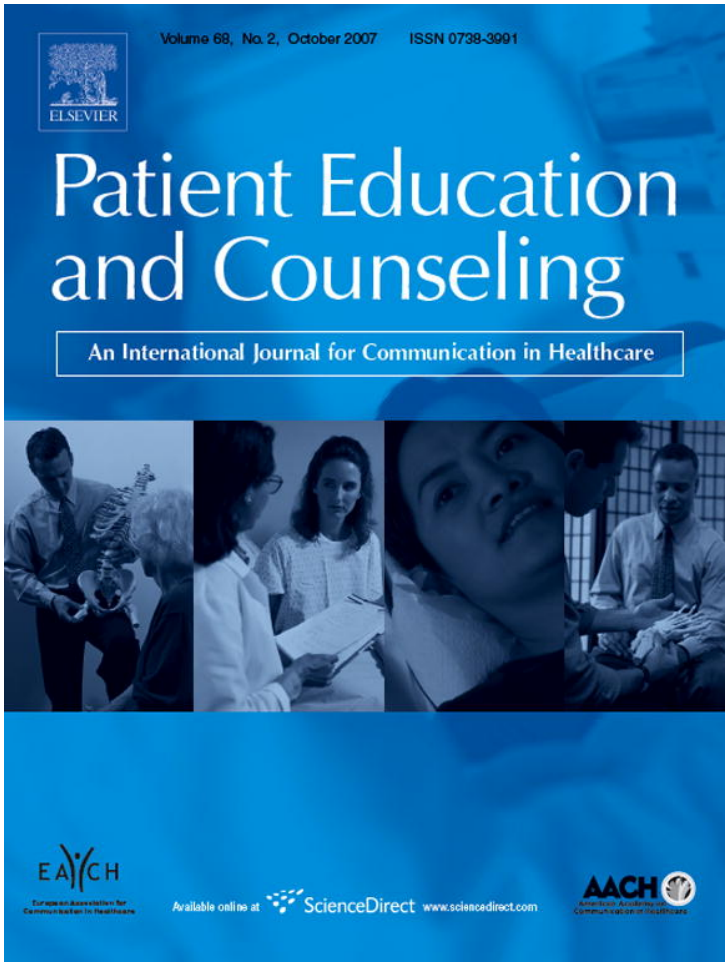

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Influence of Pharmaceutical Care intervention and communication skills on the improvement of pharmacotherapeutic outcomes with elderly Brazilian outpatients☆

Divaldo P. Lyra Jr.[a,b,*], Chiara E. Rocha[c], Juliana P. Abriata[d], Fernanda R.E. Gimenes[e], Manuel Machuca Gonzalez[f], Irene R. Pelá[a]

[a] *Faculty of Pharmaceutical Sciences of Ribeirão Preto, University of São Paulo, Brazil*
[b] *Faculty of Pharmacy, Federal University of Sergipe, Aracaju, Sergipe, Brazil*
[c] *Faculty of Pharmacy, Tiradentes University, Sergipe, Brazil*
[d] *Faculty of Pharmaceutical Sciences, University of Ribeirão Preto, São Paulo, Brazil*
[e] *Nursing College of Ribeirão Preto, University of São Paulo, Brazil*
[f] *Research Group on Pharmacotherapy and Pharmaceutical Care, University of Seville, Spain*

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Abstract

Objective: The goal of this study was to evaluate the influence of Pharmaceutical Care intervention on the results obtained with a group of elderly outpatients and to analyze the communication skills used by healthcare professionals (research pharmacists, dispensing pharmacists, and physicians) during counseling about healthcare and drug therapy.
Methods: The instruments were applied to 30 elderly outpatients assisted at the pharmacy of a primary healthcare unit in Ribeirão Preto (SP), Brazil. The group of patients received follow-up for a period of 12 months.
Results: It was observed that Pharmaceutical Care intervention and humanized communication, of an educational nature, optimized the use of medication, reduced symptoms caused by drug therapy, and improved the health conditions of the patients.
Conclusion: Pharmaceutical Care intervention was essential for the establishment of therapeutic relationships and influenced the care given to elderly people as well as the achievement of positive health outcomes.
Practice implications: After this study, Pharmaceutical Care programs were implemented in different PHCU's of Ribeirão Preto and pharmacists are following-up 300 elderly patients.

Keywords: Interpersonal communication; Elderly; Pharmaceutical Care

1. Introduction

World population aging leads to a greater prevalence of chronic health conditions, increases medication use and healthcare system costs [1]. In 2000, the direct annual cost spent on preventable drug-therapy related morbimortality in the U.S. ambulatory population exceeded US$ 177 billion dollars [2].

The prevalence of polypharmacy increases with age and many studies have been carried out to quantify the extent of the problem [3–7]. The main consequences of polypharmacy are non-adherence, adverse drug reactions, drug–drug interactions, increased risk of hospitalization and healthcare costs, and medication errors [4,8]. In Brazil, elderly people represent 50% of polypharmacy users and most of them have a low literacy level [3]. Besides, the total proportional geriatric population in Brazil is projected to increase from 9% in 1999 to approximately 13% in 2020. For these reasons the Brazilian Public Health System [SUS] needs to adopt actions to prevent aggravation of the population's health condition.

☆ I confirm that all patient/personal identifiers have been removed or disguised so that the patient(s)/person(s) described are not identifiable and cannot be identified through the details of the article.

* Corresponding author at: Faculty of Pharmacy, Federal University of Sergipe, 49032-010 Aracaju, Sergipe, Brazil. Tel.: +55 2179 3243 1812; fax: +55 2179 2105 6640.
E-mail address: lyra_jr@hotmail.com (D.P. Lyra Jr.).

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Poor communication of pharmacists with and between elderly patients, caregivers and other healthcare providers is one of the most important causes of drug-therapy problems (DTP) [9]. In a globalized scenario with significant changes in healthcare systems, Pharmaceutical Care has been defined as the responsible provider of drug therapy for the purpose of achieving definite results that improve a patient's quality of life (QoL) [10]. To achieve these results, pharmacists need to cooperate with patients and other healthcare providers in designing, implementing, and monitoring a care plan aimed at preventing and resolving DTP [9,11–14].

Since 1997, a new profile for the training of pharmacists has been determined worldwide, according to which every professional should be able to be a good communicator [15]. Effective communication is an essential tool for Pharmaceutical Care practice because it improves the use of medications by patients, including the elderly, and ensures optimal therapeutic outcomes [4,7,9,16].

Studies have shown a great development in communication skills in the education of pharmacists [17–20]. Although National Guidelines for Undergraduate Education in Pharmacy (2002) have included formal training in communication skills as part of the new pharmacist's curriculum [21], most of the Brazilian universities still have not introduced these related courses into their school's curriculum.

This study aimed at evaluating the influence of Pharmaceutical Care interventions on the results obtained with a group of elderly outpatients and analyzing the communication skills applied by the healthcare providers (physicians, dispensing pharmacists, and research pharmacists) during the healthcare counseling and drug therapy.

2. Methods

A longitudinal, prospective study (semi-experimental) was conducted at a primary healthcare unit (PHCU) in Ribeirão Preto (SP), Brazil, from July 2003 to July 2004. This setting was chosen because it is the regional health center reference for the elderly from 30 cities. At this unit, there were 300 patients with hypertension, and the center's healthcare providers identified 40% (120) non-adherence as a primary reason for poor outcomes to treatment. At the PHCU, the outpatients were attended to by four physicians, two dispensing pharmacists, and two researchers, both pharmacists themselves.

2.1. Patients

During the first week of July 2003, all hypertensive outpatients who came to the ambulatory care pharmacy of the PHCU to receive their medication were identified as potential candidates for the study. Patients were eligible to participate if they met three or more of the following criteria [22]: five or more drugs in their regimen, 12 or more doses per day, a medication regimen that had changed four or more times in the past year, three or more co-morbidities, a history of medication non-adherence [23], and the presence of at least one drug that requires therapeutic monitoring in Brazil (Appendix A). Exclusion criteria were: stage 3 hypertension (systolic $\geq$ 180 mmHg and/or diastolic pressure $\geq$ 110 mmHg based on JNC-VII criteria [24]), an identified secondary cause of hypertension, such as chronic renal disease, pheochromocytoma, Cushing's syndrome, or had missed more than three consecutive appointments during the program.

The study protocol was approved by an Ethics Committee of São Paulo University. During the first appointment, the nature of the study was described to the outpatients, and informed consent forms were signed by those eligible and interested in participating.

2.2. Pharmaceutical Care program

Patients were scheduled to visit the research pharmacist once per month at the PHCU during the period of a year. The research pharmacist (DPLJ) interviewed each patient for 40 min, using a checklist with essential issues such as socio-demographic variables, health situation, and drug therapy [25]. The Pharmaceutical Care interview program included: listening, review of health situation and drug history, identification of needs and problems, assessment, care plan, documentation, and intervention.

2.3. Freire counseling approach and Pharmaceutical Care intervention

Freire developed his education theory while teaching basic literacy skills to Brazilian adults [26]. His work has been used internationally, providing an important link between literacy and health education philosophy, theory, and practice consistent with fundamental values regarding patient empowerment and participation [27–30].

Empowerment education consisted of acts of cognition, not merely transferals of information. Freire recommends that the teacher (in this case, the pharmacist) becomes a co-learner or equal partner with the patient in the learning process [28]. Moreover, according to him the individuals are empowered through critical examination of their reality and he advocated a problem-posing method of education, in which teacher–student (pharmacist–patient) contradictions were resolved through dialogue.

The research pharmacist was previously trained in the Freire counseling approach for six months at the Nursing College of Ribeirão Preto. Pharmaceutical Care interventions, based on the Freire counseling approach, aimed at personal transformation and the awakening of the patients' "critical consciousness" [26], and were divided into: health education and drug therapy. Such transformation is attributed to three key consciousness-raising experiences: relating to and reflecting on experience (act-reflect-act); personal exploration and problem solving; and taking thoughtful action. These steps provide a framework for Freire's participatory social counseling approach to the design of effective educational strategies in health [27].

Educative intervention consisted of: counseling about chronic health conditions (nature, causes, and treatment) and changes in lifestyle, identification of signs and symptoms

caused by medication (effectiveness and safety), and encouragement of patients to participate actively in the proposed drug therapy. The ''consciousness-raising'' was monitored through drug therapy attitude changes during one year of interviews.

The research pharmacist evaluated patients individually to identify actual and potential DTP. DTP is any undesirable event experienced by a patient which involves, or is suspected to involve, drug therapy and that interferes with achieving the desired goals of therapy [31]. It was divided in terms of need, effectiveness, and safety [32]. All data was recorded on an individual form and updated monthly, thus forming a database. The drug therapy intervention also consisted of: assessment of drug history (current and past medication) and drug-taking ability, solution and prevention of DTP (actual and potential), clarification questions regarding orders, use, and storage of medicines and implementation of adherence-improving strategies.

2.4. Influence of communication

2.4.1. Instrument

A structured instrument quantifies the communication skills applied by healthcare providers (physicians, dispensing pharmacists and research pharmacist) to counseling the elderly patients [33,34]. The purpose of analyses was to verify the influence of communication skills employed by different healthcare providers in improvement of pharmacotherapeutic outcomes. This Likert-scale consists of five alternatives (always = 5; almost always = 4; sometimes = 3; almost never = 2; never = 1).

The preliminary version of the instrument was properly translated into Portuguese, submitted to evaluation by a panel of experts consisting of five pharmacists and one nurse who were all bilingual and knowledgeable of the purpose of the questionnaire and the concepts under analysis. All the separately suggested alterations were agreed to, edited, and standardized by the committee members themselves. The degree of agreement among the panel was used to measure the reliability. After this, 10 elderly patients with the same sample characteristics participated in a pilot study and significant differences in responses were not observed. Finally, this instrument was reevaluated and modified by the panel of experts.

The instrument evaluated the frequency of counseling concerning the medication used, the reasons why such counseling was effective or not, the types of communication used in order to facilitate understanding, and the professional's interest in caring for the elderly.

2.4.2. Interviews

Only during the last visit (July 2003), the instrument was applied by the previously trained interviewer (JPA) in a private room at the PHCU. The structured, individual interviews were also conducted according to a standardized guide, recorded on 60-min magnetic cassette tapes and then transcribed. Some examples of interviewee reports were used only to illustrate the patient's answers and the types of communication skills used. In this phase, standardization was intended to prevent the interviewer's bias.

The answers were kept as confidential and were only revealed for data analysis. Observations regarding written information (prescriptions and tests) were also recorded.

3. Results

Out of 300 hypertensive outpatients, 90 were invited to participate, 16 refused to participate, 74 accepted to be included, but 15 were excluded because of their ages, totaling 59 subjects. From those, 30 outpatients completed the entire study and attended all of the interviews with the research pharmacist. The other 29 quit and the most common reason for discontinuation was lack of time ($n = 11$), missing more than three consecutive appointments ($n = 10$), patient's lack of belief in any health related added-value in the study ($n = 6$), and the patient moved out of the area ($n = 2$).

3.1. Socio-demographic and health situation profile

The mean age of patients was 66 ± 5 years, 20 of whom were women ($n = 30$). Twenty-one (71%) of the interviewees had a low literacy level. There was a predominance of retirees/pensioners, 19 (63%), and housewives, 7 (27%). The mean chronic health condition per elderly individual corresponded to 3.5 ± 1.5. In this study 17, (56.5%), of the patients reported hypertension, diabetes mellitus, and hypercholesterolemy diagnosed more than 10 years before by physicians. Due to various morbidities, each patient had an average of five physician appointments per year with different specialists. Moreover, 20 patients did not inform their cardiologists about the medication prescribed by other physicians.

3.2. Drug therapy profile

During the study period 250 medications were consumed, all patients had polypharmacy (mean of 8.5 ± 4 drugs per patient), most of the medicines (81%) prescribed by physicians. Twenty patients received more than five different prescribed drugs. Polypharmacy is the taking of multiple medications for multiple medical problems [8].

Ninety two DTP were identified during the study, 3.0 ± 1.5 problems per patient. Twenty nine percent of them were detected by the patients themselves, mainly a higher incidence of safety problems (64%). Patients showed a mean of 2.6 actual DTP and 0.5 potential DTP. These DTP's had been caused by: diuretics (12 [19%]), analgesics (10 [16%]), calcium channel blockers (9 [14%]) and angiotensin-converting-enzyme (ACE) inhibitors (8 [13%]). The high medication consumption and high incidence of DTP (mainly in the Safety category) showed that the medication acted as a harmful agent to the patients' health and caused symptoms such as: orthostatic hypotension, gastritis, and dizziness. These symptoms influenced withdrawal from many treatments.

3.3. Evaluation of Pharmaceutical Care intervention

In this study, 590 interventions were performed and documented by the research pharmacist, for both drug therapy (214) and health education (376). These interventions were equally distributed among the different chronic health conditions that the patients suffered. Sixty five percent of 214 drug therapy interventions required physician decisions. The physicians agreed with the research pharmacist to change 86% of the drug therapy regimen. All of the health education interventions were accepted by the patients and implemented by them.

By the end of the study, the Pharmaceutical Care interventions solved 69% of actual DTP and prevented 78.5% potential DTP. The results demonstrated an average of 4 ± 2 Pharmaceutical Care interviews to solve each DTP. Some actual and potential DTP remained unresolved or were not prevented. The resolution and prevention of these DTP required modifications in drug regimens that depended exclusively on a medical decision. Details involving socio-demographic profile and the evaluation of Pharmaceutical Care intervention are well described in a previous publication [18].

3.4. Analysis on the influence of communication

All of the patients had doubts about their medication: ''*It's hard, there are many different medicines and we mix up all the instructions we were given*'' (DMG, female, 65 years old). With 20 patients (67%), the physicians were unconcerned in resolving the patients' doubts about their medication. Furthermore, all the 120 analyzed prescriptions were hand-written and one-third of them were not readable (Table 1).

Besides, 22 patients (71%) reported that the physicians ''almost never'' orientated them to the prescribed medication. The reasons for this behavior were: ''lack of interest'' (49%), ''lack of understanding'' concerning counseling (43%) and ''lack of time'' (8%), and the most common difficulty in communication was the written information about medication.

Sixteen patients (54%) mentioned that the dispensing pharmacists made efforts to clarify their doubts concerning medication. However, the deficiencies in the dispensing pharmacists' education also resulted in a technical and scientific speech that became incomprehensible for the patient's reality: ''*I understand very little* (...) *he talks like the physician*'' (IPC, female, 66 years old).

According to the patients, several structural barriers prevented the building of relationships with dispensing pharmacists, which made the dispensing a mechanical process of medication delivery and repetition of prescription content. Barriers such as noisy consultation rooms did not allow for worthwhile communication or meeting the patients' aspirations, since the elderly show greater need for information and attention: ''*They explain it all right, but they could do it better* (...) *we don't have such a sharp mind as we used to, we're older*'' (MST, female, 75 years old). As a consequence, 14 patients (48%) related that ''sometimes'' the dispensing pharmacists communicate with them. The most frequently mentioned reasons by dispensing pharmacists for not providing guidance were: ''lack of time'' (40%), ''lack of understanding'' (26%), ''lack of privacy'' (14%) and ''lack of interest'' (10%). Lack of time was caused by excess of activities, hindering the construction of therapeutic relationships between dispensing pharmacists and patients.

The Pharmaceutical Care intervention, based on dialogue and co-responsibility, is influenced by the patients' concerns about medication effects. The awareness-developing educational intervention stimulated an active role for patients in identification of DTP and led to a significant decrease of them. With 28 patients (93%), the research pharmacist ''always'' gave them guidance for the use of medicines. Additionally, the various types of communication skills (visual, verbal and written) were emphasized during counseling, which was spontaneously reported (Table 2).

This premise was confirmed when 29 patients (96%) stated that the research pharmacist was ''always'' interested in clarifying their doubts, and at the end of the study the group acknowledged Pharmaceutical Care as a relevant practice for health promotion. The use of communication skills and the exchange of experiences mediated the process of letting ''the feelings flow'', which resulted in the construction of therapeutic relationships, confidentiality, co-responsibility in healthcare, and the achievement of positive results: ''*After I started to have these conversations, I've become more responsible, and as a matter of fact, my diabetes levels have gone down* (...) *I was taking the medicine wrongly and at the wrong time*'' (JCM, male, 69 years old).

The particularizing of each case made it easy to plan specific care and educational actions by the research pharmacist in order to prevent and solve the patients' problems: ''*He explained what we didn't know very well and now we know how to take the medicines, where to keep them, and even how to eat correctly*'' (AFM, female, 75 years old). In these situations, the pharmacist symbolizes someone who advocates for the patients and is acknowledged by them as the professional who takes care of their health: ''*he*

Table 1
Examples of patients reports' about the write orientation concern medication (Ribeirão Preto, SP, Brazil, 2004)

Communication skills	Report	Interviewee
Written communication (reading the package directions)	*"We do try to read them, but we can't understand them."*	AAF, female, 75 years old
	"I've tried to read them, but the letters are too small. . .for older people!"	ISO, female, 71 years old
Written communication (reading the handwritten prescriptions)	*"You can't understand anything... it a physician's handwriting, you know?!"*	ISO, female, 71 years old
	"The pharmacy assistant told me to go back to the doctor's, but not even he (the doctor) could read it."	IND, female, 69 years old

Table 2
Types of communication skills spontaneously reported by patients (Ribeirão Preto, SP, Brazil, 2004)

Types of communication	Report	Interviewee
Active listening and confidentiality	*"He is my pharmacist, and he is patient enough to listen to many things that I couldn't talk to my wife about, specially about the medicines that affected my sex drive."*	MCR, male, 64 years old
Active listening and demonstration of interest	*"We can see that he is interested, and only the fact that he listens to me makes me feels relieved by the time I leave."*	WGV, female, 64 years old
Empathy and the use of terms that are suitable to the level of understanding	*"He says the right words, the way we talk."*	JCM, male, 69 years old
Non-verbal observation	*"Some days, I don't even need to tell him ... he already knows that I'm not feeling good."*	GS, female, 64 years old
Provision of written information and demonstration of interest	*"I was taking the medicine wrongly, and he noted down the right times for me."*	PAP, male, 61 years old

interceded with my physicians for me (...) *he takes care of me*'' (MCR, male, 64 years old).

4. Discussion and conclusion

4.1. Discussion

Most of the patients in this study had a low literacy level. In Brazil, individuals with lower education levels are approximately five times more likely to have health problems [35]. In this situation, the educational interventions could contribute to awareness development and to the exchange of experiences and humanization, replacing dominant and informative actions that were distant from the patients' reality. Empowering experiences foster the competence and confidence necessary for personal transformation and the realization of ''critical consciousness'' [30].

The predominance of retirees/pensioners and housewives was high is this sample. According to Rosa et al., retirees and housewives are almost eight times more likely to present morbidities [35]. In this study, the patients presented at least two chronic health conditions; as a consequence they had to be treated by different specialist physicians, to take multiple medications, and to comprehend difficult instructions about drug therapy. In the literature, it has been demonstrated that both the number of drugs prescribed and DTP risk increases with the number of physicians seen [8,36].

The process of caring for maintaining good health is symbolically associated to the physician's image; however, the study results demonstrated that communication failures between physicians and patients left important gaps in understanding the health-disease process. Mainly because during the appointments the physician did not take into account the elderly's needs, expectations, low literacy and disabilities (auditory and cognitive). Medical appointments lasted only a few minutes and emphasized the diagnosis, laboratory tests ordering, and brief information concerning the medication prescriptions [26]. The literature also cites that physicians' verbal recommendations are often insufficient; contain technical aspects that complicate the patient's understanding, besides inadequate prescriptions leading to serious DTP risks, causing serious health problems for patients [37,38]. On the other hand, patients prioritize disease and diagnosis information received during medical appointments [38].

The literature points out the need to improve the quality of communication between physicians, patients, and pharmacists [39–41]. In this study, collaborative actions between physicians and the research pharmacist promoted changes in the elderly's drug regimens, especially adjusting drug therapy to the patients' routine schedules. In addition, the co-operative working relationships between the research pharmacist, the prescribers and patients, was a key factor in solving and preventing DTP at the PHCU. Other studies showed the positive results of collaborative intervention, leading to the prevention and solution of DTP, reduction of treatment costs, and satisfaction with the Pharmaceutical Care program [4,30,42,43].

The dispensing pharmacists are responsible for ensuring clear and comprehensible information. Thus, this professional must make sure that information is given according to the patient's level of understanding without posing barriers or interference to communication [18–20]. The possibilities for pharmacists acting as health agents are limited in institutional realms, since minimal conditions are provided for good care giving. Otherwise, each patient represented a complex universe of feelings and perceptions of their own reality, which made the standardization of healthcare practices rather difficult. Therefore, improving working conditions at the PHCU, individualizing care giving, and investing in the clinical and humanistic training of professionals could democratize information and rationalize the medication use.

The DTP influenced the withdrawal from many treatments; however, the optimizing of drug therapy is an outcome of collaborative relationship between pharmacist–patient [7,16,42,43]. Pharmaceutical Care intervention contributes to awareness development and to the exchange of experiences, replacing dominant and informative actions concerning drug therapy that were distant from the patient's reality [14], especially because the focus on the patient can be understood as the experience to answer a call from the ''other'', and the ''other'' is the patient who is vulnerable and requires caring as well as responsibility from the pharmacist [44].

In this study, the relationships between the research pharmacist and the patients were based on empathy that allows ''feelings to flow'', as a way to feel or try to feel what the other feels, since, in this exchange of emotions and concerns, more opportunities to find viable and suitable alternatives for the research pharmacist to care for the patient arose. Thus, such interpersonal relationships were guided by principles such as: ethics, mutual respect, confidentiality and, above all, co-responsibility.

Co-responsibility consists in recognizing that the pharmacist and the patient form a humanly symmetric link, that is, one mirrors itself on the other's behavior. Based on this, the research pharmacist tried to establish a dialogue in order to understand the patients' life history, concerns, and needs [44,45]. In this perspective, empirical knowledge and the patients' individual aspects were taken into account.

Care is the commitment with the human being. By accepting this commitment, pharmacists can work as the bridge between patients and healthcare providers. The interaction of pharmacists with other healthcare providers has contributed to improving their clinical and humanistic skills in caring for patients [39,41,46].

4.1.1. Limitations

This study had some limitations, as follows: research pharmacist experience and education in Pharmaceutical Care, number of patients (convenience sample), differences in healthcare system, and different approaches to healthcare providers' education.

The research pharmacists' lack of experience in Pharmaceutical Care may have prevented the detection of more DTP. Therefore, a longer training period for the researcher might have produced better results. The small number of elderly in the study sample (30 outpatients) did not allow generalizing the results detected in this study; larger size samples would naturally be needed. Moreover, another study is necessary for evaluating patients who withdrew from this sample.

4.2. Conclusions

Pharmaceutical Care interventions were effective, reducing DTP and improving the patients' health conditions. Healthcare providers – physicians and dispensing pharmacists – showed various difficulties in establishing relationships with the patients, which directly influenced treatment and medication under use. For this reason, it is necessary to reformulate curricula of Brazilian Undergraduate Programs and to qualify providers for ensuring society's health and well-being.

Communication skills and Pharmaceutical Care intervention were relevant instruments for the construction of therapeutic relationships based on trust and co-responsibility, thus influencing the effective care given to patients and the achievement of positive health results.

4.3. Practice implications

After this study, the researcher gave a training of communication skills and Pharmaceutical Care to 38 dispensing pharmacists from the Public Health-System of Ribeirão Preto. As of this moment, thirteen of these pharmacists have implemented Pharmaceutical Care programs in different PHCU's and are following-up 300 elderly patients.

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Appendix A

Drugs requiring therapeutic monitoring.

Drug category
β-Blockers
Calcium channel blockers
Thiazide diuretics
Angiotensin-converting enzyme inhibitors
Angiotensin II receptor antagonists
α-Antagonists
Vasodilators
Biguanides
Sulfonamides
Cholesterol and triglyceride reducers

References

[1] OMS, Organización Mundial de La Salud. El papel do farmacéutico en el sistema atención de salud. Informe técnico de la Organización Mundial de la Salud. Tokio, 1993. Ars Pharm 1995;36:285–92.
[2] Ernst FR, Grizzle AJ. Drug-related morbidity and mortality: updating the cost-of-illness model. J Am Pharm Assoc 2001;41:192–9.
[3] Rozenfeld S. Prevalence, associated factors, and misuse of medication in the elderly: a review. Cad Saúde Pública 2003;19. 717–72492p.
[4] Bernsten C, Björkman I, Caramona M, Crealey G, Frøkjær B, Grundberger E, Gustafsson T, Henman M, Herborg H, Hughes C, McElnay J, Magner M, van Mil F, Schaeffer M, Silva S, Søndergaard B, Sturgess I, Tromp D, Vivero L, Winterstein A. Improving the well-being of elderly patients via community pharmacy-based provision of pharmaceutical care. Drugs Aging 2001;18:63–77.
[5] Vinks THAM, Koning FHP, Lange TM, Egberts TCG. Identification of potential drug-related problems in the elderly: the role of the community pharmacist. Pharm World Sci 2006;28:33–8.
[6] Juurlink DN, Mamdani M, Kopp A, Laupacis A, Redelmeier DA. Drug-drug interactions among elderly patients hospitalized for drug toxicity. JAMA 2003;289:1652–8.
[7] Gurwirtz JH, Field TS, Harrold LR, Rothschild J, Debellis K, Seger AC, Cadoret C, Fish LS, Garber L, Kelleher M, Bates DW. Incidence and preventability of adverse drug events among older persons in the ambulatory setting. JAMA 2003;289:1107–16.
[8] Rollason V, Vogt N. Reduction of polypharmacy in the elderly: a systematic review of the role of the pharmacist. Drugs Aging 2003;20:817–32.
[9] Sturgess IK, McElnay JC, Hughes CM, Crealey G. Community pharmacy based provision of Pharmaceutical Care to older patients. Pharm World Sci 2003;25:218–26.
[10] Hepler CD, Strand LM. Opportunities and responsibilities in Pharmaceutical Care. Am J Hosp Pharm 1990;47:533–45.
[11] Bell JS, Whitehead P, Aslani P, McLachlan AJ, Chen TF. Drug-related problems in the community setting. Clin Drug Invest 2006;26:415–25.
[12] Haugbølle LS, Sørensen EW. Drug-related problems in patients with angina pectoris, type 2 diabetes and asthma–interviewing patients at home. Pharm World Sci 2006;28:239–47.

[13] Blix HS, Viktil KK, Moger TA, Reikvam A. Characteristics of drug-related problems discussed by hospital pharmacists in multidisciplinary teams. Pharm World Sci 2006;28:152–8.
[14] Soendergaard E, Kirkeby B, Dinsen C, Herborg H, Kjellberg J, Staehr P. Drug-related problems in general practice: results from a development project in Denmark. Pharm World Sci 2006;28:61–4.
[15] WHO, World Health Organization. The role of the pharmacist in the healthcare system: preparing the future pharmacist: curricular development [WHO/PHARM/97.. . .-Report of a WHO Consultive, Vancouver, Canada, 27–29 August, 1997].
[16] Lee JK, Grace KA, Taylor AJ. Effect of a pharmacy care program on medication adherence and persistence, blood pressure, and low-density lipoprotein cholesterol: a randomized controlled trial. JAMA 2006;296: 2563–71.
[17] Chereson RS, Bilger R, Mohr S, Wuller C. Instructional design and assessment design of a Pharmaceutical Care Laboratory: a survey of practitioners. Am J Pharm Educ 2005;69:19–24.
[18] Lyra Jr DP, Oliveira MAC, Amorim ELC. Patient counseling trends in modern pharmacy. Boll Chim Farmaceutico 1999;138:307–8.
[19] Beardsley RS. Communication skills development in colleges of pharmacy. Am J Pharm Educ 2001;65:307–14.
[20] McDonough RPP, Bennett MS. Improving communication skills of pharmacy students through effective precepting. Am J Pharm Educ 2006;70:1–12.
[21] CNE, Conselho Nacional de Educação. Diretrizes Nacionais para o Ensino da Graduação em Farmácia de 2002. Diário Oficial da União: Brasília, Seção 1, 9 p.
[22] Koecheler JA, Abramowitz PW, Swim SE, Daniels CE. Indicators for the selection of ambulatory patients who warrant pharmacist monitoring. Am J Health Syst Pharm 1989;54:1805–15.
[23] Gordon K, Smith F, Dhillon S. Effective chronic disease management: patients' perspectives on medication-related problems. Patient Educ Couns 2007;65:407–15.
[24] Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo Jr JL, Jones DW, Materson BJ, Oparil S, Wright Jr JT, Roccella EJ. National Heart, Lung, and Blood Institute Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, National High Blood Pressure Education Program Coordinating Committee. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. JAMA 2003;289:2560–72.
[25] Currie JD, Doucette WR, Kuhle J, Sobotka J, Miller WA, McDonough RP, TICE A. Identification of essential elements in the documentation of pharmacist-provided care. J Am Pharm Assoc 2003;43:41–9.
[26] Freire P. Education for critical consciousness. New York (NY): Continuum Press; 1983.
[27] Mooney M, Nolan L. A critique of Freire's perspective on critical social theory in nursing education. Nurs Educ Today 2006;26:240–4.
[28] Rindner EC. Using Freirean empowerment for health education with adolescents in primary, secondary, and tertiary psychiatric settings. JCAPN 2004;17:78–84.
[29] Roter D. Three blind men and an elephant: reflections on meeting the challenges of patient diversity in primary care practice. Fam Med 2002;34:390–3.
[30] Roter DL, Margalit-Stashefsky R, Rudd R. Current perspectives on patient education in the U.S.. Patient Educ Couns 2001;44:79–86.
[31] Cipolle RJ, Strand LM, Morley PC. Pharmaceutical care practice: the clinician's guide, 2nd ed., New York: Mc Graw Hill; 2004, 394 p.
[32] Comité de Consenso. Segundo Consenso de Granada sobre Problemas Relacionados con Medicamentos. Ars Pharm 2002;43:175–84.
[33] Barnett CW, Nycamp D, Ellington AM. Patient-guided counseling in the community pharmacy setting. J Am Pharm Assoc 2000;40:765–72.
[34] Hargie ODW, Morrow NC, Woodman C. Pharmacist's evaluation of key communication skills in practice. Patient Educ Couns 2000;39:61–70.
[35] Rosa TEC, Benício MHD, Latorre MRDO, Ramos LR. Determinant factors of functional status among the elderly. Rev Saúde Públ 2003;37:40–4.
[36] Steinbrook R. The prescription-drug problem. New Engl J Med 2002;346:790.
[37] Silva T, Dal-Pizzol F, Bello CM, Mengue SS, Schenkel EP. Drug package inserts and the adequacy of patient's drug information. Rev Saúde Públ 2000;2:184–9.
[38] Lyra Jr DP, Prado MCTA, Abriata JP, Pelá IR. Prescription orders as cause of risk of drug-related problems. Seguim Farmacoter 2004;2:86–96.
[39] Carter BL, Zillich AJ, Elliot WJ. How pharmacists can assist physicians with controlling blood pressure. J Clin Hypertens 2003;1:31–7.
[40] Tran AN, Haidet P, Street Jr RL, O'Malley KJ, Martin F, Ashton CM. Empowering communication: a community-based intervention for patients. Patient Educ Couns 2004;113–21.
[41] Ranelli PL, Biss J. Physicians' perceptions of communication with patients and responsibilities of pharmacists. J Am Pharm Assoc 2000;40:625–30.
[42] Vivian EM. Improving pressure control in a pharmacist-managed hypertension clinic. Pharmacotherapy 2002;12:1533–40.
[43] Geber J, Parra D, Beckey NP, Korman L. Optimizing drug therapy in patients with cardiovascular disease: the impact of pharmacist-managed pharmacotherapy clinics in a primary care setting. Medscape 2002.
[44] Oliveira DR, Shoemaker SJ. Achieving patient centeredness in pharmacy practice: openness and the pharmacist's natural attitude. J Am Pharm Assoc 2006;46:56–66.
[45] Tweedie A, Jones I. What is medicine management. Pharm J 266:248.
[46] O'brein JM. How nurse practitioners obtained provider status: lessons for pharmacists. Am J Health-Syst Pharm 2003;22:2301–7.