ORIGINAL ARTICLE

Evolution of communicational profile of family medicine trainees

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Aims. To study the development of patient relation skills, as used during interviews with patients for health problems that are common within their specialty, in family medicine residents during the third year of their residency program.
Methods. Quasi-experimental (before-after), national-level, multicenter study. The participants were 193 third-year residents in family medicine at 8 training units who were trained between 1996 and 1999. During this period all residents participated in the usual training and clinical activities included in the National Plan for this specialty. The GATHA-RES questionnaire was used to evaluated six clinical scenarios in video recordings of encounters with standardized patients (3 at the start of the third year and 3 at the end of the third year). Descriptive, bivariate and multivariate statistical analyses were used.
Results. A total of 1,024 interviews were analyzed. The time spent with each patient decreased significantly at the end of the residency program; the duration of the visit was directly proportional to the score on the GATHA-RES questionnaire ($p < 0.05$). Improvements were seen in formal and organizational aspects of the interview. In contrast, skills related with the exploration of personal and contextual aspects of the problem, and negotiating skills, were worse at the end of the study. The variables that best predicted residents' communicational profile were age (inverse relation), duration of the interview, training of the tutor in clinical interviewing, and teaching unit.
Conclusions. Residents learn to shorten the duration of the visit to the detriment of communication skills that are basic to appropriate care for their patients' health problems. These results suggest the need for substantial changes in the training of family medicine residents in Spain.

Key words: Medical education. Clinical interview. Family medicine. Residents. Physician-patient communication. Physician-patient relation.

EVOLUCIÓN DEL PERFIL COMUNICACIONAL DE LOS MÉDICOS RESIDENTES DE MEDICINA DE FAMILIA

Objetivo. Conocer cómo evolucionan en los residentes de medicina de familia las habilidades de relación con los pacientes, al comienzo y al final de su tercer año de residencia, cuando atienden a problemas de salud comunes en su especialidad.
Diseño. Estudio cuasi-experimental (antes-después), multicéntrico, de ámbito nacional. Un total de 193 médicos residentes de tercer año de medicina familiar de 8 unidades docentes, que realizaron su residencia entre 1996-1999. Durante este período los residentes realizaron las actividades formativas y asistenciales habituales que marca el Programa Nacional de la Especialidad. Se valoraron 6 escenarios clínicos videograbados con pacientes estandarizados (3 al inicio del tercer año y 3 al finalizar) mediante el cuestionario GATHA-RES. Análisis estadístico descriptivo, bivariado y multivariante.
Resultados. Se evaluó un total de 1.024 entrevistas. El tiempo empleado con cada paciente disminuye significativamente al finalizar la residencia; se observa una relación directamente proporcional entre el tiempo de consulta y las puntuaciones obtenidas ($p < 0,05$). Se detectan mejorías en los aspectos formales y organizativos de la consulta. Por el contrario, las habilidades relacionadas con la exploración de los aspectos personales y contextuales de la dolencia, así como las habilidades negociadoras, empeoran al finalizar el estudio. Las variables que mejor predicen el perfil comunicacional de los residentes fueron: edad (inversamente), duración de la entrevista, formación del tutor en entrevista clínica y unidad docente.
Conclusiones. Los residentes aprenden a acortar el tiempo de consulta en detrimento de habilidades de comunicación básicas para la realización de una correcta asistencia a los problemas de salud de sus pacientes. Estos resultados sugieren la necesidad de cambios sustanciales en la formación de los médicos residentes de medicina de familia en España.

Palabras clave: Educación médica. Entrevista clínica. Medicina de familia. Residentes. Comunicación médico-paciente. Relación médico-paciente.

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Introduction

Clinical communication currently represents a fundamental aspect of medical care, not only within the setting of primary care but also in any clinical specialty. Communication is precisely the channel through which care is provided, and many well-designed studies have shown effective clinical communication to favor the processes of diagnosis and therapy.[1] To achieve and maintain effective clinical communication, physicians should be proficient in a number of skills, have specific knowledge, and project clearly-defined, appropriate attitudes.[2] Communicational skills are specific, observable and testable.[3,4]
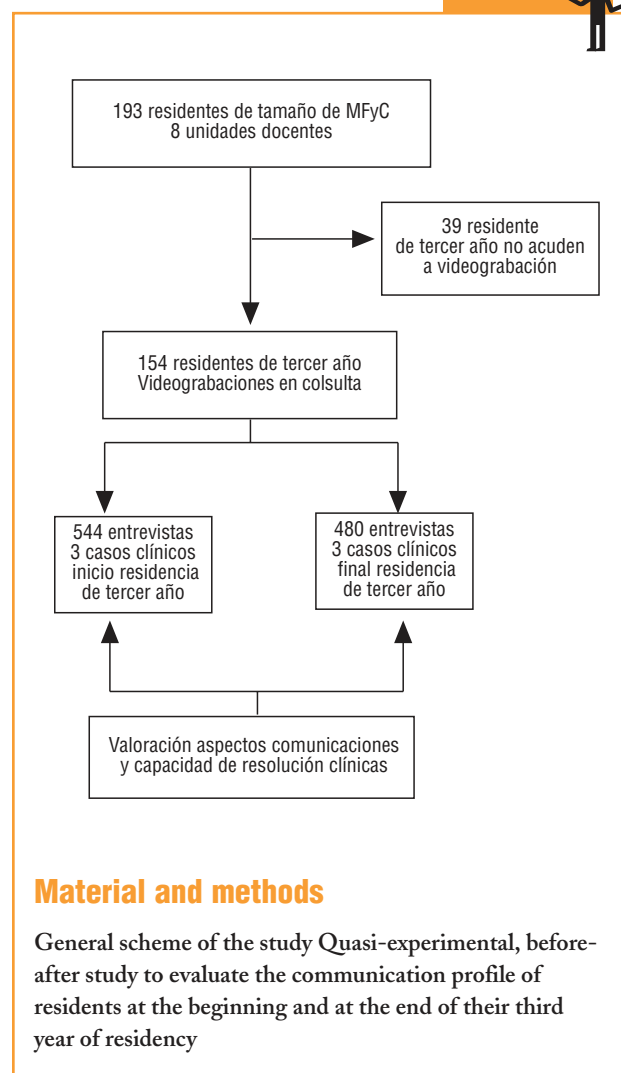
Clinical communication is currently an important part of the medical curriculum in both undergraduate and graduate training.[5,6] In Spain the National Program for the Family Medicine Specialty[7] includes clinical interviewing as an educational task that should form part of the training for these physicians. However, this recommendation is still too generic and inadequately elaborated; as a result its implementation has been uneven. In the undergraduate curriculum, training in communications skills --when present-- is merely testimonial. Thus, because of its clinical importance and because training in this important area is still in its earliest stages in Spain, it is necessary to determine how well basic communication skills are used by medical students, residents and practicing physicians, and what attitudes practitioners display in the course of interviews with patients. This information is needed before specific training programs can be designed; however, at present reliable information that can be taken to characterize the situation throughout the country is not available. The aim of the present study was therefore to discover how communication behavior (attitudes and use of skills and related tasks) evolves in family medicine residents during their third and final year of training.

Material and methods

Design and study population

A quasi-experimental before-after design was used. The study population comprised third-year residents at eight teaching units across Spain, located in Córdoba, Vizcaya, Cantabria, Jaén, Seville, Malaga, Asturias, and Orense (N=379). A sample size of 186 participants was estimated on the basis of a number of considerations. The percentage of correct answers on the questionnaire we used to evaluate knowledge, attitudes and communication skills (*g*lobal data, *a*ttitude, communication *t*asks, communication skills—*ha*bilidades, in Spanish—in *res*idents; abbreviated as *GATHA-RES*) was predicted to be 30% at the start of the third year of the residency program (pretest) and 50% at the end of the third year of training (post-test). The magnitude of difference we expected to detect was therefore 20%. We assumed an alpha error of 5%, a beta error of 20%, a bilateral hypothesis, a ratio of 1:1,

193 residentes de tamaño de MFyC
8 unidades docentes

39 residente de tercer año no acuden a videograbación

154 residentes de tercer año
Videograbaciones en colsulta

544 entrevistas
3 casos clínicos
inicio residencia
de tercer año

480 entrevistas
3 casos clínicos
final residencia
de tercer año

Valoración aspectos comunicaciones y capacidad de resolución clínicas

Material and methods

General scheme of the study Quasi-experimental, before-after study to evaluate the communication profile of residents at the beginning and at the end of their third year of residency

and a 10% drop-out rate. A total of 193 participants were chosen by random sampling, stratified across teaching units, of all third-year residents who satisfied the inclusion criteria. Twenty-three residents were excluded mainly because they did not agree to participate, or because they were on leave for a prolonged period during the study.

Clinical scenarios

The residents faced six clinical cases (A, B, and C), presented as three clinical encounters at the beginning of the third year, and three more in the final month of the third year of training. The scenarios were designed by an ad hoc working group made up of family physicians and experts in the evaluation of clinical competence. The cases were paired such that although the clinical contents differed, they were similar in complexity. Thus case A represented a biomedical problem in a person 65 years old with no additional psychosocial or personal relation difficulties. The pretest situation presented a slight worsening of the patient´s asthma, and in the post-test situation the patient had diarrhea. Case B represented an organic manifestation of somatization (headache/backache) of a psychosocial problem (stress due to possible change in location of job/family-related stress related

with starting a new job). The patient was 30 years old and expressed his expectations (computed tomography scan/referral to a specialist) in order to trigger a negotiation process. Case C represented a 45-year-old woman with an organic problem (inflammatory knee joint pain/abdominal pain) who expressed specific fears (invalidity/cancer) and intense emotions (mother´s death/mastectomy because of cancer). This patient also had specific demands (referral/laboratory tests) that triggered a negotiation process. All cases were represented by standardized patients who were trained according to guidelines that were established and agreed upon by members of the group responsible for this part of the study.

During the recording of the interviews each actors´ performance was observed as a check for appropriateness. In addition, during the study period the investigator responsible for this part of the method evaluated a group of interviews involving each actor to ensure that performances were appropriately standardized. All physician-patient encounters were recorded on videotape. The residents knew that the encounters were being simulated with standardized patients, and were asked to act as if they were actual consultations. There was a time limit of 10 minutes per encounter.

Study variables and information sources

Throughout the study period the residents carried out their regular training and clinical activities in accordance with the national plan (national curriculum) for specialization in family medicine with applicable local modifications. The main activity was providing out-patient care at a local health center on a full-time basis under the tutorship of a specialist in family medicine.

A self-administered questionnaire was used to obtain information on the characteristics of each teaching unit, tutors and the residents in their charge. The time used for each interview was also recorded.

Instrument used to evaluate the interviews

To evaluate the recorded interviews we used the GATHA-RES questionnaire (see Annex). This tool, designed and developed in Spain to evaluate the communication skills of medical residents, is divided into three sections or dimensions: *a)* attitudes, *b)* tasks, and *c)* skills. It has been validated and shown to be reliable. This instrument is an elaboration of the earlier 47-item GATHA-BASE questionnaire, which had undergone previous consensus validity evaluation by communication experts (communication and health group). The validation process used to refine the questionnaire for the desired target population (medical residents) comprised evaluation of internal consistency and between-observer reliability,[8] followed by evaluation of content validity and within-observer reliability.[9] This process resulted in a 27-item questionnaire with a Cronbach alpha value of 0.8, a between-observer reliability for each item, measured as the kappa index, of 0.41-0.95, and an intraclass correlation coefficient (ICC) of 0.97. Content validity was verified by factor analysis, which revealed a 9-factor structure that explained 62% of the variance. Within-observer reliability was verified with 47 recorded interviews from the actual study, camouflaged among other video recordings that were sent to the evaluators in four monthly batches during the 4-month evaluation period. Within-observer agreement was high, with a kappa index >0.63 and <1 and and ICC=0.94 in the first month, and a kappa index >0.80 and <1 and an ICC=0.95 in the fourth month.

All interviews were evaluated by an observer who was blind to the pretest or post-test nature of the interview. This evaluator was previously trained in the use of the GATHA-RES questionnaire. Between- and within-observer reliability was also checked as described above.

In the present study the highest score attainable varied for each of the three cases. In case A the highest possible score was 23 points, as items 9, 25, 26 and 27 were not applicable. In case B the highest possible score was 26 points, as item 27 was not applicable and items 6 and 12 were always fulfilled. In case C the highest score attainable was 27 points; all items were applicable.

Statistical analysis

Data coding and processing were done with the Access database program (Microsoft Office) by two persons working independently under the supervision of the investigator responsible for statistical analyses. This investigator ran periodic internal checks by systematically sampling 1 out of every 10 questionnaires and verifying the accuracy of data entry. The statistical analysis consisted of a descriptive study of the variables; 95% confidence intervals (95% CI) were calculated for the main estimators. Bivariate analyses consisted of McNemar´s test or Fisher´s exact test to compare the percentages of responses obtained for each item in the pretest and post-test; Student´t t test to compare paired data for mean total scores in the pretest and post-test; Pearson´s correlation coefficient to check the correlation between pretest and post-test scores; and one-way analysis of variance to investigate the relation between duration of the interviews and GATHA-RES score. Multivariate analysis consisted of multiple linear regression with the enter method to identify the independent variables related with mean GATHA-RES score for the three interviews recorded at the end of the residency period (post-test). Differences were considered significant at $P<0.05$; all contrasts were bilateral. All analyses were done with the SPSS (Statistical Package for Social Sciences).

<div style="background:orange">**Results**</div>

Table 1 shows the main characteristics of the population of third-year residents in family medicine, their tutors, and the teaching units.

Of the 193 residents who started the study, 154 completed it (20% drop-out rate). Losses were due to causes such as a change in center, illness, or technical problems with the video recording; however, the most frequent cause was failure of the physician to attend the recorded interview.

A total of 1024 clinical encounters were analyzed (544 at the start and 480 at the end of the third year of residency). Seventeen recordings were unusable because of technical problems.

Figure 1 shows the duration of the interviews. The time spent on each of the three interviews was significantly shorter at the end of the study period.

Figure 2 shows the overall scores for all residents on each case at the beginning and at the end of the study. The differences were small and nonsignificant. Mean scores ranged from 11.66 points (case A, pretest; range, 6-17 points; SD, 1.98; 95% CI, 11.38-12.06) to 15.90 points (case C, post-test; range, 8-22 points; SD, 2.84; 95% CI, 15.46-16.45). The time spent on each interview was directly proportional to mean score for each case ($P<0.05$).

TABLE 1	Characteristics of the study population		
Variables		**Residents (n = 193)**	**Tutors (n = 193)**
Mean age (Mean±SD, range)		29.7 years ± 3.65; 26-42	40.65 years ± 3.77; 30-62
Sex (%)			
	Men	29.2	64.5
	Women	70.8	35.5
Marital status (%)			
	Married	33.5	84.0
	Unmarried	66.5	13.6
	Divorced	0.0	1.9
	Widow/Widower	0.0	0.6
Children (%)			
	None	85.9	28.0
	One	9.3	10.9
	Two	3.6	47.2
	Three or more	1.0	13.9
Postgraduate studies (%)		62.0	62.2
Reason for choosing family medicine (%)		66.5% personal calling	–
Type of health center (%)			
	Urban	72.5	72.5
	Rural	27.5	27.5
Prior clinical experience (%)		19.8	–
Primary care practice (Mean±SD. range)		–	11.41 años ± 5.58; 0-36
Patients/day (Mean±SD. range)		–	38.54 ± 12.4; 11-85
Undergraduate training in clinical interviewing (%)		4.0	83.9
Postgraduate training in clinical interviewing (%)		25.0	57.7
Prior experience as a tutor (%)		–	76.7
Interactive training in clinical interviewing (%)		13.5	28.0
Resident-tutor relationship (%)			
	Good	88.0	99.3
	Fair	2.8	0.7
	Poor	0.0	0.0
	No response	8.5	0.0

Table 2 lists the pretest and post-test results for each item in the three dimensions of the GATHA-RES questionnaire. In case A there were significant increases in the scores for items related with confidence (item 3), attentiveness (item 4), and formal and organizational aspects of the consultation (items 5, 7, 19, and 20). Post-test scores were lower for items that dealt with social and family environment (item 15) and the impact of symptoms on daily life (item 11). In case B we found low initial scores and subsequent decreases particularly for items related with the impact of the problem on the patient´s life (item 11), mood (item 13), stressful life events (item 14) and, to a lesser extent, the social and family environment (item 15), pointing (item 22), and negotiation skills (items 25 and 26). There

were improvements in the scores for items related with etiquette (item 20) and organization (items 7 and, to a lesser degree, 19). In case C the pretest and post-test scores were similar. The post-test improvements in items that dealt with etiquette and organization of the visit (items 7, 19 and 20) compensated for the lower post-test scores in more important and determining items such as exploration of mood (item 13), social and family environment (item 15), impact of the problem on the patient´s daily life (item 11) and negotiation strategies (items 25 and 26).
The correlation coefficients for scores at the beginning and at the end of the study were statistically significant ($P<0.05$), although the correlation was weak for all cases (case A, 0.230; case B, 0.242; case C, 0.278; cases A+B+C,
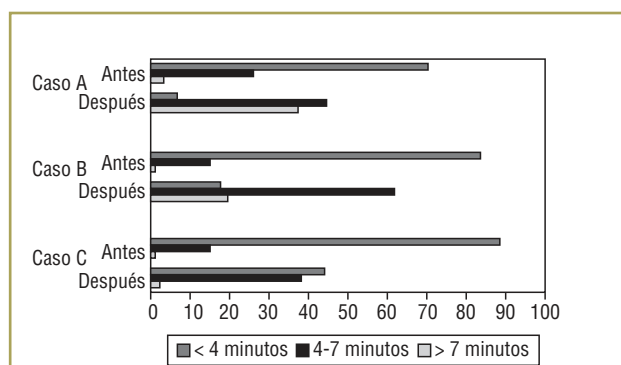
FIGURE 1 Mean time spent by residents on each consultation at the beginning and at the end of the study period.
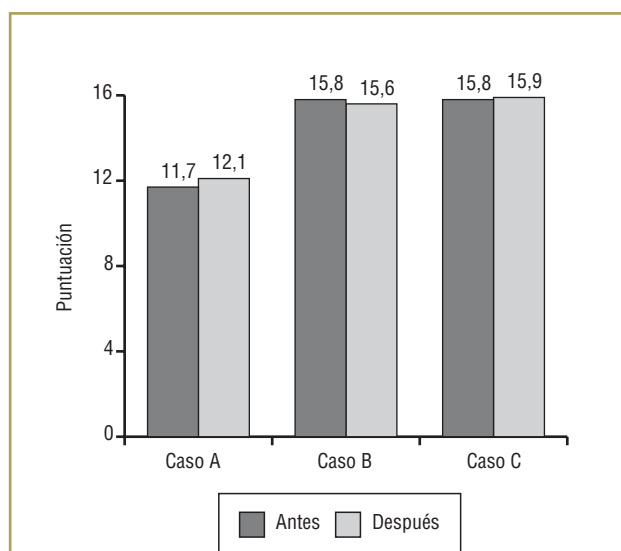

FIGURE 2 Mean scores obtained by residents on the GATHA-RES questionnaire for consultations at the beginning and at the end of the study period.

0.3599). Multiple linear regression analysis (Table 3) showed that the variables which best predicted residents´ communication skills were age (inverse correlation with GATHA-RES score), duration of the interviews (direct correlation with score), tutor´s training in clinical interviewing, and teaching unit.

Discussion

This study represents one of the first attempts in Spain to identify aspects of clinical communication that physicians in general, and residents in particular, develop in clinical encounters. Prior knowledge of these aspects is essential to plan and modify, when appropriate, educational programs on the basis of empirical data rather then mere assumption. The number of residents and different centers that participated in this study is among the highest to date, thus we believe our results to be highly consistent. However, our findings are, in general terms, negative, like those reported by Torío Durantez and García Tirado for a different sample of residents and staff physicians.[10] Theirs is the only other study which, to our knowledge, used videotaped encounters to evaluate the consultation style of Spanish physicians. These authors reported consultation style to be physician-centered and illness-centered rather than open and patient-centered.

The residents´ skills related with formal and organizational aspects of the interview improved in all three of the cases in the present study. In particular, after their third year in the regular primary care residency program, the duration of the interviews was significantly shorter. This reduction was accompanied by very modest improvements in case A (the patient with a biomedical problem); thus for this type of patient, interviewing skills can be considered to show some degree of improvement as duration of the interview decreases. However, in the other two cases an overall backslide was seen: the residents failed to evaluate key psychosocial elements and did not use communication skills considered important to establish an effective relationship with the patient and for the interview to be clinically effective.[1]

Although their influence on the results was considered slight, some limitations derived mainly from the method we used need to be taken into account in the interpretation of our findings. With regard to the measurement instrument, the checklist format of the GATHA-RES questionnaire records only whether specific behaviors occurred in the course of the interaction, but not the degree to which they were manifested. This latter feature is better reflected with a Lickert scale or with interactional analysis.[11] The exploration of symptoms and information provided to the patient were discriminative in the validation of the instrument,[8] but were not found to be discriminative in the present study; this made it impossible to analyze these areas. Another important consideration is that the GATHA-RES questionnaire does not record the type of questions the physician asks the patient, ie, open-ended, closed, leading, or some other type of narrative facilitation.[12-16] The questionnaire does not indicate who dominated the conversation in terms of time, and does not record information about smiling or other elements of social conversation, which are known to be related with the quality of clinical communication.[12,15] Also absent is information on when manifestations of empathy and understanding, which represent opportunities for emotional expression and empathy,[17] occur in the course of the interview. Moreover, because clinical communication is analyzed separately from the diagnosis, when the diagno-

Ruiz Moral R, Rodríguez Salvador JJ, Pérula de Torres L and Prados Castillejo JA, for the COMCORD Research Group.–
Evolution of communicational profile of family medicine trainees

ORIGINAL ARTICLE

TABLE 2 Percent affirmative responses for items on the GATHA-RES questionnaire at the beginning (pretest) and at the end (post-test) of the third year of residency

Íltems by dimension	Case A			Case B			Case C		
	% Pre	% Post	p	% Pre	% Post	p	% Pre	% Post	p
I. Attitudes									
1	8.8	12.1	NS	23.6	27.4	NS	49.7	50.0	NS
2	80.2	83.0	NS	76.6	82.4	NS	81.2	90.7	0.002
3	92.9	97.6	0.022	90.2	98.8	< 0.001	92.3	95.6	NS
4	78.6	93.9	< 0.001	92.4	95.2	NS	88.4	97.5	0.007
5	66.5	83.6	< 0.001	39.7	53.3	0.025	32.0	28.0	NS
6	32.4	38.4	NS	99.5	100.0	NS	90.6	96.9	NS
II. Tasks									
7	5.5	21.8	< 0.001	6.5	20.6	0.001	7.7	13.0	NS
8	100.0	99.4	NS	98.9	99.4	NS	100.0	100.0	–
9	–	–	–	99.5	100.0	NS	100.0	100.0	–
10	90.7	48.1	< 0.001	97.8	95.2	NS	91.2	93.8	NS
11	42.3	18.8	< 0.001	66.8	39.4	< 0.001	65.7	44.1	< 0.001
12	0.0	1.2	NS	98.4	96.4	NS	2.8	14.9	0.004
13	2.2	7.3	0.012	56.0	20.0	< 0.001	57.5	79.5	< 0.001
14	1.1	0.6	NS	62.8	16.4	< 0.001	65.7	94.4	< 0.001
15	19.2	8.5	0.003	84.2	80.6	NS	52.5	26.4	< 0.001
16	94.5	97.6	NS	98.9	100.0	NS	99.4	98.8	NS
17	96.2	100.0	NS	94.6	100.0	NS	98.9	96.9	NS
18	–	–	–	16.3	38.8	0.001	39.2	32.9	NS
19	39.6	61.2	< 0.001	29.3	34.5	NS	24.3	39.8	0.006
20	87.4	95.2	0.031	78.8	96.3	< 0.001	72.9	91.9	0.007
III. Skills									
21	87.9	93.3	NS	92.4	96.4	NS	85.6	94.4	0.007
22	3.8	6.7	NS	22.3	10.9	0.002	34.8	37.9	NS
23	1.1	9.1	0.002	3.3	4.2	NS	1.7	3.7	NS
24	38.5	37.6	NS	21.1	29.9	NS	29.3	14.9	0.001
25	–	–	–	7.6	6.1	NS	23.8	5.6	< 0.001
26	–	–	–	23.9	17.0	NS	43.6	11.2	< 0.001
27	–	–	–	–	–	–	48.3	40.4	NS

NS: Not significant

TABLE 3 Variables that predicted scores after the intervention. Case A + B + C

Independent variables	B	Standard error	Beta	t	p
Constant	34.594	4.217		8.203	< 0.001
Age of resident –	0.271	0.110	–0.171	–2.474	0.015
Duration of interview B	2.523	0.763	0.261	3.307	0.001
Duration of interview C	4.146	0.847	0.379	4.896	< 0.001
Number of tutor's children	0.894	0.407	0.150	2.198	0.030
Tutor received monitored training (yes/no)	1.678	0.923	0.140	1.818	0.071
Tutor provided monitored training (yes/no)	1.708	1.231	0.105	1.388	0.168
Teaching unit	–0.925	0.192	–0.335	–4.821	< 0.001

R^2. 0.413. y n = 133.

sis was ominous we cannot rule out that residents might have concentrated on other aspects of the clinical process. In this connection, a study of tests of clinical competence[18] showed that more experienced clinicians scored lower. However, we believe this would not be the case in residents whose experience is more limited.

Despite these considerations, the GATHA-RES questionnaire provides valuable information. The patient roles in cases B and C provided many potential opportunities for the physician to explore the patient´s agenda and thus develop the skills and carry out the tasks needed to build a relationship and perform an appropriate psychosocial examination. To judge from the results, the residents did not take advantage of these opportunities. Nonetheless,

Discussion
Key points

What is known about the topic

- Quality in clinical communication is related with good consultation outcomes, especially in primary care.

- Communication skills are specific, observable and testable. For this reason and the reason noted above, they are included in many undergraduate and graduate curricula.

- In Spain no information is available to date regarding the performance and type of communication that residents use during consultations, or about how their communication skills develop during training.

What this study contributes

- When family medicine residents complete their third and final year of training, the duration of consultations is considerably shorter than at the start of their third year.

- During this period the quality of their clinical relation with the patient deteriorates, as residents cease to explore personal and contextual aspects of the illness and as their negotiating skills worsen.

- The resident´s personal tutor appears to have a strong influence on improvements in the resident´s communication skills.

the questionnaire has been shown to have discriminative validity,[9,19] a fact which supports the validity of the results we report.

Another limitation lies, as noted earlier, in the *design of the cases* based on *standardized patients*. The results may have been influenced by the facts that the patients were not authentic and the interview conditions were not those of an actual clinical encounter. However, the characteristics of the experimental conditions favored appropriate interviewing: perhaps the most important of these characteristics were the availability of more time for the interview than under real conditions, and the absence of pressure to make a decision that would actually affect the person. Both these conditions have been used by us[19] and by other researchers, and have been found to be useful.[12,13,15,20-23] The clinical challenges, although differing in complexity, reflected real cases encountered in primary care; nonetheless it could be argued that a patient complaining of headaches generally produces more anxiety in the trainee physician that does a patient with backaches. In the case B pretest (headache), the residents might have been concerned with performing a more exhaustive physical examination and hence might have spent more time on the examination

than they used for the case B post-test (backache). However, this would not account for the their failure, in the post-test, to investigate associated psychosocial factors that deserved exploration in patients with back pain as much as they would have in patients with headaches.

It is important to recall that there was little variation in the overall scores across the three cases. Considering that we transformed qualitative assessments into quantitative information, the differences were nonetheless very small; although we believe this observation is of little importance per se, it is significant that the scores for certain items were worse at the end of the study, and that after a third year of training at the center where residents habitually practiced, we failed to find significant improvements.

It would have been interesting to measure the patients´ subjective impressions of, and satisfaction with, their physician´s interview style. One recent study found that the patient´s perception of the encounter correlated better with health outcome that did an observer´s assessment of the interview.[24] With regard to the evaluation of the impact of a given educational measure, although its influence is often clearly reflected in the patient´s degree of satisfaction,[12,15,25,26] it is more difficult to determine, with the instruments now available, whether the physician´s behaviors and skills change, or whether a specific measure has any actual repercussions on the patient.[27] However, well-designed studies are now appearing that demonstrate positive changes in practicing physicians[23,26,28,29] and residents.[12,15,30,31] And studies with medical students have reported a positive influence of certain techniques on basic communication skills.[20,22,32-34]

It is worrying that residents did not explore psychosocial aspects of the health problems that could have been assumed to have a psychosocial component, and which are frequent within the setting of the residents´ current and future practice. Also of concern is their failure to use communication skills known to be effective,[1] and their failure to initiate negotiations to at least try to evaluate the causes of a patient´s «inappropriate» or «surprising» demand. To judge from existing evidence, these failings are likely to affect the physician´s ability to detect and resolve clinical problems, and are also likely to detract from the quality of the physician-patient relationship. A poor physician-patient relationship has a negative influence on clinical tasks,[3,4,35] increases malpractice suits[36] and favors the inappropriate use of resources by both the patient[37] and the physician.[24] Because of the nature of the family medicine (ie, continuity and personalized care, familiarity, gateway to the medical system, and types of health problems encountered), this consideration is central to the basic technology involved in this clinical specialty: clinical communication. If the resident´s performance worsens as the time spent with each patient becomes shorter, and if these changes occur during the final year of training at health centers, the situation is worthy of careful analysis in-

volving many other factors in addition to those examined here.

One of the most interesting findings in this study is the high priority residents seem to give to time management. They assume an inherent time shortage and concentrate on improving this situation by the time they finish their training. One of the greatest worries of Spanish primary care physicians is the feeling that time is short and that the patient burden is large,[38] and this appears to be one of the messages that tutors transmit. We feel that this situation is the logical, albeit perverse, consequence of the excessive numbers of users assigned to primary care centers, and of an overburdened primary health care system. Because quality performance is related with spending more time with the patient, it is revealing that the preoccupation with time should create bad habits in clinical practice.

The residents´ attitude toward these topics is a further factor that might have influenced the results. The way the health care system is organized, and the procedure used to fill physicians´ posts, go a considerable way toward explaining the development of an «underground curriculum». The primary care system in Spain demands certain skills and knowledge sets to the detriment of certain others: posts are still filled mainly by multiple-choice examinations (or similarly structured procedures) that reward factual knowledge, and in which communication skills and consultation style count for very little. The system neither rewards nor penalizes practitioners who do not know how to attend to their patients´ personal needs, a skill that is more highly valued in predominantly private systems of health care and in public systems which include payment based on the number of patients actually seen, and which offer patients the free choice of physician. The nature of the current Spanish system conditions residents´ priorities and attitudes, especially in their final year of training, when they are most concerned with their future employment options.

An additional explanation for residents´ attitudes toward the clinical interview lies in the fact that the system for assigning residency posts forces a plethora of medical school graduates with little interest in family medicine to specialize in this branch of practice. Both younger residents and medical students appear to be more conscientious with regard to communication issues in comparison to residents who are about to finish their clinical training; the former also appear to be more sensitive to these issues, judging from the results of an earlier study[39] and from the findings of the present analysis, which found performance to correlate inversely with age. Training in communication skills should form part of graduate training from the first year.[4] As Smith and colleagues noted,[15] residents should first be trained in the key elements of their specialty, including clinical communication. The best approach, however, would be a program of structured training beginning in the first years of medical school, as in other countries.[4,6,40]

The previous training (in medical school and in earlier residency programs) that residents bring with them when they arrive at the health center is hospital-centered and disease-centered, paternalistic and physician-centered. Paradoxically, after this prior experience they are still better able to provide patient-centered care than after one year of contact with what in theory should be an additional phase of patient-oriented training and practice. The reason for this appears to lie in the fact that at the start of their rotation through the health center, residents are not yet aware of all the characteristics of the context in which family medicine is practiced. Once they become familiar with these features and come to feel comfortable in the family medicine clinic, they adopt behaviors learned at hospitals as well as those acquired at health centers. In fact, most family doctors display a disease-centered consultation style.[10] A sense of what matters is developed by—among other things—imitation of role-models.[41] In this connection we previously found that of all variables, the tutor had the greatest influence on residents´s training in interviewing skills.[42] However, further analysis of the difficulties tutors have in transmitting educational messages to trainees is beyond the scope of this discussion.

One positive finding this study revealed is that, judging from the agreement in scores, residents do not appear to maintain their consultation styles throughout the third year of training. In other words, those who score highest and lowest (ie, those who initially have a more or less strongly patient-centered style) at the beginning of the third year did not necessarily obtain similarly high or low scores at the end of this period. This finding suggests that at this stage in their training, family medicine residents do not yet have a rigid consultation style; in theory, external factors could induce positive changes. This is also supported by the fact that age correlated inversely with improved performance, hence the potential for changes in behavior may be potentially greater in earlier stages of training. The influence of the tutor was emphasized by the higher scores of residents whose tutors were sensitive to and well trained in interviewing skills. These two observations should orient future training strategies.

In conclusion, residents learn to shorten the duration of consultations at the expense of a decline in basic communication skills for the provision of appropriate patient care. These declines were most notable in the exploration of personal and contextual characteristics of the illness, and in negotiation skills. The variables that best predicted a good communication skills in family medicine residents were age (inverse correlation), duration of interviews, and tutor´s training in clinical interviewing. These results may be extrapolatable to residents in other clinical specialties, and suggest that substantial changes are needed in the training of residents in family medicine in Spain.

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ANNEX. GATHA-RES questionnaire items

Dimension 1 items. Attitudes/characteristics of the interviewer

1. Has the interviewer shown verbal evidence of awareness of the patient´s feelings, concerns (fears, etcetera) or perception of health?

2. Has the interviewer shown nonverbal evidence of awareness of the patient´s feelings, concerns (fears, etcetera) or perception of health?

3. Does the interviewer express himself/herself with confidence?

4. Does the professional make eye contact with the patient while he/she provides information?

5. Does the interviewer take the patient´s opinion into account at all times?

6. Does the interviewer allow the patient to ask questions or provide clarification?

Dimension 2 items. Communication tasks

7. Have the patient´s demands been identified during the exploratory phase of the interview?

With regard to the symptom or syndrome that has occupied the most time during the interview, have the following been identified?

8. Evolution with time

9. Localization

10. Factors that modify the symptom or syndrome

11. By the end of the interview, has information been obtained on how the symptom or process affects the patient´s daily life, social and family life-style, or employment situation?

12. By the end of the interview, has information been obtained on what the patient expects from the professional?

Among psychosocial aspects, has the professional obtained information on the following?

13. Mood

14. Stressful life events

15. Social and family environment

16. Has the interviewer provided information about the diagnosis, diagnostic procedure or patient's condition?

17. Has the interviewer provided information about treatment or other therapeutic measures the patient should take?

18. Has the patient expressed acceptance of the diagnosis or therapeutic measures proposed by the professional?

19. Has the professional urged the patient to come back if he/she considers this necessary?

20. Has the professional concluded the interview politely?

Dimension 3 items. Communication tasks

Has the professional used any of the following techniques to support the patient´s narrative?

21. Eye contact

22. Pointing

Has the professional used any of the following techniques to provide information to the patient?

23. Giving examples

24. Explaining how each therapeutic measure works

Has the professional used any of the following negotiation techniques?

25. Evaluative response

26. Exploration of beliefs

27. If the patient expresses strong emotions, has the interviewer shown emotional restraint?

COMMENTARY

To measure communication, that is the question

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Evaluating human communication is an extraordinarily complex process. Analyzing a two-way interaction—which most primary care consultations are—involves a wide variety of possibilities that require at least a minimum of systematization.

During the last three decades the clinical interview has been investigated in depth, as shown by the amount of information produced both in the English-speaking world[1] and in Spain. A clear example of such interest in Spain is the creation of research teams such as the COMCORD Group, whose members authored the study this editorial deals with.

The study carried out by Roger Ruiz and colleagues, who evaluated how the communication profile of residents in family and community medicine developed during a 1-year period, is based on three fundamental elements:

– Training in clinical interviewing.
– Multiple interviews with standardized patients.
– Evaluation of the interviews with the GATHARES questionnaire.

Training in clinical interviewing, although described succinctly in this article, is an element of capital importance. One of the best known studies in Spain is based on a biopsychosocial model that has been systematized in a semistructured interview that facilitates the exploration and resolution of a wide variety of situations in primary care. The development of a 20-hour course in clinical interviewing, although it facilitates the incorporation of different communication skills (especially those related with narrative support), has not determined how much influence such training has in situations involving real patients, or whether the changes in the trainee are maintained with time or tend to disappear. In the study that concerns us, it appears that instead of improvements in skills related with psychosocial exploration and negotiation with the patient, the opposite was seen, although in overall terms the differences were small and their actual impact on patient health is not known. Paradoxically, an earlier study in Spain with three programmed patients and a sample of 16 physicians reported results that in some aspects were the opposite: improved quality of communication at the expense of per-

- The present article discusses three major elements in research on clinical interviewing: training, designing interviews with standardized patients, and evaluation.

- The conditions under which primary care is provided incite physicians to use as little time as possible for each patient, and lead to worse outcomes in the exploration of psychosocial problems and in the physicians´ ability to negotiate with patients. The foreseeable consequences make appropriate corrective measures necessary.

- The role of the physician-tutor, who contributes knowledge, attitudes and training skills in clinical interviewing, is a decisive element in the final outcome of interviews performed by trainee physicians. This suggests that the training model used for future physicians should be re-examined.

formance on some tasks, associated with a selective loss of biomedical information which was not recorded in the patient´s chart.

Although the course on clinical interviewing included in the family medicine curriculum in Spain is recognized to be necessary, it may be insufficient to produce the desired changes. In this connection formulas for the teaching of clinical interviewing are being developed and applied (in the context of family medicine) which incorporate those elements of quality most widely accepted internationally, and that make it possible to identify, test and evaluate specific communication skills. This has been done through a process of prior training of tutors and the use of specific methods (videotaped recordings of simulated interviews, role-play with standardized patients, and structured exercises). One of the most successful of the different approaches is the analysis of actual interviews with problem-ba-

sed interviewing methods, in which the trainee physician receives intensive feedback centered on his or her training needs.[2]

Other teaching options for related areas of interest, some based on similar methods, have been used for several years to train family physicians and nursing professionals in Spain. Some relevant examples are the family interview, brief systemic therapy, emotional self-control, the motivational interview, problem-solving therapy, and a method to improve psychodiagnostic ability.

Work in Spain with standardized patients (actors trained to interact according to a series of set behaviors based on how the trainee physician acts) started within the context of courses in interviewing skills, and was further developed to evaluate medical students[3] and residents in family medicine, internal medicine and pediatrics. This approach has also been used to evaluate the clinical capacity of family physicians as a way to certify, in a clearly objective manner, their skills in history-taking, physical examination, interpersonal communication and chart notation. There is an active group of experts in Spain involved in the training of standardized patients, the design of instruments to evaluate clinical competence, and the implementation of these tools in field studies. The experience gained in these areas is helping to build a culture of evaluation of the care-providing skills of Spanish physicians (especially those in primary care) through the so-called Objective, Structured Evaluation of Competence (OSCE) (evaluación de la competencia objetiva estructurada).[4] In addition, a guide to the implementation of the ACOE instrument has been published by the Clinical Competence Training and Evaluation Group of the Health Studies Institute (IES, Institut d´Estudis de la Salut).

Although the use of standardized patients involves hard work (to train the actors, maintain an appropriate level of competence, and find the time and means to cover the costs), we now know that they are a key element in training with carefully controlled clinical situations. The well-designed, unvarying stimulus provided by a standardized patient makes it possible to compare performance in different professionals, and to establish standards for the quality of care.

Another point that merits comment centers on the use of an instrument that makes it possible to measure communication. Since the 1950s and 1960s, many instruments have been developed to evaluate clinical interviews from the standpoint of different explanatory models. Some instruments are aimed more at measuring cognitive elements, others aim to measure behaviors, and a minority are designed to analyze emotional aspects. In all cases the main question that must be asked regarding these testing instruments is whether they fulfil the requirements aptly summarized by Kraan et al.[5]: *a)* orientation toward an underlying interview-based model, *b)* well-defined communication skills and the methods used to measure them, *c)*

adequate interobserver, intra-observer and intercase reliability, shown before the instrument is used, *d)* documented content validity, *e)* well-designed items and scoring system, *and f)* usable for both training and evaluation.

The GATHA-RES questionnaire, developed from the earlier GATHA-BASE instrument (the subject of a PhD thesis by J.A. Prados) is one of the few instruments that, as a result of several years´ rigorous methodological work, satisfies all the above requirements.[6] The GATHA-RES questionnaire is now probably the most widely recommended instrument for evaluating clinical interview performance in primary care settings, particularly if formal communication elements are to be measured.

Finally, the main findings that Ruiz Moral, Rodríguez Salvador and colleagues report in this issue raise several questions: how long, on the average, should the interview last in order to obtain information on situations that are prototypical in primary care? Can a threshold duration be specified such that shorter interviews can be assumed to clearly diminish the quality of care? Although it might be felt that excessively short interviews lead to worse quality care, the present study in evidence-based medicine raises additional questions. In terms of clinical practice, how many excess errors would be made as duration of the consultation decreases? What would their associated patient morbidity and mortality be? What repercussions would the situation have on the physician´s health? How many new cases of chronic stress or *surmenage* (burnout), anxiety, or depression would appear? In economic terms, how much absenteeism results from constant time pressures and shortages? How many unneeded complementary examinations and referrals result from the desire to end the consultation on time? What are the real costs of this situation, in monetary and human terms? Ethical issues raised by the findings suggest a number of questions: Is it ethically censurable to work under such conditions? Who is responsible for their consequences? As regards health care management, who is responsible for changing the situation? Those firms that contract health services? Representatives of the colleges of physicians and medical associations? Scientific societies? The Ministry of Health, members of parliament, or those responsible for allocating the national budget? Perhaps the Public Ombudsman? Or none of the above? What about the World Health Organization? These questions will need to be answered by consensus among the responsible parties, if such can be identified.

Which variables in the clinical interview predict the best performance scores and the best outcomes? A study designed to compare groups of interviews in which specific items related with communication skills were included or omitted might provide relevant information.

In view of the decisive influence of the tutor´s profile on learning communication skills, it would be useful to discuss the features of the most useful program possible for

training the trainers in clinical interviewing, in the light of previous experience in this area within the Spanish Society of Family and Community Medicine. Our current knowledge about different methods of training in clinical interviewing (in both undergraduate and graduate education) brings to mind the question: which method would yield the best results when evaluated a posteriori with (for example) the ACOE instrument or standardized patients?

Several studies have noted the importance of a contextualized approach to patient´s demands during consultation; the results of such of an approach are increased patient satisfaction, compliance with treatment, and better health outcomes for some chronic diseases. However, two studies based on a survey of patients and physicians, published in ATENCIÓN PRIMARIA by Torío Durantez and García Ti-

rado, found that an approach based on the consulter´s experience appeared not to be relevant, whereas maintaining a good relationship with the patient and providing quality information were found to be important.

Undoubtedly, both visions contain some truth; the findings probably reflect as many factors as there are types of patient, and the prevailing culture of medicine (eg, the health care model used, availability of resources, time per interview, prior training, and expectations of those involved in the consultation). Further studies are needed to identify (as far as possible) which patient profiles and which physician profiles would benefit the most from the patient-centered or the physician-centered approach. It should not be forgotten that the key issue lies fundamentally in obtaining both objective and subjectively perceived results for health.