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Nurse prescribing in Poland

Opinions expressed by primary care doctors, nurses, and patients

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Abstract

The aim of this study was to identify and examine the differences in opinions held by health care professionals and the general public concerning the right to administer and prescribe medication which has been awarded to nurses and midwives in Poland.

The study was conducted from December 1, 2014 to July 1, 2015, in randomly selected primary health care clinics, among 2227 individuals, including 849 subjects representing medical personnel of primary health care and 1378 patients receiving primary care services. The study used 2 versions of a questionnaire. The relationships were examined with χ^2 test for independence and Kruskal–Wallis test.

Health professionals do not believe the new rights awarded to nurses and midwives will reduce the waiting time for medical consultations ($P < 0.001$). Nurses' qualifications for the new tasks were most highly rated by patients, whereas the least favorable opinion was expressed by doctors ($P < 0.001$).

To introduce nurse prescribing it is necessary to develop a suitable strategy enabling implementation of the government's initiative and facilitating the process of taking up the new task by nurses.

Abbreviations: OSC = outpatient specialist care, PCS = particular primary care services.

Keywords: e-prescription, nurse, nurse prescribing, patient, physician, primary health care, telemedicine

1. Introduction

Starting in January 2016, the community of Polish nurses and midwives will be faced with a kind of revolutionary change connected with the fact they will acquire the right to recommend and prescribe certain medications. The above authority will be obtained in accordance with the provisions of the amendment to the Nurses and Midwives Act, adopted in July 2014. The proposed changes will apply to nurses and midwives with master's degree in nursing/midwifery. Those with bachelor's degree will be able to issue the so-called repeat prescriptions, to continue treatment, as prescribed by a physician.[1–2]

These changes are designed to benefit patients for whom the new competences of nursing personnel will translate into improved effectiveness of care and better access to health services. Given the situation in Polish health services and the resulting long wait times and necessity to queue for health care, each initiative aimed at changing this situation will be welcome. Measures designed to facilitate administration of continued treatment and to initiate diagnosing a patient as early as possible, without a need to wait for medical consultation, as envisaged by the amendment, correspond with the process of continued improvement in the standards of health care, in particular for local and rural communities.

These changes also constitute a signal directed to the Polish community of nurses and midwives. Expanding their professional rights and authority is an opportunity for changing the status and raising the prestige of this social group. This is because essentially the new regulations award nurses/midwives with new rights, much broader than now, which enable them to prescribe a specific set of diagnostic tests, as well as medication, foods for special medical purposes, and medical products.

Various models of nurse and midwife prescribing, which is a novelty in Poland, have been successfully functioning in numerous countries, in particular in the European Union.[3–5] The relevant rights are varied, depending on health care system, distribution of population as well as professional status of nurses and midwives in a given country, whereas beneficiaries include patients and the entire system.[4,6,7]

Following nurses' therapeutic recommendations, patients have easy access to repeat consultations, and they perceive nurses as competent professionals. Such rational use of health care resources leads to greater economic effectiveness, enables time saving, and provides for satisfaction gained from work by nurses and midwives as well as by patients themselves.[4] The noteworthy legislative changes, adopted by the Polish parliament in Jul 2014, introduce new procedures, as stipulated by 2 new

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articles: 15a and 15b. In accordance with these regulations, nurses and midwives with master's degree in nursing/midwifery will be legally entitled to independently choose selected medications and issue prescriptions, as well as prescribe selected medical products, provided that they complete a specialist training course. On the contrary, upon completion of such specialist course, nurses and midwives with bachelor's degree will be allowed to prescribe selected medication necessary for continued treatment, as recommended by a doctor.[2] The question of payments for specialist courses designed for these professionals has not been regulated yet. In the Statement of Reasons for the draft to the act expanding the rights of nurses and midwives, the cost of such course is estimated at the level of approximately 450 PLN (120$), and the relevant expenditure can be covered either by employers or by individuals wishing to acquire rights envisaged by the act. At the same time, pursuant to the amended act, nurses and midwives will be legally allowed to issue requests for selected diagnostic tests, including clinical laboratory tests, except for examinations involving diagnostic and treatment methods posing increased risk for patients.

We would like to emphasize that the above regulations do not impose an obligation on practicing nurses and midwives to realize these rights, that is issue prescriptions and requests for specific diagnostic tests. It is up to these professionals whether or not they will seek to acquire such rights.

The situation is different when it comes to those studying nursing and midwifery. The regulatory changes made it necessary to introduce subjects related to prescribing into the teaching curricula in both courses of study.

The Statement of Reasons to the draft of the amending act points out that the relevant changes, in addition to nurses and midwives, will also affect:

(1) patients (population of 33,011,012—the nationwide list of the insured individuals on December 31, 2012), who, resulting from the expanded authority and rights awarded to nurses and midwives, will have better access to health care services, in particular primary care services (PCS) and outpatient specialist care (OSC). Benefits for some patients will include shorter diagnostic waiting times, as well as earlier start and continuation of treatment;
(2) entities organizing postgraduate nursing and midwifery courses (the total of 239 entities—data from the Centre for Postgraduate Education of Nurses and Midwives). They will be able to conduct specialist courses in prescribing medication and continued treatment, and consequently diversify the training options on offer.
(3) colleges and universities providing 1st and 2nd degree courses in nursing and midwifery (73 schools with courses in nursing, and 15 with courses in midwifery—data from the Ministry of Health). The change at the organizational level will lead to necessary amendments in educational standards for 1st and 2nd degree university courses in nursing and midwifery.

The Statement of Reasons also points out that according to estimates, nurses and midwives will issue approximately 20% prescriptions for medication related to chronic diseases in PCS and approximately 10% in OSC, which were previously issued by medical personnel. It is assumed that in PCS consultations with nurses and midwives will, at the rate of approximately 10%, conclude with issuing requests for diagnostic tests, including clinical laboratory tests.

As researchers who are also responsible for organizing 1st and 2nd degree courses in nursing and midwifery at one of Poland's leading universities, with approximately 250 nurses and midwives graduating annually, we would like to share our experiences and draw attention of the global community of nurses to the recent events taking place in Poland.

The aim of the study was to identify and examine the differences in opinions held by health care professionals and the general public concerning the right to recommend and prescribe medication which has been awarded to nurses and midwives in Poland.

2. Methods

2.1. Study population

A cross-sectional survey was carried out between December 2014 and July 2015. The study was conducted in 72 randomly selected primary health care centers. The study group included doctors and nurses (service providers) as well as patients, recipients of PCS, residents of the Podkarpackie Region, which is divided into 25 districts who expressed informed consent to participate in the study. The consent was expressed by signing a consent form attached to the questionnaire. The subjects were instructed about the necessity to complete the consent form, which included short information about the study, initials, and age. Incorrectly completed questionnaires were equivalent to subjects dissent to participate. The medical and nursing personnel in question represented the so-called general population, that is all doctors and nurses providing PCS. Ultimately 2227 individuals agreed to participate; these included 310 doctors and 539 nurses, representing general population. The group of service recipients (1378 adult patients) consisted of individuals currently registered with the doctors and nurses studied. Purposive sampling was applied to select the subjects.

Inclusion criteria for health care practitioners:

- doctors and nurses employed in primary care outpatient clinics throughout the Podkarpackie Region;
- informed consent to participate in the study.

Exclusion criteria for health care practitioners:

- adults representing other occupations, employed in primary care outpatient clinics throughout the Podkarpackie Region;
- incorrectly completed questionnaires.

Inclusion criteria for the general public:

- beneficiaries of PCS currently registered with a PCS doctor, selected at random in all districts of the region;
- individuals >18 years of age;
- residents of the Podkarpackie Region (south-eastern Poland);
- informed consent.

Exclusion criteria for the general public:

- incorrectly completed questionnaires.

A proportional representation of all social groups inhabiting south-eastern Poland was ensured. Notably, the region is characterized by low number of medical professionals and large distances which have to be covered to reach health care entities. On December 31, 2013 the Podkarpackie Region had a population of 2,097,338 (Central Statistical Office). Data provided by the Regional Statistical Office showed that there were 637 PCS doctors and 1812 community nurses. The cohort of 2227 individuals is large enough to minimize the effect resulting from error of the estimate.

Table 1

Subjects' views concerning improved access to health care.

Nurse prescribing vs improved access to services and shorter wait times for consultations with PCS and OSC doctors	Group ($P < 0.001^*$)			
	Doctors	Nurses	Patients	Total
No (1)	97 (31.3%)	162 (30.1%)	237 (17.2%)	496
Rather no (2)	69 (22.3%)	117 (21.7%)	210 (15.2%)	396
I don't know (3)	36 (11.6%)	56 (10.4%)	163 (11.8%)	255
Rather yes (4)	77 (24.8%)	105 (19.5%)	422 (30.6%)	604
Yes (5)	31 (10.0%)	99 (18.4%)	346 (25.1%)	476
Total	310	539	1378	2227
Mean rank	2.60	2.74	3.31	

P = probability value calculated using Kruskal–Wallis test.
* $P < 0.05$.

2.2. Study parameters

Research materials were acquired with the use of a survey, consisting of 2 versions of a questionnaire developed separately for health professionals and the general public. It was developed taking into account reviews of the literature, and with the use of 5-point Likert scale.

The purpose of the survey was to provide insight into respondents' opinions concerning:

- nurses' capacity to take on the new responsibilities;
- type of medication which could be prescribed by nurses; and
- safety, supervision, and expected outcomes of the relevant changes.

A pilot survey was conducted with a small group of respondents (50 doctors, 70 nurses at hospital wards, and 100 patients) to assess clarity of the survey questionnaire. The respondents did not report any problems in understanding the contents of questions included in the questionnaire. The doctors (10.2%) and the nurses (18.9%) were less enthusiastic than the "general public" (55.2%) about the potential improvement in accessibility of the relevant services and reduction of queues for health care. The respondents formulated steep requirements with regard to nurses' education. Unlike the nurses (22.0%), the doctors and the patients insisted that to recommend and prescribe medication, nurses must acquire a diploma of 2nd degree university course and should complete professional specialization (55.2% vs 60.0%). Generally, the respondents expressed an opinion that at present nurses and midwives as a group are not prepared to prescribe medication (60.2% vs 51.1% vs 72.0%). If the relevant legislation comes in force, nurses can partly take over doctors' duties with regard to requesting medical products and prescribing medication previously recommended by doctors—repeat prescriptions (the rate of approval for the above in all the groups was in the range of 65%–76%).

The findings of the prestudy survey provided rationale for conducting a wider study with a larger population of doctors, nurses, and representatives of the general public.

Participation in the study was voluntary and anonymous. The subjects first received oral information about the study, and then were provided with written information concerning its purpose and its voluntary character. The subjects were given assurance that their agreement or refusal to participate would not impact their further employment at the relevant health care entity, and in the case of patients the level of care provided to them. To ensure confidentiality of the data, the questionnaires were labeled with numbers. Correctly completed questionnaires were equivalent to the subjects' consent to participate in the study.

Bioethics Committee at the University of Rzeszów approved the study, which was carried out in compliance with the Declaration of Helsinki (No. 2/10/2013).

2.3. Statistical analyses

The collected data were processed with the use of analytic software package STATISTICA 11.0. The statistical relationships were examined with χ^2 test for independence and Kruskal–Wallis test.[8] For the purpose of the analysis, the study group was divided into subgroups representing the specific health professions and beneficiaries of PCS.

3. Results

The entire group of 849 primary health professionals included 310 doctors (13.9%) and 539 nurses (24.2%). Females constituted a majority (82.6%). The subjects represented the following age groups: 40 to 49 years (40.2%), 30 to 39 years (23.6%), 50 to 59 years (18.5%), 18 to 29 years (10.7%), and 60 years and more (7.0%). More than half of the health professionals (62.7%) lived in towns/cities, the others in rural areas (37.3%). The nurses represented various levels of educational status: secondary school of nursing—34.0%, master's degree—21.7%, 1st degree university course—21.3%, secondary education and specialization—10.8%, and 1st degree university course and specialization—8.0%. Only 4.3% of the nurses had acquired master's degree and completed a specialization.

The studied population of primary care beneficiaries (1378 individuals) included a majority of women (69.7%). The largest group of respondents consisted of those aged 30 to 49 (35.3%), who were followed by those aged 18 to 29 (32.7%), 50 to 64 (24.2%), and 65 and more (7.8%). Majority of subjects represented rural areas (61.7%), the others lived in towns/cities (38.3%). The subjects had completed secondary education (37.0%), higher education (24.4%), 1st degree university course (19.7%), as well as vocational (14.4%) and primary schools (4.5%).

To examine the changes envisaged by the new legislation, which is designed to improve access to health care services, facilitate continued treatment as well as early diagnosis and treatment of patients, without a need to wait for medical consultation, we started with inquiries related to reduced wait time for a medical consultation.

The survey results show significantly divided views concerning this matter ($P < 0.001$). Health professionals do not believe that awarding additional rights to nurses will change the difficult situation connected with long waiting time for consultations with doctors providing PCS and OSC (53.6% vs 51.8%). More

Table 2

Subjects' opinions concerning nursing education necessary for prescribing medication.

Nursing education necessary for prescribing medication	Group ($P<0.001$*)			Total
	Doctors	Nurses	Patients	N = 2191
Secondary school of nursing	15 (5.0%)	45 (8.6%)	81 (5.9%)	141
1st degree university course, bachelor's degree	9 (3.0%)	62 (11.8%)	108 (7.9%)	179
2nd degree university course, master's degree	113 (37.3%)	144 (27.4%)	343 (25.2%)	600
Specialization in nursing	16 (5.3%)	85 (16.2%)	205 (15.0%)	306
Completed university course and specialization	150 (49.5%)	189 (36.0%)	626 (45.9%)	965
Total	303	525	1363	2191

P = probability value calculated using χ^2 independence test.

Table 3

Subjects' preferences concerning selected groups of therapeutic agents/products which could be prescribed by nurses.

Therapeutic agents/products which could be prescribed by nurses	N = 2227 group			P
	Doctors	Nurses	Patients	
Powerful agents, for example insulin	37 (11.9%)	80 (14.8%)	238 (17.3%)	0.049*
Intoxicating agents, for example narcotics	5 (1.6%)	23 (4.3%)	58 (4.2%)	0.085
Psychotropic medication, for example sedatives	15 (4.8%)	59 (10.9%)	132 (9.6%)	0.010*
Foods for special medical purposes	175 (56.5%)	270 (50.1%)	681 (49.4%)	0.079
Medical products	234 (75.5%)	393 (72.9%)	901 (65.4%)	<0.001*
Exclusively medication recommended by doctors	214 (69.0%)	356 (66.0%)	851 (61.8%)	0.025*
Any medication requested by patient	12 (3.9%)	22 (4.1%)	109 (7.9%)	0.001*

P = probability value calculated using χ^2 independence test.

optimistic views concerning this matter are expressed by patients who hope for improvement in this area (55.7%) (Table 1).

The highest opinion about nurses' competences is expressed by the patients (26.9%) and the lowest by the doctors (56.4%). The nurses' views on this matter are varied ($P<0.001$). More than half of the PCS nurses (52.0%) do not think they are sufficiently prepared to exercise the new rights. Yet, nearly 1 nurse in 4 (26.1%) believes they will manage in the new situation. At the same time many subjects were unable to provide an explicit answer regarding this matter (32.3% vs 21.9% vs 34.5%).

Further analysis of the findings shows that all subjects recognize the need for adequate education for exercising the new rights. The most stringent requirements are formulated by doctors, as nearly half of them believe that to independently prescribe medication nurses should complete 2nd degree university course and acquire professional specialization (49.5%). A large number of nurses share this opinion (36.0%), yet some of them insist that specialization should not be a determining factor for acquiring such authority (27.4%). According to 11.5% of them, bachelor's degree courses are absolutely sufficient for the ability to issue prescriptions, and 8.3% believe that a nurse with secondary education will also manage to put the newly awarded rights into practice. Opinions regarding this matter were varied between the groups ($P<0.001$), yet they do not show extreme differences (Table 2).

The subjects most frequently agree that in the future nurses should be allowed to prescribe medical products (75.5% vs 72.9% vs 65.4%; $P<0.001$) and medication previously prescribed by doctors (69.0% vs 66.0% vs 61.8%; $P=0.025$) as well as foods designated for special medical purposes. Their right to prescribe insulin was found to raise some controversies ($P=0.049$). Many patients believe there is a need for this (17.3%). The same opinion was expressed by 14.8% of the nurses and 11.9% of the doctors. Similar situation was observed in the case of sedatives ($P=0.010$) (Table 3).

The respondents were additionally asked whether or not Polish nurses should be permitted to prescribe all medications, after detailed surveillance rules have been established. The relevant opinions expressed by most groups were strongly negative (80.4% vs 76.5% vs 69.9%).

There is a visible difference in the opinions whether or not nurses are able to properly perform physical examination ($P<0.001$). A large group of doctors (43.8%) do not believe nurses are competent enough in this area. Patients and nurses do not agree with this view; in fact the former most frequently insist nurses can successfully perform this task (48.6% vs 43.9%) (Table 4).

To investigate more detailed aspects of the possibility that Polish nurses will be permitted to prescribe selected therapeutic agents and to examine such related issues as responsibility and safety, the respondents were asked, for instance, whether or not nurses' recommendations related to drug dosage would be credible for patients. Over half of the nurses (50.2%) and patients (53.0%) believe that nurses have the knowledge and are

Table 4

Subjects' opinions concerning reliability of physical examination performed by nurses.

Would data collection, physical examination performed by nurses be reliable?	Group ($P<0.001$*)			Total
	Doctors	Nurses	Patients	
No (1)	99 (31.9%)	155 (28.8%)	384 (27.9%)	638
Rather no (2)	37 (11.9%)	32 (5.9%)	59 (4.3%)	128
I don't know (3)	85 (27.4%)	115 (21.3%)	265 (19.2%)	465
Rather yes (4)	44 (14.2%)	45 (8.3%)	108 (7.8%)	197
Yes (5)	45 (14.5%)	192 (35.6%)	562 (40.8%)	799
Total	310	539	1378	2227
Mean rank	2.67	3.16	3.29	

P = probability value calculated using Kruskal–Wallis test.
* $P<0.05$.

Table 5

Level of approval for selected statements related to nurse prescribing and the potential outcomes.

Statement related to nurse prescribing	Mean level of statement acceptance			*P*
	Doctors	Nurses	Patients	
Improved access to and reduced wait times for health care	2.60	2.74	3.31	<0.001*
Nurses' qualifications (education and experience)	2.24	2.53	2.77	<0.001*
Right to prescribe all medicines	1.68	1.78	1.97	0.025*
Ability to perform physical examination	2.67	3.16	3.29	<0.001*
Ability to specify drug dosage	2.61	3.42	3.42	<0.001*
Informing about unwanted side effects of medication	3.83	4.10	4.27	<0.001*
Safety of prescribing medication	2.55	3.44	3.31	<0.001*
Issuing prescriptions without contact with patient	1.89	2.15	2.51	<0.001*

P = probability value calculated using Kruskal–Wallis test.
1 = no acceptance, 3 = hesitation, 5 = full acceptance.
* $P < 0.05$.

competent enough to specify drug dosing, in compliance with the rules of patients' safety (49.7% vs 47.5%). An opposing view related to this matter is expressed by PCS doctors who claim that nurses do not have adequate knowledge related to drug dosing and safety (46.8% vs 48.0%) ($P < 0.001$). Notably, in each question an explicit answer was not provided by a considerable number of subjects in all groups (in the range of 17.1%–26.7%). Most respondents, including the medical practitioners, agreed with a statement that nurses should inform patients about unwanted side effects of the prescribed medication (72.0% vs 78.3% vs 69.0%). All groups generally point out that nurses should not prescribe medication without personal contact with the patient (70.1% vs 65.3% vs 55.1%). Yet, such option is positively viewed by a relatively large group of patients (31.6%), as well as 22.2% of the nurses ($P < 0.001$).

Subsequently the survey examined acceptance of specific statements related to nurse prescribing. The responses of the subjects in the 3 groups have been collectively presented in the table with the use of mean ranks.

The findings show that in questions related to the scope of new duties and the potential beneficial outcomes for health care system (reduced wait times, authority to prescribe all medication, prescribing without contact with patient) the nurses tend to express positive opinions slightly more often than the medical practitioners, yet they are far more skeptical about these matters than the patients. It seems, however, that the nurses show reluctant approach to the new duties. On the contrary, in the questions related to their competencies, the nurses' views are closer to the opinions expressed by the patients than those held by the medical practitioners. The doctors seem to be rather critical about nurses' qualifications for prescribing medication (Table 5).

Interesting findings are related to the issue of supervision over nurse prescribing. The responses differ significantly between the groups ($P < 0.001$). More than half of the doctors insist that such surveillance should be carried out by the National Health Fund and directly by medical practitioners (56.8% vs 56.5%). The patients most frequently opted for medical practitioners, the National Health Fund, and Chambers of Nurses and Midwives (69.6% vs 27.4% vs 27.4%). The nurses pointed to doctors' supervision, yet less frequently than the remaining groups studied (49.5%).

4. Discussion

During the recent decades a growing number of countries worldwide have awarded nurses with prescribing rights.[3,4,6,9] In many European countries prescribing rights have been extended to other people than medical practitioners to improve effectiveness and access to medication, particularly in regions with insufficient number of doctors.[5,10] Yet, there are considerable differences in the scope and degree of prescribing rights and the pace of the related developments. The nature of these changes is varied, ranging from minor adjustments to rather dynamic shifts, mainly depending on the laws of a given country. Although examining the situation worldwide in terms of nurse prescribing, the authors of the study have focused not only on the very fact whether or not nurses are permitted to prescribe but also on the implications for nursing practice and operation of health care system. Prescribing rights suggest an increase in professional autonomy and independence of the practitioner, in addition to other important aspects of nursing career.[4] The authors agree that transferring part of the responsibility for the treatment process to nursing personnel is an effective way to bridge the distance between the professions, and to enable interdisciplinary cooperation, benefiting doctors and other medical personnel, allowing doctors to focus on more complicated clinical cases.[11,12]

In the Polish literature, understandably, there are still no studies or reviews focusing on the rights awarded to nurses, since this is a new issue, and in fact we are still waiting for legal acts regulating details of these competences, such as the drug formulary and the method of issuing prescriptions by nurses. Yet the very fact that the legal changes amending the Nurses and Midwives Act are designed to award the relevant rights from January 1, 2016 inspired the authors of the present study to examine the widely discussed issues both in the medical community and among patients.

To the best of our knowledge, the present study is the first attempt in Poland to compare opinions expressed by doctors, nurses, and the general public with regard to nurse/midwife prescribing; therefore, it is difficult to compare the present findings with results reported by other Polish authors because no such studies have yet been published. Hence, we have tried to verify our findings by comparing them with what is known about these issues elsewhere.

A review of the world literature provides insight into the situation connected with nurse prescribing in other countries.[4,5,7,13]

Researchers from such countries as Sweden, the United Kingdom, Australia, the United States, New Zealand, Ireland, and South Africa present advantages of nurse prescribing. The benefits most frequently referred to include improved quality and accessibility of services for patients, more effective management of resources, and higher standards of nursing practice.[4,6,13] Benefits reported in the literature focusing on nurse prescribing

include longer and more detailed consultations carried out by nurse prescribers than by physicians, which is linked with the main goal defined as patient-oriented health care system. This is a characteristic feature of nursing taking a holistic look at the patient.[7] The outcomes of European experiences are consistent with the goals envisaged by the proposed Polish legislation, which in accordance with the Statement of Reasons is designed to improve access to health care services, facilitate continued treatment and early diagnosis, and to make it possible for patients to start treatment without a necessity to wait for consultation with a doctor. The findings of our study are surprising because they do not support the justification brought forth by the proponents of the new regulations.

It is suggested by a group of health professionals that the fact that nurses are awarded with the new rights will not reduce queues for consultations with medical specialists or decrease the waiting time, and will not heal the whole system. Obviously, concerns related to such changes may be justified, especially at the initial stage, that is a period designed for adaptation to the amended regulations, for conducting trainings and implementing the system. Patients seem to be more optimistic with regard to this, hoping for improved situation. Perhaps the opinions are connected with broader problems faced by the Polish health care system (e.g., inept health insurance system, its financing, organization, and management), as well as the professional status of nurses: perception of nursing personnel as cheap workforce, increasing scope of duties, reductions in nurse staffing, unsatisfying remuneration leading to recurring waves of strikes.[14] Miles et al have pointed out that there are 5 key factors enabling successful development of mechanisms for the initiative in question, including strong policy, support for nursing personnel, and academic educational programs.[15]

The findings suggest that those who pay much attention to the changes faced by nursing personnel, that is doctors and nurses, are concerned about qualifications of this professional group and their adequacy for the new tasks; yet due to the fact that many subjects in these groups are unable to provide explicit answer the findings seem slightly ambiguous. Because issues related to adequacy of nurses' training in Poland are part of a wider problem, in the present study the respondents were first asked to express their opinions regarding qualifications which should be expected from those exercising the new rights. The subjects unanimously agree that suitable higher education is necessary for this purpose. The most stringent requirements are formulated by medical practitioners; nearly half of them believe that to independently prescribe medication nurses should complete 2nd degree university course and acquire professional specialization. In most Western European and Anglo-Saxon countries, nurses are provided with thorough knowledge related to prescribing during undergraduate and postgraduate courses, yet the related issues are mainly included in regular teaching curricula at the level of master's degree courses. In some countries, for example in Ireland and the United Kingdom, nurses acquire the relevant qualifications during independent courses, at bachelor's level.[4,16,17] Similar measures will be introduced in Poland; the Ministry of Health has pointed out it will be necessary for nurses to acquire specialist knowledge during postgraduate courses and educational entities will have to introduce changes in teaching curricula for 1st and 2nd degree courses.[2]

Ambiguity of opinions is also reflected in further findings, according to which nurses should not be permitted to issue any kind of prescriptions, yet there are no specific contraindications for nurse prescribing of foods for special medical purposes, medical products (particularly specialist dressings), auxiliary products (e.g., diapers), or medication previously recommended by doctors. Interestingly, all groups at significant rates pointed to insulin as a therapeutic agent which, under specific conditions, could be prescribed by nurses. Perhaps the opinions reflect earlier experiences connected with the necessity of frequent visits paid by patients with diabetes to primary care doctors to get insulin prescription.

In terms of scope, range, and access, models of nurse prescribing practice differ in specific countries depending on the level of the awarded authority, range of persons authorized to prescribe medication, regional diversity of a given country, situations in which nurses are permitted to prescribe (defined diseases and specializations), and the range of medication. For instance, in the United Kingdom the range of medicines, which can legally be prescribed by nurses, depends on the category of authorization. The formulary defined for Community and District Nurses is significantly limited and comprises a detailed list of drugs which can be prescribed. Supplementary Prescribers are permitted to prescribe all medicines from the entire British National Formulary, contained in a patient's treatment plan approved by the relevant doctor; this includes selected psychotropic medication. On the contrary, nurses qualified as Independent Prescribers are allowed to prescribe all medicines from the entire British National Formulary, for all therapeutic indications matching their area of expertise, including psychotropic medication in the case of specific indications.[4,18] In Poland the law makers initially defined 10 groups of medicines (30 active ingredients) which can be prescribed by nurses: antispasmodics, anticholinergics, antiemetics, topical and gynecological antiinfectives, treatments for anemia, nonspecific antibacterial agents, topical anesthetics, analgesics, anxiolytics, antiparasitics, antiasthmatic drugs, and remedies for migraine. This is not much, for instance in comparison to the Swedish list of 230 medicines which can be prescribed to patients by qualified community nurses in 60 medical conditions. Another model is used in Ireland, where Registered Nurse Prescribers are allowed to prescribe medicines, and selected psychotropic and intoxicating agents, connected with their scope of duties at work, additionally the list of medicines must be approved by their employer, and the patients must be under a supervision of a doctor.[19] In the Netherlands, nurse prescribing is limited to the area of their specialization and competencies, yet due to demographic changes (growing number of senior citizens) and the increasing number of patients with diabetes nurses play important role in providing care and issuing prescriptions for those patients.[6] On the contrary, Nurse Prescribers in the United States have full autonomy in prescribing and this includes intoxicating and psychotropic medication, which in our study were met with negative response. The scope of authorization differs between the specific states and most prescriptions are issued by nurses working in emergency services as well as by family nurses.[20] As a side note, in countries faced with problems of underfinanced health care and rapidly spreading diseases (particularly HIV/AIDS), in poor countries of Sub-Saharan Africa, as well as in Ethiopia, Malawi, Tanzania, and Zambia, nurses play an important role in prescribing antiretroviral drugs.[21] In Uganda, due to the large numbers of patients with cancer and AIDS, nurses subscribe antiretroviral drugs and morphine to patients suffering from severe pain.[22] In South Africa primary care nurses are permitted to prescribe medication specified on the so-called Essential Medicines List, provided that one prescription contains up to 3 items. The Medicines List is updated every 2 years. If

different medication is required for a patient, they are referred to a medical practitioner.[4] The examples of models introduced in other countries constitute an important argument in a discussion which is going on in Poland with regard to the rights awarded to nurses by the Ministry of Health as a sign of trust for the profession.

Although extending the new rights to nurses, the Polish lawmaker explicitly emphasizes that before issuing a prescription or request a nurse is required to perform physical examination of the patient. We have asked our respondents about their views concerning this. The findings show significant differences in opinions related to this matter; a large group of medical practitioners (43.8%) refuse to believe that nurses are able to correctly perform physical examination. This opinion is not supported by the patients and nurses; the latter seem to be confident they can successfully cope with the task. In the light of the current legislation, a nurse practitioner with a specialization is fully qualified to assess health condition and perform physical examination. Notably, the negative opinions expressed by a group of medical practitioners may result from their lack of awareness about the training completed by nursing personnel. Medical professionals tend to have specific knowledge related to their field of expertise, yet they may not be familiar with various issues concerning other health professions, such as nurses. Owing to this they may look with reluctance at initiatives implementing measures which coincide with their competences. This opinion is supported by other authors.[6,7,12]

Findings related to other aspects of the new professional responsibilities also showed many differences between the groups. Unlike primary care doctors, more than half of the nurses and patients believe that nurses have adequate knowledge for and are competent in defining drug dosage, in compliance with the rules of patients' safety. The respondents, including the medical practitioners, agreed that nurses should inform patients about unwanted side effects of the prescribed medication. According to Hagbaghery et al,[23] lack of confidence regarding the applied pharmacology and therapy is recognized among human factors which hinder prescribing of medication, and vice versa, self-confidence is a factor promoting such initiative. By transferring the authority and fostering self-confidence in nurses as a professional group, it may be possible to help them apply their knowledge in practice.

Our survey ended with a question related to supervision over nurse prescribing. Despite significant differences in opinions, the subjects generally agreed that it should be a responsibility of doctors. Such response was also provided by 49.9% of the nurses. The medical and nursing practitioners also frequently indicated the National Health Fund, which in Poland is legally in charge of this matter. This may be an evidence of the fact that nurses do not have practical qualifications for the new professional responsibilities and they want to be supervised by medical professionals. Nevertheless, one needs to be cautious drawing conclusions from such opinions given the fact that in Poland, despite its increasing autonomy, the nursing profession in many cases continues to be perceived as an occupation typically designed to provide only supportive care in the therapeutic process. By way of comparison, it should be added that for instance in the United Kingdom, New Zealand, and Scotland nurses meeting the required criteria are registered at the national level and in the United States, Australia, and Canada at the level of specific states or provinces.[4,19]

The facts shown by this study are absolutely alarming because they reflect the serious problem related to nurses' readiness to take on the new responsibilities. The present study should constitute a basis for further research designed to monitor the process of assuming the prescribing rights as well as effectiveness of the initiative. Evaluation of the outcomes of the initiative introduced in January 2016, due to the innovative character of the project, will be possible after a period of 1 year, up to 2 years. The criteria for such assessment will include the number of prescriptions issued by nurses and midwives, for newly recommended medication or as a continuation of treatment; number of referrals to diagnostic tests and number of consultations provided by nurses and midwives, following which a prescription is issued. The above findings will be interesting in this sense that, to a degree, they will show whether or not the relevant professional group is ready to take on other newly defined duties in the near future. Here we should think about the wide range of mobile tools available in the frames of the broad concept of telenursing, including e-prescribing, and their possible use in the practice of providing care for patients. At present, works conducted in many places worldwide focus on effectiveness and safety of using such innovative solutions in practice.[24–26]

In summary, it should be pointed out that the communities of medical and nursing practitioners as well as the general public approach the proposed initiative with reserve. It can be observed that nurses themselves show reluctance when faced with the prospect of new responsibilities and this fact in public debates is justified by the lack of information concerning possible increases in remuneration corresponding with the new qualifications. From the standpoint of academic teachers involved in nursing research, we see this initiative as another milestone in the development of nursing practice in Poland.

5. Limitations

The region of study is characterized by low number of medical professionals and large distances which have to be covered to reach health care entities. This could have possible influence on the service seekers opinion in the study.

6. Conclusion

Polish nurses present cautious attitude toward the implementation of the new rights. They could take over doctors' responsibilities related to prescribing medical products and medication previously prescribed by doctors (repeat prescriptions). Yet, the respondents do not believe that the statutory assignment of new responsibilities to nurses will improve effectiveness and accessibility of health care services in Poland. It is necessary to raise awareness among nurses, doctors, and the general public with regard to the new prescribing rights, to develop a strategy for implementing the government's initiative and to promote awareness of the necessity to acquire education/training which allows exercising the right to recommend and prescribe medication. It is necessary to ensure support of medical practitioners for needs related to training and supervision, and to foster nurses' self-confidence in relation to the new tasks.

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