Physician patient communication failure facilitates medication errors in older polymedicated patients with multiple comorbidities

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Objective. To analyse the frequency of mistakes in communication between the physician and the patient and their incidence in errors in self-administered drugs.

Methods. We undertook a descriptive, cross-sectional study based on interviews with a random sample of patients older than 65 years who were polymedicated (five or more drugs) and had multiple comorbidities. Data were analysed about the patients’ reports of what the physician said, medication mistakes by the patients and their consequences.

Results. Responses were provided by 382 patients. A medication error in the last year was reported by 287 patients (75%), and 16 patients (4%) reported four or more errors. Most cases concerned the dosage, a similar appearance of the medication or a lack of understanding of the physician’s instructions. Very severe consequences occurred in 19 cases (5%). Multiple comorbidities ($P=0.006$) and a greater number of treatments ($P=0.002$) were associated with making mistakes. Frequent changes in prescription ($P=0.02$), not considering the prescriptions of other physicians ($P=0.01$), inconsistency in the messages ($P=0.01$), being treated by various different physicians at the same time ($P=0.03$), a feeling of not being listened to ($P<0.001$) or loss of trust in the physician ($P<0.001$) were associated with making medication mistakes.

Conclusions. Mistakes by polymedicated patients with multiple comorbidities represent a real risk that should be addressed by the professionals. A review should be made of the routine control questions that the physician asks the patient to identify what other drugs the patient may be taking that have been indicated by another physician.

Keywords. Aging, patient safety, physician–patient relations, primary care.

Introduction

The three most common causes of adverse events (AEs), particularly in primary care, are related with the medication, incorrect correlation between diagnosis and the treatment prescribed and physician–patient communication problems.\textsuperscript{1–3} Almost half of these AEs can be avoided.

Older age, multiple comorbidities and polymedication are considered risk factors for an AE.\textsuperscript{4–5} Patient safety policies should therefore prioritize the attention paid to this particularly vulnerable group of patients.

Several characteristics coincide in older persons that can favour an AE;\textsuperscript{5,7} indeed, 76% of all chronic diseases are diagnosed in persons older than 65 years.\textsuperscript{8} In Spain, the mean number of chronic diseases suffered by a person aged 65 to 74 years is 2.8. Among those older than 75 years, this figure rises to 3.2.\textsuperscript{9} The consumption of health care resources rises as the number of comorbidities increases, and in patients with five or more chronic disorders, the figure is 17 times as high as for those with no chronic disorders.\textsuperscript{10} An increase in age is accompanied by greater physiological frailty and progressive cognitive and functional worsening. This

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population normally has multiple comorbidities, with a high percentage of therapeutic prescriptions (and thus use of multiple drugs) that often cause problems related with the drugs, such as therapeutic noncompliance.

Failures in physician–patient communication in primary care are one of the most frequent reasons for AE,11–13 and 25% of all primary care AEs in Spain are the result communication failures.3 In Pennsylvania, Metlay et al.14 found that 32% of older patients failed to receive adequate information to enable them to follow a correct regimen with prescribed drugs at home.

AEs are not solely the responsibility of the health service and its professionals. The patients also play an important role in the prevention and causality of AE.15–19 For instance, we have known for some time that errors in insulin administration are frequent.20 Among patients with diabetes, oversight and confusion with the dosage or drug due to their similar appearance are also common.21,22 Age or dependency are related with a greater number of patient errors,14,23 and older polymedicated patients make more mistakes.24 Failure in physician–patient communication encourages these errors,21 some of which may result in complications, damage or lesions in the patient. An analysis of this failure from the point of view of older patients may provide clues to help increase safety in this group with the drugs, such as therapeutic noncompliance.

For instance, we have known for some time that errors in insulin administration are frequent.20 Among patients with diabetes, oversight and confusion with the dosage or drug due to their similar appearance are also common.21,22 Age or dependency are related with a greater number of patient errors,14,23 and older polymedicated patients make more mistakes.24 Failure in physician–patient communication encourages these errors,21 some of which may result in complications, damage or lesions in the patient. An analysis of this failure from the point of view of older patients may provide clues to help increase safety in this group with the drugs, such as therapeutic noncompliance.

Methods
We undertook a descriptive cross-sectional study based on semistructured interviews of patients aged older than 65 years who were taking at least five drugs for multiple comorbidities. The interviews were carried out at three health centres in the province of Alicante, Spain. The field study was undertaken between November and December 2011.

In Spain, the general practitioner (GP) is the gatekeeper of primary care. Patients are registered to a particular GP of a health centre according to their residence. However, they can choose other GP in some cases. At the time of this study, older patients did not pay for medicines. There are linked electronic records between primary care and hospitals at the health centres participating in this study.

Stratified sampling was performed, considering disease, sex and number of drugs (on treatment with five to six drugs or seven or more drugs). Interviews were given to a random sample of patients who attended their health centre on particular days of the week, which were also selected randomly. Patients were interviewed after giving consent if they fulfilled the following criteria: 65 years or older and on treatment for at least 5 years for one or more of the following conditions: cardiovascular, respiratory, endocrine or digestive disorders (the most prevalent according to the Spanish Health Survey25 and involving a greater risk for AE24).

Before undertaking the interview the patients provided informed consent. An explanation was given of the aims of the study, what their participation meant, the use to which the data obtained would be put and the condition of anonymity of the responses. The patients could stop the interview at any moment without having to give an explanation.

A minimum sample of 323 patients was determined (SE, 5%; 95% confidence interval; expected frequency of patient errors, 31%).13 If a patient refused to be interviewed, this patient was replaced by another who attended on the same day. Only 20 patients refused to replay. This replacement patient was also recruited randomly. The interviews were carried on in this way until the required sample size was completed.

The elaboration of the different categories to analyse the causes of error was performed according to the classification of Sarkar et al.23 Usual failures in physician–patient communication were identified after considering the results of the study by the group of Britten et al.13 from Kings College, London. The identification of the patient-related errors was based on the classification of errors in the self-administration of drugs by Field et al.,24 from the Meyers Primary Care Institute, Worcester, Massachusetts, and the Inventory of Causes of Patient Omission and Oversight.26 Questions asked in the interview were related to disorders, number of drugs, other people who lived in the patient’s house and if anyone helped the patient with the medication at home, the number of visits per year, the number of physicians seen, the evaluation of the therapeutic effectiveness of the treatment being taken, the patient’s report of the style and content of the information supplied by the physician, the possible patient errors in the self-administration of the medication and the consequences of the error. The interview structure was based on the capacity of the patients to provide sufficiently reliable information about the causes and consequences of the AE.27,28 The period for which information was requested was limited to the previous year’s treatment.

Before starting the study, the person in charge of interviewing the patients (A.P.) performed five training interviews of another five patients to determine whether the questions were correctly formulated. At the same time, it was confirmed that the questions were understandable and that response registry was appropriate. A.P already had experience in interviewing this type of patient and had been involved in other epidemiological studies of AE in patients.
For the statistical analysis, the chi-square test was used to analyse the categorical variables, the t test to compare means and the forward stepwise linear regression and forward stepwise logistic regression analysis (Wald) to identify what intrinsic conditions in the patient or what type of communication errors had a greater incidence on the frequency and type of patient errors. Factors included in the model included age, sex, number of drugs, number of physicians seen, frequency of the visits and type of physician–patient communication errors. In all statistical analyses, differences were considered statistically significant when \( P < 0.05 \). We used the Statistical Package for the Social Sciences (version 19.0; SPSS, Inc., Chicago, IL) for this analysis.

**Results**

A total of 382 interviews were carried out (Table 1). Hypertension and other cardiovascular disorders were the most frequent diagnoses. In 197 cases (51.5%), the same patient had two or more diseases. Half of the patients were being treated by more than one physician. For 329 cases (86.2%), the treatment prescribed by their GP was having a positive effect (with a similar percentage of patient satisfaction among conditions). Only 13 patients (3.4%) reported that their physician often changed the treatment.

In 287 interviews (75.1%), the patient reported having made at least one mistake with the medication in

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Description of the sample (N = 382)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>219 (57.3)</td>
</tr>
<tr>
<td>Women</td>
<td>163 (42.7)</td>
</tr>
<tr>
<td>Civil status</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>253 (66.2)</td>
</tr>
<tr>
<td>Single</td>
<td>8 (2.1)</td>
</tr>
<tr>
<td>Divorced</td>
<td>11 (2.9)</td>
</tr>
<tr>
<td>Widowed</td>
<td>110 (28.8)</td>
</tr>
<tr>
<td>Disorder</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>197 (51.6)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>131 (34.3)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>219 (57.3)</td>
</tr>
<tr>
<td>Digestive</td>
<td>94 (24.6)</td>
</tr>
<tr>
<td>Respiratory</td>
<td>82 (21.5)</td>
</tr>
<tr>
<td>Other</td>
<td>14 (3.7)</td>
</tr>
<tr>
<td>Patients with multiple comorbidities</td>
<td></td>
</tr>
<tr>
<td>With two disorders</td>
<td>161 (42.1)</td>
</tr>
<tr>
<td>With three disorders</td>
<td>18 (4.7)</td>
</tr>
<tr>
<td>With four disorders</td>
<td>18 (4.7)</td>
</tr>
<tr>
<td>Patients being treated by more than one physician</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>79 (48.5)</td>
</tr>
<tr>
<td>Women</td>
<td>127 (58.0)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>74.6 (6.5)</td>
</tr>
<tr>
<td>Women</td>
<td>74.5 (6.6)</td>
</tr>
<tr>
<td>No. of different drugs taken for at least the last year</td>
<td>( 6.5^* )</td>
</tr>
<tr>
<td>Men</td>
<td>6.1 (1.4)</td>
</tr>
<tr>
<td>Women</td>
<td>6.8 (2.7)</td>
</tr>
<tr>
<td>Months on treatment with five or more drugs</td>
<td>82.4 (85.4)</td>
</tr>
<tr>
<td>Men</td>
<td>78.7 (84.7)</td>
</tr>
<tr>
<td>Women</td>
<td>85.1 (86.0)</td>
</tr>
<tr>
<td>No. of visits to the doctor per year</td>
<td>10.7 (9.2)</td>
</tr>
<tr>
<td>Men</td>
<td>10.1 (7.5)</td>
</tr>
<tr>
<td>Women</td>
<td>11.2 (10.4)</td>
</tr>
<tr>
<td>No. of visits to the health centre just for prescriptions</td>
<td>( 6.1 )</td>
</tr>
<tr>
<td>Men</td>
<td>6.0 (4.9)</td>
</tr>
<tr>
<td>Women</td>
<td>6.1 (6.0)</td>
</tr>
<tr>
<td>No. of physicians other than the primary care physician regularly seen</td>
<td>( 2.2 )</td>
</tr>
<tr>
<td>Men</td>
<td>2.1 (1.4)</td>
</tr>
<tr>
<td>Women</td>
<td>2.3 (1.3)</td>
</tr>
</tbody>
</table>

\(^* P = 0.001.\)
the last year (Table 2). In 16 interviews (4.3%), it was detected that the same patient had made four or more mistakes with the medication during the last year. The most usual errors were those related with the dose, mostly blamed on forgetfulness and drug confusion (Table 3). No relation was found between the type of error committed and the sex or age of the patient.

In 19 cases (5%), the error due to drug confusion had very severe consequences, requiring a visit to the emergency service or hospital admission. Another 15 cases (3.9%) required new treatment. More women required new treatment to alleviate the effects of an error than men (5.9 versus 1.2, \( P = 0.02 \)). An older age or a greater number of drugs was not associated with worse consequences after an error. The presence of multiple comorbidities was associated with making more medication mistakes (\( P = 0.006 \)). Confusion with drugs was more frequent when the patient had more prescriptions (\( P = 0.002 \)).

Only 83 patients (21.7%) stated they used pillboxes to organize their medications. The use of pillboxes was more common among women (\( P = 0.02 \)). Of these, in 56 cases (76.3%) the patient was in charge of organizing the medication. In the other cases, it was the caregiver (5, 4.4%), son or daughter (17, 14.9%) or partner (5, 4.4%) who was responsible. Those patients who used pillboxes reported fewer episodes of confusion with their medication (\( P = 0.04 \)).

In 126 cases (33%) the patient reported that he or she had to request another visit to the doctor because of problems with medication. This situation was more often reported by women (37.9 versus 26.4, \( P = 0.02 \)), by those patients who reported being treated by more physicians at the same time (\( P = 0.008 \)) and by the patients being treated with more drugs (\( P = 0.001 \)).

In 112 cases (29.3%) the medication that had been prescribed by the physician produced discomfort, nervousness, dizziness, vomiting or marks on the skin. This latter AE was more common among those patients with multiple comorbidities (\( P = 0.001 \)) and those with more prescriptions (\( P = 0.003 \)). The women reported this type of complication, suggestive of an AE more than that of the men (33.8 versus 23.2, \( P = 0.03 \)).

Most patients stated they had been correctly informed by their physician about the treatment (Supplementary Table 1), although only 124 patients (32.5%) confirmed that their physician asked them about any other prescription drugs from other physicians who they also saw. A few cases (25, 6.5%) reported receiving contradictory information from different physicians about their treatment.

Frequent changes in prescription, not considering the prescriptions of other physicians, inconsistency in the information or being treated by various physicians at the same time were all associated with making mistakes in medication by the patients (Table 4).

Table 5 shows the precursors of more medication errors by the patients. The feeling of not being listened to, the loss of confidence in the physician or the incongruent messages between different professionals (Table 6) were associated with the patient making mistakes.

### Discussion

The results of this study confirm that their own medication errors represent a threat to the safety of older polymedicated patients with multiple comorbidities. These errors are more common than those already known for the system and errors in diagnosis and medication by professionals.\(^{11,29-31}\) The data are particularly relevant considering that most persons older than 85 years are chronic patients with multiple comorbidities.\(^9\)

Many professionals are fully aware of the magnitude of this problem.\(^{22}\) The findings highlight the importance of action to reduce this real risk to the safety of
patients. The results should also contribute to a greater awareness of the frequency of patient errors and their consequences in clinical terms as well as in relation to quality of life for the patients and costs for the whole health system.

The number of patients who reported having committed an error related with their medication is high. Only one fourth of those interviewed did not report an error. The patients receiving treatment with a greater number of drugs are the most vulnerable.\(^\text{24}\) In many cases, the complexity of the treatments seems to be behind these errors; thus, the content and the channel for informing the patients need to be redesigned. The time of introduction of a new medication has been suggested to be a critical time for the safety of the patient,\(^\text{24}\) an idea that this study confirms.

Although the data are not wholly comparable, they still follow the trend of those of Sakar \textit{et al.}\(^\text{21}\) about AE experienced by patients with diabetes, and the findings were very similar to the data reported for other Spanish samples of chronic patients.\(^\text{22}\) Nevertheless, it should be recalled that our sample included patients with treatments that we know are associated with more medication errors, as are oral hypoglycaemic agents, beta blockers and calcium antagonists.\(^\text{24}\)

The most frequent errors were oversights and confusions with the dosage due to either a similar appearance or not understanding the instructions of the physician, Table 4

\begin{table}[h]
\centering
\begin{tabular}{lcccc}
\hline
 & Beta & 95\% CI & P \\
\hline
Age & 1.0 & 0.9 & 1.1 & 0.652 \\
Male patient & 0.7 & 0.3 & 1.7 & 0.459 \\
No. of times attending the physician’s office per year & 1.1 & 1.0 & 1.1 & 0.136 \\
No. of times attending the health centre just for prescriptions & 0.9 & 0.8 & 1.0 & 0.127 \\
No. of different drugs taken for at least the last year & 1.0 & 0.8 & 1.2 & 0.733 \\
Months on treatment with five or more drugs & 1.0 & 1.0 & 1.0 & 0.152 \\
No. of physicians apart from the primary care physician also seen regularly & 0.7 & 0.5 & 1.0 & 0.034 \\
Positive perception of treatment effectiveness & 0.6 & 0.3 & 1.2 & 0.171 \\
Do you think your physician fully understands what is happening to you? & 0.7 & 0.2 & 2.6 & 0.559 \\
Does your physician explain clearly how you have to take the medication, even if you are just going to pick up prescriptions? & 1.3 & 0.3 & 5.4 & 0.691 \\
Do you feel that your physician listens to what you have to say with sufficient interest? & 0.7 & 0.1 & 4.7 & 0.671 \\
Do you use a pillbox to organize your medication? & 1.0 & 0.6 & 1.6 & 0.874 \\
Does your physician usually ask you if you are having any problems with the medicines you are taking when you attend the office? & 0.7 & 0.3 & 1.4 & 0.289 \\
Does your physician tell you clearly at what time, part of the day, or how to take the medicines? & 1.0 & 0.5 & 2.1 & 0.953 \\
Has your physician explained what precautions you have to take with your medicines (e.g. not take them at the same time as other medicines, take them before or after meals, before breakfast, etc.)? & 0.6 & 0.3 & 1.1 & 0.104 \\
Has your physician told you what other medicines you should not take to avoid problems with the treatment you are following? & 1.4 & 0.9 & 2.1 & 0.201 \\
Does your physician usually ask you if you are taking any other medicines prescribed by another doctor? & 1.9 & 1.1 & 3.2 & 0.013 \\
Does your physician give you written information about the medicines you have to take? & 1.5 & 0.9 & 2.5 & 0.144 \\
Does it often happen that one physician tells you one thing and another physician says something different about your treatment? & 4.4 & 1.3 & 14.8 & 0.015 \\
Physician often changes the prescription & 0.4 & 0.2 & 0.9 & 0.019 \\

\hline
\end{tabular}
\caption{Results of the logistic regression analysis to identify factors influencing that patient makes an error}
\end{table}

Dependent variable: no error versus commission of at least one medication error by the patient, \(N = 382\).

The most frequent errors were oversights and confusions with the dosage due to either a similar appearance or not understanding the instructions of the physician, Table 5

\begin{table}[h]
\centering
\begin{tabular}{lccccc}
\hline
 & Beta & P & 95\% CI \\
\hline
Do you believe your physician fully understands what is happening to you?\(^a\) & −0.23 & 0.001 & −1.09 & −0.30 \\
Does it often happen that one physician tells you one thing and another physician says something different about your treatment?\(^a\) & 0.23 & 0.001 & 0.19 & 0.68 \\
Does your physician usually ask you if you are taking any other medicines prescribed by another doctor?\(^a\) & 0.20 & 0.006 & 0.08 & 0.46 \\
Has your physician explained what precautions you have to take with your medicines (e.g. not take them at the same time as other medicines, take them before or after meals, before breakfast, etc.)?\(^a\) & −0.16 & 0.022 & −0.48 & −0.04 \\
No. of months you have been taking five or more drugs & 0.14 & 0.034 & 0.01 & 0.01 \\

\hline
\end{tabular}
\caption{Results of the lineal multiple regression analysis to identify precursors of a greater number of patient errors (dependent variable: number of patient medication errors in the last year)}
\end{table}

Dependent variable range, 0–7; \(F = 9.2, P \leq 0.0001; N = 382\).

\(^a\)No = 0; yes = 1.
findings that are consistent with those of other studies.\textsuperscript{19,22} The cause is probably multifactorial, with the involvement of the professionals, the patients and their families or caregivers.\textsuperscript{21}

We found that patient confidence in the physician, feeling listened to and the clarity of the information all contributed to patient safety. More than half the AEs in patients with diabetes have been attributed to physician–patient communication problems,\textsuperscript{21} which contrasts with our results.

Communication failures, being treated by different physicians at the same time and a frequent prescription change increase the number of these patient errors. This point is important because we already know from other studies\textsuperscript{22} that the patients on prolonged treatment tend not to tell their primary care physician about prescriptions given by other specialist physicians whom they also see.

The consequences of AE in primary care are less severe than those in other health care settings.\textsuperscript{2}

<table>
<thead>
<tr>
<th>Type and characteristic of the patient error</th>
<th>Consequences of the error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missed the medication and do not take it regularly or when told to</td>
<td></td>
</tr>
<tr>
<td>Does not remember what the physician said about how to take the medicines</td>
<td></td>
</tr>
<tr>
<td>Confused the medication and took the wrong one</td>
<td></td>
</tr>
<tr>
<td>Took a larger dose of medication than told to do by the physician</td>
<td></td>
</tr>
<tr>
<td>Mistakenly mixed medicines that had been told not to take at the same time</td>
<td></td>
</tr>
<tr>
<td>New treatment prescribed by the physician because of mistaking the medicines</td>
<td></td>
</tr>
<tr>
<td>Had health problems due to mistaking the medication (go to hospital or emergency department)</td>
<td></td>
</tr>
</tbody>
</table>

Table 6  Relation between communication failures and type, characteristic and consequences of medication error by the patient

| Negative perceptions of the effectiveness of the treatment | NS | 0.001 | 0.005 | 0.0001 | NS | NS | 0.001 |
| Believes the physician does not understand what is happening | NS | NS | 0.0001 | 0.01 | 0.0001 | 0.004 | 0.001 |
| Physician does not clearly explain how to take the medication | NS | NS | 0.03 | NS | NS | 0.0001 | NS |
| Does not feel that the physician listens with interest | 0.002 | NS | 0.0001 | 0.004 | 0.0001 | 0.002 | 0.005 |
| Physician does not usually ask about problems with medication | NS | NS | 0.002 | NS | NS | NS | 0.001 |
| Physician does not give clear instructions about the dosage | NS | NS | 0.001 | NS | 0.03 | NS | 0.03 |
| Physician does not inform about precautions with medication | 0.02 | NS | 0.02 | NS | NS | 0.0001 | NS |
| Physician does not tell you about possible drug interactions | NS | NS | NS | NS | NS | 0.02 | NS |
| Physician does not ask you whether you are taking any other medicines prescribed by another physician | 0.0001 | 0.007 | NS | NS | NS | NS | NS |
| Physician does not give you written information about the treatment | NS | 0.0001 | NS | NS | 0.02 | NS | NS |
| Does it often happen that one physician tells you one thing and another physician says something different about your treatment? | NS | NS | 0.0001 | 0.001 | 0.001 | 0.0001 | 0.0001 |
| Physician often changes the prescription | NS | 0.04 | 0.001 | NS | 0.009 | NS | 0.01 |

NS, difference not statistically significant, chi-square test, N = 238.
Nevertheless, the fact that they have mild consequences is no excuse for attempting to prevent these AE. The same applies to patient errors. Most appear not to have severe consequences.

In our study, we also analysed the frequency with which patients attended a hospital or sought medical help as a result of their own mistakes in the self-administration of medicine. The need for emergency care or hospital admission was similar to that seen in studies about medication errors by primary care professionals. The number of mistakes by the patients themselves that actually required further treatment was much lower, although the patients tend to recall better those EA with more severe consequences, which could be biasing the responses in this case.

The patients in this study were seen by an average of two different physicians, apart from their own primary care physician. Although natural for this profile of patient, this nevertheless entails an important risk because, as we found, the two most frequent communication errors were not asking about drugs prescribed by other physicians and not providing information about possible drug interactions and the precautions to be taken with the prescribed medication.

The women in our study sample used more drugs. Although coinciding with data from other studies, this nevertheless highlights the greater risk of an AE in older polymedicated women with multiple comorbidities.

The findings also reveal that this group of older polymedicated patients with multiple comorbidities attends their primary care physician’s office a mean of 10 times per year, 6 times for prescriptions. In Spain, this type of visit just to obtain a prescription (bureaucratic visit) accounts for 40% of all primary care visits. This study thus shows the avoidable workload involved in this type of visit.

Few patients (fewer than one in four) used pillboxes to organize their medication and thus prevent errors. This contrasts with the study by Metlay et al., in which more than half the older patients used this system. Spanish women use pillboxes more than men, and this type of device seems to contribute to fewer cases of confusion with medication.

When interpreting the results of this study, it should be recalled that it was not designed to determine objectively and quantifiably the consequences of errors in terms of damage or lesion to the patient. The description of the patient errors is based on the patients’ memory of situations experienced. Some errors could therefore have been forgotten as the consequences were mild. Even so, different studies have verified the usefulness of asking patients about the frequency and characteristics of AE. The possibility of becoming tired of answering during the interview obliged us to use a format with a maximum of 15 minutes, which therefore impeded asking any in-depth questions. Thus, no measurement was made of patient autonomy. In addition, this study cannot rule out the possibility of other errors apart from those identified during the interviews, nor was it possible to identify all the consequences of the errors or generalize the results to other different contexts (patients living in old persons’ homes). Nonetheless, the results do suggest certain things that could be performed to increase safety for these patients.

Although this study was not designed to review the quality of prescriptions, the data suggest that the number of prescriptions these patients have required revision.

Thus, the results warrant a review of the content of certain routine control questions the primary care physician asks the patients, particularly to identify what other drugs the patient may be taking as a result of seeing other physicians. Instruments or written information should be considered to verify in practice what contributes to better communication with the patient, above all in a setting where the appearance of a drug can vary depending on its presentation costs, more so in countries such as Spain where the National Health Service assumes the full cost of the drug.

Acknowledgements

Alicia Peralta interviewed the patients at the health centres. Miriam Calvo revised the questions and suggested relevant questions to be explored. Isabel Navarro collaborated in the preparation of the data base for the statistical analysis. Without their help and that of the personnel from the collaborating primary care centres, this study would not have been possible.

Declaration

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Conflict of interest: none.

Supplementary material

Supplementary material is available at *Family Practice* online.

References

Errors in older polymedicated patients


19 Mira JJ. The role of patients for the patient safety. Medicina Preventiva 2011; XVI: 5–11.


