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Questionnaire to assess patient satisfaction with pharmaceutical care in Spanish language

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Abstract

Objective. To develop and validate a questionnaire, in Spanish, for assessing patient satisfaction with pharmaceutical care received in community pharmacies.

Design. Selection and translation of questionnaire's items; definition of response scale and demographic questions. Evaluation of face and content validity, feasibility, factor structure, reliability and construct validity.

Setting. Forty-one community pharmacies of the province of Santa Fe. Argentina.

Participants. Questionnaire administered to patients receiving pharmaceutical care or traditional pharmacy services.

Main outcome measure. Pilot test to assess feasibility. Factor analysis used principal components and varimax rotation. Reliability established using internal consistency with Cronbach's alpha. Construct validity determined with extreme group method.

Results. A self-administered questionnaire with 27 items, 5-point Likert response scale and demographic questions was designed considering multidimensional structure of patient satisfaction. Questionnaire evaluates cumulative experience of patients with comprehensive pharmaceutical care practice in community pharmacies. Two hundred and seventy-four complete questionnaires were obtained. Factor analysis resulted in three factors: Managing therapy, Interpersonal relationship and General satisfaction, with a cumulative variance of 62.51%. Cronbach's alpha for the whole questionnaire was 0.96, and 0.95, 0.88 and 0.76 for the three factors, respectively. Mann–Whitney test for construct validity did not showed significant differences between pharmacies that provide pharmaceutical care and those that do not, however, 23 items showed significant differences between the two groups of pharmacies.

Conclusion. The questionnaire developed can be a reliable and valid instrument to assess patient satisfaction with pharmaceutical care in community pharmacies in Spanish. Further research is needed to deepen the validation process.

Keywords: community pharmacy services, patient satisfaction, pharmaceutical care, quality, questionnaire, Spanish language

Patient satisfaction is considered a personal evaluation or appraisal of a service or product received [1–3]. Data obtained from a patient satisfaction survey can be used for different purposes, such as the identification of potential areas for health care services improvement [2]; the comparison of the quality of different care programs and systems; and the detection of patients likely to disenroll from health care plans [4]. Therefore, data on patient satisfaction can serve as an indicator of service quality and as a predictor of health-related behavior [1].

In the last few decades, patients have emerged as the core concern in health care provision and quality assurance efforts [2, 5]. In developed countries, patient satisfaction is a key factor in quality assessment of the health care system [6], whereas in developing countries, the main quality concern has been the accessibility to health care services [7]. However, with the reforms introduced in the last years and the growing relevance of continuous quality improvement, researchers in Spanish-speaking countries have begun to

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assess patient satisfaction with health care, increasing the number of studies recently undertaken [7–9].

Research on patient satisfaction with pharmacy services began ~25 years ago and a significant volume of literature has been generated [3]. Most measurement tools have conceptualized patient satisfaction with pharmacy services as a performance indicator. This approach uses rating scales for patients to indicate their opinion about certain service attributes [3]. Evaluation measures have evolved into multidimensional questionnaires that cover various aspects of pharmaceutical services [3, 10].

Pharmaceutical care is a professional practice, the patient being the main beneficiary. This practice involves the responsible provision of pharmacotherapy to achieve definite outcomes related to the improvement of the patient's health and quality of life [11, 12]. Several studies carried out in other countries addressing patient satisfaction with pharmaceutical care in community pharmacies showed that the provision of pharmaceutical care contributes to patient satisfaction. Higher differences between traditional pharmacy practices and the pharmaceutical care services were observed in the dimensions specifically related with this practice [13–17].

With the worldwide adoption of pharmaceutical care practice, the need for patient-oriented assessment questionnaires emerged. There are three questionnaires—in English—to assess patient satisfaction with pharmaceutical care services that have proved to be valid and reliable to assess pharmaceutical care [17–19].

Although in English-speaking countries patient satisfaction research has been constantly evolving, in others the lack of suitable instruments is a problem [20]. Researchers need to develop a new questionnaire in their own language or adapt the existent ones—in English—that requires a rigorous adaptation process to guarantee the questionnaire's linguistic and cultural appropriateness [21].

Spanish is the fourth most commonly spoken language in the world and the official language of 22 countries [22]. A recent review of instruments to assess patient satisfaction with pharmaceutical care in Spanish found only two published questionnaires, which can be considered an initial attempt to address the topic [23–25]. There is no comprehensive, reliable and valid instrument for assessing patient satisfaction with pharmaceutical care in community pharmacies in Spanish [9, 23].

The goal of this study is to develop and validate a questionnaire in Spanish language for assessing patient satisfaction with pharmaceutical care in community pharmacies.

Methods

Design of the questionnaire

The objectives for the questionnaire were to assess patients' satisfaction with their cumulative pharmaceutical care experience in a comprehensive and reliable way, to discriminate practices that provide pharmaceutical care from those that do not, to be completed in no more than 10 min, and to be suitable for self-administration by the patient.

On the basis of previous studies, in order for the questionnaire to meet these requirements it should have the following characteristics:

(i) *Multiple dimensions*: To comprehensively assess patient satisfaction with pharmaceutical care.
(ii) *Multiple items per dimension*: To improve reliability, however, it also lengthens the questionnaire and thus increases the burden for the patient completing it [26, 27].
(iii) *Response scale*: A five-choice assessment scale ('excellent', 'very good', 'good', 'fair', 'poor'), with an assigned score from 5 = excellent to 1 = poor. Patients' surveys demonstrated that this scale yields mean scores closer to the midpoint, greater response variability and better correlation with behavioral intentions than the format 'extremely satisfied'—'very dissatisfied' [26–28].
(iv) *Simple questions and clear instructions*: In order to be self-administered.
(v) *Worded to assess cumulative experience with pharmaceutical care*: To achieve a comprehensive assessment of the cumulative experience and not only of this single encounter.

The selection of dimensions and items was based on previously published questionnaires developed to assess patient satisfaction with pharmaceutical care. These questionnaires have gone through a testing process and have been proven to be psychometrically useful [17, 18, 25]. Some items have been rephrased in order to be compatible with the 'excellent-poor' response scale. Finally, new items were added, in order to assess comprehensively pharmaceutical care as practiced in our country.

The translation of items from questionnaires in English was done with the participation of bilingual patients.

A panel of judges composed of pharmaceutical care professors, a statistician, two community pharmacists and two patients—that have received pharmaceutical care—assessed face and content validity.

The questionnaire was first applied in a pilot test, in 13 pharmacies that provided pharmaceutical care. The results were used to revise the instrument, rephrase or delete items, reduce its length or modify the response scale.

Study sites

The research was developed by the Pharmaceutical Care Area of the Faculty of Biochemical and Pharmaceutical Sciences of National University of Rosario, with the initial supervision of Dr Linda MacKeigan.

To obtain the number of questionnaires required for the data analysis, a total of 41 pharmacies, members of the College of Pharmacists of the Province of Santa Fe, participated in the project. Only 31 pharmacies in the province provided pharmaceutical care, with activities of patient education and counselling and drug therapy assessment, so they were all included. The rest were traditional pharmacies, selected by convenience sampling

from the total of pharmacies in the region. All pharmacies were located in the cities of Rosario and Santa Fe and inner towns of the province. The Ethic Committee of the College of Pharmacists gave the ethics approval for this study. The pharmacists attended seminars and received written instructions in order to deepen their knowledge about the topic and standardize their research in the pharmacies.

The inclusion criteria for patients were to be 21 years or older, to have a new prescription filled at least in once in the previous month, to have been taking at least one medication for a chronic disease and receiving pharmaceutical care in this pharmacy. This last criterion was not considered in the pharmacies that provided traditional services.

Data collection

The eligible patients were asked by the pharmacist to answer the self-administered questionnaire, explaining them that it was voluntary and confidential. If they agreed, they answered it in a private room within the pharmacy. Pharmacists had a standard form to record the number of approaches, the number of questionnaires distributed, the number of questionnaires returned and the time needed to answer the questionnaire. During the pilot test stage, patients filled a form to assess the questionnaire from the respondent perspective.

Each questionnaire had a code number (including pharmacy location, pharmaceutical care service and patient number). The first page showed the objectives of the study, the second and third ones contained the questionnaire and other data required from the patient (two sides printed). The questionnaire was given to the patient in an envelope with the same code number. After completing it, the patient closed the envelope and gave it back to the pharmacist.

Period of development of the study: April 2002–August 2004.

Data analysis

Reliability of the instrument's scales was assessed with Cronbach's alpha. For an expected reliability coefficient of 0.70 and a confidence interval criterion of ± 0.10 it was considered that the sample size requires 130 subjects [26].

Factor analysis gave information about the validity of the hypothesized grouping of items in dimensions. Principal components extracting factors with varimax rotation was applied. To determine how many factors were retained a criterion of eigenvalue greater than 1.0 was considered. This could lead to a modification of the scale's structure [29]. In order to be retained on a scale an item must meet the following criteria: factor loadings higher than 0.30 and no higher loading on another factor [26, 29]. The sample size for this step was based on the 'rule of the thumb' proposed by Nunnaly, who suggested that the number of subjects should be at least 10 times the number of items [27].

To assess the validity of the construct it was hypothesized that the patients are more satisfied with pharmacies that provide pharmaceutical care, and tested with the extreme group method. The instrument was given to two groups; one of the groups was composed of patients of traditional pharmacies and the other one of patients of pharmacies with pharmaceutical care. The Mann–Whitney test was applied to compare the data from the two groups of pharmacies.

Discriminant validity was also considered, using Pearson product–moment correlations coefficients (r) to obtain correlations between items and demographic variables.

The mean scores of the questionnaire's scales for each group of patients were compared. On the basis of the results of previous studies, [17, 19] to detect a minimum difference in the scale's mean scores of 0.40, a standard deviation (SD) of 0.85, with alpha (type I error) of 0.05 and a desired power of 0.8, a minimum of 71 patients for each group was required as sample size.

Data were analysed using the SPSS 11.5 statistical software (Statistical Software for Social Sciences).

Results

A questionnaire of 27 items, with randomly assigned order, was designed. Five dimensions were initially proposed: General satisfaction (1 item), Explanation (6 items), Managing therapy (9 items), Consideration (7 items) and Setting (4 items).

The instrument also included questions about: demographic information, pharmacy patronage, number of prescriptions in the last month, number of medicines they were taking and drug insurance.

A pilot test was used to assess the feasibility of the tool. From the total of patients asked to answer the questionnaire, 36 (76.6%) accepted and all of them completed it. Pharmacists and patients completed a form that was used to obtain the response rate and the respondent's opinion, respectively. We considered the following to revise and modify the original questionnaire:

(i) *Respondent's perspective of the instrument*: recorded opinion of the patient about clarity of the instructions, difficulty to answer any question, ease of administration and length of the questionnaire.
(ii) *Item performance statistics*: mean, SD and number of missing responses.

Respondents assessed the instrument positively, mean values for each item being between 3.44 and 4.61, SD values were lower than desired and there was only one missing response in the completed questionnaires. These values of mean and SD can be due to the fact that all pharmacies that participated in the pilot test provided pharmaceutical care. On the basis of data obtained from the Pilot Test, we decided to maintain all the items, although four items were rephrased and five were relocated in the questionnaire.

In the second application of the questionnaire 28 community pharmacies participated. The procedures in this stage were as in the Pilot Test. A total of 274 questionnaires were answered (81.3% of the approached patients who accepted to answer the questionnaire) and 174 of them were patients

Table 1 Demographic and prescription profile of the respondents ($n = 274$)

Demographic profile		N (%)
Age (years)	20–29	30 (11.1)
	30–39	35 (12.8)
	40–49	47 (17.3)
	50–59	58 (21.0)
	60–69	60 (21.8)
	70–79	40 (14.4)
	More than 80 years	4 (1.6)
Sex	Male	76 (27.6)
	Female	198 (72.4)
Level of education	Incomplete primary school	17 (6.1)
	Complete primary school	52 (19.1)
	Complete high school	127 (46.3)
	Complete University	78 (28.5)
Drug insurance	Social Insurance	174 (63.6)
	Private Health Care	55 (19.8)
	none	45 (16.2)
Number of medicines in the last month	0–2	120 (44.0)
	3–4	101 (36.8)
	≥5	53 (19.2)
Number of prescriptions last month	0–1	49 (17.8)
	2–3	149 (54.4)
	4–5	43 (15.6)
	≥6	33 (12.2)
N° pharmacies patronized last month	1	203 (74.1)
	2	52 (18.9)
	≥3	14 (5.0)
	Missing response	5 (2.0)

receiving pharmaceutical care. The respondents' profile is summarized in Table 1.

As regards the time required to complete the questionnaire, 181 (66.0%) needed between 5 and 10 min to answer it.

The total number of missing responses in all the answered questionnaires was of 114. No individual questionnaire had a missing response rate superior to 20%. Relating to individual items, item 9 had 13 missing responses (4.7%) and items 18 and 26 had 10 missing responses, respectively (3.6%).

Factor analysis with principal components and varimax rotation resulted in three factors (Tables 2 and 3). Cumulative variance of the 3-factor solution was 62.51%. According to these results, items were regrouped in three new factors: Managing therapy, Interpersonal relationship and General satisfaction.

Descriptive statistics for each item as well as the proposed and final dimensions for each one of them are shown in Table 4.

The reliability of the instrument's scales was assessed with Cronbach's alpha. The value of the reliability coefficient for the whole questionnaire (27 items) was 0.96 and values for the final three dimensions were as follows: the Managing therapy dimension had a reliability coefficient ∞ of 0.95, the Interpersonal relationship dimension 0.88 and the General satisfaction 0.73.

In order to determine the construct validity of the questionnaire, the Mann–Whitney test was applied to compare the data from the two groups of pharmacies. The Mann–Whitney test of the overall score gave a mean of 4.20 and a SD of 1.08 for the group of pharmaceutical care pharmacies, and a mean of 3.72 and a SD of 1.30 for the other one, showing no significant difference ($P = 0.32$). In spite of the overall result, individual items' scores, except for items 5, 11, 23 and 25, showed significant differences between the two groups. The higher differences between the two groups were observed in items 2, 6, 8, 10, 12, 13, 14 and 16 ($P < 0.0001$). In those variables that showed significant differences, the group with pharmaceutical care always showed a higher average than the other, implying that patients of the pharmaceutical care group assigned higher values to their answers.

The discriminating validity analysis showed no significant correlation ($P > 0.05$) between items and demographic variables, i.e. the correlation between item 1 and age was 0.062 and the correlation between item 15 and sex was 0.013.

Discussion

The aim of this study was to achieve a questionnaire in Spanish to allow the assessment of patient satisfaction with pharmaceutical care.

Results related to the reliability of the questionnaire showed values of Cronbac's alpha superior to 0.70, meaning that items are sufficiently correlated to constitute a scale [26]. Values of α between 0.70 and 0.90 are preferred, higher values could suggest a high level of item redundancy [26,

Table 2 Factor analysis results and descriptive statistics

Factor	Items	Mean	SD
Managing therapy	5, 8, 9, 13, 15, 16, 18, 20, 21, 22, 23, 24, 25, 26	3.75	1.32
Interpersonal relationship	1, 2, 3, 6, 10, 12, 14, 17, 19	4.31	0.95
General satisfaction	4, 7, 11, 27	4.33	0.92

Table 3 Item content and rotated factor loading for all the items of the questionnaire

Item	Statement (in *italics* items in the Spanish language)	Factor 1	2	3
1	The pharmacist's interest in your health *El interés del farmacéutico en su salud*	0.33	***0.57***	0.30
2	The pharmacist's professional relationship with you. *La relación profesional del farmacéutico con Ud*	–	***0.74***	0.34
3	The courtesy and respect shown you by the pharmacy staff *La cortesía y el respeto que le muestra el personal de la farmacia*	–	***0.64***	–
4	The privacy of your conversations with the pharmacist *La privacidad del lugar donde conversa con el farmacéutico*	–	0.30	***0.63***
5	The availability of the pharmacist to answer your questions *La predisposición del farmacéutico para responder sus preguntas*	***0.61***	0.30	–
6	The advice you get from the pharmacist about problems that might occur with your medication *El asesoramiento que Ud. recibe del farmacéutico sobre los problemas que Ud. puede tener con su medicación*	0.42	***0.73***	–
7	The amount of time it takes to get a prescription filled at your pharmacy *La cantisdad de tiempo que le insume la dispensación de su receta en esta farmacia*	–	–	***0.52***
8	The way the pharmacist helps you to manage your medications *La ayuda que el farmacéutico le brinda para organizar su tratamiento con medicamentos*	***0.57***	0.46	0.32
9	How frequently the pharmacist checks with you about how well your medications are working *La frecuencia con que el farmacéutico controla con Ud cuán bien está actuando su medicación*	***0.75***	0.35	–
10	The help you get from the pharmacist to avoid unnecessary costs related to your prescriptions *La ayuda que obtiene del farmacéutico para evitar costos innecesarios relacionados con su medicación*	–	***0.58***	–
11	The professional appearance of the pharmacy *La apariencia profesional de la farmacia*	–	–	***0.77***
12	The amount of time the pharmacist spends with you *La cantidad de tiempo que el farmacéutico está con Ud*	0.43	***0.53***	–
13	The pharmacist's efforts to help you improve your health or stay healthy *Los esfuerzos del farmacéutico para ayudarlo a mejorar su salud o mantenerlo saludable*	***0.58***	***0.57***	–
14	The pharmacist's instructions about how to take your medication *Las instrucciones del farmacéutico sobre cómo tomar su medicación*	0.46	***0.58***	0.31
15	The information the pharmacist gives you about the proper storage of your medication *La información que le brinda el farmacéutico sobre el almacenamiento adecuado de su medicación*	***0.55***	0.43	0.37
16	The help you get from your pharmacist when you have a health problem related to your medication *La ayuda que Ud. recibe del farmacéutico ante un problema de salud que puede estar causado por su medicación*	***0.57***	***0.53***	–
17	The professionalism of all the pharmacy staff *El profesionalismo de todo el personal de la farmacia*	–	***0.53***	0.41
18	The written information the pharmacist provides you about drug therapy and/or diseases *La información escrita que el farmacéutico le provee sobre medicamentos y temas de salud*	***0.63***	0.38	–
19	The way the pharmacist answer your questions *La idoneidad con que el farmacéutico responde a sus preguntas*	–	***0.72***	–
20	The information the pharmacist gives you about the results you can expect from your drug therapy *La información que el farmacéutico le brinda sobre los resultados esperados de su tratamiento*	***0.70***	0.47	–
21	The pharmacist's help when a medication doesn't have the expected effect *La ayuda del farmacéutico cuando un medicamento no tiene el efecto esperado*	***0.65***	0.55	–
22	How your pharmacist uses information about your previous conditions/drugs when assessing your drug therapy. *La aplicación que el farmacéutico hace de los registros de sus medicamentos y enfermedades anteriores*	***0.77***	0.31	–
23	The help you get from the pharmacy staff with the administrative arrangements necessary to obtain your medicines *La ayuda del personal de la farmacia en los trámites administrativos necesarios con la Obra Social*	***0.54***	–	0.48

(*continued*)

Table 3 Continued

Item	Statement (in *italics* items in the Spanish language)	Factor 1	2	3
24	The way your pharmacist works together with you to plan what should be done to get good results from your medications *La manera en que el farmacéutico trabaja junto con Ud para planificar lo que debería hacerse para tener buenos resultados de su medicación*	*0.75*	0.30	–
25	The way your pharmacist works together with your doctor to make sure your medications are the best for you. *La manera en que el farmacéutico intenta trabajar junto con su médico para estar seguros de que su medicación es la mejor para Ud*	*0.84*	–	–
26	The responsibility that the pharmacist assumes for your drug therapy *La responsabilidad que el farmacéutico asume por su tratamiento con medicamentos*	*0.70*	–	–
27	Your pharmacy services overall *Los servicios de su farmacia en general*	–	–	*0.74*

–, loadings < 0.30.

Table 4 Descriptive statistics and dimensions for each item in the total of questionnaires ($n = 274$)

Item	Mean	SD	Proposed dimension	Final dimension
1	4.28	0.75	C	IR
2	4.50	0.67	C	IR
3	4.41	0.72	S	IR
4	4.54	0.60	C	GS
5	3.76	0.92	S	MT
6	4.40	0.72	E	IR
7	3.99	0.79	C	GS
8	4.10	0.88	MT	MT
9	3.80	1.01	MT	MT
10	4.50	0.65	C	IR
11	4.50	0.65	S	GS
12	4.14	0.81	C	IR
13	4.18	0.82	MT	MT
14	4.32	0.81	E	IR
15	4.09	0.78	E	MT
16	4.20	0.89	MT	MT
17	4.55	0.64	S	IR
18	3.71	1.06	E	MT
19	4.44	0.67	E	IR
20	4.00	0.93	E	MT
21	4.10	0.85	MT	MT
22	3.80	1.06	MT	MT
23	4.12	0.96	C	MT
24	3.95	1.04	MT	MT
25	3.68	1.21	MT	MT
26	4.18	0.85	MT	MT
27	4.61	0.58	GS	GS

MT, managing therapy; E, explanation; C, consideration; S, setting; GS, general satisfaction; IR, interpersonal relationship.

27]. We decided to maintain all items because this was a first application and next studies could consider the exclusion of any item if Cronbac's alpha continues higher than 0.90.

In the factor analysis, cumulative variance for the three factors was superior to 60.0% and, therefore, none of them was excluded [30, 31]. Items 13 and 16 had similar rotation factor loading for factors 1 and 2, however, both were assigned to the first factor because we considered them more related to it.

Previous validated and multidimensional questionnaires that assessed satisfaction with pharmaceutical care defined similar factors as our three factor solution [17–19]. In fact, Managing therapy and Interpersonal relationship are essential components of pharmaceutical care, with high impact on patients' health and quality of life [11, 12].

Although the overall results of the construct validity test did not showed significant differences between the two groups of pharmacies, twenty-three items did so. Only item 25, form the other four items, is specifically related with pharmaceutical care, considering the interaction between pharmacist and physician, a relationship that should be reinforced in community pharmacies in our country. Previous studies that compared patient satisfaction between pharmaceutical care and traditional pharmacy services have found lower differences in patient satisfaction's rate than the expected. [13, 15, 17]. That could be not only for possible limitations of the studies but also because satisfaction with traditional pharmacy services is high [15]. Researchers also suggest that there is a need for increased public awareness about pharmacists' capabilities and the value of pharmaceutical care services, as well as a more proactive approach to the provision of cognitive services [15, 17].

There are two limitations that need to be acknowledged regarding this study. The first is that community pharmacists may have selected patients who were actively involved in pharmaceutical care practice and eager to answer the

questionnaire. The other limitation would be that the questionnaire is geographically bounded: even when Spanish is the official language of many countries, diverse cultures coexist within them. Therefore, it would be important to carry out a cross-cultural adaptation before it is use in other countries, and also to validate the adapted questionnaire as if it were a new one [25, 26].

Although this study considered the data of the first validity analysis, the results suggest that the questionnaire developed can be a reliable and valid instrument—in Spanish—to assess patient satisfaction with pharmaceutical care in community pharmacies. Further research is needed to deepen the validation process of this questionnaire, with special focus on the construct validity. The next step is to use this questionnaire in other areas of our country and in other Spanish speaking countries.

Finally, in Spanish-speaking countries the number of articles published related with patient satisfaction has increased in the last years, but there are methodological weaknesses in the development of instruments to assess patient satisfaction, a problem that need to be solved in order to give patient satisfaction the same hierarchy than other health indicators [7–9, 23, 32]. The widespread application of pharmaceutical care practice needs a reliable and valid instrument to be applied in a usual way, not only to obtain results for research, but also for monitoring everyday practice and its impact on quality of health care.

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References

1. Pascoe GC. Patient satisfaction in primary health care: a literature review analysis. *Eval Program Plann* 1983;**6**:185–210.
2. Aharony L, Strasser S. Patient satisfaction: what we know about and what we still need to explore. *Med Care Rev* 1993;**50**:49–79.
3. Schommer JC, Kucukarslan SN. Measuring patient satisfaction with pharmaceutical services. *Am J Health Syst Pharm* 1997; **54**:2721–32.
4. Jackson J, Chamberlin J, Kroenke K. Predictors of patient satisfaction. *Soc Sci Med* 2001;**52**:609–20.
5. Sitzia J, Wood N. Patient satisfaction: a review of issues concepts..*Soc Sci Med* 1997;**45**:1829–43.
6. Gold M, Woodridge J. Surveying consumer satisfaction to assess managed care quality: current practices. *Health Care Finance Rev* 1995;**16**:155–73.
7. Mera JA. A review of the 'welfare state' and alternative ways of delivering health care. *Int J Qual Health Care* 2002;**14**:87–90.
8. Romano Yalour M, Grunhut Y. La encuesta de satisfacción a los usuarios de servicios de salud. *Boletín Programa Investigación Aplicada Isalud* 2001;**1**:1–3.
9. Barrasa JI, Aibar C. Revisión sistemática de los estudios de satisfacción realizados en España en el periodo 1986–2001. *Rev Calidad Asist* 2003;**18**:580–90.
10. Johnson JA, Coons SJ, Hays RD. Structure of satisfaction with pharmacy services. *Med Care* 1998;**36**:244–50.
11. World Health Organization. *FIP-WHO. Pharmaceutical Care. Tokyo Declaration*. September 1993.
12. Hepler CD, Strand LM. Opportunities and responsibilities in pharmaceutical care. *Am J Hosp Pharm* 1990;**47**:533–42.
13. Shibley MC, Pugh CB. Implementation of pharmaceutical care services for patients with hyperlipidemias by independent community pharmacy practitioners. *Ann Pharmacother* 1997;**31**:713–9.
14. Carter BL, Barnette DJ, Chrischilles E *et al*. Evaluation of hypertensive patients after care provided by community pharmacists in a rural setting. *Pharmacotherapy* 1997;**17**:1274–85.
15. Kradjan WA, Schulz R, Christensen D *et al*. Patients' perceived benefit from and satisfaction with asthma-related pharmacy services. *J Am Pharm Assoc* 1999;**39**:658–65.
16. Blenkinsopp A, Phelan M, Bourne J *et al*. Extended adherence support by community pharmacists for patients with hypertension: randomized controlled trial. *Int J Pharm Pract* 2000; **8**:165–75.
17. Volume CI, Farris KB, Kassam R *et al*. Pharmaceutical care research and education project: patient outcomes. *J Am Pharm Assoc* 2001;**41**:411–20.
18. Larson LN, Rovers J, MacKeigan LD. Patient satisfaction with pharmaceutical care: update of a validated instrument. *J Am Pharm Assoc* 2002;**42**:44–50.
19. Gourley GK, Gourley DR, La Monica Rigolosi E *et al*. Development and validation of the pharmaceutical care satisfaction questionnaire. *Am J Managed Care* 2001;**7**:461–6.

20. Etter JF, Perneger TV. Validating a satisfaction questionnaire using multiple approaches: a case study. *Soc Sci Med* 1997;**45**:879–85.

21. Cella D, Hernandez L, Bonomi A *et al*. Spanish language translation and initial validation of the functional assessment of cancer therapy quality of life instrument. *Med Care* 1998;**36**:1407–18.

22. Instituto Cervantes. *Madrid. España*: http://www.cervantes.es (March 2004, date last accessed).

23. Traverso ML, MacKeigan L. Instruments for measuring patient satisfaction with pharmacy services in the Spanish language. *Pharm World Sci* 2005;**27**:281–4.

24. Alvarez de Toledo F, Aros Gonzalez P, Eyaralar Riera T *et al*. Pharmaceutical Care in people who have had acute coronary episodes(TOMCOR study). *Rev Esp Salud Pública* 2001;**75**:375–87.

25. Hernandez L, Chang CH, Cella D *et al*. Development and validation of the satisfaction with pharmacist scale. *Pharmacotherapy* 2000;**20**:837–43.

26. Streiner DL, Norman GR. *Health measurement scales: a practical guide to their development and use*. Oxford: Oxford University Press, 1995.

27. Nunnally JC. *Psychometric Theory*. New York: McGraw-Hill, Inc., 1978.

28. Sudman S, Bradburn N. *Asking Questions. A practical guide to Questionnaire design*. San Francisco: Jossey Bass Inc. 1982.

29. Lewis-Beck M. *Factor analysis and related techniques*. London: Sage Publications, 1994.

30. Dillon W, Goldstein M. *Multivariate analysis. Methods and applications*. New York: John Wiley and Sons., 1984.

31. Johnson D. *Métodos multivariados aplicados al análisis de datos*. International Thompson Editores, 2000.

32. Caminal J. La medida de la satisfacción: un instrumento de participación de la población en la mejora de la calidad de los servicios sanitarios. *Rev Calidad Asist* 2001;**16**:276–79.

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