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# Working conditions, job strain and work engagement among Belgian radiation oncologists



Radiothéra

Conditions de travail, stress et engagement professionnel des radiothérapeutes belges

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# ABSTRACT

*Purpose.* – This national survey has measured the working conditions, work engagement, job strain, burn out, and the negative work-home interaction among Belgian radiation oncologists with validated questionnaires. In fact, previous studies had in general shown an interest to burn out and its association with working conditions among oncology workers, but not focused on radiation oncologists in particular. Moreover, few studies concerned work engagement and its association with working conditions although this could be important in preventing burn out.

*Methods.* – We used the WOrking Conditions and Control Questionnaire, the Positive and Negative Occupational States Inventory, the Maslach Burn out Inventory, and the negative work-home interaction subscale of the Survey Work-home Interaction Nijmegen. One open question asked about problematic job situations.

*Results.* – Sixty-six radiation oncologists participated (30% response rate). Median scores of most of working conditions corresponded to normal scores. Control over time management (45.8) was close to low score, while control over future (60.9) was high. Median score of job strain (48.9) was normal, whereas median score of work engagement (60) was high. Median score of burn out was low. The mean of negative work-home interactions (1.1) was higher than the mean of 0.84 in a reference sample (t=4.3; P<0.001). The most frequent problematic situations referred to work organization (e.g. time pressure) and specific resources (e.g. chief support).

*Conclusions.* – Radiation oncologists showed a very high level of work engagement and experienced several job resources. However, some resources (as supervisor support) were missing and needed to be developed. These results were discussed in the context of motivational process described in the Job Demands-Resources Model.

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# RÉSUMÉ

*Objectifs de l'étude.* – Cette étude nationale a mesuré les conditions de travail, l'engagement et le stress professionnel, le *burn out* et l'interaction négative travail-famille parmi les radiothérapeutes belges avec des questionnaires validés. En effet, les études précédentes se sont en général intéressées au *burn out* et à son association avec les conditions de travail parmi les travailleurs en oncologie, mais ne se sont pas focalisées sur les radiothérapeutes en particulier. De plus, très peu d'études ont concerné l'engagement professionnel et son association avec les conditions de travail alors que ce serait important dans la prévention du *burn out*.

*Méthodes.* – Nous avons utilisé le WOrking Conditions and Control Questionnaire, le Positive and Negative Occupational States Inventory, l'inventaire de *burn out* de Maslach, et la sous-échelle « interaction

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EM consulte www.em-consulte.com négative travail-famille » de l'instrument «Work-home Interaction Nijmegen ». Une question ouverte concernait les situations professionnelles problématiques.

*Résultats.* – Soixante-six radiothérapeutes ont participé à l'étude (taux de réponse de 30%). Les médianes de la plupart des conditions de travail étaient normales. Le contrôle sur la gestion du temps (45,8) était proche d'un score faible, alors que le contrôle sur l'avenir (60,9) était élevé. La médiane du stress professionnel (48,9) était normale, alors que la médiane de l'engagement professionnel (60) était élevée. La médiane du *burn out* était faible. La moyenne du Negative Work–home interaction (NEGWHI) (1,1) était plus élevée que celle de 0,84 d'un échantillon de référence (t=4,3; p <0,001). Les situations problématiques les plus fréquentes se référaient à l'organisation professionnelle (par exemple pression du temps) et à certaines ressources spécifiques (par exemple soutien du superviseur).

*Conclusion.* – Les radiothérapeutes présentaient un engagement professionnel très élevé et avaient de nombreuses ressources professionnelles. Cependant, certaines ressources étaient manquantes et seraient à développer. Ces résultats sont discutés dans le contexte du processus motivationnel décrit dans le Job Demands-Resources Model.

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#### 1. Introduction

Many researchers have studied job stress and burn out. Since the early 2000s, a new model of stress at work, the 'Job Demands-Resources Model' has appeared in the scientific literature [1]. Schaufeli and Bakker suggest that employee well-being is related to a wide range of workplace variables that can be conceptualized as either job demands or job resources [1]. These two sets of working conditions may each evoke a different process. First, job demands may exhaust employee's mental and physical resources and may therefore lead to the depletion of energy and to health problems (health impairment hypothesis). Second, the presence of adequate job resources reduces job demands, fosters goal accomplishment and stimulates personal growth, and may therefore lead to a stronger dedication to one's work (motivational hypothesis).

Job stress has been much studied in the medical profession. In particular, caring for patients with cancer can be one of the most demanding and stressful areas of medicine. Studies have mainly focused on medical oncologists and showed high prevalence rates of burn out from 25% to 62% in different countries (USA. Netherlands, UK, Canada, and Switzerland) (Table 1) [2–9]. There are few studies on job stress among radiation oncologists. However, radiotherapy is a profession that has seen major technological advances in recent years [10]. Radiation oncologists are therefore working in an environment where they are balancing complex technology with the emotional strain of working with cancer patients in a setting where there is no room for error, whilst still maintaining a high level of patient care and an empathetic demeanor [11–13]. Moreover, the demand for radiotherapy services is increasing [14]. All this could constitute job demands that could lead to a variety of problems for physicians including burn out without adequate job resources. Two studies in UK found that the prevalence of emotional exhaustion was at 38% among radiation oncologists and depersonalization prevalence was higher among radiation oncologists compared to medical oncologists and physicians involved in palliative care, 31%, 15% and 13%, respectively [5,6]. One study in Germany among eleven radiotherapy departments also showed that nurses and physicians had the highest level of job stress compared to radiographers and physicists [15].

In these studies, burn out among medical and radiation oncologists was associated with the stress of feeling overloaded or of working over 50 h/week, with treatment toxicity/errors, with deriving little satisfaction from professional status/esteem, with high stress and low satisfaction from dealing with patients, and with low satisfaction from having adequate resources [2,6,9]. In the same way, the specific study among radiotherapy departments showed that the greatest source of job stress originated from structural conditions (e.g. underpayment) and from "stress by compassion" (e.g. "long suffering of patients") [15]. Moreover, being a young physician or being in the first few years of a consultant post appeared as a significant individual risk factor for burn out [5,6]. Only two studies have looked at sources of satisfaction among oncologists (e.g. having good relationships with patients, relatives and other staff; being held in esteem by colleagues) [5,6].

In summary, several studies have shown an interest to burn out and its association with working conditions among oncology workers in general, but have not focused on radiation oncologists in particular. On the other hand, very few studies have shown an interest to work engagement and its association with working conditions although this could be interesting in preventing burn out. So, we performed a national survey among Belgian radiation oncologists with validated questionnaires to measure working conditions, work engagement, job strain, burn out and the negative work-home interaction.

## 2. Methods

#### 2.1. Questionnaires

In collaboration with the Belgian College of Radiotherapy, questionnaires were sent to 220 French and Dutch-speaking radiation oncologists in September 2011. We combined different instruments: the WOrking Conditions and Control Questionnaire (WOCCQ) [16], the Positive and Negative Occupational States Inventory (PNOSI) [17], the Maslach Burn out Inventory (MBI) [18], and the negative work-home interaction subscale of the Survey Work-home Interaction Nijmegen (NEGWHI) [19]. This was completed by an open question in which participants were asked to describe three problematic events encountered in their daily work activities.

### 2.1.1. Working conditions and control questionnaire

It is a multidimensional scale to measure the control that a worker has in his/her work situation [16], already used among anesthetists [20]. It encompasses six dimensions of control, allowing a more precise diagnosis about working conditions: control of resources, task management, risk, planning, time management and future. Each item refers to a job characteristic phrased in the first person, such as 'I believe in the future of my job'. The questionnaire response format is: 1 = rarely or never applicable to my job; 2 = sometimes applicable to my job; 3 = regularly applicable to my job; 4 = almost always or always applicable to my job. The valence of the items was balanced. Normative scores are available. A moderate level of control can vary from 40 to 60, with a mean equal to

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