

based on the concept and measure on work engagement of their subordinate workers in Japan.

**Methods** The study sample was all managers and employees of a financial enterprise in Japan. The study design was a single-group pre-and post-test study. We developed a one-session 150 min workshop-based training program based on the HSE management competencies framework, including lectures, group works, and homework. Work engagement of subordinate workers was measured at baseline and 1 year follow-up by the short version of new Brief Job Stress Questionnaire (BJSQ). Improvement of 12 areas of sub-competencies among managers was also assessed by using the HSE competency indicator tool.

**Results** 94 managers (92 men and 2 women) and 1187 subordinate workers (590 men and 597 women) participated in the study. The scores of work engagement did not increase significantly from baseline to 1 year follow-up among subordinate workers as a whole, with a small effect size (Cohen's  $d=0.05$ ). However, multilevel analyses revealed that improvements of 6 sub-competency areas of managers was significantly associated with increase in work engagement of subordinate workers, particularly for the integrity ( $\gamma=0.05$ ,  $p=0.03$  for the crude analysis;  $\gamma=0.05$ ,  $p=0.03$  after adjusting for the covariates).

**Conclusion** The training program for managers failed to show its effect on improving work engagement of subordinate workers, possibly because of the low intensity of the program. However, it is suggested that the integrity might be a key management competency to improve work engagement of subordinate workers.

1349

#### RESIDENCY PROGRAM IN OCCUPATIONAL MEDICINE GUIDED BY THE COMPETENCES REQUIRED TO PRACTICE THE SPECIALTY IN BRAZIL

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**Introduction** The professional training in Occupational Medicine in Brazil is guided by the list of competences defined by the National Association of Occupational Medicine (ANAMT) in 2003 and updated in 2016, covering 6 domains and 28 essential competencies headed by the competence of moral judgment. This work presents the results of a study carried out with the objective of elaborating a residency program in Occupational Medicine at the Hospital das Clínicas of the Federal University of Minas Gerais, with a duration of 2 years, distributed in 5760 hours, with emphasis on detailing the essential competences of the Professionalism and Study and Intervention on the Health Situation of Workers.

**Methods** The quantitative-qualitative study took as reference the competences defined by ANAMT and the norms that regulate the medical residency programs in the country, with the construction of matrices that were successively submitted to the appreciation of residents, graduates of the program and professionals specialised in the area. At the end, a Seminar was held to validate the results.

**Result** A preliminary document was produced where the main technical knowledge, skills and attitudes expected for each general competence contained in the fields of Professionalism

and Study and Intervention on the Health Situation of Workers were defined and listed.

**Discussion** This study detailed the general competences of the first two domains of the competency matrix prepared in 2016 by ANAMT with the aim of making their use easy and practical. This detail can serve as a platform for the development and orientation of Medical Residency Programs in Occupational Medicine.

1351

#### VIOLENCE AGAINST STUDENT NURSES BY PATIENTS AND THEIR RELATIVES IN PUBLIC HOSPITALS IN KWAZULU-NATAL, SOUTH AFRICA

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**Introduction** Workplace violence in the healthcare setting is increasing and poses a danger to healthcare professionals. It is reported that nurses are at three times greater risk of being exposed to violence in the workplace than any other professional group.

**Methods** A quantitative, descriptive, cross-sectional survey was conducted at four randomly selected campuses of the KwaZulu Natal College of Nursing. A non-probability convenience sample of 421 student nurses was realised. A validated and reliable instrument was used to collect data which was statistically analysed using SPSS 23. Tests included Pearson's correlation, t-tests, Anova and chi-square.

**Result** Majority of those sampled were female and Black with more female victims of workplace violence than males. Male patients and their relatives were most often the perpetrators. Male students reported depression and negative effects on personal relationships more often than females. Males felt that it was not important for them to report any workplace violence and more males saw it as part of the job.

The wards were the most likely site to experience violence with the operating theatres the least likely.

The senior students reported more abuse in the workplace than the junior students. There were no significant relationships between the year of study and reporting of violence and the awareness of any policy in the hospital addressing workplace violence.

Violence in the workplace was not, for the majority of those sampled, a reason to consider leaving the profession.

**Discussion** Student nurses are victims of workplace violence, perpetrated by patients and their relatives, in the public hospitals of KZN. They call in absent at work and feel angry and depressed. Many of these victims do not report the incidences of abuse that take place during their clinical placement and many are not even aware of the policies that exist in their institutions.

1431

#### ASYNCHRONOUS, ONLINE TRAINING OF HEALTHCARE WORKERS AND HYGIENE/SAFETY MANAGERS IN OCCUPATIONAL HEALTH AND HYGIENE

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**Background** The Global Program in Occupational Health Practice (GPOHP) is a 400 hour, online, interactive program with 2 tracks in Health and Hygiene. GPOHP has trained 135 individuals from 85 different countries over 8 years.

**Methods** An online survey of course participants was administered to determine the value of this training and to guide future content and training methods.

**Results** 30% of the prior course participants from 19 countries responded. 68% received company sponsorship for tuition, 19% received scholarships and 13% were self-funded. Respondents reported a significant increase in knowledge base, greater confidence in doing their jobs, clarity about where to seek the best resources, awareness of global standards, and how to execute specific activities including, incident (accident) investigation, noise monitoring, ergonomic assessment, return to work after injury/illness, and development of a worker screening program. A few described moving up in their careers because of this training. Several participants continue to share ideas and plans with their classmates across national boundaries.

**Discussion** Online training in OH is an important and apparently successful tool for training those without locally available courses. Asynchronous communication lowers expenses by reducing time off work and out-of-country. Hands on activities applied in their own work settings with feedback from experts were likely to be key in developing relevant and immediately applicable skills. Establishing a network of OH providers could improve conditions for workers and companies, globally.

#### 1450 OUTCOMES OF AN INNOVATIVE TRAIN-IN-PLACE OCCUPATIONAL MEDICINE RESIDENCY PROGRAM

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**Introduction** Physicians making a mid-career change in specialty may find options for formal training limited. We describe a train-in-place program, with measureable outcomes, created to meet the challenge of training mid-career physicians desiring formal training in the field of Occupational Medicine. Our objective is to evaluate educational outcomes from a novel residency program for mid-career physicians seeking formal training and board certification in Occupational Medicine.

**Methods** Physicians train-in-place at select Clinical Training Sites where they practice, participating in eighteen visits to Philadelphia over a two year period. Program components include competency-based training structured around Subject Area Rotations, mentored trainee projects and periodic auditing visits to the Clinical Training Sites by program faculty. The main outcome measures are achievement of Accreditation Council on Graduate Medical Education milestones and American College of Occupational and Environmental Medicine competencies, performance on the American College of Preventive Medicine examinations, diversity in selection and placement of residents after training, and the number of graduates who remain in the field.

**Results** Graduates, 113 to date, comprised 7.5% of new American Board of Preventive Medicine diplomates over the past decade, score competitively on the certifying examination, achieve all milestones, express satisfaction with training, and are geographically dispersed representing every region of the United States. Most practice outside of the 25 largest Standard Metropolitan Statistical Areas. Over 95% remain in the field.

**Conclusions** Training-in-place is an effective approach to provide mid-career physicians seeking comprehensive skills and Board certification in occupational medicine formal training, and may be adaptable to other fields.

#### 1472 DEVELOPMENT AND VALIDATION OF THE JOB CRAFTING SCALE FOR UNIVERSITY STUDENTS

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**Introduction** The interest of the project 'Ready for Work' is in educating students to enhance occupational well-being in order that they will transfer the learnt to their future work. Job crafting was chosen as one concept that students should master. The first act was to assess the students' study related job crafting. For this the job crafting scale (Tims, *et al* 2012) required modifications. The aim of this paper is to present the job crafting scale modified for assessing the students' job crafting and its validation results.

**Methods** The modified scale consisted of 23 items, 8 items measuring dimension 'increasing structural job resources', 6 measuring 'increasing social job resources', 4 measuring 'increasing challenging demands' and 6 measuring 'decreasing hindering job demands'. 768 university students answered the questionnaire. The scale was tested by using reliability assessment and exploratory factor analysis.

**Results** The four dimensions each had good reliability. Cronbach alphas ranged 0.78–0.91.

The four factors explained 56,6% of the variance. However the structure of four dimensions was not well supported. The first factor (Eigenvalue 7) explaining 35% of the variance consisted of items measuring 'increasing social job resources'. The second factor (Eigenvalue 2,4) explaining 10% of the variance was related to items of 'increasing structural job resources' as well as 'increasing challenging job demands'. The third factor (Eigenvalue 1,5) explaining 6,5% of the variance consisted of items measuring 'decreasing hindering job demands'. The fourth factor explaining 5% was related to a few items concerning the negotiation of the work to be done.

**Conclusion** The correspondence between students' work and employees' work needs deeper theoretical consideration when developing the scale for students' job crafting further. The scale items assessing job crafting factors 'increasing structural resources' and 'increasing challenging job demands' were related and this needs careful interpretation.

#### 1489 OCCUPATIONAL HEALTH HISTORY TAKING ATTITUDES AND BEHAVIOURS OF CHIROPRACTIC INTERNS

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**Introduction** Occupational illness and injuries are a major health burden, with the large majority being musculoskeletal related. Because of this, health care providers, such as chiropractors, should understand the role of work in health conditions. This pilot study assessed the occupational history taking attitudes and behaviours of chiropractic interns for one year,