Physicians’ and patients’ valuation of pharmaceutical care implementation in Poznan (Poland) community pharmacies

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Abstract Implementation of pharmaceutical care (PC) in Poland is of great importance to patients, who, on the one hand, often follow complex pharmacological treatment regimens recommended by several physicians of different specialties, and, on the other, take up the decision on self-treatment due to availability of OTC medications. The aim of the present study was to assess the opinion of both patients and physicians about implementation of PC service in Polish community pharmacies.

A cross sectional study was carried out from September 2009 to September 2010 by a pharmacist (author of the study) on the basis of an anonymous questionnaire, where demand of physicians (n = 104) and patients (n = 202) for implementation of PC in a community pharmacy was assessed. The study was planned to determine the relationship between implementation of PC, cost and time of this service and patients’ and physicians’ socio-economic information.

Responding patients (85.64%) and physicians (76.92%) unanimously confirmed the need for implementation of PC. Most people convinced of the service implementation were 88.89% of physicians under the age of 35 and all the respondents were over 65 years of age (p = 0.027), just as 93.33% with service lesser than 5 years and 73.68% of respondents working a maximum of 20 years (p = 0.023). Mainly according to 90.00% of physicians with specialty in internal medicine and 92.59% of physicians of the group “Others” (p = 0.012), PC should be implemented in pharmacies.

Women more frequently than men reckoned that appointments with a pharmacist should last up to

Abbreviation: PC, pharmaceutical care.
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1. Introduction

Transformations which affected health care in Poland in the last few years, apart from some positive aspects for pharmaceutical branches, such as very good supply or a wide range of available medications, also contributed to exacerbation of the situation of community pharmacies among other things by intensification of unhealthy competition. Aggressive advertising, breaking pharmaceutical law and even dumping very often dominate professional advice. It makes some pharmacists mainly entrepreneurs whose main aim is to obtain income essential for maintaining a pharmacy and earning profit. What is more, in the case of an insufficient number of employees, pharmacists are compelled to carry out non-specific administrative duties, not related to work with patients, which could be fulfilled by persons without pharmaceutical education (Waszyk-Nowaczyk and Simon, 2009). Similar problems have also been noted in other countries (Hughes et al., 2010; Perraudin et al., 2011; Van den Brink et al., 2012; Ibrahim and Scott, 2013).

A pharmacist is the first person addressed by a patient with a health problem due to often an impossible immediate contact with a physician within the service of the National Health Fund in Poland (Jasińska and Orszulak-Michalak, 2009). Additionally, the mean time of a physician’s advice is decreasing, so a medical examination of a patient is often followed by only providing the patient with a prescription and some evasive information (Kwilecki, 2009). Therefore patients often seek advice in community pharmacies, and frequently omit a visit to a physician’s office. Implementation of PC is of great importance to patients, who, on the one hand, often follow complex pharmacological treatment regimens prescribed by several physicians of different specialties, and, on the other one, due to aggressive advertising, take up a decision on self-treatment (Szalonka and Sikorska, 2007; Modig and Kristensson, 2009; Wong et al., 2011; Chan et al., 2013). PC provides an opportunity to establish close cooperation between a pharmacist and a physician to ensure optimal pharmacotherapy conditions of a given patient to avoid problems of polypharmacy, and also offers the possibility of cost reduction resulting from reimbursement of medications dispensed in pharmacies (Al Mazroui et al., 2009; Onda et al., 2009; Westerlund and Marklund, 2009; Niquille et al., 2010; Santos et al., 2010; Krass et al., 2011; Waszyk-Nowaczyk and Simon, 2011). Appropriate cooperation between a physician, a pharmacist and a patient should also enhance the prestige of the pharmacist profession in Poland. Hence research was carried out determining opinions of both patients and physicians about implementation of PC service in community pharmacies. The study was planned to establish the relationship between implementation of PC, cost and time of this service and age, sex, and education of patients as well as age, sex, specialty, professional/scientific degree and length of service of physicians.

2. Materials and methods

A cross sectional study was carried out from September 2009 to September 2010 by a pharmacist (the author of the present study) on the basis of an anonymous questionnaire where physicians’ and patients’ demand for PC implementation in a community pharmacy was determined. The study included 104 physicians and 202 patients receiving services of four independent Poznan community pharmacies. The questionnaire was developed not only to examine physicians’ and patients’ willingness to pay for the service, but also to generate information to help pharmacists design PC in community pharmacies that patients would pay for. This study used only some of the collected information.

Respondents were asked to circle ‘yes’ or ‘no’ if they would be willing to pay for PC. Persons exhibiting willingness to pay for PC have been proposed with five sums which they would be willing to pay for the offered service: USD 1, 2, 5, USD 5–20, >20. It is associated with Polish insurance and accounting system of pharmacy services with the National Health Fund, where one lump sum amounts to approximately 2 dollars. Also the time, which, in the opinion of a physician and a patient, a pharmacist should spend on delivering PC was assessed. Three categories were listed: less than 5 min, 5–15 min, more than 15 min. Socio-economic data included information about age, sex, specialty, professional/scientific degree and length of service of physicians, and age, sex and education of patients. The study was approved by the ethics review board of Poznan University of Medical Sciences.

The results were statistically analyzed with the use of Statistica 8.0 application (StatSoft®). In order to analyze relationships between the traits, taking into account sample size and frequency of analyzed categories of the examined traits, chi-square test of independence ($\chi^2$) was used in the case of a large sample and a higher frequency of categories, and Fisher–Freeman–Halton test for low expected frequencies. For all the statistical analyses, a significance level of 0.05 was used to assess differences between groups.

3. Results

In the research, 202 questionnaires were collected from patients (Table 1) and 104 questionnaires from physicians.
About 60.00% of patients were 35–64 years old, while women accounted for 75.74% of patients. Most of the respondents had at least secondary education (83.17%). About 60.00% of physicians were women at the age of 35–64 years. Predominant physicians’ specialties included internal medicine (28.85%) and family medicine (20.19%). Most of the responding physicians had no scientific degree (84.62%). The length of service of the physicians in the predominant group was longer than 5 years (71.15%).

The research assessed the need for implementation of PC and time and cost of an appointment with a pharmacist for the purpose. The need was unanimously confirmed by 85.64% of responding patients (Fig. 1) and 76.92% of physicians (Fig. 2). The decision was independent of age, education and sex of patients (Table 3). The results concerning opinions of physicians are presented in Table 4. Most respondents convinced of PC implementation were 88.89% of physicians under the age of 35 and all the respondents over the age of 65 ($p = 0.027$), similarly as 93.33% of physicians with a length of service shorter than 5 years and 73.68% of respondents working for a maximum of 20 years ($p = 0.023$). According to 90.00% of physicians with specialty in internal medicine and 92.59% of physicians of the group “Others” ($p = 0.012$), implementation of PC in pharmacies should take place.

Percentages of patients reckoned that the appointment should last up to 5 min, and from 5 to 15 min were comparative (43.07% vs 40.59%, Fig. 3). A considerable percentage of physicians stated that an appropriate appointment time was at least 5 min with a maximum of 15 min (67.31%, Fig. 4). Women more often than men stated that appointments with a pharmacist should last up to 15 min ($p = 0.012$, Table 5). Table 6 collates detailed information about physicians, where 77.78% of the youngest physicians and 83.33% of the oldest ones reckoned that the visit should last from 5 to 15 min ($p = 0.049$), similarly as 80.77% of physicians without specialty and 77.78% of physicians of the group “Others” ($p = 0.0009$).

The questionnaire also addressed the issue of paying for PC. The mean cost of the appointment according to patients should amount to about USD 7, and most of the respondents

| Table 1 | Patients’ frequency distribution of the study. |
|---------|-----------------------------------------------|
| **Age (years)** | Frequency ($n$) | Percentage (%) |
| Under 35 | 76 | 37.62 |
| 35–64 | 103 | 50.99 |
| 65+ | 23 | 11.39 |
| Total | 202 | 100.00 |
| **Gender** | Frequency ($n$) | Percentage (%) |
| Male | 49 | 24.26 |
| Female | 153 | 75.74 |
| Total | 202 | 100.00 |
| **Education** | Frequency ($n$) | Percentage (%) |
| Primary/vocational | 34 | 16.83 |
| Secondary | 72 | 35.65 |
| Student | 42 | 20.79 |
| Higher | 54 | 26.73 |
| Total | 202 | 100.00 |

| Table 2 | Physicians’ frequency distribution of the study. |
|---------|-----------------------------------------------|
| **Age (years)** | Frequency ($n$) | Percentage (%) |
| Under 35 | 36 | 34.62 |
| 35–64 | 62 | 59.61 |
| 65+ | 6 | 5.77 |
| Total | 104 | 100.00 |
| **Gender** | Frequency ($n$) | Percentage (%) |
| Male | 41 | 39.42 |
| Female | 63 | 60.58 |
| Total | 104 | 100.00 |
| **Specialty** | Frequency ($n$) | Percentage (%) |
| Family medicine | 21 | 20.19 |
| Internal medicine | 30 | 28.85 |
| No specialty | 26 | 25.00 |
| Others: | 27 | 25.96 |
| Pediatrics | 4 | 3.85 |
| General surgery | 4 | 3.85 |
| Cardiology | 4 | 3.85 |
| Ophthalmology | 3 | 2.88 |
| Clinical oncology | 3 | 2.88 |
| Obstetrics and gynecology | 3 | 2.88 |
| Dermatology and venereology | 2 | 1.93 |
| Orthopedics and traumatology | 1 | 0.96 |
| Otolaryngology | 1 | 0.96 |
| Psychiatry | 1 | 0.96 |
| Radiology | 1 | 0.96 |
| Total | 104 | 100.00 |
| **Scientific/Professional degree** | Frequency ($n$) | Percentage (%) |
| MD | 88 | 84.62 |
| PhD, MD | 14 | 13.46 |
| Prof., PhD, MD | 2 | 1.92 |
| Total | 104 | 100.00 |
| **Length of service as a physician** | Frequency ($n$) | Percentage (%) |
| Under 5 years | 30 | 28.85 |
| 5–20 years | 36 | 34.61 |
| Over 20 years | 38 | 36.54 |
| Total | 104 | 100.00 |
indicated a sum of USD 1 (Fig. 5), more precisely – 41.86% of persons aged from 35 to 64 years ($p = 0.034$) and 50.00% of respondents with primary and occupational education ($p = 0.024$, Table 7). Physicians most often determined mean appointment cost at USD 14 by indicating a sum of the range of USD 5–20 (Fig. 6). Table 8 shows that the sum was most often stated by about 50.00% of persons over the age of 35 ($p = 0.005$), by 55.56% of persons with specialty in family medicine and by 66.67% of persons of the group without specialty ($p = 0.024$). The other patients (27.72%) and physicians (30.77%) stated that PC should be a service reimbursed by state (Figs. 5 and 6).

4. Discussion

The need for implementation of PC was confirmed on the basis of both patients’ and physicians’ opinions. The greatest acceptance was exhibited by internal medicine physicians, young physicians without specialty and, what is especially important, also by the group of the greatest length of service – more than 20 years. It probably results from many years of experience, which is important for establishing appropriate cooperation between physicians and pharmacists in Poland. The youngest physicians confirmed the need for joint work in the interdisciplinary team on safety of pharmacotherapy of a patient (Cerbin and Lulek, 2013). However, researches outside Poland demonstrated no dependence on physician’s age (Azhar et al., 2004; Matowe et al., 2006; Zaidan et al., 2011), and, even in contrast to the results obtained in the study, it has been reported that the higher length of service of a given physician, the lower demands he makes on a pharmacist (Smith et al., 2002). Data available in the literature indicate that patients’ experiences result in their positive attitude toward PC (Montgomery et al., 2007) and make them expect wider and wider range of the new service (Kassam et al., 2009). With time they begin to notice the differences between “a friendly advice” and substantiated PC, which, according to respondents, is much more beneficial (Montgomery et al., 2010; Robinson et al., 2010). The need for implementation of PC in Poland has been confirmed by numerous researches carried out in the world, proving health benefits of PC to a patient. It is of particular importance since many prescribed medications are not taken according to a physician’s recommendations, which contributes to an increase in the number of hospitalized patients and therefore increased expenditure on health care (Waserfallen et al., 2011). However, appropriate pharmacist’s interven-

### Table 3

| Yes n (%) | No n (%) | $p$-Value |
|----------|----------|-----------|
| **Age**  |          |           |
| Under 35 | 68 (89.47) | 8 (10.53) | 0.473 |
| 35–64    | 85 (82.52) | 18 (17.48) | |
| 65+      | 4 (17.39)  | 19 (82.61) | |
| Total    | 157 (77.72) | 45 (22.28) | |
| **Gender** |        |           |
| Male     | 41 (83.67) | 8 (16.33) | 0.396 |
| Female   | 135 (88.24) | 18 (11.76) | |
| Total    | 176 (87.13) | 26 (12.87) | |
| **Education** |       |           |
| Primary/vocational | 26 (76.47) | 8 (23.53) | 0.407 |
| Secondary | 61 (84.72) | 11 (15.28) | |
| Student  | 8 (90.47)  | 4 (9.53)  | |
| Higher   | 49 (90.74) | 5 (9.26)  | |
| Total    | 174 (86.14) | 28 (13.86) | |

### Table 4

| Yes n (%) | No n (%) | $p$-Value |
|----------|----------|-----------|
| **Age**  |          |           |
| Under 35 | 32 (88.89) | 4 (11.11) | 0.027* |
| 35–64    | 42 (67.74) | 20 (32.26) | |
| 65+      | 6 (100.00) | 0 (0.00)  | |
| Total    | 80 (76.92) | 24 (23.08) | |
| **Gender** |        |           |
| Male     | 33 (80.49) | 8 (19.51) | 0.635 |
| Female   | 47 (74.60) | 16 (25.40) | |
| Total    | 80 (76.92) | 24 (23.08) | |
| **Specialty** |   |           |
| Family medicine | 13 (61.90) | 8 (38.10) | 0.012* |
| Internal medicine | 27 (90.00) | 3 (10.00) | 0.002* |
| No specialty | 18 (69.23) | 8 (30.77) | |
| Others   | 25 (92.59) | 2 (7.41)  | |
| Total    | 83 (79.81) | 21 (20.19) | |
| **Scientific/professional degree** | | |
| MD       | 67 (76.14) | 21 (23.86) | 0.496 |
| PhD, MD  | 12 (85.71) | 2 (14.29)  | |
| Prof., PhD, MD | 1 (50.00) | 1 (50.00)  | |
| Total    | 80 (76.92) | 24 (23.08) | |
| **Length of service as a physician** | | |
| Under 5 years | 28 (93.33) | 2 (6.67)  | 0.023 |
| 5–20 years | 24 (66.67) | 12 (33.33) | |
| Over 20 years | 28 (73.68) | 10 (26.32) | |
| Total    | 80 (76.92) | 24 (23.08) | |

* $p < 0.05$. 

Figure 3: Patients’ willingness to spend time on delivering PC, $n = 202$. 

Figure 4: Physicians’ willingness to spend time on delivering PC, $n = 104$. 

(p = 0.005), by 55.56% of persons with specialty in family medicine and by 66.67% of persons of the group without specialty ($p = 0.024$). The other patients (27.72%) and physicians (30.77%) stated that PC should be a service reimbursed by state (Figs. 5 and 6).
Table 5  Patients’ opinions concerning time which a pharmacist should spend on delivering PC and their sex, age and education.

|                  | <5 min. n (%) | 5–15 min n (%) | 15 min. n (%) | p-Value |
|------------------|---------------|----------------|---------------|---------|
| **Age**          |               |                |               |         |
| Under 35         | 32 (42.11)    | 32 (42.11)     | 12 (15.78)    | 0.890   |
| 35–64            | 42 (40.78)    | 46 (44.66)     | 15 (14.56)    |         |
| 65+              | 9 (39.13)     | 9 (39.13)      | 5 (21.74)     |         |
| Total            | 83 (41.09)    | 87 (43.07)     | 32 (15.84)    |         |
| **Gender**       |               |                |               |         |
| Male             | 31 (63.27)    | 13 (26.53)     | 5 (10.20)     | 0.012   |
| Female           | 96 (62.75)    | 39 (25.49)     | 18 (11.76)    |         |
| Total            | 127 (62.87)   | 52 (25.74)     | 23 (11.39)    |         |
| **Education**    |               |                |               |         |
| Primary/vocational | 14 (41.18)    | 10 (29.41)     | 10 (29.41)    | 0.149   |
| Secondary        | 25 (34.72)    | 33 (45.83)     | 14 (19.45)    |         |
| Student          | 16 (38.09)    | 9 (45.24)      | 7 (37.1)      |         |
| Higher           | 28 (51.85)    | 24 (44.44)     | 2 (3.71)      |         |
| Total            | 83 (41.09)    | 86 (42.57)     | 33 (16.34)    |         |
* p < 0.05.

Table 6  Physicians’ opinions concerning time which a pharmacist should spend on delivering PC and their sex, age and education.

|                  | <5 min. n (%) | 5–15 min n (%) | 15 min. n (%) | p-Value |
|------------------|---------------|----------------|---------------|---------|
| **Age**          |               |                |               |         |
| Under 35         | 6 (16.67)     | 28 (77.78)     | 2 (5.55)      | 0.049   |
| 35–64            | 9 (14.52)     | 34 (54.84)     | 19 (30.64)    |         |
| 65+              | 1 (16.67)     | 5 (83.33)      | 0 (0.00)      |         |
| Total            | 16 (15.39)    | 67 (64.42)     | 21 (20.19)    |         |
| **Gender**       |               |                |               |         |
| Male             | 10 (24.39)    | 27 (65.85)     | 4 (9.76)      | 0.062   |
| Female           | 5 (7.94)      | 42 (66.67)     | 16 (25.39)    |         |
| Total            | 15 (14.42)    | 69 (66.35)     | 20 (19.23)    |         |
| **Speciality**   |               |                |               |         |
| Family medicine  | 5 (23.81)     | 13 (61.91)     | 3 (14.28)     | 0.0009* |
| Internal medicine| 2 (6.67)      | 13 (43.33)     | 15 (50.00)    |         |
| No specialty     | 3 (11.54)     | 21 (80.77)     | 2 (7.69)      |         |
| Others           | 6 (22.22)     | 21 (77.78)     | 0 (0.00)      |         |
| Total            | 16 (15.38)    | 68 (65.39)     | 20 (19.23)    |         |
| **Scientific/professional degree** | | | | |
| MD               | 12 (13.64)    | 58 (65.91)     | 18 (20.45)    | 0.644   |
| PhD, MD          | 4 (28.57)     | 9 (64.29)      | 1 (7.14)      |         |
| Prof., PhD, MD   | 0 (0.00)      | 2 (100.00)     | 0 (0.00)      |         |
| Total            | 16 (15.38)    | 69 (66.35)     | 19 (18.27)    |         |
| **Length of service as a physician** | | | | |
| Under 5 years    | 4 (13.33)     | 24 (80.00)     | 2 (6.67)      | 0.087   |
| 5–20 years       | 6 (16.67)     | 19 (52.78)     | 11 (30.55)    |         |
| Over 20 years    | 5 (13.16)     | 23 (60.53)     | 10 (26.31)    |         |
| Total            | 15 (14.42)    | 66 (63.46)     | 23 (22.12)    |         |
* p < 0.05.

Figure 5  Patients’ willingness to pay for PC, n = 202.
Table 7  Patients’ opinions concerning paying for PC and their sex, age and education.

|        | 1$ n (%) | 2$ n (%) | 5$ n (%) | 5–20$ n (%) | 20$ n (%) | p-Value |
|--------|--------|--------|--------|--------|--------|--------|
| **Age** |        |        |        |        |        |        |
| Under 35 | 7 (23.22) | 6 (20.00) | 8 (26.67) | 4 (13.33) | 5 (16.67) | 0.034*
| 35–64 | 18 (41.86) | 8 (18.61) | 11 (25.58) | 4 (9.30) | 2 (4.65) |
| 65+ | 4 (26.67) | 4 (26.67) | 0 (0.00) | 7 (46.66) | 0 (0.00) |
| **Total** | 29 (32.95) | 18 (20.45) | 19 (21.59) | 15 (17.05) | 7 (7.96) |
| **Gender** |        |        |        |        |        |        |
| Male | 12 (42.86) | 5 (17.86) | 5 (17.86) | 3 (10.71) | 3 (10.71) | 0.804
| Female | 21 (35.00) | 11 (18.33) | 16 (26.67) | 8 (13.33) | 4 (6.67) |
| **Total** | 33 (37.50) | 16 (18.18) | 21 (23.86) | 11 (12.50) | 7 (7.96) |
| **Education** |        |        |        |        |        |        |
| Primary/vocational | 6 (50.00) | 1 (8.33) | 1 (8.33) | 4 (33.33) | 0 (0.00) | 0.024*
| Secondary | 15 (46.87) | 4 (12.50) | 6 (18.75) | 5 (15.63) | 2 (6.25) |
| Student | 2 (12.50) | 1 (6.25) | 7 (43.75) | 3 (18.75) | 3 (18.75) |
| Higher | 8 (28.57) | 12 (42.86) | 5 (17.86) | 1 (3.57) | 2 (7.14) |
| **Total** | 31 (35.23) | 18 (20.45) | 19 (21.59) | 13 (14.77) | 7 (7.96) |

* p < 0.05.

Figure 6  Physicians’ willingness to pay for PC, n = 104.

Table 8  Physicians’ opinions concerning paying for PC and their sex, age and education.

|        | 1$ n (%) | 2$ n (%) | 5$ n (%) | 5–20$ n (%) | 20$ n (%) | p-Value |
|--------|--------|--------|--------|--------|--------|--------|
| **Age** |        |        |        |        |        |        |
| Under 35 | 0 (0.00) | 1 (6.25) | 2 (12.50) | 6 (37.50) | 7 (43.75) | 0.005*
| 35–64 | 0 (0.00) | 0 (0.00) | 4 (12.90) | 16 (51.61) | 11 (35.49) |
| 65+ | 0 (0.00) | 0 (0.00) | 0 (0.00) | 5 (50.00) | 5 (50.00) |
| **Total** | 0 (0.00) | 1 (1.75) | 6 (10.53) | 27 (47.37) | 23 (40.35) |
| **Gender** |        |        |        |        |        |        |
| Male | 0 (0.00) | 1 (4.00) | 2 (8.00) | 15 (60.00) | 7 (28.00) | 0.877
| Female | 0 (0.00) | 0 (0.00) | 5 (15.63) | 9 (28.12) | 18 (56.25) |
| **Total** | 0 (0.00) | 1 (1.75) | 7 (12.28) | 24 (42.11) | 25 (43.86) |
| **Specialty** |        |        |        |        |        |        |
| Family medicine | 0 (0.00) | 0 (0.00) | 1 (11.11) | 5 (55.56) | 3 (33.33) | 0.024*
| Internal medicine | 0 (0.00) | 0 (0.00) | 2 (10.00) | 9 (45.00) | 9 (45.00) |
| No specialty | 0 (0.00) | 0 (0.00) | 1 (8.33) | 8 (66.67) | 3 (25.00) |
| Others | 0 (0.00) | 1 (6.25) | 3 (18.75) | 7 (43.75) | 5 (31.25) |
| **Total** | 0 (0.00) | 1 (1.75) | 7 (12.28) | 29 (50.88) | 20 (35.09) |
| **Scientific/professional degree** |        |        |        |        |        |        |
| MD | 0 (0.00) | 1 (2.27) | 5 (11.36) | 21 (47.73) | 17 (38.64) | 0.663
| PhD, MD | 0 (0.00) | 0 (0.00) | 1 (8.33) | 8 (66.67) | 3 (25.00) |
| Prof., PhD, MD | 0 (0.00) | 0 (0.00) | 0 (0.00) | 0 (0.00) | 1(100.00) |
| **Total** | 0 (0.00) | 1 (1.75) | 6 (10.53) | 29 (50.88) | 21 (36.84) |
| **Length of service as a physician** |        |        |        |        |        |        |
| Under 5 years | 0 (0.00) | 1 (6.67) | 3 (20.00) | 6 (40.00) | 5 (33.33) | 0.221
| 5–20 years | 0 (0.00) | 0 (0.00) | 1 (5.26) | 10 (52.63) | 8 (42.11) |
| Over 20 years | 0 (0.00) | 0 (0.00) | 3 (13.04) | 13 (56.52) | 7 (30.44) |
| **Total** | 0 (0.00) | 1 (1.75) | 7 (12.28) | 29 (50.88) | 20 (35.09) |

* p < 0.05.
tion enables to prevent medication problems, resulting in obtaining right effects of prescribed pharmacotherapy (Lee-mans et al., 2003; Van Mil et al., 2004; Williams et al., 2008). According to Szalonka studies (2010), half of responding physicians determined the actual odds in favor of PC implementation, and the most considerable obstacle indicated by respondents was lack of a consistent computer application and inappropriate system of communication between physicians and pharmacists (Szalonka, 2010).

Patients, just as physicians, stated that a PC appointment should last up to 15 min. Women were interested in a longer time of the appointment, which was indicated also by two physician groups: of the physicians with a short length of service and of those with the longest service. Scientific researches confirm that a pharmacist spends an average of up to 15 min per patient on consulting medication problems (Campbell and Saulie, 1998; Look et al., 2012). However, it is disturbing that the time of the appointment indicated by half of the respondents in the questionnaire was up to 5 min. The situation may result from unawareness as well as from misunderstanding of PC principles. The reason is that such time is insufficient for delivering the service as it only allows to provide essential information, e.g., information concerning OTC medications taken (Hong et al., 2010).

On the basis of the conducted research, it was determined that about 43.56% of patients and 54.81% of physicians indicated the need for paying for the service. Evaluation of PC service was carried out and, in patients’ opinions, the averaged value amounted to USD 7, and, in physicians’ opinion, it was USD 14. About 1/3 of examined patients and physicians indicated that the service should be reimbursed. A study by Dryja et al. confirms that patients in Poland are aware of the costs of the care, and reckon that a pharmacist should receive additional payment at a maximum of USD 7 and the National Health Fund should be the payer (Dryja et al., 2011). Also Skowron in her paper noted that over half of responding patients were willing to pay for the visit USD 2–3, and 31.00% of respondents indicated a sum of USD 4–7. The figure was not dependent on obtained income (Skowron, 2011). It was observed in the USA in 1994 that 20.00% of patients were inclined to pay a sum from 50 cents from USD 30–100 an hour (Wang et al., 2011).

The results of the study assure positive evidence to support PC. It is expected by patients and physicians in the opportunity of individualized and controlled pharmacotherapy in close cooperation with pharmacists. Future investigation is needed to understand how to better organize and finance these services in Poland.

5. Conclusion

There is little evidence from Polish studies so this investigation supplies new data about implementation PC in Poland. The increased patients’ and physicians’ willingness to benefit from this service provides pharmacists with opportunities to develop PC in community pharmacies.

Conflict of interest

No conflicts of interest have been declared.

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