

Occupational Physicians' Attitudes and Practices in Relation to Occupational Cancer Prevention

A Qualitative Study in Southeastern France

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We conducted a qualitative survey of 20 occupational physicians (OPs) in southeastern France in 2008 to study their attitudes and practices regarding the prevention of occupational cancers. Occupational physicians' practices regarding occupational cancers centered mainly on prevention. Numerous difficulties impeded these activities: attitudes that minimized the carcinogenic risks by employers and employees, the absence or inadequacy of mandatory risk assessment to identify health hazards, and difficulties in obtaining individual exposure forms, which employers are supposed to complete to identify employees exposed to carcinogens. Other problems were related to the resources available to OPs and the constraints on their time. Finally, some OPs reported that they lacked self-efficacy. The results of this study suggested the need to strengthen OPs' initial training, draft and adopt good practice guidelines for various aspects of their practices, and improve collaborations between OPs and other professionals specialized in the prevention of occupational risks. *Key words:* occupational health services; occupational physicians; occupational cancer; prevention; practices; attitudes; barriers; France.

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INTRODUCTION

In France, mortality from cancer has increased to the point that it is now the leading cause of death, ahead of cardiovascular disease.¹ In the US, on the other hand, cancer mortality and incidence both appear to have diminished slightly at the beginning of this century.² Approximately 5% of cancers in Europe are thought to be of occupational origin, that is, the direct consequence of a worker's exposure to physical, chemical, or biological risks.^{3,4} In 2003, in France, the proportion of employees thought to be exposed to one or more carcinogenic products in a one-week work period was estimated at 13.5%.⁵ The prevention of occupational cancers was recognized as an important priority by the French government only recently, in the Public Health Act of 2004 and in the first occupational health plan launched in 2005. Nonetheless, French occupational health regulations have furnished tools to help prevent occupational exposure to carcinogens for several decades, and these have grown stronger over time (Table 1). In particular, all employers are required to inform their employees of these risks and how to prevent them, to train them in safety measures and safe work methods, to assess the risks (Table 1) present in the company, to establish an individual exposure form for each employee exposed to carcinogens at work (Table 1), and to implement prevention measures. These measures might involve the replacement of carcinogenic products by noncarcinogenic items or other protective measures, collective or individual.

National regulations currently define the occupational physician's (OP) role as an advisor to both the employer and employees. In France, there are now about 7000 OPs; about 70% of them are trained in occupational hygiene during their specialized residency. Only private sector employees are routinely monitored by OPs, but some public sector workers, such as public hospital employees and local government employees, are also occasionally monitored. Contrary to practices in most other countries, OPs are in charge of monitoring workers' exposure and assessing each workstation to identify the hazards and assess the risks (Table 1).⁶ they are required to devote 150

TABLE 1 Tools for Screening and Identifying Exposures to Carcinogenic Substances

Tools/Methods	Function	Supervision	Method of Implementation
Labeling	The labeling is the initial information, essential and concise, furnished to a user about product hazards and about precautions for their use.	Manufacturer	The label of a chemical product must include: one or two danger symbols; the name, address, and telephone number of the manufacturer, importer, or distributor; the name of the product; the name of substances required to be placed on the label; the type of risks; instructions for safe use.
Material safety data sheets (MSDS)	The document furnishes important product information for a given chemical about the dangers to human health and the environment associated with its use, as well as indications on means of protection and measures to take in case of emergency.	Manufacturer	The MSDS must include 16 mandatory items. The manufacturer, seller, or importer of the chemical product concerned must furnish its MSDS to the plant manager or independent worker. Then, the plant manager must transmit it to the occupational physician.
Risk assessment	Risk assessment is a process of assessing all the risks and dangers for workers' safety and health in the workplace.	Employer	Risk assessment includes several stages: the identification of risks, people exposed, and conditions of exposure; the ranking of risks; the measures of prevention to be established, their priority and their implementation. This assessment must be revised regularly, especially when the work process changes.
Risk assessment and employee safety plan	The results of the risk assessment must be recorded in this document. It serves as the basis for the development of an annual plan to prevent occupational risks and ensure safe working conditions, including lists of actions to be taken to reduce occupational risks.	Employer	This assessment plan must be updated annually or during any change in work practices. Failure to draft it makes the employer liable for criminal penalties.
Individual exposure form	This form makes it possible to identify employees exposed to carcinogenic products. It includes the name of the product or products used, the type of work performed, and the period of exposure to the product.	Employer	For each employee on the list of exposed employees, the employer must create an exposure form. It must be updated annually. This form must be transmitted to the occupational physician, who stores it in the employee's medical file.
Workstation studies	Study of the needs and constraints of a specific workstation/job. It involves determining the profile of medical fitness as a function of the risks and requirements of the job and formulating guidelines to improve or adapt working conditions.	Occupational physician	The Labor Code requires an occupational physician to study the workstation of a worker before determining that the worker is unfit for the job.
Company form	This form records all occupational risks in a workplace and the number of employees exposed to them	Occupational physician	The occupational physician draws up and updates the company form. This form is then transmitted to the employer. It is presented to the hygiene, safety, and working conditions committee.
Certificate of non-contraindication	This certificate states that there is no medical contraindication to work involving exposure to agents that are carcinogenic, mutagenic, or reprotoxic (CMR).	Occupational physician	Before assignment to work involving exposure to a CMR agent, the occupational physician is required to complete a certificate that there is no medical contraindication to this work.

TABLE 2 Characteristics of the Sample of Occupational Physicians Interviewed during the Qualitative Study (n = 20)

Physicians' Characteristics	Number of Occupational Physicians Interviewed
Sex	
Men	6
Women	14
Department	
Outsourcing provider	12
In-house	8
Industry/sector	
Construction	3
Agricultural	2
Health (research, medical)	4
Chemistry, petrochemical	2
Tertiary services	2
Other	7
Total	20

half-days of their working time to such tasks. They are also responsible for medical visits, also mandatory, to monitor the health status of job candidates before hiring and of employees throughout their work life. Occupational physicians must help the employer seek noncarcinogenic replacement products or processes, as well as draft and update the mandatory company risk report that lists the risks in the workplace (Table 1) and the annual employee safety plans intended to determine prevention activities. They also provide employees with information and training in cancer risk prevention. Occupational physicians are not authorized to treat patients nor to write prescriptions. The French Labor Code regulates the organization of occupational health services (OHS) in the workplace. Large companies (those with more than 250 employees) must themselves organize the monitoring of their employees' health, with the head of the company ultimately responsible for ensuring provision of OHS, and the OPs are company employees. Most companies, however, purchase OHS from an independent contractor, that is, they outsource their OHS duties to a business supplying these services. Such outsourced OHS providers, like in-house units, employ OPs to provide monitoring for numerous enterprises. We will generally refer to them as OHS contractors.

Although OPs have an essential role to play in cancer prevention, there is little documented information available about their knowledge, attitudes, perceived role, practices in this domain, or the obstacles they meet. We used the key words "occupational physician," "prevention," "carcinogenic substances/products," and "attitude/knowledge/behavior/practices" to search the following databases: Medline, Web of Knowledge, Science Direct, SocINDEX, and Psycinfo. No French study, and very few in other countries, were found on this subject. A Finnish study showed OPs' dif-

ferent attitudes towards the officially required certificate of fitness for work in an environment exposed to carcinogens.⁷ A similar certificate is required in France, where its official name is "certificate of the absence of contraindications to exposure to carcinogens" (hereafter referred to as the "certificate of non-contraindication") (Table 1).

We therefore conducted a qualitative study to explore: (1) the knowledge, attitudes, perceived roles, and practices of OPs in relation to occupational cancer prevention; and (2) the obstacles to these preventive practices, as perceived by the OPs.

METHODS

Population

Twenty OPs were recruited in southeastern France through telephone solicitations and word-of-mouth. We deliberately tried to recruit a group diverse in their demographic characteristics, type of employer (in-house or OHS contractors), and industry (Table 2).

Data Collection and Analysis

Two psychologists used a semi-structured interview outline to conduct in-depth face-to-face interviews (n = 20). The instrument was intended to explore a wide range of potentially relevant issues regarding prevention of occupational cancers and was drafted with the assistance of two OPs, one an expert in occupational prevention; two psychologists; and a senior research psychologist. It covered, in particular, an analysis of OPs' perceived role: that is, whether they saw themselves as facilitating prevention in the strict sense of the word or involved more generally in early screening and evaluating workers for compensation; their attitudes (in particular, as related to the certificate of non-contraindication); their self-efficacy; their practices; and perceived difficulties (Table 3). Although the instrument was prepared to ensure that the same themes were studied in each interview, there were no predetermined responses, and participants were encouraged to talk freely. Data were collected from April to July 2008. The interviews lasted 60 minutes on average and were all audiotaped with the OPs' consent and later transcribed verbatim.

The two psychologists analyzed the subjects' words according to thematic content. They followed three steps for each transcript: (1) an initial coding was performed to identify emerging themes; (2) from this, conceptual themes were labeled to establish a grid for the thematic analysis; and (3) all the transcripts were analyzed in depth according to this grid in order to evaluate the frequency of themes or ideas, study the internal logic of each discourse, the variability of work practices and opinions, and the types of barriers perceived by the participants.

TABLE 3 Semi-structured Interview Instrument

- I. Initial question: When you hear the term "occupational cancer," what does that bring to mind?
- II. Themes
 - A. Professional practices and perceived role
 1. How do you see your role?
 - a. Are there any discrepancies between how you see your role and your actual practices?
 - b. Are there any discrepancies between your role as French legislation and regulations define it and your actual practices?
 2. Can you tell me about your practices related to occupational cancers?
 - a. What are your practices in terms of prevention? Screening? Reporting of occupational cancer?
 - b. Have your practices and your perspective on this changed since the beginning of your career?
 - B. Difficulties
 1. What difficulties have you encountered in your practice, related to occupational cancer?
 - a. Do you have any difficulty identifying the carcinogenic agents used in the company? Which?
 - b. Do you have any difficulties in exposure assessments? Which? Do you think you have a role to play in the risk assessment that the employer must perform? What do you think of the implementation of the risk assessment and employee safety plan in the companies you cover?
 - c. Do you have any difficulties reporting occupational cancers? What are they?
 - d. Do you have any difficulties in access to scientific/medical information? What are they?
 2. Can you give me an example or tell me about a particularly striking case where you encountered problems related to occupational cancer?
 - C. Importance of carcinogenic risks and follow-up of exposures
 1. In your daily practice, how extensive do you think exposure to carcinogenic risks is?
 - a. How important do you think occupational cancer is compared with occupational diseases as a whole?
 - b. Are some more frequent than others?
 2. In your opinion, are there situations in which employees are particularly exposed to carcinogenic agents as part of their work?
 - a. Specific occupations or sectors at risk?
 - b. Geographic areas at risk?
 3. What tools do you know about for monitoring and keeping track of an individual's exposure through his or her career? What do you think of them? Which do you use?
 - a. What do you think about individual exposure forms?
 - b. What methods and tools do you find most effective?
 4. What do you think about the certificate of non-contraindication for carcinogenic agents for a workstation? Do you do them?

RESULTS

Twenty OPs participated. Their characteristics are described in Table 2. We identified three main themes or subject areas related to occupational cancer prevention by OPs: (1) occupational physicians' role and practices; (2) obstacles to occupational cancer prevention, either organizational or related to individual employers or employees; (3) potential obstacles to occupational cancer prevention linked to OPs' attitudes (Table 4).

Role and Practices of OPs

In general, the OPs indicated strong agreement with the principle of prevention and multiple disagreements with the regulations.

Focus on prevention, sometimes exclusive. Most OPs considered the prevention of occupational cancers to be a part of their role. Nine OPs indicated that their role included neither early screening of occupational cancers nor helping to ensure the compensation of work-

ers with cancer (by completing official certificates). All the OPs spontaneously described and detailed their practices in occupational cancer prevention very similarly: informing and training employees and employers about products and protection, identifying carcinogenic agents used in the companies, advising employers about their replacement by noncarcinogenic products, and assessing and following-up potential exposures.

Divergent opinions about the contours of prevention: limited to work or expanded to non-occupational risks. A quarter of the participants, essentially those from in-house OHS, consider their priority to be the preservation of the employees' health in general, that is, not limited simply to workplace health, although the Ministry of Labor regulations do not call for this general aspect. These five OPs reported that they are involved in general prevention, such as smoking prevention, nutritional education, and screening for some cancers that are not thought to be work-related. One in-house OP commented: "We do lots of prevention; it's more public

TABLE 4 Themes Concerning the Prevention of Occupational Cancer by Occupational Physicians (n = 20)

Themes Identified	N*
<i>Perceived role of occupational physicians</i>	
• It is based essentially or even solely on prevention	15
• It does not include the reporting of cancers	5
—that is the responsibility of the treating physician	3
—because it is not listed officially as part of the OP's role	2
• It is not limited to health at work, but involves health-related behavior more generally (nutritional advice, for example)	5
<i>Professional practices of occupational physicians</i>	
• The prevention practices of occupational physicians include activities to increase awareness among employers and employees, the identification of carcinogenic agents, advice about their replacement, exposure assessment, and follow-up	20
• Prevention practices not specifically focused on health in the workplace	7
• Spend less than 150 half-days on activities at the company	7
• When employees are exposed to carcinogens, do you prescribe additional screening examinations for occupational cancers in an unsystematic way, according to variable criteria?	9
• I have never been involved in reporting a case of occupational cancer	18
<i>Difficulties encountered in the assessment of carcinogenic risks</i>	
• Disregard of hazard and/or minimization of risks by employer and employees	14
• Poor product labeling (after transfer/decanting)	13
• Difficulty in obtaining material safety data forms from the employer	15
• Difficulties of setting up a risk assessment and employee safety plan, especially in small and medium-sized companies	7
• This plan led to an improvement in risk prevention	5
• Individual exposure forms are not used	5
• Lack of time to visit the company	11
<i>Difficulties encountered in screening for occupational cancers</i>	
• Lack of knowledge about the reliability and modalities of application of some screening tests	5
• Lack of financial resources to prescribe some recommended examinations (CT scanner, for example)	4
<i>Ethical issues: opinions about the certificate of non-contraindication to exposure to carcinogenic and reprotoxic agents</i>	
• Opposed to completing these forms:	19
—because it essentially authorizes the exposure of employees to carcinogenic agents	12
—I do not do these attestations	10
—I draft them, but modify the language	5
<i>Perceptions of occupational physicians about their independence and their efficacy</i>	
• Feeling of lack of independence	8
• Dissatisfaction about their advisory role	7
• Feeling of lack of self-efficacy	10
<i>Perception of risks about occupational cancers</i>	
• The environment and lifestyle and habits are more important than occupational exposure in the onset of occupational cancers	6
• I consider that occupational cancer risks are a priority for action	8
• I consider that the immediate risks are a priority compared with deferred risks	10
• The employees I follow are less exposed to carcinogenic risks than those in other sectors	17

*Number of occupational physicians with similar or equivalent responses.

health than occupational medicine." Another from the in-house medical sector said: "What we do is a lot of public health screening: everything related to breast, prostate, and colon cancer."

Balance between medical surveillance and activities at the company. In 2004, the French legislature modified the statute covering occupational medicine. It intended, in particular, to increase the time devoted to occupational medical activities and monitoring at companies to 150 half-days while changing the frequency of routine mandatory medical visits for employees from annual to

biannual, except for employees exposed to well-identified risks such as carcinogens, mutagens, or substances toxic to reproduction. One-third of the OPs reported spending less time than required by regulation on activities within the company and especially at workstation studies (Table 1). The reasons for this were lack of time and resources or, for some, a disagreement about the spacing of the mandatory medical visits. As one in-house OP noted: "What they're asking OPs now is to reduce medical visits . . . to be in the field more. . . . I disagree with the people at the Ministry." Only one OP

reported that the legislation had pushed him to spend more time at activities in the company such as workstation assessment.

Certificate of non-contraindication: heterogeneity of practices associated with ethical positions. Since 2001, regulations have required OPs to complete a certificate that an employee has no medical contraindication to exposure to carcinogenic substances before the employee can be assigned to work involving such exposure (Table 1). All but one participant opposed this certificate. Their reasons varied. One-third reported that it is difficult to know or to be certain that a person has no contraindication; other OPs considered that this made them liable and amounted to having them authorize employees' exposure; and finally, others thought that no one should be exposed to carcinogenic substances at work, including healthy volunteers. One in-house OP commented that: "I'd say that this is at the limits of professional ethics . . . it means that we are authorizing an employee to be in contact with carcinogens." Half the OPs reported that they did not complete these certificates, a quarter of them modified the wording, and the others wrote them nonetheless so that the employees could work.

Organizational or Employer- and Employee-Related Obstacles

Disregard or denial of dangers by employers and company personnel. According to the OPs, both employers and employees were unaware of, or underrated the dangers associated with exposure to carcinogens, especially in small and medium-sized companies. Independently of that, risks were also minimized: some employees felt invulnerable to carcinogenic exposures or were in denial about it. One OHS contractor noted, regarding construction work, that: "I am nonetheless astonished that when we see someone who has worked for 20 years as a woodworker, that we are the ones who teach them that wood is carcinogenic." Some OPs also stressed employees' resistance to wearing individual protective equipment.

Organizational problems in companies. One of the main problems expressed by the OPs is linked to the employers' lack of involvement in occupational cancer prevention. Most OPs reported that the products used in companies were often poorly labeled if at all (especially when chemical products are decanted into other containers). Moreover, 15 OPs reported that they found it very difficult to obtain the material safety data sheets (MSDS) for products used in the company (Table 1) when they asked the employer for them. According to these respondents, the forms were not completely filled out, inadequately updated, and difficult to use.

The transcription of European directive n°89/391/EC into French regulations in 2001 required all employers to draft a document assessing the risks in a

company in order to prepare an annual risk prevention and safety plan (Table 1). One third of the OPs reported that this procedure is long and difficult to apply, especially in small companies (less than 10 employees) and medium-sized companies (11 to 250 employees), where the document is often neither drawn up nor used. According to the OPs, employers at these companies encountered more difficulties than at large companies in preparing this document and in implementing prevention activities because they did not have the funds required, the time, or the specific tools or staff to implement them. Contractors noted that: "In small companies, it's difficult to set up prevention activities because the employer does not have the money for it"; and: "I realized that where it was hardest was in small and medium-sized companies because they are not equipped." Nonetheless, half the OPs reported that this risk assessment and employee safety plan was "fundamentally a good thing." Several OPs thought that it improved the prevention of occupational risks.

In addition, a quarter of the OPs, especially in the small and medium-sized companies, reported that they did not receive individual exposure forms. These forms, which must be drawn up by the employer, made it possible to identify the employees exposed, in particular, to carcinogenic substances (Table 1). But they were often not created or were imprecise or incorrect.

Organizational constraints in OHS. More than half of OPs, mainly those working for outsourcing providers, reported that they did not have enough time to conduct inspections in the company, use the MSDS, or participate in research or training activities. Most OPs also reported that the OHS had neither staff nor resources enough for their workload. One OHS-contracted OP put it this way: "I have up to 250 companies with fewer than 10 employees; that's enormous! You can imagine how much work that is!" Finally, they also encountered difficulties in quantifying exposure (such as duration and frequency) and risk because they did not always know reliably the exact processes or the type of protection used.

Potential Obstacles Associated with OPs' Attitudes

Occupational physicians' minimization of occupational cancer risks. Six OPs stated that non-occupational environment, lifestyle, and habits were much more important in the onset of cancer than occupational exposure to carcinogenic substances. One OHS-contracted OP asserted: "Aren't the pesticides we use in our garden 10 times more dangerous than, how shall I say it, the product we use at work? Therefore the whole issue for me is the non-occupational origin of a cancer." Eight OPs considered carcinogenic risks in the workplace as a priority for action, and 10 others indicated that immediate risks, such as workplace accidents, were greater priori-

ties than cancer risks. These OPs thought that cancer risks were not important for the populations they followed. They considered occupational cancers to be rare and their priority to rank after that of musculoskeletal diseases and psychosocial risks: "I would rank them after psychosocial risks, after everything that is musculoskeletal, and then, I would put them in third place . . . well, in terms of frequency, they are not frequent" (OHS contractor, service sector).

Seventeen OPs questioned reported that the employees in their sector are less exposed to carcinogens than workers in other sectors. This comment by an OHS contractor in construction was typical: "I'm talking about construction . . . there really aren't a lot of carcinogens present; it must depend on the activity . . . they don't handle a bunch of products . . . this is completely different from an industrial sector, metal-lurgy or something like that."

Individual attributions of risk by OPs. Although most OPs considered employers responsible for employees' health, a quarter of the OPs also designated employees as equally or more responsible for their health than the employer: "I am for personal responsibility . . . what I say is that it's not the employer who is responsible, it's the worker's health and everyone is responsible for their own health" (OHS contractor).

Perceived lack of independence and/or self-efficacy. Many OPs, especially those working for OHS contractors, expressed the feeling that they lacked independence and had a small margin of maneuver. Some did not feel at ease proposing prevention activities to the employer because they were concerned that these cost money and that the employers are free to change their OHS provider. One OHS contractor commented: "We're not really independent of the employer; if we bother them too much, we won't have any more companies paying us, and then we wouldn't have any more work." Moreover, a third of the OPs, mainly those from outsourcing providers, reported that they were dissatisfied by their consultant role, and half felt ineffective, as these types of comments suggest: "I have the feeling that I'm not effective, or even that I'm futile" (OHS contractor); "We have the impression of investing lots of time, of giving, giving, and then lots of times, that produces nothing . . . in these cases there, it's really a failure for me" (OHS contractor).

DISCUSSION

Our results suggest that, beyond a discourse mainly focused on prevention and regulatory norms, OPs' practices regarding cancer prevention differ from one OP to another to some extent and deviate sometimes from regulations. This heterogeneity may reflect different ways of interpreting regulations and of adapting one's practices to them. Below we discuss some hypotheses that may explain our results: (1) some OPs

may search for professional legitimacy outside the occupational health sphere; (2) organizational constraints on OPs' activities force them to make choices and create individual strategies of adaptation to such constraints; (3) some specific aspects of labor regulations create ethical dilemmas for some OPs; and (4) obstacles to the prevention of occupational cancers, which might be classified into two categories—external obstacles related to the OPs' environment and internal obstacles related to the OPs themselves.

Search for Professional Legitimacy outside the Sphere of Occupational Health

A minority of OPs, mainly from in-house departments ($n = 5$), appeared to favor prevention that goes beyond the regulatory framework, focused especially on employees' lifestyle and habits outside of work. Occupational physicians are not authorized in France to treat patients nor to write prescriptions. It is therefore possible that some would seek legitimacy in non-occupational prevention. That this type of discourse came especially from OPs in in-house departments might also be explained by the relatively fewer organizational constraints in these departments compared with those in OHS outsourcing providers. In-house OPs have a more or less great autonomy of action which allows them to do what they think is right and thus increases their sense of legitimacy. This allows in-house OPs more room to deviate from strict rules and act consistently for the company personnel.

Individual Strategies of Adaptation to Regulations Because of Organizational Constraints

Company visits help the OPs to grasp the reality of working conditions, to list the occupational risks present in the company, and to study specific jobs and workstations. The legislative reforms of 2004 have reinforced the time that OPs devote to these visits. Nonetheless, time constraints forced some OPs to choose between visiting sites and routine employee medical assessments. These choices could be a source of heterogeneity in practices. The unfavorable demographic trends for OPs in France (many are planning to retire during the next five years, with their replacement not at all certain) threatens to increase OPs' workload still further and thus worsen these balancing problems.

Ethical Dilemmas Induced by Some Regulatory Provisions

Our results also suggest that certificates of non-contraindication presented OPs with an ethical dilemma: do not write it and harm a worker's chance of a job, or write it but risk becoming responsible for exposing him

or her to the risk of cancer. This dilemma appeared to induce variability in the practices and modalities of drafting the certificate, as already observed in a study of Finnish OPs.⁷

Obstacles to the Prevention of Occupational Cancers

This study also showed that obstacles to activities for occupational cancer prevention can be categorized as "external" (that is, those related to organizational or company factors and to the employer, on the one hand, and those related to the employees, on the other) and "internal" (that is, those associated with the attitudes of the OPs themselves).

External Obstacles

External obstacles related to the company organization and employers. The OPs questioned in our survey reported a lack of involvement by employers in drafting risk assessment and employee safety plans, completing individual exposure forms, and the prevention of occupational cancers. This confirmed previous observations in other surveys and verification campaigns by the French Labor Inspectorate among various types of companies or enterprises.⁹ A national survey in 2003 indicated that 64% of the employees exposed to carcinogens were exposed at high levels and with insufficient collective protection, and that 43% of the asbestos-exposed employees had no collective or individual respiratory protection.⁵

External obstacles related to employees. The OPs stressed employees' ignorance of the products they use and associated this ignorance with attitudes of denial, probably linked in turn to a process of rationalization in the face of workers' perceived lack of control over their working conditions. These results suggested that employees were insufficiently aware of, and informed about the dangers of the products they handle. This has been described in other countries, in studies of the construction industry, for example, relative to exposure to the sun.^{10,11}

Consistent with other results,⁹ the OPs underlined that the obstacles described above are more marked in small and medium-sized companies than in large ones (> 250 employees). This was probably explained by the fact that companies with less than 250 workers do not have the human, technical, or financial resources to develop a culture of prevention or to undertake action to improve working conditions. The paradox is that, in view of the inadequacy of the culture of prevention in smaller companies and the prevalence of such companies (they account for about 80% of all companies in the study area), it is precisely these small and medium-sized companies that require some action to be taken to improve awareness and assist in risk assessment procedures.

Internal Obstacles

Minimizing the risks of occupational cancers. Most of the OPs interviewed in this study, relying on their scientific knowledge, put occupational factors into perspective with other environmental or lifestyle factors that relate to the onset of cancer (such as smoking). In addition, there were two sociocognitive biases that should be considered. A minority of OPs minimized the conditions of work and employer responsibility and underlined the employees' individual responsibility to an extent that might be indicative of Ross's psychosociological bias.¹² Moreover, most of the OPs questioned, including those in the industries most exposed to carcinogenic substances (construction, chemical/petrochemical manufacturing, agriculture)¹³ reported that the carcinogenic risks for the employees they followed seemed to them to be lower than those of employees in other sectors (comparative optimism bias).^{14,15} The combination of these two sociocognitive biases might constitute a major obstacle to prevention.

Feelings of lack of independence, limited margin of maneuver, and lack of self-efficacy. The feeling of a lack of independence expressed by eight of the OPs is worrisome because it might lead them to give up recommending prevention activities or to not insist on them. The feeling of having a small margin of maneuver was related to the fact that OPs had only an advisory role.¹⁶ Paradoxically, the OPs in in-house departments perceived that they have more latitude to have their recommendations accepted by their employer than the physicians of outsourcing providers. The former were an integral part of the company, knew its ins and outs, and had regular contacts with all of its components.¹⁶

Moreover, the OPs of outsourcing providers expressed feelings of dissatisfaction more often. This perception seemed to be associated with the lack of time and resources to follow so many companies, but also feelings that they lacked mastery, control, and self-efficacy. This suggests a broader feeling by OPs that they are not appreciated, a point stressed by several authors.^{16,17} This might be explained in part by the diminished attraction of occupational medicine, which is at the bottom of the scale, in terms of perceived prestige, of medical specializations in France. Moreover, employees and employers have a poor impression of OPs and show it: the usefulness of OPs is challenged because they are not authorized to treat patients and their activity is perceived more as a regulatory obligation than a genuine need.¹⁶

These different perceptions contrasted with the fact that OPs have the means to act: they could, for example, warn employers and employees, lean on the legal representatives of company personnel, and call in government departments such as the Labor Inspectorate. On the one hand, the OPs' feeling of low self-efficacy might well constitute an obstacle to their pre-

vention activities by reducing their capacity to mobilize the resources required to implement these activities effectively.^{18,19} On the other hand, less mobilization of resources and diminished success of prevention activities could also reinforce feelings of low self-efficacy.

CONCLUSION

The interpretation of the results of this survey must remain conservative in view of its limitations. The sample, because of its small size, cannot be considered representative of all OPs in the study region. However, the sample of OPs included in this study was intentionally diverse according to the types of departments, industries, and activity sectors covered.

The OPs' discourse in these interviews might have been influenced by their awareness of the norms that cover their occupational practices and therefore might not correspond to their actual practices. Nonetheless, we observed differences in attitudes and behaviors on points that are well-known topics of debate within the occupation (such as those regarding the certificate of non-contraindication). Nor could we rule out a social desirability bias in this type of research. This is particularly true in the French context, where awareness is high regarding the epidemic of cancer from occupational asbestos exposure due to the lateness of the ban on asbestos use in France (1997) and the accompanying flaws in prevention, including the response of OPs. These limitations probably led to an underestimation of both the sociocognitive bias and the minimization of risks discussed above. Nonetheless, this research has made it possible to uncover important variability in some of the attitudes, perceptions, and practices of OPs.

Although France has a relatively complete legislative and regulatory arsenal for the prevention of occupational cancers, we observed that its practical application in companies presents problems. This study revealed not only numerous external obstacles (both organizational and associated with the company), but also internal obstacles (associated with the OPs themselves). The external obstacles were particularly notable in the small and medium-sized companies. This presents problems, given that these companies make up most of the region's and the country's economic tissue. The statements by the OPs in our study agreed with the observations already made by others involved in prevention, in particular, the Labor Inspectorate. This suggested a vision shared by the different participants in occupational cancer prevention that might thus help promote the cooperative implementation of activities to reinforce this prevention.

Moreover, the internal obstacles suggested in this research are a new finding, to our knowledge. Identifying them raised the question of the initial and contin-

ued training of OPs and, more widely, that of the place of occupational health in the medical curriculum. That is, the results of this study suggest that OPs should be better prepared and should receive help in meeting the requirements of occupational cancer prevention, especially in small and medium-sized companies. Specifically, their initial training should be strengthened; good practice guidelines, covering various aspects of their practices, should be drafted for them; and collaboration should be strengthened with other professionals, such as Labor Inspectors and specialists in occupational risk prevention. These results must be studied in more detail in a quantitative study of a representative sample.

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