

Original Article

An epidemiological analysis of occupational poisoning in Malaysia: A retrospective study from the National Poison Centre

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Abstract

The present study aims to describe occupational poisoning in Malaysia by assessing the epidemiological characteristics and identifying the risk factors. Retrospective analysis of telephone enquiries made to the National Poison Centre (NPC) regarding occupational poisoning from 2006-2019 was conducted. The NPC received a total of 1,597 calls of occupational poisoning whereby sociodemographic analysis showed that the most high-risk group included males (80.7%) of Malay race (39.2%) aged between 19 and 29 years (33.6%) who were working at agricultural sites (42.9%) or factories (25.1%). Doctors (87.2%) reported mostly acute (95.5%) exposure through the major routes of inhalation (44.2%) and ingestion (36.6%). Data analysis indicated that state, age and race played a significant role ($p < 0.05$) in determining whether occupational poisoning occurred via pesticide (44.8%) or industrial agent (40.5%), which caused the majority of cases. This study emphasized the importance of occupational safety and health (OSH) and the need for designing interventions, strategies and future research for quality improvements in safety at the workplace.

Keywords: occupational safety and health, workplace, agriculture, manufacturing, pesticide

1. Introduction

The World Health Organisation (WHO) and the International Labour Organisation (ILO) estimated that in 2016, 1.88 million deaths and 89.72 million disability-adjusted life years (DALYs) were attributed to occupational illnesses and injuries. Major risk factors included long work hours, exposure to occupational matter, gases and fumes, as well as occupational injuries (World Health Organization and International Labour Organization, 2021). Furthermore, the effects of occupational safety and health (OSH) morbidity and mortality are more prevalent in developing and rapidly

industrializing countries (Murray & Lopez, 1996), especially in the WHO African Region, the South-East Asia Region, and the Western Pacific Region (World Health Organization and International Labour Organization, 2021). This causes a tremendous economic burden, costing approximately 4% of the world's Gross Domestic Product (GDP) each year (roughly US\$2.8 trillion) (Takala *et al.*, 2014).

Law enforcement ensures efficient conduct at the workplace by covering a myriad of OSH issues, namely the surveillance of work environment and workers' health, advice on prevention and control of occupational health hazards, provision of training and education for employers and employees, conduct of research, and generation of data system (Buranatrevedh, 2015). In Malaysia, the Department of Occupational Safety and Health (DOSH) is the main agency responsible for ensuring that people's safety, health and

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