

PARTNERSHIP – IS IT EVEN POSSIBLE? DIFFERENT ATTITUDES OF MEDICAL AND PHARMACY STUDENTS TOWARD INTERPROFESSIONAL COOPERATION

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Abstract

The aim of this study was to determine attitudes of medicine and pharmacy students toward the possibility of establishing cooperation between pharmacists and physicians. A cross-sectional questionnaire survey was conducted among 215 final years students'. Data were analysed using the chi-square test of independence or the Fisher-Freeman-Halton exact test in case zero observed frequency values occurred. The level of statistical significance was assumed at $p < 0.05$. Students differed in their opinions about areas for future cooperation. Medical students did not perceive collaboration as necessary for proper designing and modifying patient's therapy. Both medical (40.70%) and pharmacy students (41.12%) found the cooperation important in the field of patient's education. Moreover, in pharmacy students' opinion, pharmacist should participate in collecting information regarding patient's diseases (60.17%) and medicines concomitantly used (71.79%). On the other hand, respectively only 12.64% and 35.63% of the medical students agreed with this statement (in both cases $p < 0.0001$). The lack of clear division of responsibilities or indication of areas for cooperation between health care professionals in the future may result both in interfering with the competence of other professionals or the lack of self-confidence in undertaken actions.

Rezumat

Obiectivul studiului abordat a fost determinarea atitudinilor studenților de la facultățile de medicină și farmacie privind posibilitățile de inițiere a unei cooperări dintre medic și farmacist. Studiul transversal a fost realizat pe baza unui sondaj realizat cu participarea a 215 studenți din ultimii ani de studii la facultățile de medicină și farmacie. Datele au fost analizate cu ajutorul testului chi-pătrat de independență și a testului Fisher-Freeman-Halton în cazul frecvenței valorilor zero observate. Nivelul de semnificație statistică a fost stabilit la $p < 0,05$. Opiniile studenților cu privire la domeniile de cooperare în viitor sunt diferite. Studenții facultăților de medicină nu percep cooperarea ca fiind necesară pentru proiectarea și modificarea tratamentului pacientului. Atât studenții de la medicina generală (40,70%), cât și cei de la farmacie (41,12%) apreciază cooperarea, ca fiind semnificativă în educarea pacientului. Mai mult decât atât, în opinia studenților de la farmacie, farmacistul trebuie să participe la colectarea de informații cu privire la alte boli

ale pacientului (60,17%) și medicamente administrate concomitent (71,79%). Pe de altă parte, doar 12,64% și respectiv 35,63% dintre studenții de la medicină chestionați au fost de acord cu această afirmație (în ambele cazuri $p < 0,0001$). Lipsa stabilirii clare a responsabilităților între personalul medical sau a indicării zonelor de cooperare între profesioniștii din domeniul sănătății pot genera pe viitor conflicte de competență în cadrul personalului medical sau lipsă de încredere în sine în acțiunile întreprinse.

Keywords: pharmacy students, medical students, cooperation, partnership

Introduction

Over subsequent decades we have been witnessing intense development and dissemination of medical and pharmaceutical sciences as well as growing dynamics of the market of medical services and products, which together lead to extension of patients' life and improvement of its quality. A decrease in the number of children per family, accompanying this phenomenon, results in changes in demographic structures and aging of the population. The increasing disproportion between the demand for broadly defined medical services and availability of qualified medical staff forces decision-makers to introduce solutions in the health policy that improve access of patients to health care services and thereby include other medical professions in the process of treatment [8].

One health service that may significantly contribute to the improvement of life quality of a patient is pharmaceutical care based on the cooperation between physicians and pharmacists [11]. Previous studies confirmed that a greater involvement of a pharmacist in pharmaceutical care may significantly enhance therapeutic outcomes [9]. Apart from supplying an appropriate and suitable medicinal product or appliance and providing information and advice to the patient on the safe use of them, they take on subsequent assignments aiming at supervision of effectiveness and safety of the therapy prescribed by a physician [11]. However, an increasing role of a pharmacist frequently arouses anxiety in the medical environment. The lack of understanding on the required skills and competence of pharmacy graduates and also the lack of clearly defined expectations of pharmacists hinder establishing partner relationships with them and decrease perception of a pharmacist to a shopkeeper in the eyes of a physician, which, as a consequence, brings about misunderstandings and conflicts [6, 12, 18]. Building mutual relationships based on trust and partnership requires formulation of clear principles of functioning in a team [12]. Despite the fact that legislators make attempts to introduce regulations regarding the range of responsibilities of both professional groups, the conflict regarding

competence division between physicians and pharmacists has been existing for ages and has assumed different forms in Central Europe [19].

The World Health Organization highlights the necessity of education to enable more effective teamwork and collaborative practice [21]. Thereby it is reckoned that the way of perception of other health care professionals and possibilities of establishing cooperation with them in the period of pre-graduate education translate into actions taken in professional life. In spite of fact that authors have searched MEDLINE using different keywords including “*cooperation*”, “*partnership*”, “*student*”, “*pharmacy*”, “*medicine*”, “*collaborative practice*”, “*expectation*”, they have not found studies presenting opinions of individuals who will form pharmacist-physician relationships in the near future, i.e. students of medical sciences. Hence, the basic aim of this study was to determine attitudes of the students of final years of pharmacy and medicine faculties in terms of the possibility of establishing cooperation between pharmacists and physicians.

Materials and Methods

A cross-sectional survey was conducted among fifth-year students of pharmacy and sixth-year students of medicine of the Poznan University of Medical Sciences. Anonymous questionnaires were distributed from February to March 2010 and from February to March 2011. The university's research ethics committee approved the questionnaire to be completed by students.

The criterion for the selection of the analysed sample was having the status of a last-year student of each of the programs on the basis of the assumption that these individuals would soon be establishing interdisciplinary relationships. The questionnaire included the list of responsibilities and competence of health care professionals in pharmaceutical care. Respondents were asked to point out those professional duties which should be carried out in cooperation of a physician and a pharmacist.

The results were statistically analysed using Statistica10.0 software (StatSoft®). The analysed data came from the nominal scale and therefore they were analysed using the chi-square test of independence or the Fisher-Freeman-Halton exact test in case zero observed frequency values occurred. All tests were analysed at significance level of $p=0.05$.

Results and Discussion

Out of 321 distributed questionnaires, altogether 232 questionnaires were collected which enabled to assess the response rate at 72.27%.

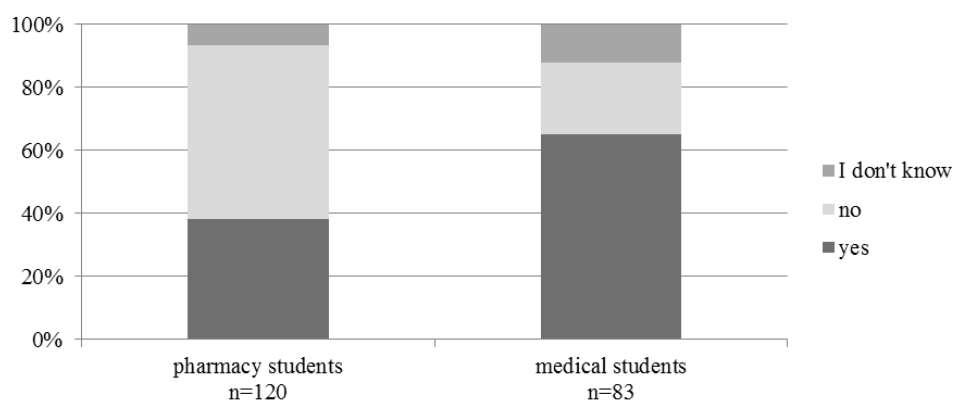
Seventeen of the collected questionnaires were excluded because of no answer (n=10; 4.31%) or lack of respondent specification (n=7; 3.02%), while 215 underwent further analysis. Sample characteristics are presented in Table I.

Table I.

The characteristic of analysed sample of population					
Sample size	gender	5 th year of pharmacy		6 th year of medicine	
		female	male	female	male
	age [M±SD]	90	36	54	35
		23.4±0.59	23.61±0.92	24.91±1.28	24.77±0.96
TOTAL		126		89	
Whole population		female	male	female	male
		188	65	316	166
TOTAL		253		482	

* Size of the whole population of fifth-year pharmacy students and sixth-year medical students in years in which the study was conducted (2009-2011) / data provided by Poznan University of Medical Sciences

Collected data showed the divergence of students' perception regarding healthcare professionals cooperation. The majority of medical students (65.06%) felt that unambiguous division of responsibilities between the healthcare professionals is possible, while only approximately one-third of the future pharmacists shared this view (Figure 1).

**Figure 1.**

Answers' distribution: Do you think that responsibilities of physicians and pharmacists can be unambiguously separated? $P < 0.0001$

There are many studies showing possibilities of establishment of cooperation between a physician and a pharmacist that assess their results both qualitatively and quantitatively [8, 15, 17, 20, 22] and describe

expectations of the representatives of positions of public trust in terms of such a cooperation [12, 18]. The results of the conducted study showed statistically significant differences in perception of the possibilities of cooperation between physicians and pharmacists in students' opinion (Table II).

Table II.

Answers' distribution for questions regarding the areas on which pharmacists and physicians should cooperate, where statistically significant differences were observed

Areas for cooperation between a physician and a pharmacist	responses of pharmacy students			responses of medicine students			p-value
	cooperation n (%)	individual assignment n (%)	total	cooperation n (%)	individual assignment n (%)	total	
selection of the most effective active substance	53 (44.17)	67 (55.83)	120	16 (18.39)	71 (81.61)	87	0.0001
counselling a patient on a drug's administration	57 (47.90)	62 (52.10)	119	55 (62.22)	32 (36.78)	87	0.0292
selection of the optimal dosage regimen	39 (32.77)	80 (67.23)	119	13 (15.12)	73 (84.88)	86	0.0041
selection of desired drug preparation	23 (19.49)	95 (80.51)	118	36 (41.38)	51 (58.62)	87	0.0006
collection of information on other patient's diseases	71 (60.17)	47 (39.83)	118	11 (12.64)	76 (87.36)	87	p<0.0001
monitoring of patient's adherence	57 (49.14)	59 (50.86)	116	21 (24.71)	64 (75.29)	85	0.0005
establishing types of tests essential during ongoing pharmacotherapy	20 (17.24)	96 (82.76)	116	4 (4.60)	83 (95.40)	87	0.0058
collection of information on medications concomitantly used by a patient	84 (71.79)	33 (28.21)	117	31 (35.63)	56 (64.37)	87	p<0.0001

Over 70% of pharmacy students indicated that a mutual area for cooperation between a physician and a pharmacist is obtaining information on different medications taken by a patient. The same view was shared by only one-third of medicine students. When asked about gathering information on comorbidities, 60.17% of future pharmacists stated that it might be worth cooperating in this field; while only a small number of medicine students (12.64%) agreed that it may turn out to be productive. Similar differences were observed for other activities (e.g. selection of the most effective therapeutic substance or dosage regimen, monitoring of adherence).

It can be seen that pharmacy students are more interested in establishing pharmacist-physician cooperation. The growing participation of pharmacists in providing pharmaceutical services, which increases their satisfaction from carried out assignments and enables professional self-fulfilment, was already showed [7, 9]. On the other hand, 58.5% of the pharmacists who took part in 'mystery customer' study of Negru et al. [16], offered only a simple drugs dispense with no counselling. That is why; a

stimulus to take on additional responsibilities may also be the desire to overcome the negative perception of a pharmacist as a 'shopkeeper'.

In spite of the development of industrial, hospital and clinical pharmacy, still few years ago pharmacy graduates in Poland related their professional career with community pharmacies [2], therefore a pharmacist is unambiguously equated with a community pharmacist. As it is emphasized in a study by Hughes and McCann [12], the 'shopkeeper image' seems to be deep-rooted in physicians' awareness, which significantly reduces their willingness to establish partner relationships with pharmacists. Thereby the perception of a pharmacist as a shopkeeper may result in the lack of readiness to cooperate in terms of selection of a therapeutic substance the most effective in therapy because, according to a popular opinion of physicians, decisions made by pharmacists could be influenced by economic issues [12].

The same image appears as a result of a study by Smith et al. [18] in which physicians are more favourably inclined towards cooperation with hospital pharmacists than with community pharmacists in the stage of pharmacotherapy design. Muijers et al. [14] in their study demonstrated that, according to the opinions of 90% of pharmacists, their knowledge and abilities should support the physicians' prescribing policy. A similar opinion was expressed by only 39% of physicians.

The lack of willingness to cooperate during establishing therapy regimen may also result from the fact that, according to physicians, pharmacists do not have sufficient medical training to participate in the clinical decision process, and also from the legal position where a physician is held liable for the effect of pharmacotherapy without defining the pharmacist's place in the process [14]. The conducted research shows that according to medical students, cooperation between physicians and pharmacists should take place mainly regarding the patient's education. These expectations are in accordance with both the attitude of professionally active physicians and so-far proposed solutions [4, 10, 13, 18]. Also pharmacy students indicate great importance of cooperation in a patient's education. However, their responses also suggest that they are willing to become involved in additional activities, i.e. pharmacotherapy design and monitoring of its effectiveness and safety.

Doucette et al. [6] showed that with time a pharmacist who demonstrates knowledge and abilities earns a physician's trust, which is considered to be essential for the partnership and professional relationships establishment [5]. That is why it is worth to consider dissemination of assumptions at the root of the recently popular model of inter-professional

education (IPE). It is probable that students learning “*with, from and about each other*” [1], despite freely chosen career paths, will perceive both cooperation between health care professionals and the role of each of them in a medical team in a similar way. However, confirmation of this statement requires further research.

Though statistically significant divergences in students’ perception of areas for cooperation appeared, results obtained from the survey showed also that in some cases both pharmacy and medical students present similar attitudes (Table III).

Table III.

Answers’ distribution for questions regarding the areas on which pharmacists and physicians should cooperate, where no statistically significant differences were observed

Areas for cooperation between a physician and a pharmacist	responses of pharmacy students			responses of medicine students			p-value
	cooperation n (%)	individual assignment n (%)	total	cooperation n (%)	individual assignment n (%)	total	
monitoring of appropriate medication use	43 (36.13)	76 (63.87)	119	31 (36.05)	55 (63.95)	86	ns*
selection of the appropriate drug formulation	39 (32.77)	80 (67.23)	119	25 (28.74)	62 (71.26)	87	ns
selection of adjuvant therapy	34 (28.81)	84 (71.19)	118	31 (35.63)	56 (64.37)	87	ns
Providing information to a patient about dosage regimen	70 (58.82)	49 (41.18)	119	41 (47.13)	46 (52.87)	87	ns
education of a patient about appropriate use of diagnostic devices (e.g. glucose meter)	47 (41.23)	67 (58.77)	114	35 (40.70)	51 (59.30)	86	ns

* non-significant

These data enabled an indication of the areas on which pharmacist-physicians cooperation would be possible and especially desired (Figure 2).

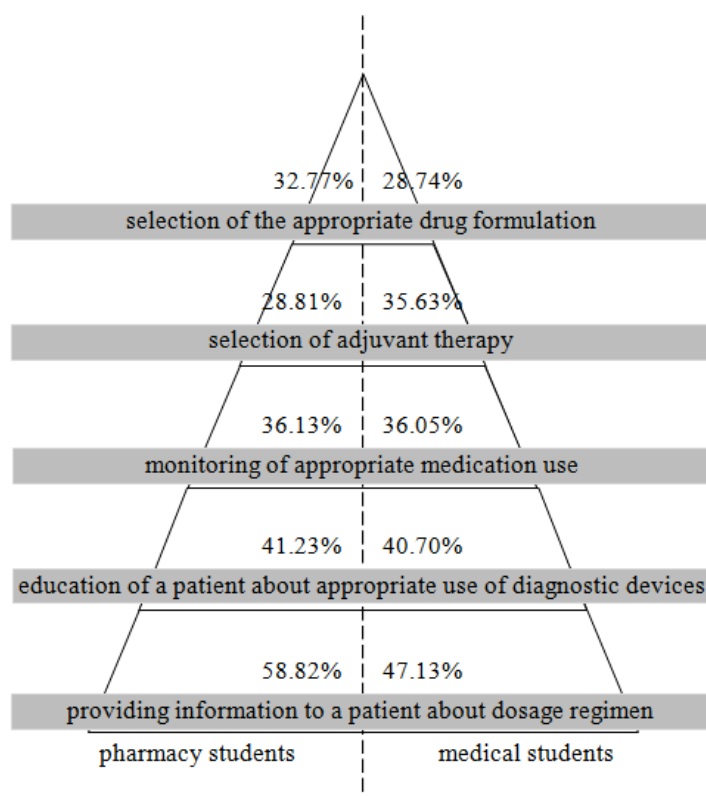


Figure 2.

Areas for pharmacist-physician cooperation in students' opinion

Conclusions

Results of the present study demonstrate great divergences between perceptions of areas for cooperation by students who will form physician-pharmacist relationships in the near future. Medicine students do not consider pharmacists as partners in common work on design and modification of therapy; they rather indicate their role in the education of patients. Though pharmacy students want to participate in patients' knowledge improvement, they would like to join other activities i.e. making therapeutic decisions as well. The lack of clear division of responsibilities or indication of areas for cooperation between health care professionals in the future may result both in interfering with the competence of other professionals or the lack of self-confidence in undertaken actions. Moreover, it can lead to distrust towards other professionals. It is reckoned that gradual implementation of inter-professional education can increase mutual understanding and trust as well as facilitating communication.

Limitations of the study. Although there are similarities in the structure of the analysed and general population of students of the last years of pharmacy and medicine, the research was carried out in 1 out of 10 Polish state universities providing education both in pharmacy and medicine. Despite unified education standards of all medical higher education institutions in the country, the survey can be considered as representative only for Poznan University of Medical Sciences. Further studies are needed to provide reliable data for the whole territory or Poland. Moreover, for other samples it would be recommended to supplement the list of assignments included in the questionnaire, e.g. with monitoring of adverse effects, assessment of therapy effectiveness and other medicine-related problems, in order to analyse as many pharmacotherapy elements as possible.

Acknowledgements

This study was funded by a research grant from the Poznan University of Medical Sciences (502-14-03314429-09985).

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Manuscript received: December 2013