3Ps – Pharmacist, Physician and Patient: Proposal for Joint Cooperation to Increase Adherence to Medication

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ABSTRACT

Objective: *Older people receive medications for chronic diseases and therefore adherence is an important health and economic concern. The objective of the study is to determine relationships between pharmacist, patient and patient's family physician with special emphasis on the comparison of adherent and non-adherent patients.*

Methods: *The study was designed as a cross-sectional survey by use of a self-administered 33-item questionnaire. The study included 635 individuals collecting or buying drugs for the treatment of chronic diseases and 84 pharmacists dispensing drugs for chronic diseases to patients.*

Results: *The study included 265 (41.7%) adherent and 370 (58.3%) non-adherent patients. Comparison of particular answers between patients and pharmacists revealed a discrepancy, with a significant difference in five of eight answers. The highest difference was recorded in answers to the question whether a pharmacist offered thorough advice to the patient on how to take the drug; an affirmative answer to this question was given by 90.5% of pharmacists and only 57.2% of patients. The analysis of respondents' claims about their relation with one doctor shows that in the first place, with the highest number of positive responses, is the claim of the respondents that their doctor always explains the results of laboratory tests and other specialized findings (n = 489, 77.0%).*

Conclusion: *Enhancing communication between the physician, the pharmacist and the patient is a key in boosting the patient's ability to follow a medication regimen. Pharmacist-physician-patient relationship can improve adherence to medication. It is very important to empower pharmacists to offer and allow time for patient counselling.*

Keywords: Adherence, medication, patient, pharmacist, physician

Fórmula Triple "FMP" – Farmacéutico, Médico y Paciente: Propuesta de Cooperación Conjunta para Aumentar el Cumplimiento con los Medicamentos

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RESUMEN

Objetivo: *Las personas mayores reciben medicamentos para enfermedades crónicas, y por ende, el cumplimiento farmacológico es un asunto importante para la salud, a la par que una preocupación económica. El objetivo del estudio es determinar las relaciones entre el farmacéutico, el paciente y médico de la familia del paciente, con especial énfasis en la comparación de pacientes cumplidores y los incumplidores.*

Métodos: *El estudio fue diseñado como una encuesta transversal, consistente en un cuestionario autoadministrado de 33 ítems. El estudio incluyó a 635 individuos que recibían o compraban medicamentos para el tratamiento de enfermedades crónicas, y 84 farmacéuticos que dispensaban los medicamentos para enfermedades crónicas a los pacientes.*

Resultados: *El estudio incluyó a 265 (41.7%) cumplidores y 370 (58.3%) pacientes incumplidores. La comparación de respuestas particulares entre pacientes y farmacéuticos reveló una discrepancia, con*

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una diferencia significativa en cinco de ocho respuestas. La diferencia más alta se registró en las respuestas a la pregunta de si un farmacéutico podía aconsejar cabalmente al paciente sobre cómo tomar los medicamentos: una respuesta afirmativa a esta pregunta fue dada por el 90.5% de los farmacéuticos y sólo por el 57.2% de los pacientes. El análisis de los planteamientos de los encuestados sobre su relación con el médico muestra que en primer lugar – con el mayor número de respuestas positivas – está el reclamo de que su médico siempre explique los resultados de las pruebas de laboratorio y otros hallazgos especializados (n = 489, 77.0 %).

Conclusión: *Mejorar la comunicación entre el médico, el farmacéutico y el paciente es la clave para incrementar la capacidad del paciente para seguir un régimen de medicamentos. La relación médico-paciente-farmacéutico puede mejorar el cumplimiento con los medicamentos. Es muy importante capacitar a los farmacéuticos para ofrecer y tomar tiempo para aconsejar a los pacientes.*

Palabras claves: Cumplimiento, medicamento, paciente, farmacéutico, médico

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INTRODUCTION

Adherence to the medication regimen is generally defined as the extent to which patients take medications as prescribed by their healthcare providers (1). Medication adherence is an umbrella term used to describe the concepts of compliance and persistence with prescribed medication (2). Adherence rates are typically higher among patients with acute conditions, as compared with those with chronic conditions; adherence among patients with chronic conditions is disappointingly low, dropping most dramatically after the first six months of therapy (3–5). A number of objective and subjective factors influence patient adherence with therapy prescribed. Educational interventions involving patients, their family members, or both can be effective in improving adherence (6–7).

Collaboration and communication ratings among pharmacist, physician and patient are quite problematic and perceived as adversarial. Teamwork training that focusses on specific interactions between professional groups should target these concerns (8). The pharmacist-patient relationship is very important because intervention of the pharmacist can improve adherence to drugs and decrease health costs (9). There are many opportunities for improvement in pharmaceutical care programmes and in the number of patients who properly adhere to their medications (10). Patient-family physician relationship is especially important in improving adherence to medication. People are more likely to adhere to treatment if they have a good relationship with their doctor (11).

The medical prescription is the end-result of a structured process. It is, in effect, a medico legal document that binds the physician that writes it, as well as the pharmacist who delivers it, with a civil duty of care (12). Open discussion between the pharmacist, the patient and his or her physician regarding barriers to adequate medication adherence, followed by a multifaceted, personalized intervention to address these barriers, plays a key role in encouraging patients to adhere to the recommendations of the healthcare team (13). In order to understand medication adherence and implement interventions to improve medication adherence, factors at these different levels should be taken into consideration (14).

We wanted to explore the influence of patient-level and micro-level factors (pharmacist and physician) important for improving and increasing adherence to medication. Despite this trilateral relationship, reminder-based interventions may improve adherence to daily medications, but most of them are impractical for widespread implementation (15), and their efficacy may be optimized when combined with alternative adherence-modifying strategies.

SUBJECTS AND METHODS

Reports of this observational cross-sectional study include STROBE Statement-checklist of items.

The study included patients from outpatient pharmacies, the constituents of the pharmacy chain called City Zagreb's Pharmacies (local name: Gradske ljekarne Zagreb). All patients filled prescriptions for chronic diseases. We used a self-report tool for screening adherence and barriers to adherence.

The tool included two questionnaires: one for patients and the other for pharmacists. Self-reported medication adherence was measured using the 33-item patient questionnaire that asked patients about taking their medication and which was referred to a sample of 635 patients collecting/buying drugs for the treatment of chronic diseases in pharmacies. According to medication adherence, study patients were divided into adherent or non-adherence subjects by their declaration. The subjects answering the respective question that they had never failed to take their medication on time were considered as adherent, and all others as non-adherent. The questionnaire listed 16 common reasons for non-adherence and study patients had to answer questions on each of these reasons as the possible cause of his or her non-adherence.

A 21-item pharmacist's questionnaire was used in a sample of 84 pharmacists dispensing drugs for chronic diseases to patients. In the pharmacist's questionnaire was

also an item related to patient adherence (where pharmacist was able to rate patient adherence factors). Pharmacists evaluated the patient adherence factors by scoring them from one (the factor of the highest impact) to nine (the factor of the lowest impact). In the pharmacist's questionnaire were some claims related to adherence: the patients' average knowledge about drugs according to a pharmacist's statement, scoring from one (inadequate) to five (excellent) and the mean time for patient counselling by the pharmacist on issuing a drug prescribed for the first time and on repeat drug dispensing.

The relationship between the patient and pharmacist was defined by eight questions and advice posed or given to the patient by the pharmacist that was same in both questionnaires (patients and pharmacists). The aim was to determine eventually the difference in answers between patient and pharmacist about these questions and advice.

The patients and pharmacists answered the same questions on whether the pharmacist had done the following:

- asked the patient whether he/she was taking the drug for the first time;
- asked the patient to repeat aloud how to take the medication, thus ensuring that the patient understood medication instructions;
- asked the patient about skipping the prescribed medication doses, how frequently and why; and
- asked the patient about his or her attitude toward medication.

The patients and pharmacists answered whether the pharmacist had given the following advice to the patient:

- the importance of adherence with therapy prescribed;
- appropriate mode and timing of medication (verbal and written advice);
- the potential consequences of combining therapy prescribed with some other over-the-counter (OTC) drugs; and
- solving the possible medication side effects.

The study was conducted at Zagreb pharmacies. Questions about the relationship between the patient and his or her family physician was a component of the 33-item patient questionnaire, where patients responded to a series of questions relating directly to this relation and, indirectly, the persistence of the treatment. Nine items dealt with the patient's relationship with his/her doctor and asked the patient to agree or disagree. The relationship could either be positive or negative based on the claims made in the questionnaire. Most of the claims were of positive character and defined a positive and collaborative relationship between patient and doctor. Questions about the relationship between the pharmacist and patient's family physician were a component of the 21-item pharmacist questionnaire. In the relationship between pharmacists and family physicians, the pharmacist was asked about contacting the patient's family physician in case of problems observed in the patient due to non-adherence with therapy prescribed and informing the physician of side effects reported by the patient to the pharmacist.

Statistical analysis

Apart from the descriptive analysis of the data collected, the statistical significance of between-group differences was determined. Student's *t*-test, Whitney rank sum test and Chi-squared test were used when appropriate for the evaluation of the results. The *a priori* level of significance for all analysis was 0.05. All analysis was performed with SigmaStat 3.0 for Windows (SPSS Science software products, Chicago, IL, USA).

RESULTS

Among 635 study patients, 265 (41.7%) were adherent and 370 (58.3%) non-adherent. Demographic and social characteristics of study patients and pharmacists are presented in Tables 1 and 2, respectively.

Table 1: Demographic and social characteristics of study patients

	n	(% of total)
Study patients	635	100.0
Age group (years)		
26–35	50	7.9
36–45	52	8.2
46–55	122	19.2
56–65	162	25.5
66+	249	39.2
Gender		
Female	378	59.5
Male	257	40.5
Occupation		
Employed	211	33.2
Unemployed	31	4.9
Retired	357	56.2
Relief recipient	4	0.6
Student	4	0.6
Housewife	19	3.0
Farmer	6	0.9
Other	3	0.5
Level of education		
University	238	37.5
High school	309	48.7
Elementary school	73	11.5
Other	15	2.4
Living alone		
Yes	119	18.7
No	516	81.3
Marital status		
Married	396	62.4
Divorced	39	6.1
Widowed	122	19.2
Common-law	19	3.0
Single	59	9.3

There were six outcome events that were analysed: 1) the pharmacist-patient relationship was defined by some questions and advice, 2) factors which, according to pharmacists' experience, influence patient adherence with therapy prescribed, 3) factors which, according to patients' experi-

Table 2: Demographic and other general characteristics of study pharmacists

	n	(% of total)
Study pharmacists	84	(100.0)
Age group (years)		
0–35	32	(38.1)
36–45	20	(23.8)
46–55	23	(27.4)
56	9	(10.7)
Gender		
Female	81	(96.4)
Male	3	(3.6)
Type of pharmacy		
Private	56	(67.5)
County (City of Zagreb)	22	(26.5)
Lease	5	(6.0)
Separate counselling room		
Yes	32	(38.1)
No	52	(61.9)
Degree on badge/coat		
Yes	67	(79.8)
No	17	(20.2)

ence, influence their adherence with therapy prescribed, 4) pharmacist scoring of the patients' knowledge of drugs, 5) answers of all respondents to the claims about their relationship with the doctor and 6) pharmacist's relationship with the patient's family physician.

The majority of study patients stated forgetfulness as the main reason for skipping drug dosing (n = 381; 60.0%), followed by not being at home (n = 288; 45.4%) and being short of the drug [having used it all] (n = 282; 44.4%). The reasons for medication non-adherence are presented in descending order in Table 3. In the pharmacist questionnaire, the pharmacists ranked fear of disease and type of disease as the major factors of patient adherence with therapy prescribed, whereas the price of the drug and fear of side effects were ranked as being of less importance (Table 4).

Table 3: Reasons for medication noncompliance in total study population

No.	Reason for skipping drug dose	n	%
1	I just forgot	381	60.0
2	I was not at home	288	45.4
3	I was short of the drug (I had used it all)	282	44.4
4	I had problems with medication timing	260	40.9
5	I take a number of drugs several times a day	251	39.5
6	The drug was not available due to short supply	228	35.9
7	I felt well	228	35.9
8	I wanted to avoid side effects	188	29.6
9	My doctor frequently changes my therapy	165	26.0
10	I felt the drug to be toxic/harmful	150	23.6
11	I was sleepy at medication time	145	22.8
12	I felt depressed or broken	145	22.8
13	I was afraid of developing drug dependence	143	22.5
14	I had a cold	133	20.9
15	The drug was too expensive	132	20.8
16	I did not want other people see me taking drug	79	12.4

Table 4: Factors which, according to pharmacists' experience, influence patient adherence to therapy prescribed

Factor[a]	Mean score[b]
Fear of disease	2.6
Type of disease	3.1
Patient's mental profile	3.7
Patient's level of education	3.9
Relationship with physician	4.4
Pharmacist's advice	4.7
Fear of drug's side effects	5.1
Price of drug	6.2

[a]Factor power was scored by the pharmacists: 1 (highest impact) to 9 (lowest impact)
[b]Average score based upon the ranking of all respondents

DISCUSSION

Pharmacist-patient relationship

The pharmacist to patient relationship was defined by eight questions and advice (Table 5). Comparison of particular answers between patients and pharmacists revealed a discrepancy in five of eight answers. Pharmacists claimed to provide advice or pose questions to patients at a higher rate as compared with the patients' affirmative answers to the same questions. The significant difference was recorded in answer to the question of whether a pharmacist offered thorough advice to the patient on how to take the drug; affirmative answers to this question was given by 90.5% pharmacists and only by 57.2% patients. An opposite pattern was observed in the case of pharmacist's interest in the patient's attitude toward using the drugs prescribed. A higher proportion of patients (58.3%) stated that the pharmacists were interested in their attitude, as compared with only 36.9% of pharmacists stating the same. Furthermore, 41.7% of patients claimed that the pharmacist asked them about skipping a prescribed drug dose, how frequently and why, as compared with only 28.6% of pharmacists stating that they asked patients about this. The mean score the pharmacists allocated to the patients' average knowledge about drugs was 2.25 (rank was from one to five).

According to the pharmacist statements, the mean time for patient counselling on issuing a drug prescribed for the first time was 4.81 minutes, and on repeat drug dispensing 1.76 minutes, yielding a reduction by 63% (Figure). Only 14 of 84 pharmacists reported providing advice to patients on all questions posed in the questionnaire (advice on the importance of therapy adherence, verbal and written explanation of how to take a prescription drug, explaining the consequences of combining prescription drugs with OTC drugs, and suggesting how to solve the possible drug side effects); their mean time for patient counselling was 5.36 on first and 2.21 minutes on repeat drug dispensing, respectively, pointing to greater care for patients as compared with other pharmacists.

Table 5: Pharmacists questions and advice

Question or advice	1[a]		2[b]	
	n	%	n	%
Has the pharmacist asked you whether you take the drug for the first time?	391	61.6	61	72.6
Has the pharmacist asked you to repeat aloud the instructions on how to take the drug?	145	22.8	12	14.3
Has the pharmacist informed you on the importance of complying to therapy prescribed?	297	46.8	63	75.0
Has the pharmacist advised you in detail on how to take the drug?	363	57.2	76	90.5
Has the pharmacist advised you on combining your therapy with OTC drugs?	344	54.2	57	67.9
Has the pharmacist advised you on solving the possible drug side effects?	277	43.6	41	48.8
Has the pharmacist asked you about skipping your therapy doses and why?	265	41.7	24	28.6
Has the pharmacist asked you about your attitude towards your drug therapy?	370	58.3	31	36.9
Total	**635**	**100.0**	**84**	**100.0**

1: the patient states that pharmacist always asks him/her

2: the pharmacist states that he/she always asks the patient

[a] related to 33-item questionnaire from 635 patients collecting/buying drugs for the treatment of chronic diseases (patient's questionnaire)

[b] related to 21-item questionnaire from 84 pharmacists dispensing drugs for chronic diseases (pharmacist's questionnaire).

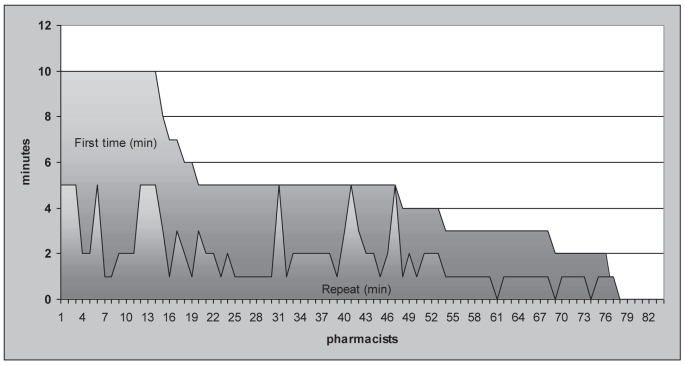

Figure: Mean time for patient counselling on issuing a drug for the first time and on repeat.

Patient-family physician relationship

More than three-quarters of respondents (75.3%) were treated for more than five years by their present general practitioner (doctor); there were more adherent patients who were treated for more than five years (83.4%) than non-adherent ones (69.5%). Table 6 shows the responses of all, adherent and non-adherent subjects. The analysis of respondents' claims about their relationship with their doctor shows that in first place, with the highest number of positive responses, is the claim that their doctor always explains the results of laboratory tests, X-rays and other specialized findings (n = 489; 77.0%). The attitude of adherent and non-adherent patients equally contributed to this rating, because it is in second place for adherent patients (n = 207; 78.1%), and in first place for non-adherent patients (n = 282; 76.2%).

In second place overall is the claim that patients can consult their doctor whenever they have some personal or emotional problem (n = 467; 73.5%); this took first place for adherent patients (n = 210; 79.2%) and third place for non-adherent patients (n = 257; 69.5%). In third place for all patients with 71.0% (n = 451), was the claim that a physician monitors the patient's problem solving (either directly or by telephone). The adherent patients did not differ from non-adherent patients in accepting this claim (72.5% *vs* 70.0%). In adherent patients, that claim is in third place (n = 192; 72.5%) and in second place in non-adherent patients (n = 259; 70.0%). The claim that the doctor advises and collaborates well with other healthcare professionals (pharmacists, nurses *etc*) is in fourth place overall (n = 440; 69.3%) and in both adherent and non-adherent patients with a similar share (70.6% *vs* 68.4%). The biggest difference between adherent and non-adherent respondents was in the patients' claims that their doctor does not listen sometimes; 42.2% of non-adherent patients claim that their doctor does not listen sometimes, while only 27.2% of adherent respondents claim the same.

Pharmacist-family physician relationship

Assessment of the pharmacist's relationship with the patient's family physician revealed that half of the study pharmacists (n = 43; 51.2%) took counsel with the family physician if they recognized problems in the patient due to therapy non-adherence; the other half of study pharmacists gave a negative answer to this question (Table 7). Two-thirds (n = 55; 65.5%) of study pharmacists stated they used to

Table 6: Answers of all, adherent and non-adherent patients to the claims about their relationship with their doctor

Answer	All respondents						Adherent respondents						Non-adherent respondents					
	n			%			n			%			n			%		
	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
8	489	146	635	77.0	23.0	100.0	207	58	265	78.1	21.9	100.0	282	88	370	76.2	23.8	100.0
1	467	168	635	73.5	26.5	100.0	210	55	265	79.2	20.8	100.0	257	113	370	69.5	30.5	100.0
6	451	184	635	71.0	29.0	100.0	192	73	265	72.5	27.5	100.0	259	111	370	70.0	30.0	100.0
9	440	195	635	69.3	30.7	100.0	187	78	265	70.6	29.4	100.0	253	117	370	68.4	31.6	100.0
3	413	222	635	65.0	35.0	100.0	186	79	265	70.2	29.8	100.0	227	143	370	61.4	38.6	100.0
7	370	265	635	58.3	41.7	100.0	169	96	265	63.8	36.2	100.0	201	169	370	54.3	45.7	100.0
2	314	321	635	49.4	50.6	100.0	156	109	265	58.9	41.1	100.0	158	212	370	42.7	57.3	100.0
5	269	366	635	42.4	57.6	100.0	99	166	265	37.4	62.6	100.0	170	200	370	45.9	54.1	100.0
4	228	407	635	35.9	64.1	100.0	72	193	265	27.2	72.8	100.0	156	214	370	42.2	57.8	100.0

Answer:
1. I can contact my doctor whenever I have some personal or emotional problem
2. I am going to the doctor for preventive examinations
3. My doctor knows if I eat healthy, smoke, drink alcohol or not
4. My doctor does not listen to me sometimes
5. I'm not always comfortable asking my doctor questions
6. My doctor monitors my problem solving (either directly or by telephone)
7. My doctor knows how much my family affects my health
8. The doctor always explains to me the results of laboratory tests, X-rays and other specialist findings
9. I notice that my doctor advises and collaborates well with other healthcare professionals (*eg* pharmacists, nurses, *etc*)

Table 7: Pharmacist's relationship with the patient's family physician

Pharmacist's answer	Affirmative answer		Negative answer		All answers	
	n	%	n	%	n	%
1	43	51.2	41	48.8	84	100.0
2	55	65.5	29	34.5	84	100.0

1: Pharmacist takes counsel with the patient's family physician if recognizes problems in the patient due to therapy non-adherence

2: Pharmacist informes the patient's family physician of the side effects reported to the pharmacist by the patient

contact the patient's family physician and inform him/her of the side effects reported to the pharmacist by the patient; one-third of the pharmacists did not contact family physicians.

Answers given by the pharmacist's taking and not taking counsel with the patient's family physician were compared with answers to the questions on the pharmacists providing advice to patients (Table 8). The pharmacists who took counsel with the patient's physician when observing

Table 8: Pharmacist taking counsel with the patient's family physician compared with the pharmacist's advice offered to patients

Pharmacist's advice to patient	1[a]		2[a]	
	Yes n (% of 43)	No n (% of 41)	Yes n (% of 55)	No n (% of 29)
On the importance of therapy adherence	34 (79.1)	29 (70.7)	49 (89.1)	14 (48.3)
Explaining how to take a prescription drug	41 (95.4)	35 (85.4)	55 (100.0)	21 (72.4)
Explaining consequences of combining prescription drugs with OTC drugs	34 (79.1)	23 (56.1)	42 (76.4)	15 (51.7)
Proposing how to solve side effects	27 (62.8)	14 (34.2)	29 (52.7)	12 (41.4)

1[a]: Pharmacist taking counsel with the patient's family physician if recognizing problems in the patient due to therapy non-adherence (43 pharmacists; 51.2%)

2[a]: Pharmacist informing the patient's family physician of the side effects reported to the pharmacist by the patient (55 pharmacists; 65.5%)

problems in the patient caused by therapy non-adherence (n = 43) were found to care more for patients, giving them more advice on regular and appropriate medication (advice on the importance of therapy adherence, verbal and written explanation on how to take the drug prescribed, explaining the consequences of combining prescription drugs with OTC drugs, and proposing how to solve side effects issues) than those that did not take counsel with the patient's family physician.

According to the pharmacists' experience, fear of disease, type of disease and patient's mental profile were the major factors which influenced patient adherence to prescribed therapy (Table 4). A higher proportion of the patients believed that pharmacists were interested in their attitude toward adherence to the therapy prescribed, as compared with the answers to the same question given by the pharmacists who have a great advantage to monitor patients between clinic visits and to provide useful information to patients and physicians (16). The relationship between the patient and his/her family physician is especially important in improving adherence to medication. Practitioners should always look for poor adherence and can enhance adherence by emphasizing the value of a patient's regimen, making the regimen simple, and customizing the regimen to the patient's lifestyle. Innovative methods of managing chronic diseases have had some success in improving adherence when a regimen has been difficult to follow (17–20). Physicians may be able to simplify the drug regimen by using one drug that serves two purposes or by reducing the number of times a drug must be taken, to improve adherence and to reduce the risk of interactions.

Non-adherence to the prescribed drug regimen was found to be the highest among 11 European countries. Doctors prescribing for older people have to purposefully monitor adherence and strengthen co-operation and motivation of the patient to adhere to the prescribed drug regimen. Particularly in seniors with polypharmacotherapy, it seems necessary to simplify the drug regimen as much as possible. In elderly patients with physical disability, cognitive impairment or depression, supervision and/or the help of another person with drug preparation and application may improve drug adherence (21).

Family physicians in the Canadian province of Saskatchewan appreciate the importance of medication non-adherence but seldomly interact with community pharmacists. They believe that pharmacists have a role in supporting patients with medication adherence and indicate a willingness to work more collaboratively with them to promote adherence. For this type of collaboration to be effective, it appears that increased adherence-related communication between the two healthcare providers and additional healthcare funding is required (22). The doctor-pharmacist relationship has several components: individual consultations, regular team meetings and establishment of a limited formulary for physicians and residents. There is evidence that compliance is improved when the pharmacist is involved in patient education (23). Perceptions of disease factors, illness-relevant cognition and beliefs about treatment have stronger relationships to adherence. For adherence to occur, symptoms must be sufficiently severe to arouse the need for adherence, be perceived as being resolvable and acute, and remedial action must effect a rapid and noticeable reduction in symptoms (24, 25).

In our study, patients themselves argued that the main cause of non-adherence was forgetfulness. Forgetfulness is the most common reasons for not adhering to drug treatment (26). The key question is: Why do people forget? There are many systems for improving adherence. One of this is interactive voice response (IVR) from Quebec, Canada, designed to improve medication adherence. It evaluated the feasibility and acceptability for prescription refill and daily medication reminders (27). Two novel features were tested: personalized, medication-specific reminder messages and communication *via* voice recognition.

One solution to medication adherence is pharmacist-led medication regimen simplification. Simplification of older inpatients' regimens is feasible when training in regimen simplification is provided (28). One way to increase long-term adherence in elderly patients is giving longer prescriptions for cardiac secondary prevention medications at hospital discharge (29).

LIMITATIONS

There are a number of limitations of this study. One of them is an unequal number of respondents: 635 patients collecting/buying drugs for the treatment of chronic diseases and 84 pharmacists dispensing drugs for chronic diseases to patients. The attitudes of patients' family physicians were determined indirectly by the patients' and pharmacists' answers. This type of investigation was conducted for the first time, and so some pharmacists felt uncomfortable.

AUTHORS' NOTE

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Authors' contribution: ML interpreted the data; JC conceived and designed the study, analysed and interpreted the data; KM analysed and interpreted the data; ME interpreted the data. All authors have approved the manuscript for publication.

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