

Editorial

The Socio-Economic Impact of Occupational Diseases and Injuries

The International Labour Organization¹⁾ has estimated that there are 2.34 million work-related deaths every year. Among them, 321,000 are due to accidents whereas the remaining 2.02 million deaths are caused by various types of work-related diseases, which correspond to a daily average of more than 5,500 deaths. The International Labour Organization¹⁾ states “The inadequate prevention of occupational diseases has profound negative effects not only on workers and their families but also on society at large due to the tremendous costs that it generates; particularly, in terms of loss of productivity and burdening of social security systems.” According to the International Social Security Association²⁾, 270 million suffer non-fatal workplace accidents each year with 160 million new cases of occupational illnesses; the financial burden of compensation, health care, rehabilitation and invalidity is huge: a sum equivalent to 4 percent of world GDP for work injuries alone. For some developing countries, the cost can be as high as 10 percent of GDP.

Farquhar *et al.* (2001)³⁾ stated in their book “Public health has, for many years, been concerned with efforts to increase the efficiency of health care delivery, to measure changes in health care resource utilization and associated costs, and to link these changes to different types of interventions.” From this viewpoint, we consider that research on the socioeconomic impact of occupational disease and injuries is important for decision makers in occupational health and safety to implement preventive measures, service and policy. In this Special Issue, we would like to focus on “The Socioeconomic Impact of Occupational Diseases and Injuries,” addressing the socioeconomic impact of occupational diseases and injuries as well as the cost-effectiveness (or benefits) of analysis of preventive measures and the evaluation of legislation and social policy in occupational health. In Volume 51: Issue 5 (2013) of *Industrial Health*, seven articles have been accepted for publication, viz (1) Santana *et al.*: Health Care Costs and the Socioeconomic Consequences of Work Injuries in Brazil: A Longitudinal Study, (2) Shimazu *et al.*: Psychosocial Mechanisms of Psychological Health Disparity in Japanese Workers, (3) Wada *et al.*: Economic Impact of

Loss of Performance due to Absenteeism and Presenteeism Caused by Depressive Symptoms and Comorbid Health Conditions among Japanese Workers, (4) Hasegawa *et al.*: Occupational Factors and Problem Drinking among a Japanese Working Population, (5) Ishida: Inequality in Workplace Conditions and Health Outcomes, (6) Kan: Being out of Work and Health among Younger Japanese Men: A Panel Data Analysis, and (7) Itoh *et al.*: Estimates of Annual Medical Costs of Work-related Low Back Pain in Japan. Other several articles submitted to the Special Issue are now under review and we expect publication in the following regular issues of *Industrial Health*.

Santana *et al.* estimate the direct health care costs and socioeconomic consequences of work injuries by a prospective longitudinal study of workers identified in the emergency departments of public hospitals in Brazil. They report that approximately half the cases suffered loss of earnings, and female workers were more frequently dismissed than male workers. The most frequently reported family consequences were the need for a family member to act as a caregiver and difficulties with daily expenses. Total costs for treatment and rehabilitation of work injuries were approximately US\$40,000; half of that was out-of-pocket costs paid by relatives or workers themselves. Most out-of-pocket costs were related to transport and purchasing medicines and other wound care products. The second largest contribution (40.6%) came from the public National Health System (SUS). Employer participation was negligible. Health care funding must be discussed to alleviate the economic burden of work injuries on workers.

In Shimazu *et al.*'s article, the psychosocial mechanisms underlying the positive relationships between socioeconomic status (SES) and psychological health are investigated. They test the hypothesized model based on large datasets from two different studies, and report that (1) educational attainment was positively related to psychological distress through job demands, (2) educational attainment was negatively related to psychological distress through job resources, and (3) educational attainment was not directly related to psychological distress. Thus, educa-

tional attainment has an indirect effect, rather than a direct one, on psychological distress among workers; educational attainment has both a positive and a negative relationship with psychological distress through job demands and job resources, respectively.

The economic impact of absenteeism and presenteeism due to five illnesses potentially comorbid with depressive symptoms was studied by Wada *et al* among Japanese workers aged 18–59 years. These conditions included back or neck disorders, depression, anxiety, or emotional disorders, chronic headaches, stomach or bowel disorders, and insomnia. The Stanford Presenteeism Scale was used in their study. The primary leading cause of economic loss was found to be back or neck disorder. Wage loss per person was relatively high among those identifying depression, anxiety, or emotional disorders. These findings offer insight into developing strategies for workplace interventions on increasing work performance.

The study by Hasegawa *et al.* was to clarify the occupational risk factors for problem drinking among a Japanese working population. They analyzed the data from a random-sampling survey about mental health and suicide in Hamamatsu residents in 2008. Self-employed females have a high prevalence of problem drinking. Problem drinking was also associated with clerical and service professions for both genders, and with administrative/managerial and sales professions for females. Smaller companies showed a higher prevalence of problem drinking than larger ones for male workers. It is necessary to consider these characteristics to provide effective measures to address problem drinking in the workplace.

Ishida examined the relationship between the inequality in workplace conditions and health-related outcomes in Japan, by analyzing the effect of changes in the work conditions and work arrangements on the subjective health, activity restriction, and depression symptoms. They used the Japanese Life Course Panel Survey, which consists of a nationally representative sample of the youth and the middle-aged. The first major conclusion is that there are substantial changes in health conditions between the two waves even though the distributions of health-related outcomes are very similar at two time points. The second is that the effects of work conditions depend on different health-related outcomes. Self-reported health and depression symptoms are affected by a variety of job-related factors. The atmosphere of helping each other and the control over the pace of work are two important factors that affect both depression and self-reported health. They suggest that the workplace conditions and job characteristics have

profound influence on the workers' health.

The report by Kan examines the effect of being out of work, which is in a broader category of unemployment, on the physical and mental health of young Japanese men using panel data. Being out of work has no observable effect on self-assessed physical health, whereas it has a negative effect on mental health as measured by five-item version of the Mental Health Inventory. It is difficult to clearly distinguish the direction of causality even after controlling for individual heterogeneity that is constant over time. An analysis was done with a sub-sample to mitigate a possible reverse causality. The result consistently showed that being out of work has a negative effect on mental health.

Little is reported regarding economic burden of work-related low back pain except in the United States. In Itoh *et al.*'s study, annual medical cost of work-related low back pain in Japan is calculated based on the treatment fee per day, the total number of days of treatment received for low-back pain of all causes, employment rates, and an estimated number of work-related low-back pain cases. The analysis indicates that, in 2011, the total annual medical cost for work-related low back pain was 82.14 billion yen, consisting of 26.48 and 55.66 billion yen for inpatients and outpatients, respectively. Whereas the total medical costs of work-related low back pain monotonically increased during 2002–2011, the costs for spine disorders (including spondylosis) have also increased in recent years. Work-related low back pain entails a considerable economic burden to Japanese society.

“Healthy Work Life in 21st Century Japan: National Occupational Research Strategies”⁴⁾ in 1998 provided a framework to guide occupational health research in our country, showing three key areas, viz I. Research on issues related to working life and health that arise from changes in the occupational structure, II. Research on the human health effects of hazardous workplace factors, and III. Research on risk assessment and the management system for occupational health and safety, consisting of 18 priority issues. In 2010, a new framework was proposed by a group of experts⁵⁾, which advocated three important areas of research, viz., I. Research on issues related to occupational safety and health that arise from changes in the industrialized society, II. Research on the risks and hazard at workplace, and III. Research on risk assessment and the management system, consisting of 22 priority issues. Understanding and solving the “Socioeconomic Impact of Occupational Diseases and Injuries” discussed in this Special Issue is crucial to determining the order of priority.

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