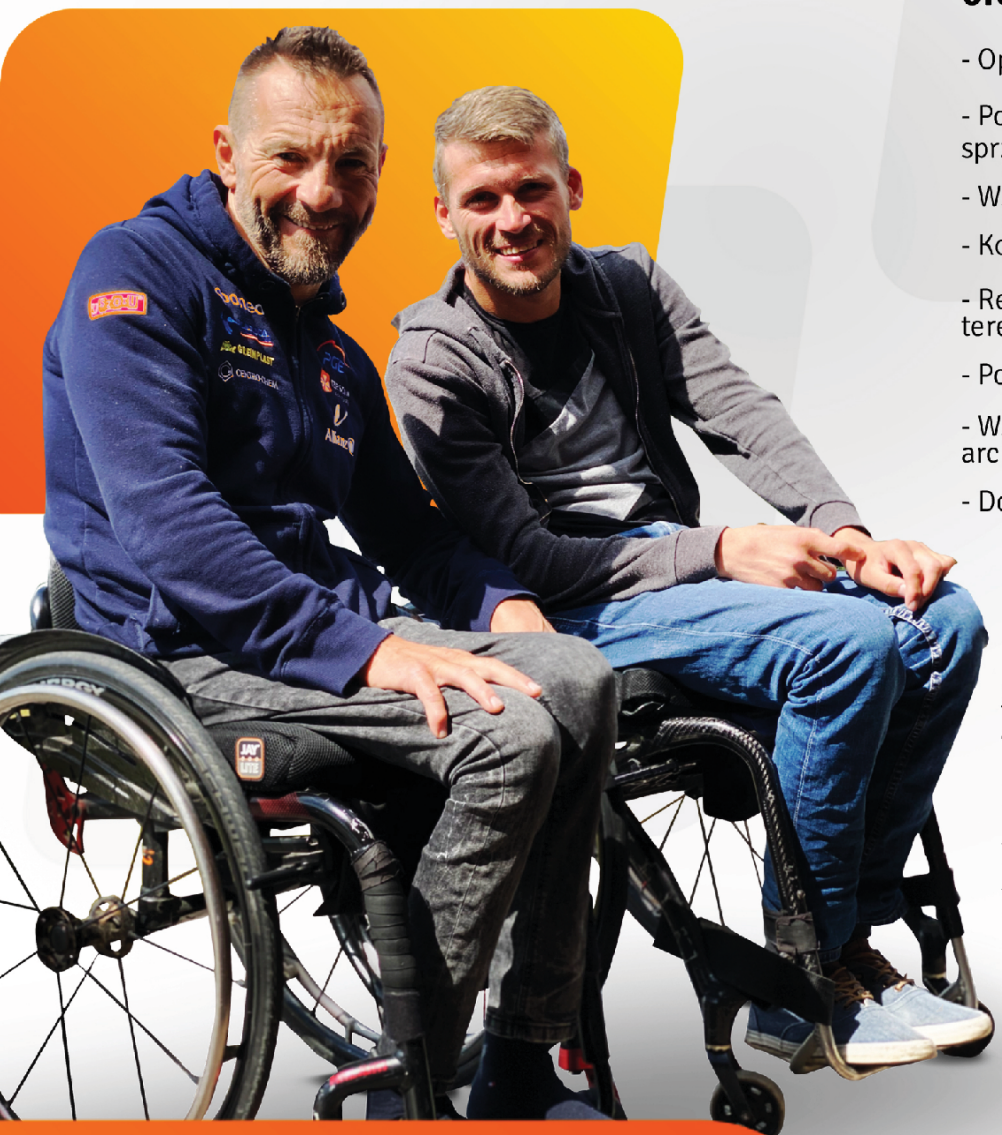

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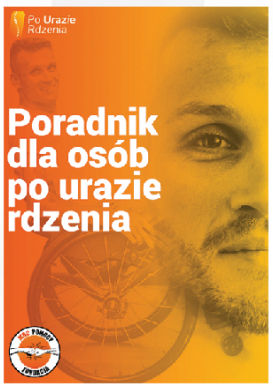

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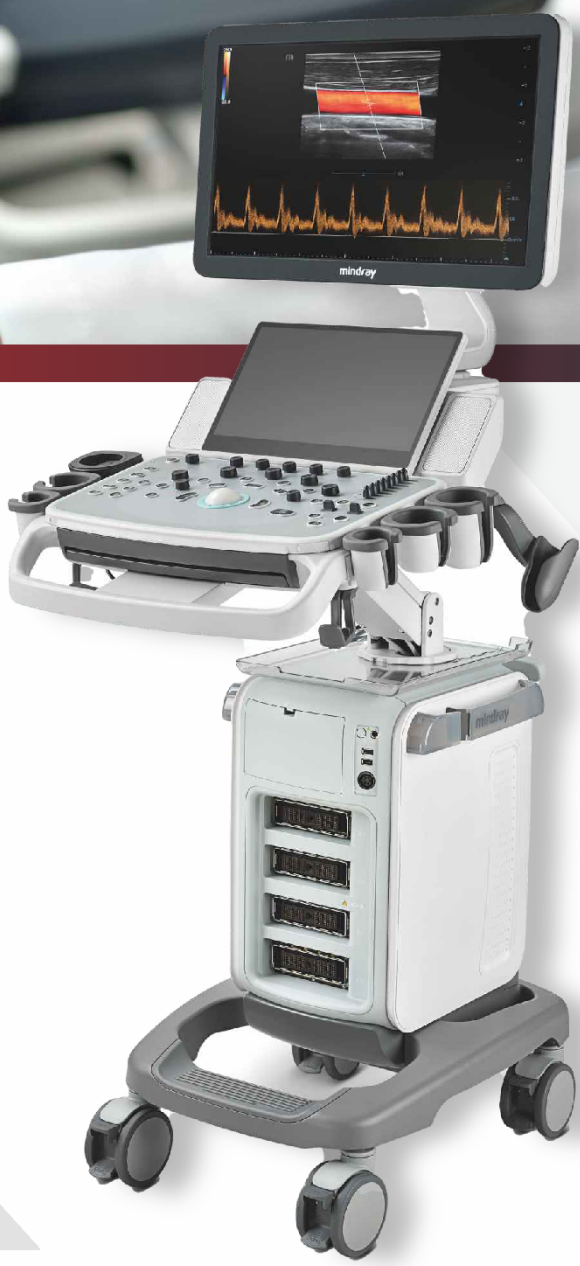

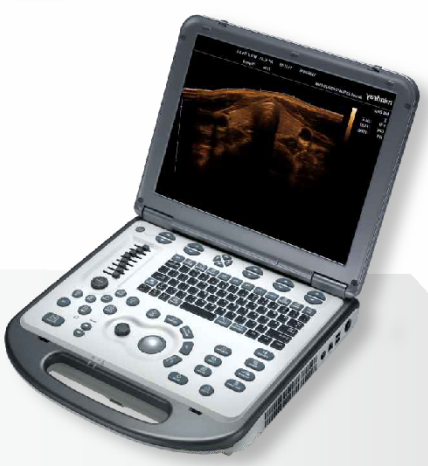

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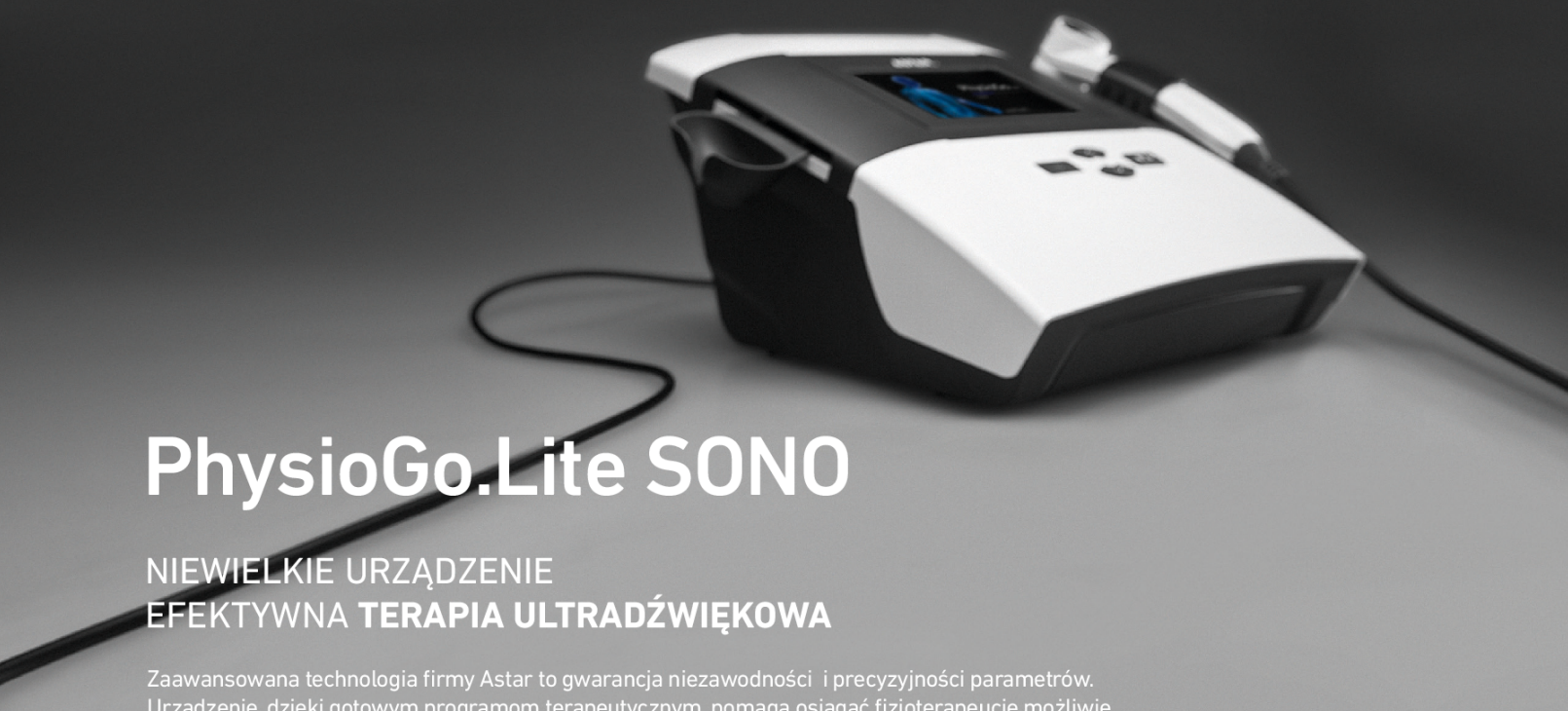

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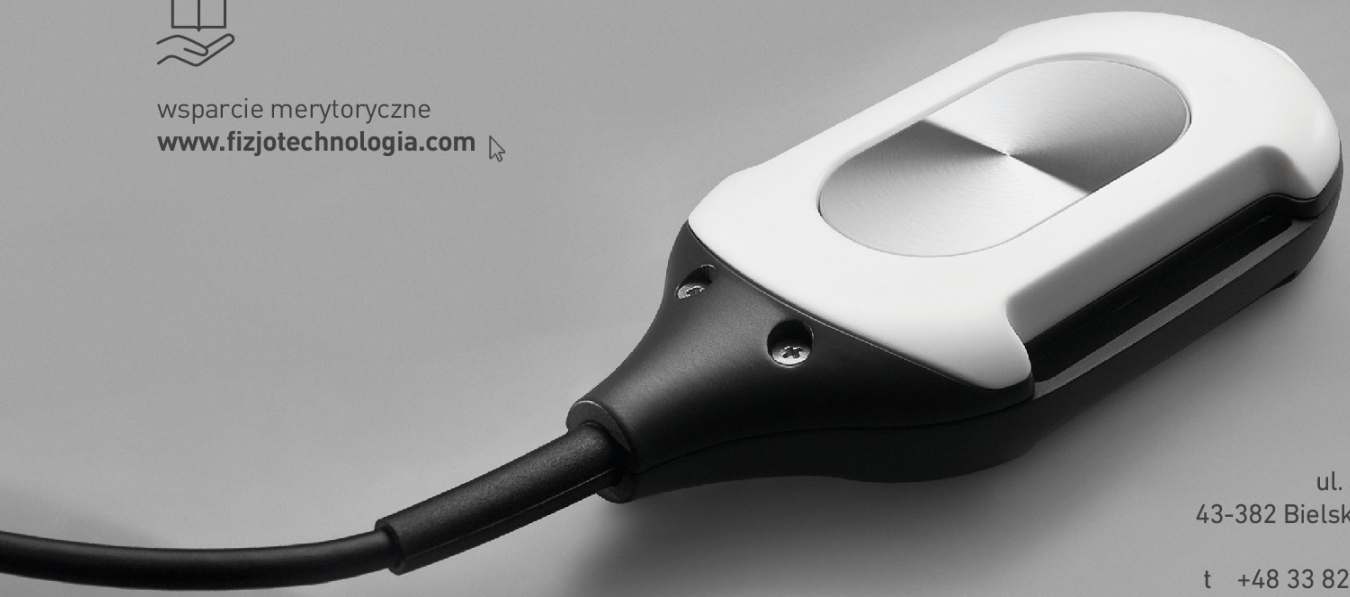

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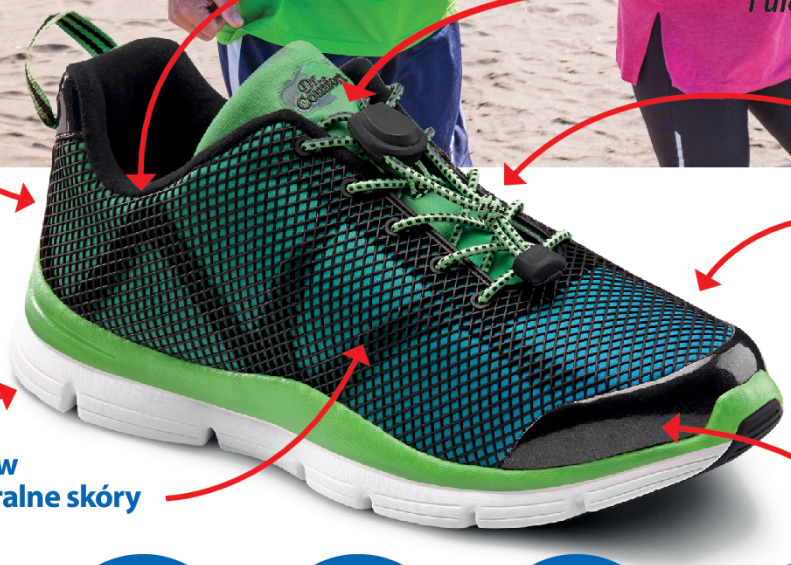

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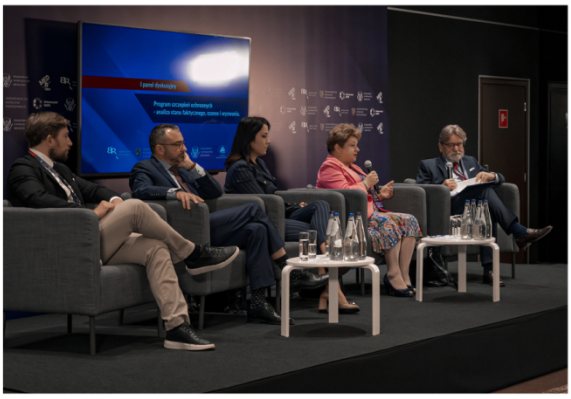
Sukces czy porażka? Czyli jak wygląda sytuacja w zakresie szczepień ochronnych w Polsce?



Cztery uczelnie – Centrum Medyczne Kształcenia Podyplomowego, Warszawski Uniwersytet Medyczny, Akademia Leona Koźmińskiego i Uniwersytet SWPS zorganizowały konferencję naukową w ramach Projektu „Budowanie zaufania do szczepień ochronnych z wykorzystaniem najnowszych narzędzi komunikacji i wpływu społecznego".

Podczas czterech paneli dyskusyjnych eksperci, naukowcy, lekarze, psycholodzy, przedstawiciele instytucji publicznych dyskutowali na temat szans i wyzwań stojących przed system szczepień w Polsce.

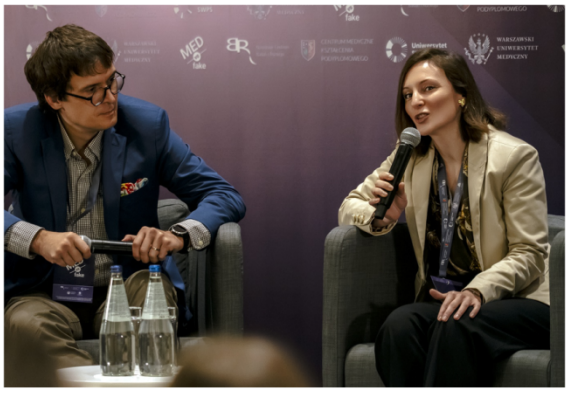
Nie da się zaprzeczyć faktom – szczepienia ochronne są najefektywniejszą metodą zwalczania chorób zakaźnych. Podnoszenie zaufania do szczepień, które przekłada się na poziom wyszczepienia populacji, jest więc kluczowym wyzwaniem stojącym przed wszystkim odpowiedzialnymi za zdrowie publiczne w Polsce.

Dużym sukcesem i krokiem w dobrym kierunku było wprowadzenie szczepień w aptekach – podkreślił prof. Jarosław Pinkas, Konsultant Krajowy w dziedzinie zdrowia publicznego.

Niemniej, mimo szeroko prowadzonej kampanii medialnej, Polska należy do krajów o najniższym poziomie wszczepienia przeciw COVID-19 w Europie (niespełna 60% populacji zostało w pełni zaszczepionych). Co roku w naszym kraju przeciw wirusowi grypy szczepi się jedynie 4-6% osób. Według danych PZH-NIPZ liczba uchyleń od szczepień obowiązkowych wśród dzieci w okresie od 2016 do 2020 roku wzrosła 2-krotnie z 23 tys. do 50.5 tys.

„Szczepienia przeciwko grypie u pracodawców bardzo zmniejszają absencję w pracy, ta sama prawidłowość dotyczy szczepień rotawirusowych" – mówił prof. Marcin Czech

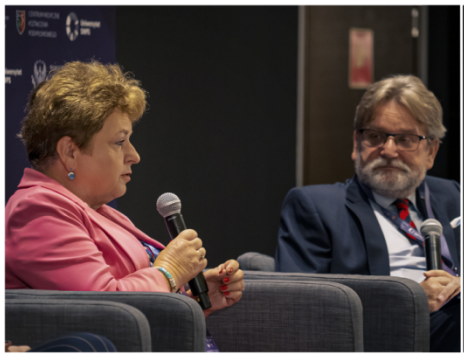
Z danych uzyskanych przez Warszawski Uniwersytet Medyczny wynika, że postawy mieszkańców Polski wobec szczepień nie są spójne. Może to w przyszłości spowodować dalszy spadek poziomu wyszczepienia populacji, a w dalszej perspektywie wzrost zagrożenia epidemiologicznego.

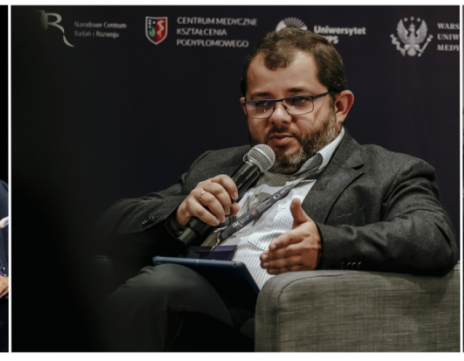


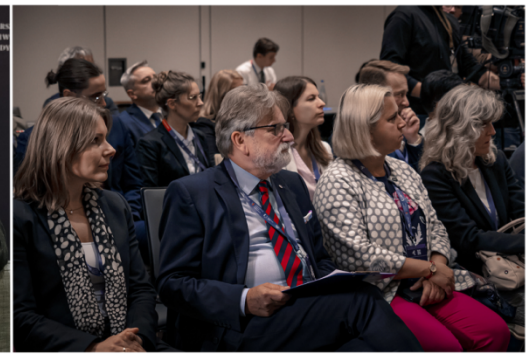
W ramach panelu prowadzonego przez Uniwersytet SWPS zastanawiano się nad przyczynami postaw wobec szczepień. Pierwszym skojarzeniem, jakie większość Polaków wypowiada po haśle „szczepienia" jest „koronawirus". I choć rzeczywiście od końca 2020 roku szczepienia przeciwko COVID-19 stały się jednym z bardzo ważnych elementów debaty publicznej, to przecież rosnąca liczba osób uchylających się od szczepień na takie choroby jak odra czy krztusiec była ważną kwestią społeczną już przed marcem 2020 roku.

Jednym z kluczowych wyzwań stojących przed system szczepień w Polsce jest walka z fake newsami, podkreślali eksperci Akademii Leona Koźmińskiego.
Czy dezinformację naukową można interpretować w kategoriach cyberwojny?
Czy jest to zagrożenie porównywalne z katastrofą klimatyczną, bądź rozwojem technik AI? Jaką rolę odgrywają w tym procesie media społecznościowe? To pytania z którymi musimy się jak najszybciej zmierzyć.

Mimo wszystko wysoka wyszczepialność w Polsce to sukces wszystkich profesjonalistów medycznych i osób działających na rzecz zdrowia publicznego. Wciąż zdecydowana większość Polaków dokonuje właściwych wyborów zdrowotnych. To optymistyczny wniosek płynący z konferencji CMKP, WUM, SWPS i ALK. Jednak nic nie jest dane raz na zawsze – pojawiające się wyzwania powinny mobilizować lekarzy, naukowców, edukatorów, przedstawicieli administracji publicznej do szukania nowych sposobów dotarcia z komunikatem zachęcającym do szczepień i podejmowania zdecydowanych działań na rzecz walki z dezinformacją.







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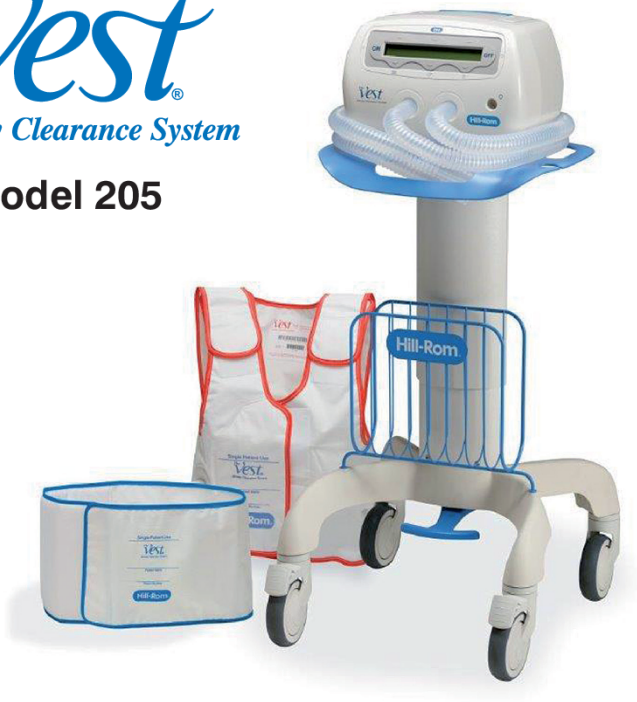

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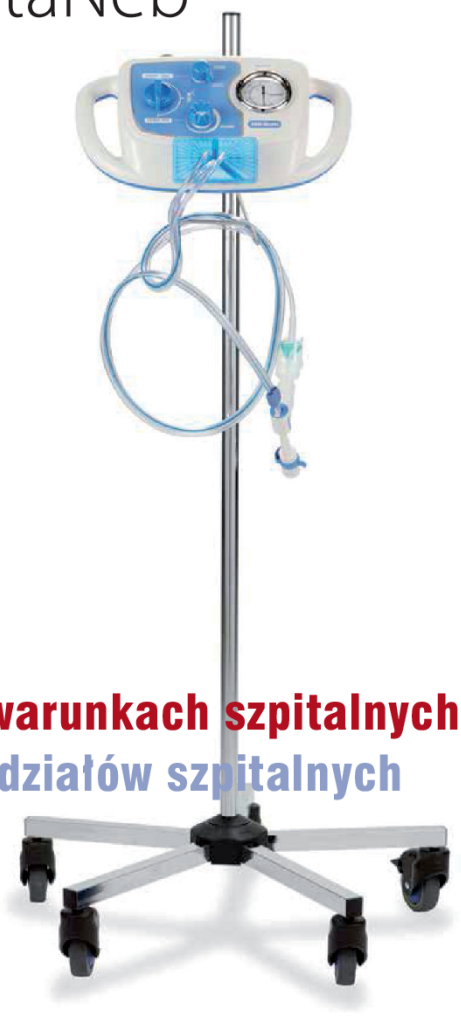

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nr 4/2022 (22)

Study on the level of professional satisfaction of students of physiotherapy after one year of studying remotely in connection with the COVID-19 pandemic

Badanie poziomu satysfakcji zawodowej studentów kierunku fizjoterapia po roku nauki w trybie zdalnym w związku z pandemią choroby COVID-19

Katarzyna Placek[1,2(A,B,C,D,E,F)], Beata Skolik[3,4(B,D,E,F)], Renata Szczepaniak[5(B,D,F)], Artur Polczyk[6(B,E,F)], Katarzyna Walicka-Cupryś[7(B,D)], Małgorzata Wójcik[8(B)], Roksana Malak[9(B)], Ewa Rakowicz[10(B)], Agnieszka Dąbek-Szwajlik[11(B)], Tomasz Maicki[12(B)], Anna Lipińska[13(B)], Anna Boguniecka[14(B)], Michał Przybylski[15(B)], Piotr Chyliński[16(B)], Janusz Dość[17(B)], Sebastian Niżnik[(B)], Dominik Starski[(B)], Mirella Kozakiewicz[(B)], Mateusz Curyło[18(E,F)]

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Abstract

The COVID-19 pandemic resulted in an almost immediate need to limit social contact, including access to full-time education.
Teaching in the 2020/2021 academic year relied almost entirely on remote education. Medical students felt the problem of the lack of student-patient contact in particular. Internships and apprenticeships were kept to a minimum, and in many universities there were no apprenticeships, which also translated into the lack of acquisition of practical knowledge, which is very important in the work of a future medic.
The study covered students from all voivodeships. The nationwide character of the study made it possible to obtain objective results.
The objective of the study was to examine the level of satisfaction and acquired skills of students of the medical faculty, i.e. physiotherapy within remote education.
The results of the study and the literature review show that the preferred form of education in medical faculties is a mixed form of education, and student satisfaction with the remote form is rather low. It has been shown that this method of education does not lower the level of satisfaction, and at the same time has a positive effect on the economic aspect of studying.

Key words:
student satisfaction, physiotherapy, remote learning, COVID-19 disease

Streszczenie

Sytuacja związana z pandemią choroby COVID-19 spowodowała praktycznie natychmiastową potrzebę ograniczenia kontaktów społecznych, w tym również dostępu do edukacji w trybie stacjonarnym.
Nauczanie w roku akademickim 2020/2021 prawie całkowicie opierało się o nauczanie zdalne. Studenci kierunków medycznych w szczególny sposób odczuli problem związany z brakiem kontaktu student-pacjent. Staże zawodowe oraz praktyki zostały ograniczone do minimum, a w wielu uczelniach praktyki zawodowe nie odbywały się, co również przełożyło się na zdobywanie wiedzy praktycznej, tak istotnej w pracy przyszłego medyka.
Badaniem objęto studentów z wszystkich województw. Ogólnopolski charakter badań pozwolił uzyskać obiektywne wyniki.
Celem pracy było zbadanie poziomu satysfakcji oraz zdobytych umiejętności studentów kierunku medycznego – fizjoterapii w czasie nauczania w formie zdalnej.
Wyniki badań oraz przegląd literatury dowodzą, że preferowaną formą edukacji na kierunkach medycznych jest forma mieszana, a satysfakcja studentów z formy zdalnej jest raczej niska. Wykazano, że taki sposób kształcenia nie obniża poziomu satysfakcji, a jednocześnie pozytywnie wpływa na aspekt ekonomiczny studiowania.

Słowa kluczowe:
satysfakcja studentów, fizjoterapia, tryb nauki zdalnej, choroba COVID-19

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Introduction

The COVID-19 pandemic resulted in an almost immediate need to limit social contact, including access to full-time education.

Teaching in the 2020/2021 academic year relied almost entirely on remote education. Medical students felt the problem of the lack of student-patient contact in particular. Internships and apprenticeships were kept to a minimum, and in many universities there were no apprenticeships, which also translated into the lack of acquisition of practical knowledge, which is very important in the work of a future medic.

The study covered students from all voivodeships. The nationwide character of the study made it possible to obtain objective results.

Aim

The objective of the study was to assess the level of satisfaction and acquired skills of students of the medical faculty, i.e. physiotherapy within remote education.

Assumptions of the study

For the needs of the study, the following research questions were asked:

1. In the opinion of the respondents, has the introduction of remote education influenced the quality of education in the field of physiotherapy?
2. Has remote education influenced the quality of teaching and learning the material?
3. Has remote education influenced the assessment of the respondents' skills and competences to work with patients?
4. Has remote education had an impact on the level of professional satisfaction of students with education in the field of physiotherapy?
5. Has the introduction of remote education influenced the passing of exams?

Method

1,397 students of physiotherapy took part in the study. The survey was undertaken by students from all sixteen voivodeships, state and private universities, both full-time and part-time, working and non-working, who were students of the 2nd to 5th year. A questionnaire consisting of 4 parts was used as the research tool. The first part consisted of data on the form of study, year of study and professional situation; the second and third parts included questions created by the authors concerning, respectively, the assessment of the quality and availability of remote education, the feeling of the level of professional satisfaction and preparation for work in the profession during the year of remote education; the fourth part concerned medical forecasting – the effects and usefulness of remote education for students of physiotherapy.

Results

Among the respondents, 75.6% were full-time students, and 24.4% were part-time students. The most numerous group of respondents were students of the 2nd year (34.8%), 4th year

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(31.4%) and 3rd year (20.7%), respectively. The fifth-year students constituted the smallest group – 13.1%. The vast majority (75.4%) of the respondents were non-working students, who had no professional experience and had no contact with patients outside of clinical classes, internships and apprenticeships. Among these students, the most frequently indicated were a reduced level of professional satisfaction and anxiety caused by the lack of contact with patients as a factor limiting professional skills and competences.
Most of the respondents were students at state universities, constituting 75.6%. This group of students could use the medical simulation centre to supplement their education.
Table 1 presents the numerical and percentage distribution of the respondents in individual voivodeships, divided into full-time and part-time students.

Table 1. Characteristics of the study and control group

Voivodeship	Full-time		Part-time	
	n	%	n	%
Lower Silesian	76	7%	4	1%
Kuyavian-Pomeranian	28	3%	58	17%
Lublin	49	5%	31	9%
Lubusz	84	8%	0	0%
Lodz	100	9%	0	0%
Lesser Poland	66	6%	1	0%
Masovian	45	4%	44	13%
Opole	45	4%	47	14%
Subcarpathian	69	7%	27	8%
Podlaskie	104	10%	21	6%
Pomeranian	11	1%	2	1%
Silesian	46	4%	35	10%
Świetokrzyskie	190	18%	41	12%
Warmia-Masuria	24	2%	21	6%
Greater Poland	37	4%	7	2%
West Pomeranian	82	8%	2	1%
Total	1056		341	

Survey questions examining the level of professional satisfaction concerned the differences in the acquisition of knowledge, difficulties in completing subjects, as well as the quality of transferring knowledge during remote classes compared to the full-time form.
The respondents answered three questions:
1. After the introduction of remote education, did you feel any difference in the quality of the material provided?
2. Do you think that, due to the introduction of remote education, the level of your skills is lower compared to the regular form of education?
3. Is the acquisition of the material more difficult during remote education?
It was assumed that selecting the answer YES in each of the 3 questions examining the level of satisfaction would indicate that remote learning in the field of physiotherapy was assessed as significantly different from expectations (Table 3).
From among the respondents, 57.6% stated that the acquisition of knowledge from materials in the form of remote classes is more difficult than in the regular form.

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Table 2. Division of respondents in individual voivodships according to the year of study

Voivodeship	2nd year		3rd year		4th year		5th year	
	n	%	n	%	n	%	n	%
Lower Silesian	20	4.05%	8	2.79%	35	7.97%	17	9.29%
Kuyavian-Pomeranian	40	8.10%	26	9.06%	18	4.10%	1	0.55%
Lublin	8	1.62%	0	0.00%	27	6.15%	45	24.59%
Lubusz	40	8.10%	13	4.53%	39	8.88%	0	0.00%
Lodz	0	0.00%	23	8.01%	71	16.17%	6	3.28%
Lesser Poland	42	8.50%	1	0.35%	28	6.38%	0	0.00%
Masovian	0	0.00%	40	13.94%	44	10.02%	1	0.55%
Opole	41	8.30%	5	1.74%	2	0.46%	44	24.04%
Subcarpathian	61	12.35%	0	0.00%	12	2.73%	23	12.57%
Podlaskie	7	1.42%	52	18.12%	36	8.20%	30	16.39%
Pomeranian	2	0.40%	0	0.00%	6	1.37%	5	2.73%
Silesian	76	15.38%	2	0.70%	2	0.46%	1	0.55%
Świetokrzyskie	65	13.16%	71	24.74%	94	21.41%	1	0.55%
Warmia-Masuria	17	3.44%	17	5.92%	11	2.51%	0	0.00%
Greater Poland	15	3.04%	23	8.01%	6	1.37%	0	0.00%
West Pomeranian	60	12.15%	6	2.09%	8	1.82%	9	4.92%
Total	494	100.00%	287	100.00%	439	100.00%	183	100.00%

The assessment of one's own skills acquired during remote learning is an important problem. As many as 68.9% of respondents believe that their skills after one year of studying remotely are much lower than those acquired during full-time studies, supported equally with practical training of the profession during clinical classes and apprenticeships.

A total of 46.9% of the respondents considered that the level of professional satisfaction after a year of remote education in the field of physiotherapy significantly differs from their expectations (Table 3).

Table 3. Number of respondents who answered yes to all 3 questions concerning the assessment of the learning outcomes in the remote mode

Voivodeship	Yes		No		I don't know	
	n	%	n	%	n	%
Lower Silesian	42	6.57%	5	2.82%	0	0.00%
Kuyavian-Pomeranian	37	5.79%	8	4.52%	0	0.00%
Lublin	37	5.79%	6	3.39%	0	0.00%
Lubusz	71	11.11%	1	0.56%	0	0.00%
Lodz	64	10.02%	5	2.82%	0	0.00%
Lesser Poland	26	4.07%	13	7.34%	0	0.00%
Masovian	47	7.36%	8	4.52%	0	0.00%
Opole	35	5.48%	8	4.52%	0	0.00%
Subcarpathian	29	4.54%	21	11.86%	0	0.00%
Podlaskie	70	10.95%	15	8.47%	1	8.33%
Pomeranian	7	1.10%	0	0.00%	0	0.00%
Silesian	30	4.69%	14	7.91%	4	33.33%
Świetokrzyskie	101	15.81%	38	21.47%	6	50.00%
Warmia-Masuria	11	1.72%	8	4.52%	1	8.33%
Greater Poland	21	3.29%	2	1.13%	0	0.00%
West Pomeranian	11	1.72%	25	14.12%	0	0.00%
Total	639		177		12	

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Both the non-working and working students confirmed that the year of remote education did not meet their expectations.
More than half of the respondents (59.5%) believe that the year of remote education reduced their future professional competences, 24.8% of the respondents believed that the year of remote education did not affect their level of professional competence, and 15.7% answered that they do not know whether the form of remote education has had an impact on their level of competence.
The study was also aimed at assessing how the year of remote education influenced the level of acquired professional competences to work as a physiotherapist.
The results in the tables are also presented with the division into the working and non-working groups (Table 4).
It was considered that students believed that their professional competences were lowered when they answered YES to the following questions:
• Do you think that the year of remote education has lowered your future professional competences to work as a physiotherapist?
• Due to the introduction of remote education, do you feel a lower level of preparation for work as a physiotherapist compared to the previous year with the regular form of education?

Table 4. Assessment of the level of acquired competences after one year of remote education among respondents working professionally and studying part-time

Voivodeship	Yes				No				I don't know			
	Working		Non-Working		Working		Non-Working		Working		Non-Working	
	n	%	n	%	n	%	n	%	n	%	n	%
Lower Silesian	5	3.36%	51	7.96%	3	2.86%	3	1.91%	2	11.76%	3	5.36%
Kuyavian-Pomeranian	15	10.07%	30	4.68%	13	12.38%	5	3.18%	3	17.65%	2	3.57%
Lublin	11	7.38%	33	5.15%	5	4.76%	11	7.01%	0	0.00%	3	5.36%
Lubusz	10	6.71%	57	8.89%	1	0.95%	5	3.18%	1	5.88%	2	3.57%
Lodz	6	4.03%	73	11.39%	5	4.76%	3	1.91%	0	0.00%	4	7.14%
Lesser Poland	0	0.00%	26	4.06%	2	1.90%	14	8.92%	0	0.00%	2	3.57%
Masovian	20	13.42%	41	6.40%	5	4.76%	6	3.82%	1	5.88%	4	7.14%
Opole	14	9.40%	36	5.62%	18	17.14%	4	2.55%	2	11.76%	2	3.57%
Subcarpathian	7	4.70%	32	4.99%	11	10.48%	19	12.10%	2	11.76%	5	8.93%
Podlaskie	14	9.40%	65	10.14%	10	9.52%	9	5.73%	0	0.00%	5	8.93%
Pomeranian	4	2.68%	7	1.09%	0	0.00%	1	0.64%	0	0.00%	0	0.00%
Silesian	10	6.71%	22	3.43%	8	7.62%	11	7.01%	4	23.53%	7	12.50%
Świetokrzyskie	23	15.44%	113	17.63%	9	8.57%	30	19.11%	2	11.76%	8	14.29%
Warmia-Masuria	3	2.01%	15	2.34%	6	5.71%	10	6.37%	0	0.00%	1	1.79%
Greater Poland	4	2.68%	16	2.50%	3	2.86%	3	1.91%	0	0.00%	7	12.50%
West Pomeranian	3	2.01%	24	3.74%	6	5.71%	23	14.65%	0	0.00%	1	1.79%
Total	149	100.00%	641	100.00%	105	100.00%	157	100.00%	17	100.00%	56	100.00%

More than half of the respondents (51.7%) indicated that obtaining credits for subjects taught remotely is significantly easier compared to regular education. 31.4% of the respondents answered no, stating that it was more difficult for them to complete subjects after a year of studying remotely, while 16.9% of the respondents did not feel the difference in the difficulty of obtaining credit.

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The respondents were also asked whether the preferred form of classes in the case of further necessity to limit SARS-CoV-2 virus transmission would be a hybrid form, i.e. online lectures and classes in the regular form.
The vast majority (76.2%) of the respondents were in favour of this form of education, 15.2% of the respondents believe that the mixed form of education is not a good solution, and 8.6% of the respondents do not know whether this form of education is a good solution.
These results are in line with domestic and foreign reports.

Discussion

The pandemic significantly influenced the possibilities of educating students of medical faculties, including physiotherapy. As many as 46.9% of respondents considered that the level of satisfaction after one year of remote education was below their expectations.
Despite the implementation of alternative methods of education for medical students, the majority of them negatively assessed their skills and competences, mainly in terms of the learning outcomes related to working with patients.
The level of professional satisfaction of students of physiotherapy is presented in an Italian retrospective study [9], which compared the level of student satisfaction after one year of remote education with respect to full-time education. The level of satisfaction with on-line education was the same as among students who studied full-time. At the same time, it was shown that e-learning alone is not a form accepted by students and significantly differs from the expectations of the respondents as a basic form of education.
The results presented in the report prepared by the Institute of Philosophy and Sociology of the Pedagogical University of Cracow emphasize the problem of mental well-being in students who have studied remotely [1]. The results of the study showed that students have a harder time absorbing material posted on e-learning platforms and that there is a problem with the overwhelming amount of material and the inability to contact teachers in real time. The Medical Education Improvement Centre of the Medical University of Warsaw in the presented report on remote education in medical faculties [4] also pointed to the problems with placing teaching materials without lecturers' comment and the lack of possibility to educate students in a practical way. The study also covered academic teachers. A problem of remote education reported by students was also the unavailability of on-line learning tools [7]. Similar problems related to education at medical universities in China [8], where remote education was introduced almost immediately, and the majority of the surveyed students positively assessed remote education.
The assessment of the perception of remote education programs by medical students while suspending clinical internships during the COVID-19 pandemic was presented in a report by medical academies in California [2]. Most of the students unequivocally assessed the possibility of learning a profession in the form of classes in clinics as the most effective and most valuable in gaining professional experience. Regardless of the place of the studies [2, 3, 8, 9], for students the possibility of gaining experience in direct contact with patients in the form of internships is fundamental. Learning from textbooks and remote classes were rated as the least effective. Most of the students mentioned the loss of clinical abilities resul-

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ting from inexperience or the impossibility to gain experience through direct contact with patients. In this study, the majority of respondents felt less prepared for final exams in comparison to the option to study full-time rather than remotely. Paradoxically, more than half of the students surveyed for the purposes of this study (51.7%) indicated that the form of obtaining credits online is much easier, compared to the regular form, which certainly results from technical limitations and the possibility of verifying knowledge, but also independence of the examined students.

Polish studies on the evaluation of the effects of remote education by students of other medical faculties were carried out at the Powiśle University [3]. 402 students of medical faculties participated in the study. Similarly to the students of physiotherapy, the respondents emphasized the problem of the lack of "live" contact with lecturers. The respondents also indicated difficulties related to the lack of a sense of security, disturbance of friendships, and a growing sense of insecurity.

These elements affect the effectiveness of the online learning process, which 57.6% of the physiotherapy students surveyed in this study assess as weaker and more difficult than the regular learning process. Difficulties identified in the research carried out at the Powiśle University may also affect interpersonal skills, which are invaluable in physiotherapeutic practice, acquired mainly in the course of direct work with patients, which, in the opinion of the respondents, was definitely lacking during the year of remote education. The results of the analysis of remote education introduced in Saudi Arabia, which included 1,289 students and academic teachers, indicate similar teaching difficulties resulting from online education in medical faculties, related both to the growing sense of stress, problems with time management and communication [5]. Regardless of the place of the study, the respondents unanimously indicate that the most beneficial form of studies in their opinion is the mixed form of education. As many as 68.9% of the respondents for this thesis believe that a year of studies without clinical classes, internships or apprenticeships significantly reduces their skills in relation to the form of education before the pandemic. More than half of the respondents (59.5%) believe that the year of remote education reduced their future professional competences.

A nationwide report on the preferences of students in terms of the form of education was carried out by the FLOW Research Centre [3]. The results of the research presented an assessment of 1,232 students of 76 Polish universities. According to the results obtained in our study, the FLOW Research Centre indicates that the preferred form of studies by students is a mixed form. Moreover, the majority of respondents assessed the level of satisfaction with remote education as average, and the quality of remote education as compared to the regular form as much worse [10, 11, 12, 13].

Conclusions

1. According to the respondents, the introduction of remote education had an impact on the quality of education in the field of physiotherapy. In the opinion of the respondents, teaching in a remote form reduced the quality of education.
2. Remote education influenced the quality of the transfer and acquisition of the material. According to the respondents, the quality of the transferred knowledge was worse compared to full-time education, and the acquisition of knowledge through educational platforms was much more difficult.

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3. Remote education influenced the assessment of their skills and competences to work with patients. Most of the respondents assessed the ability to work with patients as inferior in comparison to the regular form of education.
4.Remote education influenced the level of professional satisfaction of students with education in the field of physiotherapy. Most of the respondents indicated a low level of professional satisfaction after one year of remote education, and their expectations towards education significantly differed from the quality of the acquired skills.
5. The introduction of remote education made it difficult to obtain credit for particular subjects. The respondents indicated that completing individual subjects taught remotely is much easier compared to learning in the regular form.
6. The presented research results and the literature review show that the preferred form of education in medical faculties is a mixed form of education, and that student satisfaction with remote education is rather low.
7. It has been shown that this method of education does not lower the level of satisfaction, and at the same time has a positive effect on the economic aspect of studying.

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Piśmiennictwo/ References

1. Długosz P.: Raport z II etapu badań studentów UP. Opinia na temat zdalnego nauczania i samopoczucia psychicznego, Instytut Fizjologii i Socjologii Uniwersytetu Pedagogicznego, Kraków 2020.
2. Charles S., Coffey S., Bridget V., Mac Donald L., Sherbini B., Baxter S.L., Lander L.: Student Perspectives on Remote Medical Education in Clinical Core Clerkships During the Pandemic, Med. Sci. Educ. 2020 Dec; 30 (4): 1577-1584, Published online 2020 Oct 14. doi:10.1007/s40670-020-01114-9
3. Heród M., Pawlikowska B., Strzała- Osuch K.: Analiza i ocena nauczania zdalnego w okresie pandemii w opinii studentów Powiślańskiej Szkoły Wyższej jak studenci postrzegają nauczanie zdalne? FLOW Centrum Badawcze, www.makeitflow.pl, dostęp 14.04.2021.
4. Doroszewska A., Hys M., Jakubiak M., Kształcenie zdalne, czyli jak? Centrum Doskonalenia Edukacji Medycznej WUM, Warszawa 2020.
5. Rajab M.H., Gazal A.M., Alkattan K.: Challenges to Online Medical Education During the COVID-19 Pandemic, 2020 Jul 2;12(7): e.8966. Doi: 10.7759/cureus.8966.
6. Lee J., Solomon M., Genti L., How does the pandemic affect U.S. college students? Temple University, Philadelphia 2020.
7. Nimrod G.: Technophobia among older Internet unsers, Educ. Gerntol, 2018;44:148-162.
8. Wang Y., Yu R., Liu Y., Qian W.: Students and Teachers Perspective on the Implementation of Online Medical Education in China, 2021. https://doi.org/10.2147/AMEP.S323397.
9. Rossetini G., Geri T., Palase A., et al.: Online teaching in physiotherapy education during Covid-19 pandemic in Italy: a retrospective case-control study on students' satisfaction and performance, BMC Med. Educ.; 21 (1): 456,2021, ID: covidwho-1378124.
10. Ng L., Seow K.C., Mac Donald L., et al.: eLearning durning the Covid-19 pandemic, Phys Ther. 2021; 4: 101, pzabo082.doi: https://doi.org/10.1093/ptj/pzabo82.
11. World Physiotherapy response to COVID-19 briefing papers exploring the impact of COVID-19 on education.Immediate impact on the higher education sector and response to delivering physiotherapist entry level education, London 2021, https://world.physio/covid-19-information-hub/covid-19-briefing-papers,
12. N. Al Shhorbaji, Atun R., Car J., WHO: eLearning for undergraduate health professional education: a systematic review informing a radical transformation of health workforce developmental, London 2021, https://www.who.int/her/documents/elearning_hwf/en/.

doi.org/10.56984/8ZG1A62sK