The objective of this study is to assess the prevalence of musculoskeletal disorders (MSDs) among Medical Secretaries (MS) and their impact on their health-related quality of life (HRQL).

Methods A cross-sectional multicentric exhaustive study was conducted among medical secretaries working in three public hospitals. The survey included a self-administered questionnaire related to individual and professional characteristics, a French abbreviated version of the Karasek's Job Content Questionnaire, a French validated version of Nordic Questionnaire, a French validated version of the SF12 and NHP scores. The study also included objective validated clinical maneuvers. Determinants of MSDs and their impact on HRQoL were evaluated through univariate and multivariate analysis.

Results A total of 72 office female workers were included with a response rate of 81.8%. The mean age was 43.75 ± 8.9 years. The body mass index (BMI) was higher among workers over the age of 45 years. According to Karasek's model, 54 subjects (75%) were in 'Job strain' situation. During the last 12 months, back complaints were reported by 69.4% and neck complains were reported by 79.2% of workers. An impaired physical HRQoL (PCS <50,11) was identified in 72.2% of subjects. An altered mental HRQoL (MCS <47.96) was identified in 76.4% of workers. In the multivariate analysis, BMI was found to be a risk factor for MSDs of the back (OR: 1.2), whereas time spent in front of the computer screen was found to be a risk factor for MSDs of the neck (OR: 2.8). MSD of the back was an independent predictive factor for a more altered physical HRQoL (OR: 7.45), whereas MSD of the knees was an independent predictive factor for more altered mental HRQoL (OR: 1.87).

Conclusion The prevalence of MSDs among female office workers is high and have a negative impact on both physical and mental HRQoL.

P-374 LIFE AND DEATH AT WORK: A TUNISIAN PROSPECTIVE STUDY

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Introduction Death at work remains a frequent pressing public health issue despite undeniable progress in occupational health and safety. This study aims to assess cases of deaths at the workplace reported in the Forensic Medicine Department of a public hospital in the central region of Tunisia.

Patient and Methods A prospective exhaustive study was conducted in the Forensic Medicine Department of a public hospital located in the central region of Tunisia (Mahdia). This study concerned death occurring in the workplace for which a forensic investigation was carried out during a period of four years from January 2016 to December 2019.

Results Of the 728 deaths reported to the Forensic Medicine Department during the study period, only thirty-five deaths occurred in the workplace with an incidence of 4.8%. The deceased were mostly men (sex ratio = 4) and mean aged 48 years. Victims were blue-collar workers in 97% of cases, fishermen in 34% of cases, security guards in 14% of cases, construction workers in 12% and finally agricultural labourers in 2% of cases. The mechanism of

death mostly reported was drowning (34%) followed by cardiac accidents (23%) and trauma (16%). This study revealed a case of suicide in the workplace and two cases of white autopsy.

Conclusion Deaths in the workplace fall into two broad categories: deaths due to workplace injuries or fatal work-related accidents including motor vehicle accidents, machinery-related events, homicides, falls, and electrocution, and deaths due to chronic diseases such as ischemic accidents, aortic dissection. This study has highlighted the contribution of early autopsy in revealing the cause of deaths occurring in the workplace and the need to implement preventive measures to minimize workplace-related preventable deaths.

P-375 OCCUPATIONAL FUTURE OF HEALTHCARE WORKERS WITH OCCUPATIONAL DERMATITIS.

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Aim To identify factors influencing the occupational future of healthcare workers suffering from occupational dermatitis.

Patients and Methods This was a multicenter cross-sectional study of healthcare workers suffering from occupational dermatitis in the four public hospitals in the central region of Tunisia. A synoptic sheet related to socio-professional and administrative data was completed. A self-questionnaire relative to medical data and occupational future was completed during a direct interview.

Results The study involved 40 healthcare workers, only 37 workers were included in the study. They were predominantly female (73%) and mean aged 44.7 ± 9.4 years. A request of reclassification was introduced in 19 cases (51%), workstation adaptation in 14 cases (38%) and allergen eviction in 20 cases (54%). A mutation was reported in two patients (5.4%) and three workers retired (8.1%). A statistically significant association was found between the request of reclassification, a history of allergic manifestations ($p = 0.003$) and the allergic agent ($p = 0.014$). Workstation layout was significantly associated with a history of allergic manifestations ($p = 0.039$), the hand palm location ($p = 0.04$), and eviction measures. After multiple binary logistic regression, the request of reclassification was significantly correlated with a history of allergic manifestations ($p = 0.008$), a sensitization to nickel sulfate ($p = 0.009$) and the fingers location ($p = 0.038$). The change of workstation was significantly correlated with a history of allergic manifestations ($p = 0.026$).

Conclusion The occupational future of healthcare workers suffering from occupational dermatitis depends on a history of atopy (especially allergic rhinitis) and sensitization to allergens (thiuram mix).

P-376 ORIGIN, PREVALENCE AND DETERMINANTS OF VIOLENCE IN PUBLIC HOSPITALS IN TUNISIA.

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Objective To assess the prevalence of violence in the health-care environment and to identify its respective origin and determinants in two university hospitals in the Central-East region of Tunisia.

Methods A bi-centric and exhaustive cross-sectional study was carried out in health professionals from two public hospitals in the Center-East of Tunisia over a period of eight months. The study was based on a self-administered and structured individual questionnaire composed of two parts: a first part for the evaluation of the socio-professional characteristics of the participants and a second part for the evaluation of violence at work (VAW) and its origins (external and internal).

Results A total of 546 healthcare professionals agreed to participate in this study, giving an overall response rate of 19%. The prevalence of VAW was 95.8%. The mean age was 34.5 ± 9.6 years with a sex ratio of 0.42. Doctors, Nurses and Senior Technicians were significantly the most exposed to VAW ($p = 0.000$). External violence (EV) was more frequent than internal violence (IV) (93.4% and 77.8%, respectively). EVs were moral (92.3%) and physical (73.4%) and IVs were mainly moral (76.9%). After multivariate regression, the predictive factors of VAW were the level of education (primary/secondary, OR = 12.2) and the profession (Technician (OR = 21.2), Doctor (OR = 14.5) and Nurse (OR = 12.8)). Predictors of EVs were nationality (OR = 6.2), level of education (primary/secondary, OR = 7.2) and occupation (Doctor (OR = 10.4) and Nurse (OR = 8.8)). The only predictor of IV was male gender (OR = 0.6).

Conclusion This study has identified a high prevalence of VAW among health workers dominated by external violence. Sensitization and staff training on the management and prevention of violence should be necessary to improve professional performance in public hospitals.

P-377 THERMAL CONSTRAIN IN A TUNISIAN STEEL COMPANY

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Background Historically, the arduous sectors of work have been those that are physically heavy such as work in the steel industry. In this context, this arduousness is related to significant thermal constraints caused by the production processes. In Tunisia, this sector employs more than 2498 workers. This study aims to identify the heat strain at work in the steel industry by measuring the metabolism of work.

Methods A cross-sectional and exhaustive study was conducted in a steel company located in the governorate of Monastir (Tunisia). The study was conducted in the hot season during the months of August and September 2015. The evaluation of the thermal constrain was made through the evaluation of the metabolic rate in accordance with the recommendations of the 'analysis' level of the international standard ISO 8996 'Ergonomics of the thermal environment – Determination of metabolic rate'. This analysis was based on the recording of heart rate during work.

Results A total of 80 male workers aged 37.9 ± 9.25 years and having an average job tenure of 12.5 ± 11.4 years were included. The mean absolute cardiac cost was 18.67 ± 6 beats per minutes. The average relative heart rate was $17.1\% \pm$

5.8% . The equivalent metabolic rate was estimated at 292.7 ± 59.8 Watts. The interpretation of the workload based on the equivalent metabolic rate, the percentage of use of the maximum work capacity and the limit time for this metabolic load was rated as acceptable for the majority of workers (84.8%).

Discussion and Conclusion In Tunisia, the steel sector is an active sector of activity. The present study objectively quantified the physical workload in the steel sector in hot season. For most workers, the workload was light to moderate. Nevertheless, a preventive approach combining technical, organizational and medical actions should be implemented.

P-379 FATIGUE AND SLEEPINESS AT THE WHEEL: CASE OF PUBLIC BUS-DRIVERS IN THE CENTER OF TUNISIA

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Introduction The World Health Organization estimated that fatigue and sleepiness multiply the risk of road traffic accident by eight. Indeed, fatigue, related to physical, mental or emotional workload, generates disruption of physiological functions and sleep-wake rhythm. This impact drivers' cognitive performance with disruption of the decision-making process and lengthening of reaction time.

Objectives To assess the prevalence of fatigue and sleep disorders among bus drivers in a public transport company and to identify the associated socio-demographic, medical and occupational risk factors.

Materials and Methods

An exhaustive cross-sectional survey was conducted over three months, among bus drivers of a company in the center of Tunisia. Validated questionnaires of Pichot, Epworth and Pittsburgh were used for the assessment of sleep quality and drowsiness.

Results The study population was exclusively male ($n=197$). The mean age was equal to 40 ± 6.5 years and the bus driving seniority was higher than 10 years in 58% of cases. According to Pichot's score, 60% of bus drivers were concerned with fatigue, in high level for 6% of cases. In addition, 40% of the drivers suffered from excessive daytime sleepiness. The sleepiness was slight in 24% of cases and moderate in 16% of cases. According to statistical analysis, medical history ($p=0.05$), snoring ($p=0.04$) and the nature of the traffic circuit ($p=0.04$) emerged as bus drivers' fatigue risk factors. Sleepiness was associated with several individual and occupational factors including obesity ($p=0.02$), tea and/or coffee consumption ($p=0.01$), seniority ($P=0.07$) and daily driving time ($p=0.04$).

Conclusion Fatigue and sleepiness among bus drivers were statistically associated with individual characteristics and work organization specificity. Efficient global preventive strategy must promote healthy lifestyle among drivers (fight against sedentary, substance abuse, promotion of physical activity...) and take into consideration their working days duration and organization.