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## Understanding the process of returning to work of breast cancer survivors: emergence of a conceptual, integrative, transactional and ergonomic model

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**Objective:** To study the socio-professional, clinical, para-clinical characteristics of occupational deafness, and their impact on ability to work.

**Material and Methods:** Retrospective descriptive study of 90 cases of occupational deafness collected between 2001 and January 2021, at the Department of Occupational Medicine and Occupational Diseases of the University Hospital Rabta, Tunisia.

**Results:** This is a population with a mean age of  $38.39 \pm 9.8$  years and a predominance of men gender (65.9%). The majority belonged to the telephone call centers (63.7%), followed by the construction and public works sector (11%). The posts of work most responsible for occupational deafness were telephone advisor (63.7%) and construction and public works worker (7.7%). Lack of personal protection was reported by the majority of employees (95.6%). The time to onset of first auditory manifestations relative to noise exposure was  $5.02 \pm 4.46$  years. Tonal audiometry performed for all patients showed bilateral perceptual deafness in 85.7% of cases. Mean hearing loss on the best ear was  $37.61 \pm 18.58$  dB, on the right and  $36.59 \pm 19.01$  dB, on the left. Auditory evoked potential was practiced in 27.5% of cases. Deafness was considered as a compensable occupational disease for 23.1 per cent of the employees.

**Conclusion:** The often-delayed onset of auditory warning signs justifies early and regular audiometric monitoring from the onset of sound exposure.

606

### **Noise exposure and hearing health among US Firefighters**

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**Introduction:** Firefighters (FF) are exposed to recurrent hazardous noise during their work shift both during routine tasks and responding to emergency calls, putting them at an increased risk of occupational hearing loss. However, little is known about FFs' noise exposure and associated health outcomes. The purpose of this study is to gain an understanding of FFs' perceptions of noise in the fire service and of their risk of hearing loss.

**Materials and Methods:** A cross-sectional study design was used to evaluate noise in the FFs' work environment, determine current types of hearing protective actions, and identify firefighters' perceptions of occupational noise exposure and their perceived health risk. A 53-item survey was administered to a non-probabilistic sample of US first responders.

**Results:** A total of 220 FFs with a mean age of 40.1 years completed the survey, 93% male and 81% identifying as white with an average tenure of 13.8 years. 55% of participants reported having ringing/buzzing and hearing muffled sounds in their ears following hazardous noise exposure. 82% reported exposure to hazardous sounds during a work shift while only 64% reported never to rarely wearing hearing protection while working. Moreover, 25% were unaware of work policies for hearing protection use, and 73% reported never receiving information about noise induced hearing loss. Finally, 68% said they were not concerned about their hearing.

**Conclusion:** FFs' substantial exposure to noise and associated health risks reveals a clear need for policy aimed at mitigating the consequences. We need to explore ways to integrate hearing protection.

### **33. WOMEN HEALTH AND WORK**

607

#### **Women at work: wrist and elbow injuries and pathologies in different occupational settings from the National Compensation Authority (Inail) data records (2015-2019)**

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**Introduction:** In a previous study, women's upper limb injuries were found frequent in some typical work settings. This study goes in deep on wrist and elbow injuries, taking into account their main occupational pathologies (carpal tunnel syndrome (cts) and epy-condilitis (epy)).

**Methods:** Wrist and elbow compensated injuries and pathologies were selected from Inail data records in five years (2015-2019). Incidence Rate and Odds Ratio were studied for gender and occupational settings.

**Results:** A total of 29.494 wrist and 12.379 elbow injuries were collected together with 5.077 cts and 2.455 epy. Women were more at risk than men for wrist+elbow injuries (OR 1.32, IC 95% 1.31-1.34) and cts+epy pathologies (OR 3.13, IC 95% 3.02-3.24). Women injury incidence rate was higher among cleaners for wrist (1.62‰) and elbow (0.71‰) while incidence rate for cts (0.50‰) and epy (0.27‰) was higher among hairdressers, laundresses and wellness services (HLW). Cleaners were at the highest rank (2.5‰) for overall wrist and elbow injuries and pathologies. Frequency analysis showed higher OR for overall wrist (injuries and pathology) in HLW services (OR 2.41, IC 95% 2.24-2.60) and overall elbow (injuries and pathology) (OR 2.05, IC 95% 1.88-2.24) and their global impact (OR 2.23, IC 95% 2.09-2.37). Wrist injuries were mainly fractures (33.1%), bruise (48.6%) for elbow. HLW presented more wrist fractures (51.2%) and mail delivery more elbow bruise (54.2%).

**Conclusion:** Wrist and elbow injuries and occupational diseases should be considered in a global framework for prevention especially in work sector at higher risk as cleaning and HLW activities.

608

#### **Understanding the process of returning to work of breast cancer survivors: emergence of a conceptual, integrative, transactional and ergonomic model**

*Bertrand Porro<sup>1</sup>, Marie-José Durand<sup>2</sup>, Audrey Petit<sup>1</sup>, Mélanie Bertin<sup>3</sup>, Yves Roquelaure<sup>1</sup>*

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**Introduction:** There is a need to develop integrative approaches explaining the breast cancer survivors' (BCS) return to work (RTW) process and allowing a better understanding of the articulation between the factors involved. We aimed at proposing a conceptual framework of the BCS' RTW according to the transactional perspective.

**Methods:** The TRIAGE expert consensus technique was implemented. For each determinant in an initial list established from the literature, experts were first asked to indicate their agreement level individually, via an online questionnaire. Determinants obtaining an agreement level of 80% or over during this first phase were

retained. The remaining and additional determinants suggested by the experts, were then discussed collectively. After discussion, experts voted via a new online questionnaire to (not) retain each determinant. Determinants obtaining an agreement level of 80% or over after this second phase were retained. A conceptual model was then developed following the transactional approach.

Results: 62 determinants were included in the conceptual model which has been reviewed by 6 of the 11 experts recruited for the TRIAGE exercise. The final conceptual model comprises the BCS' characteristics and the broad categories of the transactional approach (1st appraisal—work ability; 2nd appraisal—resources; adjustment strategies; outcomes—[non-]RTW; feedback)

Conclusions: Based on knowledge, experience and clinical practices, the REWORK-BC model includes the medical, psychosocial, financial, professional and ergonomic aspects of the BCS' RTW. The model will be illustrated with concrete clinical cases

## 609

### **Does the occupation of women associated with domestic violence? Evidence from National Family Health Survey, India 2015-16**

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Background: Although working women help in delivering financial stability to a family, their professional life often subjects them to increased domestic violence (DV). The paper aims to explore the relationship between women's occupational category and their exposure to domestic violence using a nationally representative sample in India.

Methods: This was a cross-sectional study among women of reproductive age from all over India. The domestic violence module in the survey was administered per the World Health Organization's guidelines. In total, 83,397 women were selected for the domestic violence questions, and 79,729 completed the module, from which 66013 were ever-married women. Logistic regressions were used to assess the independent contribution of the variables of occupational status in predicting exposure to three categories of domestic violence, namely less severe, severe and sexual violence. Results: The prevalence of less severe violence, severe violence, and sexual violence was 27%, 7.9%, and 6.7%, respectively, among ever-married women in India. This study found that manual working women were at high risk (AOR= 1.596; 95%CI 1.481-1.720) of less severe violence than women currently not in the workforce. However, the risk of severe violence (AOR=1.74495%CI 1.354-2.247) and sexual violence (AOR=1.896; 95%CI 1.494-2.404) was higher among professional /technical/managerial women.

Conclusions: This study concludes that working women are at higher risk of domestic violence. Professional /technical/managerial women were at higher risk of severe and sexual violence among occupational categories.

## 610

### **"I Get That Spirit in Me" — Mentally Empowering Workplace Health Promotion for ethnically diverse Female Workers in Low-Paid Work During Midlife**

Marjolein Verburgh<sup>1</sup>, Petra Verdonk<sup>2</sup>, Yolande Appelman<sup>3</sup>, Monique Brood-van Zanten<sup>4</sup>, Karen Nieuwenhuijsen<sup>1</sup>

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Introduction: During midlife, female workers, particularly those with a migratory background and in low-paid work, experience more occupational health challenges than other groups of workers. The Work-life program (WLP) has been developed as a workplace health promotion intervention to support these female workers. In this exploratory mixed-methods study, we aimed to address the research question: What is the impact of the WLP on the women's health and work functioning?

Material and Methods: We included women aged between 45 to 60, working in low-paid jobs (e.g., patient food service assistants and cleaners) in a hospital. We used questionnaires before and after the intervention and 12 semistructured, in-depth interviews.

Results: The total number of participants was 70 at pre-test (t0), and 56 at post-test (t1). More than half of the participants had a migration history that varied greatly — 21 different ethnicities. Almost all participants had a low or intermediate educational level. Our quantitative data showed that menopausal symptoms improved significantly after the WLP. Our qualitative data showed that the WLP initiated a process of mental empowerment that initiated positive changes in four domains: behavior, physical health, mental wellbeing, and in the workplace.

Conclusions: Our findings suggest that female workers in low-paid work experience a positive impact from the WLP. The WLP is an intervention that mentally empowers female workers to make choices that enhance their health and wellbeing, both at work and in their private lives, as summarized in the quote of one participant: "I get that spirit in me!".

## 611

### **Implementation Evaluation of Workplace Health Promotion among Ethnically Diverse Women in Midlife with a Low Socioeconomic Position**

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Introduction: Women with a low socioeconomic position (SEP) often have unfavorable working conditions, and experience additional occupational health challenges during midlife. Little is known about the implementation of workplace health promotion (WHP) among women at the intersection of midlife, low SEP and ethnicity, and how they may be supported.

Material and Methods: For these women, we implemented a WHP intervention aimed at supporting women during midlife as a pilot in an academic hospital. This pilot comprised multiple steps: first tailoring the intervention to these women's needs and developing an implementation protocol; then implementing the WHP and qualitatively evaluating the implementation process using the RE-AIM framework.