

corresponding set of actions for safe practice. These cluster around four important areas: Education, training and clinical supervision; Interpersonal relationships; IPV enquiry; Safety planning.

**Conclusions** In this presentation we will explore the important mechanisms through which health professionals' responses to IPV can be improved. The presentation will appeal to delegates interested in the relationship between health care, violence and IPV safety planning.

### 390 INTIMATE PARTNER VIOLENCE: TURKEY'S FEMICIDE PROBLEM

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**Background** Throughout Turkey, violence that women have been subjected to is still widespread. Murder of women or femicide involve intentional-murder-of-women because they are women and increasing worldwide as it is in Turkey. In spite of juristic-regulations and precautions made to prevent violence against women, femicide in Turkey has not stopped-proof that the problem is structural in-nature. Collecting correct-data on femicide is challenging, largely because police and medical-data-collection-systems on homicide often do not have satisfactory-information or do not report the victim-perpetrator relationship or the motives, let alone gender-related motivations for murder. The study objective is to collect data on number and some characteristics of femicide in 2012 in the newspapers and compare the numbers them with other available data.

**Methods** 2012 issues of four top-newspapers from different media-agencies are reviewed. For every femicide a file-created, and collected-data from four-newspapers merged according to the 37 items of data-collection-sheet.

**Results** 202 femicide cases were found. Of the victims 31.7% were aged 25–34, 43.1% were married, 59.4% had children, 4% were pregnant. Of the perpetrators, 26.7% were aged 25–34, 56.9% were married, 48.5% had children, 41.1% were the victim's-husband, 7.4% were the victim's-separated-spouse, 5.9% were the victim's-ex-husband, 19.3% were victim's-boyfriend and 4.5% were victim's-ex-boyfriend. Of the femicides, 33% had discord, 18.4% had violence, 9.4% had intimidation-history. 8.9% of women demanded police-protection. Firearm use was 44.2%, and 54.5% cases' place of death was home.

**Conclusions** A huge gap between existing laws and what is happening in reality and femicide which is a common criminal problem in Turkey. But data is not consistent. In 2012, according to newspapers 202, Ministry of Family and Social Policies 145, woman organisations 210 femicide were detected mainly due to the definition-differences. In spite of the limitations, newspapers are the only accessible-source at the national-level. The penalties of the Law (Protection-of-the-Family-and-the-Prevention-of-Violence-against-Women) are not a deterrent force and in spite of juristic regulations and precautions made to prevent violence against women, femicide in Turkey has not stopped-proof that the problem is structural in nature. Thus, ending this problem requires additional reforms and the establishment of new sustainable policies with the ultimate aim of reconstructing society.

### 391 RISK FACTORS OF INTIMATE PARTNER VIOLENCE (IPV) OF THAI WOMEN

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**Background** IPV is a global concern and have a devastating effect on women. In order to understand its underlining causes, many studies tried to determine risk factors which make some women vulnerable to IPV. Determining risk factors, which are direct causes of IPV, or identifying common characteristics of victims to target services, can assist in designing effective IPV prevention programs. This study aimed to analyse risk factors of IPV in Thai women.

**Methods** A province in the central part of Thailand was selected to be the site for this study. A random sample of women in the reproductive age group in the province was conducted. In total, 299 women participated in an interviewer-administered survey during October 2010 – March 2011. Interviewers were nurses and social workers who had been trained in interviewing techniques. Data on socioeconomic characteristics, types and experience of IPV, attitude towards traditional gender roles, partners having extra marital sexual relations, pleasure in sexual intercourse and issues relating to formal marriage were collected. Multivariate regression analysis was employed to identify risk factors influencing IPV scores.

**Results** Approximately 14% of women in this study experienced physical or sexual violence. There was no significant difference in socioeconomic characteristics of women who experienced IPV versus no experience. Responses of being humiliated, scolded, beaten, pushed, forced sex were 22.6%, 11.3%, 8%, 12.8% and 4% respectively. Experience of physical abuse, sexual abuse and partners having extra marital sexual relations were significantly associated with IPV scores (the standard coefficients = 0.312, 0.424 and –0.192) ( $p = 0.00$ ). Adjusted R square = 0.41.

**Conclusions** Screening to identify risk factors in Thai women can assist in intervention designs to prevent IPV. Including factors at other levels (e.g. policy and laws etc.) should also be considered for a comprehensive intervention design.

## Arctic Safety

Parallel Wed 1.6

### 392 LOW HAND TEMPERATURES CAN BE A RISK FACTOR IN ARCTIC SURFACE MINING

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**Background** Human body responses to cold exposure by decreasing circulation in skin, arms and legs to prevent heat loss. Hands and feet are especially vulnerable to cooling as their own heat production is minimal and their heat balance depends almost totally on the heat transported by circulation. The thermal insulation of handwear is usually smaller than that in footwear, as manual performance is decreased by thick and clumsy handwear. As a result, cold hands are a common problem in outdoor work. Cooling of hands decreases manual performance and tactile sensitivity

and increases the risk of accidents. This study aimed to quantify the problem of cold hands in Arctic open pit mines.

**Methods** The questionnaire study was carried out in four open pit mines in Russia, Finland, Sweden and Norway. Moreover, skin temperatures as well as thermal sensations were recorded in Kevitsa (Finland) and Aitik (Sweden) open pit mines among 14 male and 2 female mine workers with duties consisting mainly of outdoor work.

**Results** The questionnaire study (n = 1323) revealed that experienced cold problems were negligible at ambient temperatures above  $-10^{\circ}\text{C}$ . However, at  $-10 - -20^{\circ}\text{C}$ , 25% of workers estimated that their prevailing thermal sensation was "cold". Skin temperature measurements showed that finger skin temperatures were below  $15^{\circ}\text{C}$  (a threshold for sharp performance decrement) for 21% of the working time.

**Conclusions** The questionnaire study and skin temperature measurements suggest unequivocally that hands/fingers are so cold that manual performance is markedly decreased in more than 20% of workers/working time. Such a decrease in manual performance increases the risk of accidents. It should be noted that during the skin temperature measurements ambient temperature was never below  $-16^{\circ}\text{C}$ . Improved cold protection should be directed to cold sensitive workers and tasks especially at ambient temperatures below  $-10^{\circ}\text{C}$ .

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### 393 THERMAL AND VISUAL PROBLEMS WHILE USING FAN-ASSISTED RESPIRATOR IN THE COLD

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**Background** Respirators protecting against airborne particles and gases are also needed in cold environments. However, low temperature causes special problems such as freezing of exhaled moisture in the respirator, increases respiratory resistance and hampers communication. Fan-assisted respirators aim to solve the problem of respiratory resistance. However, there are a lot of complaints that the high and continuous air flow inside the face shield cools the face and eyes. This study aims to quantify the cooling problem and seeks solutions.

**Methods** Fan-assisted respirator with the face shield together with the battery-powered fan and filters was used. Air flow rates were 170 and 240 l/min. Exposure temperatures were  $-10$ ,  $-20$  and  $-30^{\circ}\text{C}$ . Under the face shield the face skin was either unprotected or protected by a facemask (balaclava with a ventilator). Five male volunteers participated in the study. Face skin temperatures were measured at forehead, cheek, nose and lower lip. In the exposure temperature the subjects were standing, stepping and lifting for altogether 30 min.

**Results** Face skin temperatures were between  $5$  and  $17^{\circ}\text{C}$  and thermal sensation was "cold" without the facemask. While the facemask was used skin temperatures were between  $17$  and  $30^{\circ}\text{C}$  and thermal sensation was "slightly cool". Fogging of the visor started from the sides in 10 to 15 min (exercise started) and humidity started to freeze soon after, regardless of the use of the facemask.

**Conclusions** The flow of air inside the fan-assisted respirator decreased skin temperatures to uncomfortable level within  $5 - 10$

min without the facemask. The lowest temperature was measured in the lower lip. The use of facemask kept the skin temperatures in comfort/acceptable level. Freezing of exhaled moisture in the face shield was a marked problem without and with the facemask. It seriously restricted the eyesight causing a critical safety issue. Further development is needed for the respiratory protection in the cold.

### 394 SMART PROTECTIVE SOLUTIONS FOR WORK IN THE COLD

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**Background** Human and industrial activities are increasing in the Arctic. Several countries are involved in Arctic business e.g. through oil and gas, mining, fisheries, tourism, as well as technology suppliers and developers for those fields. Year-round activity in the area involves challenging climate for the industries as well as workers' performance and occupational safety. In the cold, thermal comfort, work capacity and productivity decrease and the risk of mistakes, errors and accidents increase. Peripheral or uncovered body parts, like hands, are the first to cool when humans are exposed to cold resulting in reduced manual and psychomotor performance.

Recently started SmartPro-project (Smart protective solutions for industrial safety and productivity in the cold) aims to assure productivity and occupational safety in cold by developing proactive auxiliary heating solutions for protective clothing and gloves. **Methods** The project is organised in three work packages (WP). WP1 develops an algorithm for monitoring cold stress for workers, WP2 creates novel gloves which have new design and optimal thermal insulation supported by auxiliary smart heating system, and WP3 is for project management and dissemination.

**Results** This project will develop novel solutions for interactive heating systems for the hands and early warning systems of critical levels of cold. Smart solutions, such as wireless sensors, wearable computing and auxiliary heating together with material solutions, will be integrated into a protective workwear jacket and novel designed gloves.

**Conclusions** The SmartPro-project will lead to smarter and safer work in several industries, where workers are frequently exposed to harsh weather environment. Integrating wireless sensors in protective clothing and gloves will provide, together with the knowledge from the thermal environment, an early warning mechanism of critical level of cold exposure on work site and on an individual level in real time.

### 395 WINTER TYRE TYPE AND TRAFFIC SAFETY

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**Background** The winter tyre type have various effects on traffic safety. These effects have been analysed in three separate studies published between December 2014 – December 2015.

**Methods** The main questions of the 3 studies were a): what's the safety difference between studded tires and studless tires and b) how can we promote traffic safety connected to winter tires? The