

The Effect of Continuous Education on the Professional Practice of French Community Pharmacists

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In order to maintain a high quality pharmaceutical system, pharmacists should be engaged in continuous education. The purpose of this study is to evaluate the impact of a continuous training scheme on pharmacists' practices concerning the validation of prescriptions. We used an educational methodology, through exploratory talks and literature on this issue, to build an adapted questionnaire. Results show: (1) a potential improvement in the relationship between pharmacists and physicians; (2) the pharmacists' awareness of their essential role for the prevention of iatrogenic risk; (3) a better use of the software tools (concerning drug interactions); (4) a better communication with the patient, however, that still needs further improvement. Beyond these results, this study opens up perspectives concerning continuous education for the pharmaceutical knowledge of pharmacists, and also on improving behaviour with patients.

Keywords: Community pharmacy; Continuous education; Evaluation; Patient education

INTRODUCTION

Health care systems are currently experiencing an evolution. Questioning mandatory continuous training appears to be a political issue for pharmacists in France at present, and training pedagogy has to be adapted to specific objectives and to professional practice. The quality of care involves several types of good practice, such as research practice, clinical practice and care practice. In hospitals, medical teams often try to keep track of the way the patients take their drugs (Noirez *et al.* 1998) and to improve their medical compliance. This is not always true for

patients going to a community pharmacy; they sometimes have to find information about their medication by themselves. This situation shows how important the counselling role of the pharmacist remains, in order to improve patient education.

The French Health Care Code confirms the technical and scientific role of the community pharmacist. The role of the pharmacist involves listening, counselling and explaining the pathology and the treatment prescribed. Particular emphasis is on the action of each drug, administration mode, potential adverse reactions, medicine interactions to avoid, precautions in use and how to compensate for noncompliance. (Williford and Johnson, 1995; Caulin, 1998; Jacquemet and Certain, 2000). All these recommendations involve the pharmacist, as well as the physician, in the prevention of therapeutic iatropathology. The question raised now, concerns "added value" of the pharmacist for the patient.

In order to optimise his role, the pharmacist should be implicated in adapted continuous education. We set up a continuous education scheme called ORDOQUAL^{®†} in 1991, within the Clinical Pharmacy Service of Grenoble University. This training offers the opportunity for community pharmacists to focus on patient drug supply. Its aim is to improve the detection of drug interaction, pharmacological analysis and appropriate management, through prescription validation. The course lasts two days and includes questionnaires, briefing and role-play, allowing participants to exchange ideas and share their professional experience. The training has already been followed by around 2000

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pharmacists and eleven years after its initiation, the perception of this training is always as positive, especially through the improvement of knowledge by a didactic and interactive method. The aim of this study was to explore which aspects concerning the practice of pharmacists, were improved after this training.

MATERIALS AND METHODS

An Educational Approach Through "Referentialisation"

For this project, we applied a methodology used in Educational Sciences, called "referentialisation". Referentialisation is an evaluative approach described as "the research of pertinent references, able to explain and justify the conception and evaluation of an educational set-up" (Figari, 1994). We built a "referential", that included several references (bibliographical and contextual, combined with thematic and qualitative information collected through exploratory talks), in order to find the characteristics of our research object and to build the most pertinent evaluation instrument. At the beginning of this referentialisation approach, three pharmacists were randomly chosen for exploratory interviews. These interviews were semi-structured and included questions concerning the role of the pharmacist, the future of the profession, continuous education and effects of this training on their practice. The interviews were recorded and transcribed, to allow for a thematic analysis (Bardin, 1996). Table I gives the main thematic ideas regarding pharmacists' views of their profession.

The characteristic themes of these talks were selected and included with the bibliographic and contextual references to allow for the construction of relevant qualitative criteria, linked to quantitative indicators. The referential in Table II must be read according to these chronological stages.

According to the indicators selected, we constructed a questionnaire, with 19 questions (available upon request). This questionnaire was used twice: once at the beginning of a two-day training ("input" questionnaire), and a second time, one month later ("output" questionnaire).

RESULTS

The main results are presented in Table III, describing the outcomes of the questionnaire, before and after the two-day training course. Not all the questions were selected for this article, only those addressing the main indicators of the 3 criteria (adaptability, relevance and coherence). This was done in order to facilitate reading and

comprehension of the table (complete data is available upon request).

DISCUSSION

The purpose of this study was to show the impact of a continuous education scheme on knowledge and practice of community pharmacists. Before interpreting the results, several points should be considered. Firstly, the small sample of pharmacists does not allow for statistical analysis of the results, only for an exploratory description of findings. However, the qualitative results could be confirmed by a larger study, including different items, such as social and professional categorisation of the pharmacists' working environment, type of practice, type of organisation and number of collaborators.

In addition, the pharmacists included in this study presented with a specific profile, already being involved in continuous training, so the results indirectly include their motivation. The type of methodology chosen (a questionnaire study) unavoidably limits the results of the study, and could be complemented with observations and qualitative analysis on larger populations. It would be interesting to know under what conditions the pharmacists answered the "output questionnaire", as they were not in training conditions (contrary to the "input questionnaire"), and no longer anonymous. Concerning knowledge, the time frame was probably too short to be conclusive so it would be interesting to complete these results with a longitudinal study. Furthermore, the results above are what pharmacists declared and not necessarily what they actually do.

One of the implications of the study results regards the potential improvement of the relationship with the physician. Pharmacists do not always feel comfortable with calling the physician when they detect an inadequate prescription. It is too early to reveal if continuous training can effectively change and improve this relationship, but it appears that most of the pharmacists in the study became aware that the iatropathology risk is real and that their prominent part is to participate in its prevention. We demonstrated this through the following: the pharmacists' creation of more history sheets, describing the patient's drug history and physio-pathological context; a better detection of pharmaceutical interactions; a better technical knowledge of these interactions; better research for information; better use of the software (various degrees of interaction detection, adapted to the knowledge of pharmacists or of their collaborators).

Communication with the patient, however, needs to be improved. Pharmacists ask more

TABLE I Leading items mentioned by pharmacists

Mentioned Items	Interviews*		
	1 Female 30-40 years old, Elderly patients, 2 collaborators	2 Female 40-50 years old, Low social status patients, 3 collaborators	3 Male 40-50 years old, Elderly and/or Low social status patients, 13 collaborators
		How often the item is quoted	
Administrative overload	0	1	11
Commercial aspect	2	15	5
Communication and patient counselling	4	13	10
Communication with other practitioners	0	7	4
Dispensation	8	4	1
Identify loss of the pharmacist	0	5	0
Interest scientific knowledge	1	12	6
Memorisation	0	13	1
Organisational problems	2	7	12
Pessimism	0	0	2
Power	2	0	2
Professional discrediting	3	0	4
Professional methodology	0	3	5
Professional scientific evolution	3	6	3
Recognition and valorisation	2	3	7
Social help/sanitary education	1	4	2

*Pharmacist and type of pharmacy consulted.

TABLE II Referential

References	Characteristic Themes	Criteria	Indicators
Contextual	C.S.P.* The Vidal® [†] • Continuous education • "Haut Comité de la Formation Continue" [‡] Therapeutic iatropathology	Adaptability [†] Pertinent intervention, at the right moment Easy implementation of the learned concepts	→ Number of dysfunction detections [†] on new prescriptions in real time (/day) → Time to find a piece of information in real time
Bibliographical	• Medical audit • W.H.O. • Specific surveys The "referentialisation" Items of Table I above	Relevance [‡] Software information use Research for information efficacy Behaviour relating to information management	→ Number of "interaction" messages read and managed (/day) → Time to find the adequate information → Percentage of prescriptions including correctly managed interaction(s)
Exploratory talks		Coherence [#] Ability to validate prescriptions	→ Percentage of prescriptions delivered without a clear understanding of the therapeutic aim(s) → Percentage of prescriptions delivered without any question and/or counselling → Number of continuous training sessions followed (/year)

*Code de la Santé Publique[®]; a legal reference. [†]Pharmacist capacity to manage a new situation. [‡]Concerning contra-indications, medical interactions and posologies. [§]French committee, able to judge the quality of continuous training. [¶]Globalisation of the professional act. [‡]According to the scientific references.

TABLE III Major links between criteria, indicators, questions, and answers

Criteria	Questions	Responses	Input (15/21)	Output (15)
Pertinent intervention (A*)	Do you regularly create a pharmaceutical history file (on your computer or elsewhere)?	Yes No	2 13	6 9
Research for information efficacy (R [†])	What is your reaction to a computer alert, in case of medical interaction?	Questions to patient Consulting literature Patient counselling Phoning the physician No reading of the alert message <i>Total</i>	10 7 4 10 2 33	13 9 7 12 1 42
Behaviour relating to information management (K)	If there is a computer alert, why don't you read the message?	The prescription has been delivered once I know about interaction(s) It takes too much time I don't understand the message	8 8 5 4	7 12 4 2
	Comment on a prescription [‡]	Understanding of the pharmacological mechanism of interaction Knowledge of narrow range drugs Correct attitude into account chronology of fenofibrate and fluvindione introduction Patient counselling	0 0 0 6 0 9 0 16	11 3 2 3 3 9 2 33
Ability relating to prescription validation (C [†])	Do you sometimes deliver a prescription without asking any questions?	<i>Total</i> Yes No	 10 5	 6 9
	Do you always ask if the patient takes something else than medicines mentioned?	Yes No	5 10	9 6

*Adaptability. [†]Relevance. [‡]This question concerns the comment of a prescription including interaction between fenofibrate and fluvindione. [§]Coherence.

questions to the patient, in order to limit major risks, called "critical points", around dispensation (interactions, contra-indications, dosage, etc.). However the real attitude of the patient, alone at home with his drugs, remains uncertain. Pharmacists seem more careful when facing a prescription delivered for the first time. They often consider that a renewed prescription is less important. It would be interesting in future courses to encourage pharmacists to be more attentive to the apparition of iatrogenic effects and dosage, clinical and biological monitoring.

Beyond these results, this study opens up perspectives concerning, on one hand, continuous training for the benefit of pharmacists' pharmaceutical knowledge and on the other hand patient education and its improvement by understanding the community pharmacists' role (Chewning and Schommer, 1996). What are the patients' expectations concerning educational messages? The patient's education is at the interface of educational and medical sciences (O.M.S., 1998; Assal, 2000; Deccache and Meremans, 2000).

References

- Assal, J.-P. (2000) "L' éducation thérapeutique du patient: le projet OMS et les applications pratiques", *Bulletin d'éducation du patient* **19**, 14–16.
- Bardin, L. (1996) *L'analyse de Contenu* (PUF, Paris).
- Caulin, C. (1998) "Information, Education et Accompagnement du patient", *Bull. Acad. Natl Méd.* **182**, 1407–1414.
- Chewning, B. and Schommer, J.C. (1996) "Increasing clients' knowledge of community pharmacists' roles", *Pharm. Res.* **13**(9), 1299–1304.
- Deccache, A., Meremans, P., *et al.* (2000) "L'éducation pour la santé des patients: au carrefour de la médecine et des sciences humaines", In: Sandrin-Berthon, B., ed, *L'éducation du patient au secours de la médecine Biennales de l'éducation* (PUF, Paris).
- Figari, G. (1994) *Evaluer: quel Référentiel?* (De Boeck Université, Paris, Bruxelles).
- Jacquemet, S. and Certain, A. (2000) "Education thérapeutique du patient: rôles du pharmacien", *Bull. Ordre* **367**, 269–275.
- Noirez, V., Protas, B., Monfort, P., Commun, N., Labrude, M. and Hoffman, M. (1998) "Conseil pharmaceutique aux patients ambulatoires à l'hôpital", *J. Pharm. Clin.* **17**, 160–168.
- O.M.S. (1998). Therapeutic patient education. Continuing education programmes for health care providers in the field of prevention of chronic diseases. Report of a WHO working group, WHO Regional Office for Europe.
- Williford, S.L. and Johnson, D.F. (1995) "Impact of Pharmacist Counselling on Medication Knowledge and Compliance", *Mil. Med.* **160**, 561–564.