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Interactions between radiofrequencies signals and living organisms

Medical practitioners and electromagnetic fields (EMF): Testing their concern

Médecins de ville et ondes électromagnétiques : étude de faisabilité

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ABSTRACT

Health and environment (H&E) crises proliferate. In some cases, medical practitioners are involved. Legitimate as concerns social issues, they are often invited to contribute to local discussions. More recently, medical doctors (MDs) have organized themselves within local then national non-governmental organizations (NGOs). Close to citizens in issues concerning health, they are increasingly questioned by their patients on various other issues, including electromagnetic fields (EMF). Research has shown, however, that their knowledge about H&E issues is poor, although their opinions carry weight. In view of these previous studies, it appeared to be useful to conduct a quantitative survey of MDs to assess their understanding of EMF, taking into account the pragmatic context of their practice and of their constraints.

RÉSUMÉ

Les crises en santé et environnement se multiplient. Dans un certain nombre d'entre elles, des médecins se sont impliqués. Leur légitimité sociale les fait alors bénéficier d'une écoute particulière. Récemment des médecins intéressés par ces sujets, se sont organisés au sein d'associations locales, puis nationales. Acteurs de proximité de la santé, ils sont, de plus en plus, interpellés par leurs patients sur des sujets comme celui des ondes électromagnétiques (OEM). Différents travaux ont montré que leurs connaissances en santé et environnement produites par des scientifiques étaient très lacunaires, pour autant ils sont écoutés par leurs patients. Sur la base de ces résultats, il est apparu intéressant de préparer une enquête quantitative auprès des médecins sur le sujet des OEM en tenant compte de leur contexte concret de pratique et de leurs contraintes.

1. Introduction

Crises and questions about health and environment (H&E) issues proliferate. These issues are increasingly mediatized, and the social movements organized around them by activists and non-governmental organizations (NGOs) are often publicized at both national and local levels.

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Industrial activities are regulated by a strong formalism designating the parties involved in the development of a project and giving central stage to administrative paperwork. This type of institutional structure frequently leads to radicalism, because there is little opportunity for NGOs or citizens to be integrated into the decision-making process. Social demands are unlikely to be taken into account unless founded on sound arguments, for example threats to health. Some of our research [1] investigating H&E crises has shown the increasing presence and, thus, importance of medical practitioners when they become involved in such social movements. Their social legitimacy leads them to be invited to contribute to local negotiations.

Under pressure from international treaty obligations, social and political governance is intensifying across many spheres of activity. These processes concern institutional actors or stakeholders, but not medical practitioners, who are generally excluded. Some French MDs who have been involved in movements have organized themselves into NGOs [2] so as to engage with institutional and political debates at national[1] or local levels; the aims were to present arguments about the health of individuals and to be able to sound the alarm (whistle blowers). However, few MDs are genuinely active and involved in these associations, although in some cases, large numbers sign petitions, as for example, in the cases of a community waste incinerator in Clermont-Ferrand [3]. However, their actions may be reported by the media and thereby contribute to the general debate about health and the environment or discussions of specific issues such as EMF.

Previous research (Salomon, [1d]) has shown that medical practitioners' attention can be drawn to these matters by their own concerns, media outlets, patient complaints or requests for information or guidance.

Although health is their core competence, very few practitioners are interested in H&E issues. However, they have recently shown the importance in many countries of their opinions and the weight given to their profession, as concerns some unanticipated issues, such as swine flu or influenza A. They have not been considered by health authorities as an institutional partner for negotiation, but they have shown their power, for example, to block vaccination policy. In addition, during a consultation, it is easy for patients to ask for or suggest hypotheses about the cause of an illness or a source of discomfort. Physicians are both socially and professionally a legitimate group to address questions of anxiety about health. Patients are increasing turning to physicians for this purpose.

The content of their medical training does not, however, prepare physicians with knowledge of scientific studies. Their knowledge is produced by scientific experimentation, but their core competence is developed through practice with both their patients and teachers. This contrasts with the epidemiology, science and scientific results that are the basis of political and administrative decisions and public policies. The collective vision of risk is not necessarily the same as the individual vision of risk: medical practitioners are key actors in the articulation between the two, although each of them has his own view. Their individualism has to be considered in the global analysis and understanding of their interventions in H&E issues. Medical practitioners, in other words, are lay persons just like their patients and elected representatives, but their collective self-image and social representation give the appearance of "knowledgeable people" or experts (*sachants*).

A survey in Austria [3] of general practitioners has shown that many patients ask about the health consequences of electromagnetic pollution and more than 95% of MDs questioned "to some degree, or totally, believe in a health-relevant role of electromagnetic fields". This study also revealed the only very marginal role played by health authorities in informing physicians.

The French National Institute for Health Education has lately enlarged its survey of general practitioners by introducing a specific investigation about H&E. Several studies have shown that MDs know very little about many of these issues, and, in particular, air pollution [4], despite the various campaigns and documents issued by health authorities and aimed at MDs. Their concern about danger of waste incinerators, for instance, increases when there is a local crisis [5].

Mobile phones and masts raise many questions and provoke anxieties all over the world. Each country has developed political responses and regulatory regimes adapted to their context [6]. The various relevant pieces of research demonstrate the increasing importance of MDs as concerns the issue of electromagnetic fields (EMF). This previous work led to the idea of surveying MDs in France about this particular issue.

This article is not a research report, but considers the *feasibility of a quantitative survey and the possible questionnaire to be used in any such survey.* The work is based on previous research, concerning both the involvement of MDs in H&E crises and their recent contributions to H&E issues as well as work on EMF. The objective of the potential quantitative survey would be to document the practical context, knowledge, information, and problems of MDs and the *answers they give to patients* [7]. *Their willingness to engage in medical training programs*, as well as the content of such programs, is also examined. A qualitative preliminary study, involving several interviews and a working group, has been conducted to develop a questionnaire and to evaluate potential problems that may accompany any such intervention. The present article is the descriptive result of this work and presents the hypotheses from which the questionnaire has been elaborated.

2. Practitioners and health and environment

With two exceptions, the involvement of MDs in the issue of H&E is recent. These exceptions are Hippocrates' principles, cited by doctors currently involved in such H&E issues, and the hygienist movement in the 19th century.

[1] The "*Grenelle de l'Environnement*" organized to address various environment issues, including H&E issues, did not include MDs in the debates.

There are a large number of medical practitioners in France (about 190,000 have diplomas from a Faculty of Medicine and are registered with the French *Conseil de l'Ordre*). About 110,000 practice and 60,000 are general practitioners. Although the universities deliver a common core of knowledge, the profession is characterized by substantial heterogeneity.

Numerous factors contribute to this situation. This phenomenon is emphasized by the fact that most medical doctors are self-employed and, as individuals, define themselves through the freedom resulting from their independence of practice. Nevertheless, there is a current trend towards physicians forming groups and being employed. Being a doctor in private practice allows the freedom of choosing who you are, and how and when you practice. There are many factors contributing to the diversity of approaches to medicine and medical practice: working in a large city or in the countryside, alone or in a group practice, regularly, or not, attending professional training, working, or not, in a specialty, in a hospital or in general practice, additional practices, age, integration or not into a network, political commitment, participation within communities, governments, philosophical beliefs, and many more.

These elements can interact and explain the large diversity of knowledge, forms of practice, and objectives medical practitioners give themselves as professionals, as well as of attitudes concerning the relationships with patients. Indeed, such relationships range from purely technological approaches, using Evidence-Based Medicine, to care for individuals taken in their whole personal context.

This variety is pertinent to the MDs' interest or concern about EMF and perception of risk, and also to the advice they give to their patients, their own behavior and the way they learn and build their knowledge and therefore their behavior towards professional training.

3. How do questions about electromagnetic fields arise during consultation?

MDs overwhelmingly use cell phones and they have greatly facilitated their professional lives. However, the various interviews and working sessions reveal that EMF is a problem when raised by patients.

The question is paradoxical: MDs are as just like lay people, their patients, as concerns this issue. They raise the same questions and do not have access to more accurate information. They are not, therefore, in a position to play their usual role that can be described as to: reassure, answer questions, give practical advice, cure, take into account the various aspects of their patients' lives, integrate the consequences of their prescriptions, provide care, avoid harm, etc. They, therefore, can only resort to good sense, experience and their own personal overview of heterogeneous pieces of knowledge. The positions taken by MDs are therefore numerous and depend on their own situation.

Generally speaking, the questions they are asked are still rare and very general. They may be more precise or associated with more anxiety when mothers and children are concerned, and these questions are addressed to pediatricians or gynecologists but tend to concentrate on cell phones rather than on masts.

Two types of questions are common: those related to a general anxiety either about electromagnetic pollution or about the proximity of cell phones to the brain, and those asking for confirmation that using cell phones is harmless.

4. Medical doctors accompany their patients' doubts

There are various factors explaining why physicians are particularly likely to be convinced that there is a remaining doubt about the safety of cell phones:

- The issue is not central to their practice, so they do not make the effort to know more about it;
- With no specialist or expert knowledge, they are lay persons who only receive general information;
- Unless they are very motivated, they do not know about the official websites of national or international health authorities or agencies;
- They are more sensitive to media reports of judgments about masts than to international or national scientific knowledge and reports;
- Their past experience includes many examples of radical changes or evolutions: medications that were suddenly considered to be dangerous after a long period of prescription, changes in advice, for example about infant nursing, discontinuation of vaccination programs by the authorities (Hepatitis B), etc. These events tend to raise doubts about and distance from scientific knowledge;
- Practitioners practicing alternative medicine in addition to allopathic approaches are more likely to perceive higher risks;
- In addition to cancers, and other serious and chronic disease, physicians are sensitive to the many health discomforts reported by their patients.

Given these elements, it is easy to understand why there may be insufficient long-term knowledge and consequently amplified doubts about the health consequences of EMF. This may be further emphasized by the desire of MDs to give simple and pragmatic answers to their patients.

This attitude leads to MDs advising the use of measurement equipment, ear plugs, not keeping the phone near the bed, etc.

5. Disconnected with the institutional scope of scientific knowledge

Other than issues concerning their routine practice, MDs in France are independent of the government and the authorities. The official information published by the Ministry of Health or Health authorities or agencies about EMF, air pollution or municipal waste incinerators are not diffused to or through MDs. They are only recipients of public health campaigns, such as those addressing early screening tests for some cancers, seasonal flu or chronic diseases. Although recent issues, particularly H1N1 flu and nutrition, are new topics involving substantial diffusion of information, no budget is allocated for MD training in H&E issues. This is despite the second H&E National Program and the explicit necessity of developing training efforts for various concerned parties, particularly health professionals.

Furthermore, physicians do not constitute a source of feedback information. Their acts, their practice, their documentation (for instance, concerning any intolerance to EMF) remain confined to their offices.

Their knowledge is therefore more the result of their personal interest and efforts than of their initial knowledge or relevant professional training.

6. Professional training

There are many obstacles to appropriate professional training concerning matters that are distant from the core practice of MDs. In France five main forms of training are offered. First, university or inter-university graduation, but at the time of the present study, only one focused on H&E, and had fewer than 20 participants. Second, conventional professional training for which MD's receive financial compensation, but this requires official authorization according to a specific process and to date, no H&E training whatsoever has yet been officially approved. Third, training offered by private associations, but no program dedicated to H&E has yet been organized, although some projects are in development stages. Fourth, clubs of MDs organize, generally on a localization basis, conferences or dinners addressing a common issue or issue of interest; this depends on the initiatives, contacts and networks of MDs themselves. Some such events have taken place, but they are not publicized and, therefore, it is difficult to identify them. Finally, some doctors or institutes periodically organize conferences or professional training on scientific issues for MDs; note that most such events are aimed at occupational MDs.

There is one further problem confronting professional training on these topics: there is substantial pressure on physicians' time. Their agenda is overscheduled, they are frequently overworked. Therefore, they are selective about what they will devote time to (their direct center of interest, new skills to learn or knowledge to acquire).

7. The content of training: health, environmental medicine or practical advice?

Even if professional training could be organized and MDs were willing to attend, it would be difficult to determine the appropriate content of such training for various diverse reasons: the uncertainties that characterize H&E issues; the broad spectrum of professional commitments; the initial knowledge of attendees, the specialties of the MDs and in particular the practice of alternative medicine; and the vast scope and complexity of H&E issues and scientific knowledge.

MDs' NGOs provide oriented knowledge whereas physicians require practical approaches that are straightforward to learn and to deliver to their patients. Indeed, it is difficult to provide knowledge about uncertainty appropriate for the doctor who wants to reassure the patient or for the patient who wants to be reassured. Other issues concern where to start, where to stop, and how to allow the possibility of deepening and/or renewing knowledge according to the progress of scientific research.

It is unclear who could compile and deliver the content of such training, and who would be legitimate for everybody as H&E issues are characterized by controversy.

Reliability of information is a key point of initial education but also of H&E. A critical approach is at the heart of what is taught at university, where documentary research is combined with the rules for appropriate selection: identification of sources, precise scope, identified author/s, conflicts of interest, precise methodology, etc. The rules and principles, in other words, of normative or procedural methodology, take the place of the content. MDs tend to retain this critical approach, although this leads to a variety of convictions and beliefs rather than to knowledge.

8. Presentation of the questionnaire

The aim of the questionnaire was to be as extensive as possible but still acceptable to busy practitioners. The main items concern the questions raised by patients and by physicians themselves, the way physicians seek information, their trust in the various sources of knowledge, the answers they give to patients and the professional training they expect. Given the diversity of MDs, general questions about their location, the form or specificity of their practice, their age group, etc., would help describe the population.

The questionnaire, which provided the opportunity to work with interested MDs, has been elaborated with the aim of being both as exhaustive as possible and feasible within a time that can be accepted by MDs in the context of their work. It is a prototype that requires testing prior to its application. The questionnaire is given as an annex of the original report and is available on request.

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