

PATIENT SATISFACTION REGARDING COMPOUNDED PHARMACEUTICAL PRODUCTS AND IMPLICATIONS ON PHARMACEUTICAL PRACTICE MANAGEMENT

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Abstract

Nowadays, industrial pharmaceutical products (IPP) have the largest share in the pharmaceutical market compared to the compounded pharmaceutical products (CPP) for which there are no similitude in the industry. We set out to study the patient satisfaction concerning CPP, as part of the pharmaceutical care received in community pharmacies, using a specific questionnaire. For 4 weeks 1000 questionnaires were completed by patients in a total of 10 community pharmacies from Iaşi County, Romania. The evaluation of patient satisfaction regarding pharmaceutical preparations could be assessed from the perspective of the trust degree in pharmacist advice who recommends these types of pharmaceutical products: CPP or IPP. Patients' responses showed a greater confidence in pharmacist advice regarding the compounded pharmaceutical products made through the pharmaceutical science and art *versus* their experiences with the industrial pharmaceutical products.

Rezumat

În prezent, preparatele farmaceutice industriale (IPP) au ponderea cea mai mare pe piaţa farmaceutică comparativ cu preparatele farmaceutice magistrale (CPP), produse pentru care nu există un similar în industrie. Studiul şi-a propus evaluarea satisfacţiei pacienţilor cu privire la preparatele magistrale (CPP), ca parte a consilierii farmaceutice primite în farmaciile comunitare, utilizând un chestionar. Timp de 4 săptămâni au fost completate 1000 de chestionare de către pacienţi, în 10 farmacii comunitare din judeţul Iaşi. Evaluarea satisfacţiei pacienţilor cu privire la preparatele farmaceutice poate fi făcută din perspectiva gradului de încredere în farmacistul care recomandă produsele farmaceutice, magistrale sau industriale. Răspunsurile pacienţilor au arătat o mai mare încredere în recomandările şi consilierea cu privire la produsele farmaceutice realizate în farmacie, recurgând la ştiinţa şi arta preparării acestora, faţă de propriile lor experienţe referitoare la produsele farmaceutice industriale.

Keywords: patient satisfaction, compounded pharmaceutical products, patient decision-making process, pharmaceutical care

Introduction

Due to the fulminant development of the major pharmaceutical companies and the current trend of industrialization in all fields, CPP (compounded pharmaceutical products) have drastically decreased both in recommendations and in use [1].

The current trend is to shorten the time spent with the patient by both the physicians and the pharmacists [2]. The number of physicians that prescribe CPP is extremely low and, because of the current market, there are many other convenient treatment options to

use [3, 4]. The few diseases that can be treated using CPP are likely to no longer have this option in the near future. However, in these times, in the United States compounded prescriptions comprises up to 3% of the prescription market [5].

A brief explanation for the decrease in CPP recommendation is that there is no longer an obligation for the pharmacy to honour any prescriptions and virtually community pharmacies may operate without a compounding room, according to current normative [6-13].

Nowadays, industrial pharmaceutical products (IPP) have the largest share in the pharmaceutical market, about 98%. Many patients will have to resort to IPP (mainly patients with oral mucosal diseases, dermatological and gynaecological ailments), unless pharmacists agree to compound pharmaceutical products.

This issue will be reflected not only on patients, but also on pharmacists and pharmacies, as fewer pharmacies are equipped with a compounding room, and fewer pharmacy graduates have the opportunity to learn how to formulate and compound these pharmaceutical products [14, 15].

On the other hand, throughout the world, the pharmacy profession involves activities such as compounding, preparing and manufacturing medicines. All these activities increase patient access to medicines and are based on proper procedures which guarantee the quality and safety of preparations by pharmacists [9]. Compounding is essential for paediatric and elderly patients, offering for these special patients age-adapted drug formulations. It also completes the lack of treatment options for certain patients with extraordinary medical needs (i.e. oncologic patients) and adaptation to an extraordinary situations like pandemics or medicines shortages [16].

Improving pharmaceutical services is a constant concern for pharmacists, with the focus on increasing patient satisfaction [17, 18]. Patient satisfaction can be measured by surveys, where expressed satisfaction

is valid and reliable if it is used on a large scale [19-24]. Health care specialists are aware that providing CPP in community pharmacies has significant benefits to patients.

Our study wants to evaluate, based on a specific questionnaire, answers of 1,000 patients from Iași County, Romania, the patient satisfaction regarding the CPP. The questionnaire was developed to gather information about frequency, type and credibility of CPP.

Materials and Methods

A cross-sectional study was carried out in Iași County, Romania, in 10 selected community pharmacies on the basis of an anonymous distributed questionnaire to patients who agreed to answer the proposed questionnaire. The questionnaire design was based on previous literature studies [25-27].

The questionnaire was brief and included seven easy-to-understand and easy-to-answer questions for adults (Table I). Patients have been asked to answer it after the pharmaceutical act was provided, and to place the questionnaire into a marked box on departure. Patients under the age of 18 were excluded. 1,000 completed questionnaires were selected. Practically, every question had at least one answer. The large number of questionnaires proposed in the study has been established in order to draw some relevant conclusions.

Table I
The proposed questionnaire

Question	Answer
1. How often do you buy pharmaceutical products or dietary supplements from a pharmacy?	Monthly
	Weekly
	Annual
2. Do you know the differences between compounded pharmaceutical products (CPP) and industrial pharmaceutical products (IPP)?	Yes
	No
3. Have you ever used a CPP?	Yes
	Was it recommended by a pharmacist?
	Was it prescribed by a physician?
	Was it a friend's recommendation?
	Was it your request?
	No
	I don't know
4. Do you consider that CPP you have used was effective?	Yes
	No
	I don't know
5. Do you rely on pharmacists' opinion?	Yes
	No
6. Do you consider that the supply for CPP should be higher?	Yes
	No
7. If there were both CPP and IPP for your illness, which would you choose?	Compounded
	Industrial
	I don't know

The questionnaire was piloted on 1,000 patients for clarity, relevance, acceptability and time to completion. Data collection took place over a 4-week period during normal day working hours in a total of 10 community

pharmacies from Iași County, Romania, 8 out of 10 pharmacies involved in the project having a compounding room and were well-known to provide pharmaceutical service of producing CPP. Pharmacies were selected

according to the possibility of obtaining the consent of the pharmacy manager and the availability of pharmacists to provide the questionnaire to patients. For one month all patients who entered the pharmacies involved in the study were asked to complete the questionnaire. After giving their consent, the patients received the questionnaire, without any time limit being imposed. Usually, the patients completed the questionnaire in 2 - 10 minutes. Each pharmacy had above of 100 questionnaires to distribute and return the first 100 of them completed after one month. Only pharmacists were involved in the implementation of this study, with no access to pharmaceutical assistants. If patients had questions about the questionnaire, the pharmacists answered them without indicating any answer to participants. After checking the questionnaire's validity, the pharmacist assured sure that the patient understood the topic of the study.

All questionnaires were analysed regardless on their completeness. The questionnaire is reliable under the terms of the study and may be used for research, pharmaceutical/medical education and auditing purposes. The research was carried out in accordance with the principles of pharmaceutical practice regulated in Romania and with the Declaration of Helsinki (1975), as revised in 2000 [28].

Statistical analysis

The results were analysed using the Statistical Package for Social Sciences (SPSS) version 19.0 for Windows. Frequency and percentage statistics were represented in the obtained results. The non-parametric Pearson

Correlation was used for comparison of the answers of 2 questions. For all the statistical analyses the significant level of $p < 0.05$ was set.

Results and Discussion

The analysis of the main components of the evaluations of CPP revealed three satisfaction factors: awareness regarding CPP, their use and the frequency of treatments. The cumulative patient experience was comprised in the answers of a seven-question questionnaire with a multi-point response scale.

Patients filled in the questionnaire when leaving the pharmacy, usually after taking their prescription or after purchasing an over the counter medicine (OTC). The name and surname were not entered on the questionnaire, leaving the possibility of anonymity available. Instead, the age and sex category had to be checked and the questions were usually with a single answer. One thousand patients have filled out the questionnaire and each patient were assigned to an age group (Figure 1). Patients who completed the questionnaire were predominantly women (69.90%): 20.1% between 18 - 34 years, 29.7% between 35 - 54 years and 20.1% after 55 years. The men who completed the questionnaire were: 4.9% between 18 - 34 years, 9.0% between 35 - 54 years and 16.2% after 55 years. The higher number of women who answered this study can be explained by their greater interest in health than men [29].

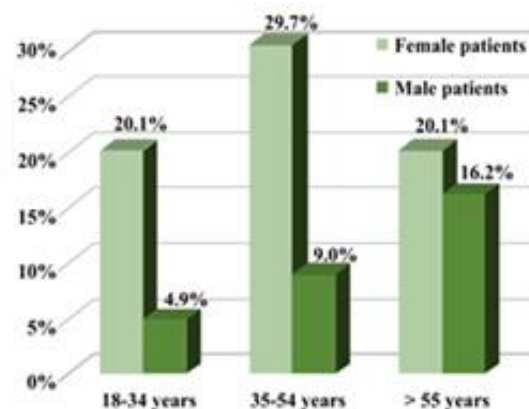


Figure 1.

Response rate by age and gender

It is recognized that women are more interested in health than men, the age of people who attend certain community pharmacies cannot be generalized because it can be an issue related to the marketing of that pharmacy. For the 10 pharmacies that entered this study, the highest percentage of patients (29.7%) were women between 35 - 54 years old. Practically the high ratio of patients in this category can be explained by the affinity of women to health for both them and their family.

The frequency of patients in the community pharmacy depends on external factors such as the visibility of the location, the availability of existing products, the quality of pharmaceutical counselling, etc. Over 50% of all patients that have filled out the questionnaire responded that the frequency of going to the pharmacy for prescriptions, for OTC or for dietary supplements was monthly (Figure 2).

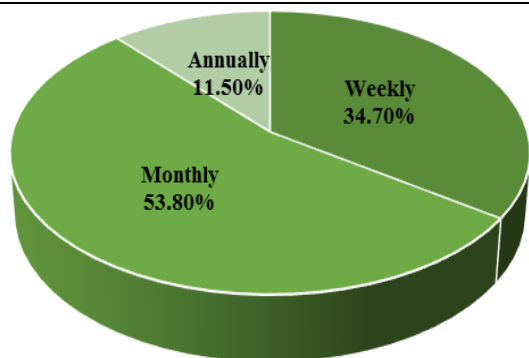


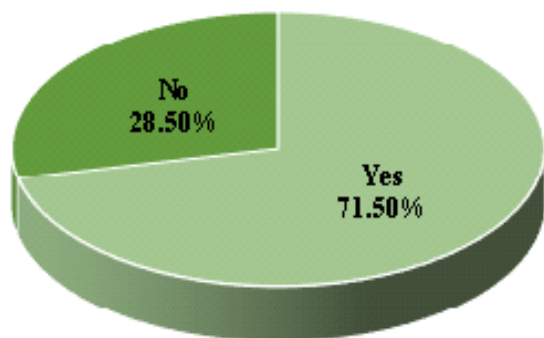
Figure 2.

Purchase frequency for pharmaceutical products or dietary supplements from a pharmacy

Taking into account that patients with chronic illness go to their family doctor monthly to receive prescriptions, explained the obtained results. The percentage of patients that resort to pharmaceutical services weekly was 34.7% and it reflects the level of education of the population. The more the patients rely on the physician and pharmacist, the faster and more efficient the prevention process is.

Although, less than 20% of the community pharmacies have a compounding room, 71.5% of the patients who responded had knowledge of CPP and 68.1% of them had used at least once in a lifetime a CPP (Figure 3).

Do you know the differences between CPP and IPP?



Have you ever used a CPP?

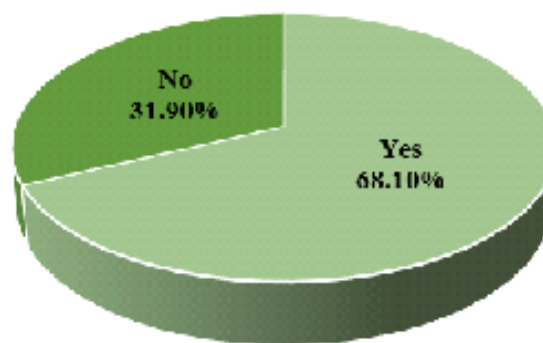


Figure 3.

Percentage of patients that are aware and have used CPP

The frequency of CPP use was closely related to the recommendation of a physician or pharmacist since patients who have used at least once in their lifetime such pharmaceutical products responded that 45% had a prescription and 26% decided to use a CPP based on the pharmacist recommendation. Only 19% answered that it was their choice to use such a preparation (Figure 4).

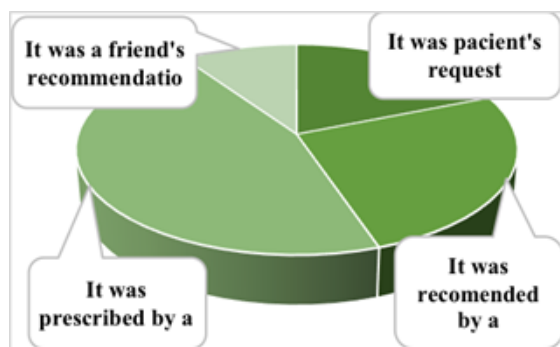


Figure 4.

Motivation for choosing CPP

The 63% success rate confirms that CPP could be used in a disease treatment just well as IPP, especially

since each person responds differently to the treatment (Figure 5). These results are sustained by the literature, many published papers estimating that in the future CPP may be used more often than the industrial products [30-33]. Furthermore, it is possible that there is a certain psychological advantage in favour of CPP, as patients perceive its personalized quality.

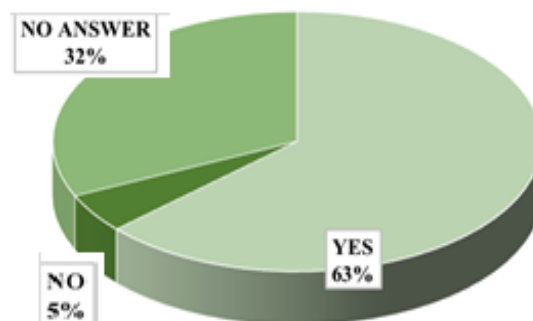


Figure 5.

Success rate of treatment using CPP

In these days pharmacists stands out as a health professionals who are the only one specialized in the area of drugs [34, 35]. This statement is underlined

by the results obtained in this study, 82.1% of patients answered that they rely on pharmacist opinion, proving a great credibility of patients in the pharmacist advice (Figure 6).

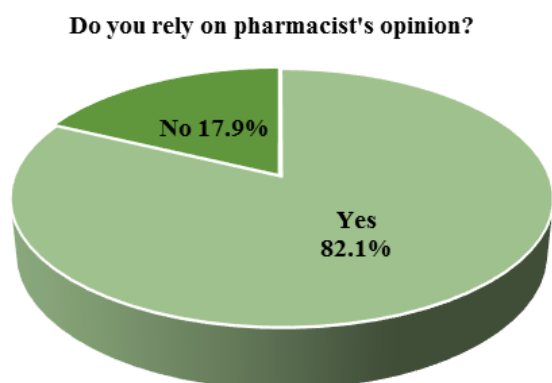


Figure 6.
Pharmacists' credibility

Moreover, 64.5% of the patients said they would choose a CPP in favour of the equivalent IPP (Figure 7), and 74% do believe that the requirement is higher than the supply (Figure 8).

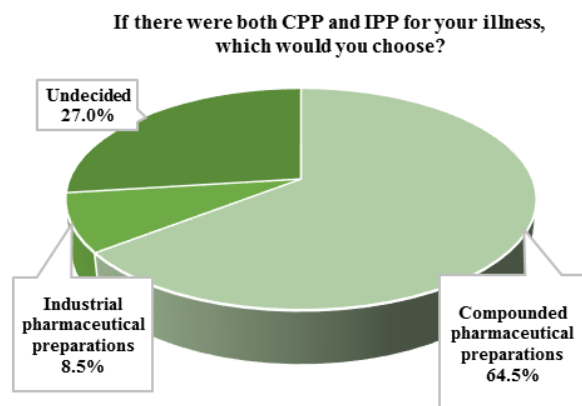


Figure 7.
Patient's choice regarding CPP

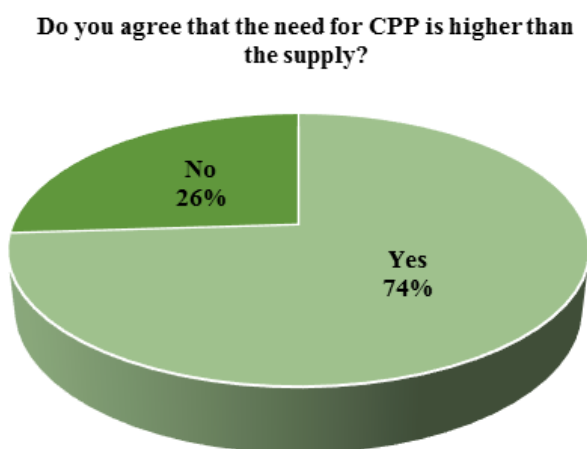


Figure 8.
Patient's perception regarding CPP requirement

The significant positive correlation ($r = 0.682$; $p = 0.01$) proved the importance of CPP, that was directly proportional to patient confidence in pharmacists. This correlation showed that patients who trust their pharmacist are more likely to use CPP and, on the other hand, the ability to prepare CPP could serve as a marker of confidence in pharmacists from patient's perspective. This correlation can help to surpass many of the current milestones in the pharmaceutical field and could lead to a better relationship in the physician-patient-pharmacist triangle.

Data from literature shows that patients' satisfaction with their treatments was linked with a higher success rate of treatment [36-46]. Our results highlight that patients who trust their pharmacist are more likely to evaluate their treatment efficiency. Regardless of the correlation ($r = 0.511$, $p = 0.01$) or patients' trust in pharmacists, as a result of providing quality pharmaceutical services including CPP, the benefits are in the end in patients' favour. Also, the intensity of the correlation between items 2 and 6 is significant ($r = 0.921$, $p < 0.05$). Promoting CPP could be highly beneficial for pharmacies and this might reflect in patients' satisfaction with both their treatments and their pharmacist. Patients' satisfaction with treatment using CPP led to the first choice of such a preparation *versus* the industrial preparation. Significantly positive correlation ($r = 0.72$, $p < 0.05$) confirms that option for the patients.

The positive correlation of items 5 and 7 provides the "key" of the pharmaceutical act through the intensity of the relationship between the pharmacist's position, his recommendations and the choice of pharmaceutical preparation selected by the patient. The relationship between the two items was highly significant ($r = 0.727$, $p = 0.01$), which allows us to express that pharmacists with experience in the art and science of mixing compounded products enjoy higher levels of trust from their patients. We can also state that the services provided by the pharmacists are in high demand, being in contrast with current opinion that CPP account for less than 2% of the market.

The study had several limitations. Despite the large set of results we consider this questionnaire a clamping point for a future larger study that could target a greater number of pharmacies. Pharmaceutical counselling is closely related to patient's trust in the pharmacist, which is why we consider it a point of reference for a broader vision of understanding the patient's psychology in choosing a pharmacy or a pharmacist. Another limitation can be seen in the results themselves which are correlated with the type of pharmacies included in the study, with or without a compounding room.

Conclusions

Even if the century of speed and massive industrialization in which we live leads us to minimize the pharmaceutical

act and to diminish the use of CPP, the proposed questionnaire revealed the patient's opinion on the issue. Patients clearly have a favourable opinion for CPP, and the market should reflect on this opinion, taking into account that not only the patient has benefits, but also the pharmacists. This cross-sectional study can be beneficial to pharmacists/pharmacies in order to achieve an efficient management and for enhancing the quality of patient-oriented pharmaceutical care services.

Conflict of interest

The authors declare no conflict of interest.

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