was significantly associated with LBP, even when adjusted for other known predictive factors. Thus, preventive initiatives for low back pain among healthcare workers must focus on limiting manual patient handling and include the use of proper mechanical patient handling equipment and training on the use of these equipment.

P.3.05 MARITIME FATAL ACCIDENTS AND VESSEL DISASTERS IN TAIWANESE FISHING VESSELS, 2003–2015

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Introduction Fishery is a hazardous industry with high occupational fatalities, mainly due to vessel disasters, especially among smaller vessels, according to European and North-American studies. However, Asian countries with different industry status and larger portion of global marine capture production are short of adequate investigation.

Methods In Taiwan, Fisheries Agency provided compensation for maritime fatalities and capsizing vessels, and recorded all enrolled crews and fishing vessels in Fishery Administration Management Information System. Using these two databases, incidence rate and odds ratio (OR) were calculated to depict an overall picture of maritime fatal accidents and associated causal factors.

Results From 2003 to 2015, there were 562 cases of fatal accidents, whose mechanisms were man overboard (368, 65.5%), followed by capsizing (53, 9.4%). Overall incidence rate was 3.6 per 10 000 man-labour year. The rates were 2.51, 4.12, and 7.28 per 10 000 man-labour year, and odds ratios were 1.0, 1.64 and 2.90, for coastal (<12 Nautical miles, Nm), inshore (12–200 Nm), and deep sea (>200 Nm) fisheries.

There were 632 cases of vessel capsizing, whose mechanisms were fire (162, 25.63%), followed by natural disaster, mechanical problem (85, 13.45%), and collision (71, 11.23%). Overall incidence rate was 152.01 per 10 000 vessels. The rates were 7.15, 21.42, 71.48, and 51.95 per 10 000 vessels, and odds ratios were 1.0, 3.00, 10.05 and 7.29, for small-sized (sampan and fishing raft), small-medium-sized (<20 gross registered tonnages, GRT), medium-large-sized (20–200 GRT) and large-sized (>200 GRT) vessels.

Conclusion Our findings showed the mixed effect of vessel size and fishery types on maritime fatal accidents, and deep-sea medium-large-sized vessels, as the smallest vessels in deep sea fisheries, had the highest risk. Compared with other developed countries, more than half fishing vessels of deep sea fisheries in Taiwan are less than 100 GRT, and preventive intervention should be focused on these vessels.

P.3.06 MARITIME FATALITIES DUE TO ACUTE ILLNESS IN TAIWANESE FISHING VESSELS, 2003–2015

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Introduction Fishery is notorious for its high maritime fatalities. Apart from fatal accidents, acute illness without timely emergency medical care may be another important reason for maritime fatalities. However, compared with fatal accidents, maritime fatalities due to acute illness are much less discussed and investigated, and there is need for epidemiological evidence to support and develop preventive strategies.

Methods In Taiwan, Fisheries Agency provided compensation for maritime fatalities, and recorded all enrolled crews in Fishery Administration Management Information System. Using these two databases, incidence rate and odds ratio (OR) were calculated to depict an overall picture of maritime fatalities due to acute illness and associated causal factors.

Results From 2003 to 2015, there were 665 cases of maritime fatalities, whose mechanism were fatal accidents (562, 84.5%) and acute illness (103, 15.5%). Overall incidence rate of maritime fatalities due to acute illness was 0.67 per 10 000 man-labour year. The rates were 0.27, 0.70, and 2.58 per 10 000 man-labour year, and odds ratios were 1.0, 2.60 and 9.65, for coastal (<12 Nautical miles, Nm), inshore (12–200 Nm), and deep sea (>200 Nm) fisheries.

Conclusion Our findings showed that one in seven maritime fatalities is due to acute illness in Taiwanese fishing vessels, and deep sea fisheries had the highest risk, followed by inshore and coastal fisheries, which may be explained by difference in accessibility to emergency medical care. This calls for intervention like regular health screening and occupational health service to prevent the occurrence of acute illness in advance, especially in deep sea fisheries.

P.3.07 PROGNOSIS AND QUALITY OF LIFE IN WORKERS WITH OCCUPATIONAL UPPER LIMB INJURY

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Objectives Because literatures about health impact of occupational upper limb injury in injured workers are rare, the study aimed to investigate effects of the injury on workers' prognosis and health-related quality of life.

Methods This was a cross-sectional study of 206 workers with occupational upper limb injury recruited from two teaching hospitals. Their sociodemographic factors, work-related factors, disease severity, return to work status, psychological symptoms, and quality of life were assessed by questionnaire interview at 2 years after injury.

Results The study found that the majority of injured workers were middle-aged (44.0 ± 12.2 years) and men (58.3%). There were 36.3% workers did not return to work at 2 year post-injury. The average EQ-5D was 0.81 (ranged from 0 to 1), and the psychological symptoms using 5-item Brief Symptom Rating Scale was 4.19 (ranged from 0 to 20). The multivariable linear regression showed that high educated injured workers had poorer quality of life ($\beta = -0.218$, $p = 0.003$) and more psychological symptoms ($\beta = 6.35$, $p = 0.001$) than those with low education. In addition, workers with longer duration (months) of return to work had better quality of life ($\beta = 0.0013$, $p = 0.029$) and lesser psychological symptoms ($\beta = -0.05$, $p = 0.002$), and the workers' compensation scheme

may explain the inconsistent with previous studies, and further exploration for other reasons was warranted.

Conclusions The health impact of occupational upper limb injury are multiple aspects, including psychological, return to work, and quality of life. Further studies with longitudinal follow-up are needed to further elucidate their associated risk factors in different stages post-injury, which could be useful for prevention of workers' long-term disability.

P.3.10 CAUSES AND CONSEQUENCES OF WORK ACCIDENTS IN ESTONIAN AGRICULTURE

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Introduction Work accidents (WA) in agriculture are a problem all over the world. There are over 1,3 billion agricultural workers, that counts more than 50% of all the worlds' workforce. Even if the most of work tasks become more automated, farmers, family members and farm workers are facing risks at work that are higher than in most other occupations. Many accidents involve the handling of machinery or animals. The costs of WAs are increasing, exhausting national economy as a whole. The aim of this study is to analyse the main causes and consequences of WAs in Estonian agriculture.

Method The database of accidents in agriculture (2008–2017) has obtained from the Estonian Labour Inspectorate. WAs statistics is based on official reports of employers. Causes and consequences including injury severity, type and body region are described in the present study.

Results The main cause of WAs in agriculture is disregarding of safety requirements (28,9%), whereas more than half of cases remain unclear. Loss of control over animals or machinery (33,4%), falling and slipping (21,5%) and an attack or an assault by cattle (15,8%) are the main activity-based reasons of WAs. During the last decade the most were minor injuries (72,8%). By the type of injury most often wounds and superficial injuries (40,4%), bone fractures (25,6%) and concussion or internal injuries (16,2%) have been registered. Upper and lower limbs (35,7% and 33,6%) were the most often injured body regions.

Conclusions Agriculture is a sector with high accident risks, where injury rate shows steady tendency to increase. It is important to pay more attention on improvement of safety culture and prevention of work accidents in agriculture.

P.3.11 IMPLEMENTATION OF COMMUNITY-BASED OCCUPATIONAL HEALTH PROGRAMS FOR INFORMAL WORKERS IN INDONESIA

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Informal workers account for 60% of workforce in Indonesia. Most do not have access to occupational health and safety (OHS) services. The study aims to explore the implementation of community-based OHS program consisting of OHS post and cadres (referred to as UKK program) among informal workers in rural areas in Indonesia. This study was an implementation research using focus group discussion (FGDs) and key informant interviews (KIIs) to workers, primary health care (PHC) staff, and provincial and district program managers. Thematic analysis was used to identify barriers and enablers of UKK implementation at intrapersonal, interpersonal, community, organizational and policy level.

A total of 10 FGDs with informal workers from different areas of occupation, two FGDs with PHC staff and 6 KIIs with program managers were conducted. Informal workers faced various occupational risks yet personal protective equipment were rarely available or used. OHS was perceived as important, however, participation in UKK was low because of lack of time and information. There was lack of workers empowerment, resulting in top-down planning of activities by PHC. Informal workers expected PHC health workers to provide OHS services rather than UKK cadres. Not all PHCs have implemented UKK. Few programmers were trained on OHS. The program was assigned low priority and resource allocation by PHC and District Health Office. The absence of OHS regulation for informal workers offered little incentive for government departments to implement OHS programs and services for informal workers.

Informal workers had unmet needs of OHS. Substantial efforts are needed to implement UKK, especially investment in financial and human resources. UKK establishment should be focused at workplace with the highest occupational risks. Technical capacity of programmers responsible for health promotion and OHS should be improved. Local policy on social protection and OHS services for informal workers should be developed.

P.3.14 OCCUPATIONAL HAZARDS AMONG MIGRANT WORKERS: IMPACT ON THEIR FERTILITY AND MENTAL HEALTH

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Background More than 1,750 Nepalis leave the country daily for foreign employment. A total of 6 39 167 aspirant migrant workers left for various countries in last fiscal year 2016/17, up from 418,713 in previous FY 2015/16. Most the migrant worker destination is hot humid climate countries for occupational work especially chemical, biological hazards.

Methods It is the retrospective study among return migrant male 100 case reports with non-migrant control reports in (2016 Jan–2018 Nov.) years. Data of Semen analysis reports (questionnaire for duration of infertility, sperm count, percentage of normal sperm morphology, percentages of sperm), BMI, mini mental health examination and family details data was collected. Descriptive statistics, analysis of variance, and correlations were conducted using SPSS 21.0 and Epi info