Results Twenty-nine studies have been found from the referred theme. Several studies have been performed in animal models. Only three papers reported the effects of metals on sleep-wake cycle. The first one was carried out with a population living in the surroundings of a metal recycling plant, where authors have detected that the exposed population had 2.3 chances to report sleep complaints. The other two studies observed children and pre-teens with high levels of lead in the blood have been associated to delay in the onset of sleep, longer duration of nocturnal awakenings, shorter duration of sleep, insomnia (OR=2.01) and longer daytime sleepiness (OR=2.90).
Discussion There are effects which link the environmental exposure to lead and cadmium with sleep complaints. Considering there are several production sectors, such as mining, and manufacturing processing industries that work with such metals and whose workers are in continuous shifts, it is likely that workers in these industries may suffered the effects of metal exposure and those leading to changes in biological rhythms caused by shift work.
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1358 ACQUIRED DYSCHROMATOPSIA IN MEXICAN WORKERS OF A CHEMICAL INDUSTRY EXPOSED TO A MIXTURE OF ORGANIC SOLVENTS

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Introduction Acquired dyschromatopsia is an early and sensitive marker of ophthalmic neurotoxicity due to chronic exposure to various chemicals. The overall objective of this research was to identify changes in colour vision acquired the personnel occupationally exposed (POE) to a mixture of OS (benzene, toluene, xylen –BTX-).
Material and methods A cross-sectional study was conducted in two groups of workers; one occupational exposure to a mixture of OS and one without exposure to the chemical industry. The participants answered a questionnaire to explore risk factors acquired discromatopsia. Subsequently, the test Lanthony 15 desaturated (LD-15) in each eye was used to determine the ability of colour discrimination and Confusion Chromatic Index (CCI) was quantified. All ratio >1 was interpreted as abnormally increased. The data univariate and bivariate analysis were submitted. Association tests were implemented (*t* test, Chi^2 and logistic regressions).
Results The total population was 142 workers, 5.4% of whom had a profile consistent with congenital dyschromatopsia and were excluded from the final analysis. The group of 73 workers was exposed, while the unexposed group was 65. The average age was 43.9 years (±10) and 42.7 years (±12), respectively. The prevalence of acquired dyschromatopsia in both eyes was higher for the exposed group; 8% in right eye and 9% in left eye, however, no statistically significant differences from the unexposed group. Quantification of CCI was slightly higher in the exposure group (1.09) compared to the group without exposure (1.08), although the differences between groups were not statistically significant (p=0.73).
Discussion The results are consistent with those of other investigators; ICC ratio is higher in the exposed group, as well as the prevalence of acquired dyschromatopsia, being the most common for both groups.

1244 ELECTROENCEPHALOGRAPHIC STUDIES AMONG DRIVERS BEFORE AND AFTER TEST ON BUS SIMULATOR

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Introduction The aim of the study was to evaluate the effect of the test on the simulator on the bioelectric activity of the brain of professionally active drivers.
Methods Electroencephalography registration was performed with the 32-channel recorder. Electrodes locations were specified by the International 10–20 system. The records were performed before the start of the test on the simulator, which enables full simulation of real road conditions (Exam I) and after its completion (Exam II). A recording was performed, with eyes closed, for 30 min. At 2,5,6,23,25 min of the test, the eye was opened and closed, at the 8th min. – a test of deep breathing (hyperventilation test – 3 min) and intermittent photic stimulation. We used stimulation with frequencies of 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 Hz and back. 45 subjects were enrolled to study. All subjects were bus drivers aged 31–58 years (43.5±7.9 years), seniority as a bus driver of 13.3 ±8.6 years. The frequency and amplitude of the basic activity of the brain was analysed and compared between left and right homologous EEG channels in Exam I and II.
Results The basic activity brain parameters were analysed at rest, 2–3 min hyperventilation and after activation attempts. In the Exam I hyperventilation revealed a statistically significant difference between basic rhythm frequencies (p=0.043). In the left-side channels, the mean value was significantly higher than in the right-side channels (10.49±1.34 vs 10.30±1.19), the difference was not observed in the Exam II (10.46±1.66 vs 10.29±1.64, p=0.397).
Discussion This difference could not be explained by the physiological response to hyperventilation. There were no differences between the baseline rhythm recorded at rest at both the first and second test. The explanation of these results requires further studies.

Occupational Health and Development

1133 CALLING OCCUPATIONAL HEALTH TO THE FOREFRONT

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Introduction An overview was conducted of the exposure and impact Occupational Health has had in RSA when compared to Safety and the Environmental disciplines. Although Occupational Health eventually established a foothold in RSA during the industrial era of the early 1900's, the discipline appeared to have evolved much slower with limited recognition. A foundation to further develop evidence based strategies that could revitalise the

effective use and or recognition of Occupational Health in the multi-disciplinary approach was much needed.

Method A scoping review of over 50 literature resources published since 2012 was conducted. The focus was on the evolvement and/or impact of historic milestones, legal frameworks, stakeholder involvement, and awareness strategies in RSA as compared between the disciplines of Occupational Health, Safety and Environment. The literature sources predominated around level 7 evidence. These were current legislation, standards, journal articles, professional association guidelines, professional newsletters, news and media feeds. A content analysis was conducted and tabularised for comparison.

Results Although health appeared to be a common thread, it was frequently coupled with safety and/or the environment resulting in a diluted picture with health in the background. The volumes of legislation, standards and guidelines for safety and the environment far outweighed Occupational Health. Implementation focused on safety and/or environmental strategies rather than health which was not decentralised to the district level such as environmental that had municipality bylaws, neither was it broken down into tangible levels for society and communities. Occupational Health in RSA hospitals still remains a huge concern. Small to medium business enterprises were overlooked and currently still pose as one of the challenges.

Discussion Increased involvement by the OHPs is strongly needed in government decision and policy making processes to cover the gaps. Occupational Health needs commitment, implementation, evaluation, support and penalties of non-compliance by stakeholders, government and labour.

1141 RISK OF STAPHYLOCOCCUS AUREUS EXPOSURE AMONG WORKERS IN SELECTED CATTLE AND SMALL RUMINANTS SLAUGHTERHOUSES IN TANZANIA

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Introduction The occupations involving working with animal production have for so long been known to bring significant health risks to workers, with distinctive attention to injuries. However, workers employed at slaughterhouses are at risk of pathogen exposure and especially zoonotic ones due to general working condition that exposes them directly to live animals, carcasses and viscera of possibly infected animals. The increased use and misuse of antimicrobials in animal treatments and feed to promote growth have increased the development of antimicrobial resistance, exposing workers to a more serious infection. This study aimed to determine the prevalence of nasal antibiotic resistant *Staphylococcus aureus and* associated risk factors.

Methods A cross-sectional study was conducted to collect data using questionnaire for information on occupational and personal history, checklist for working conditions and nasal swabs from 427 workers at slaughterhouses in Dar es Salaam, Dodoma and Arusha regions in Tanzania. Swabs were tested for *S.aureus* and later isolates were screened for antibiotic susceptibility.

Results Overall prevalence of *S. aureus* nasal carriage was about 30.0% where as 5% was resistant to antibiotic. The prevalence was higher in slaughter or carcass processing workers but also about 5 times higher in cleaning. Many slaughterhouses had poor infrastructure, less than 60% had a toilet and less than 20% had hand-washing facilities. Slaughtering of sick animals was observed in about 10% of slaughterhouses. Less than half of workers wore personal protective clothing

Conclusion Working conditions of majority of cattle slaughterhouses visited in Tanzania are not in line with the health and safety recommendations. Current facilities and practices may increase occupational exposure to biological hazards. Cattle slaughterhouse workers may have increased exposure to livestock-associated *S. aureus*, particularly MRSA. Therefore, further epidemiologic investigation on occupational exposure to livestock-associated *S. aureus* is required.

1146 OCCUPATIONAL PHYSICAL INJURIES AMONG WORKERS IN ONSHORE OIL DRILLING OPERATIONS IN TURKANA COUNTY, KENYA

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Introduction Onshore oil drilling involves the use of heavy machinery and tools which contribute to occupational injuries. In Kenya, onshore oil drilling attracts workers from varied socio-economic backgrounds who operate in isolated locations coupled with harsh environmental conditions. Such conditions not only influence occupational hazards, but give rise to occupational injuries. The study sought to assess the occupational physical injuries among workers in onshore oil drilling operations in Turkana County, Kenya.

Methods A cross-sectional descriptive study was conducted among workers from October 2015 to February 2016. A total of 164 workers were included in the study. Convenience sampling followed by systematic random sampling were used to select the study participants. Data were collected through pretested semi-structured questionnaires. Data collected were analysed using SPSS version 20. Multivariate logistic regression analysis was used to assess the relative effect of independent variables on the outcome variable. The level of significance was set at $p<0.05$.

Results 9.8% of the workers experienced physical injuries. Duration worked in oil drilling industry ($\chi^2=11.557$, $df=4$ $p=0.021$), level of education ($\chi^2=8.273$, $df=3$ $p=0.016$), hazard awareness ($\chi^2= 3.655$, $df=1$ $p=0.056$), worker awareness of activities at work that pose risks of injuries ($\chi^2=7.697$, $df=1$ $p=0.006$), awareness of occupational health and safety legal frameworks ($\chi^2=7.87$, $df=1$ $p=0.005$), worker participation in fire drills ($\chi^2=3.724$, $df=1$ $p=0.054$) and on job training ($\chi^2=1.359$, $df=1$ $p=0.038$) were associated with occurrence of physical injuries at bivariate analysis. Age (AOR=0.354, $p=0.014$, 95% CI: 0.154 to 0.811) and issues experienced while using Personal Protective Equipment (PPEs) (AOR=3.652, $p=0.053$, 95% CI: 0.984 to 13.553) were significant predictors to occupational physical injuries at logistic regression.

Conclusion There is a clear interplay between risk factors; socio-demographic factors, environmental factors, and behavioural factors with occurrence of physical injuries. This could be tapped to formulate occupational health and safety specific intervention strategies for the oil and gas industry.