The Trend of Occupational Diseases and Poisoning Notification in Pahang: Achievements and Future Challenges

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Abstract:

Introduction: The notification requirements on occupational diseases and poisoning are stated clearly in the Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Disease) Regulation 2004 [NADOPOD] (OSHA, 1994). Nevertheless, the number of notifications remain low compared to the number reported in developed countries. In view of occupational disease and poisoning under-reporting issues, the Department of Occupational Safety and Health (DOSH), Pahang has implemented few intervention programmes for notification improvement in line with the Occupational Safety and Health Master Plan (OSHMP 2020) strategies. The intervention programmes include firm punitive actions against non-compliance to the NADOPOD regulations 2004, standard settings and promotional activities. The aim of this study is to discuss the trend of occupational disease and poisoning notification in Pahang post-intervention programmes. **Methods:** Secondary data on occupational disease and poisoning based on DOSH Pahang's database from 2016-2019 was collected and descriptively analysed. The total cases of reported occupational disease and poisoning was 1867 cases. **Results:** There was an increasing trend of the occupational diseases and poisoning notification within the study period. In 2019, DOSH Pahang has successfully responded to OSHMP 2020 targets where there has been an increased in notifications of more than 30 percent as compared to 2016. Firm legislative enforcement, standard settings and promotional activities are the main reasons of the increased in the notifications. Among the notified cases, the highest is occupational noise related hearing disorders (1776, 95.1%). Nevertheless, the notification of other occupational diseases was scanty. It is believed that comprehensive and clear guidelines for both work environment and worker's surveillance for noise exposure bound by legislative requirements are the major reasons of the highest notifications for occupational noise related hearing disorders. **Conclusion:** The study suggests for using a similar approach to increase the notification of other occupational diseases and poisoning to improve notification.

Keywords: notification, occupational disease, poisoning, trend, under-reporting

Introduction:

Occupational disease and poisoning occur due to hazards exposure from work activities at the workplace. Nearly 2.3 million employees die each year because of workplace accidents and diseases (ILO, 2019). Occupational diseases and poisoning are estimated to cause higher number of worker fatalities as compared to fatal industrial accidents (ILO, 2019).

One of the major functions of the Occupational Health (OH) Section in DOSH state offices is conducting investigation of reported cases on occupational diseases and poisoning. The notification of occupational disease and poisoning is by the occupational health doctor (OHD), occupational health physicians (OHP), registered medical practitioners, and safety and health officers (SHO) using the JKKP 7 form, either via manual or online submission. Following the notification, an investigation will be conducted by the Department of Occupational Safety and Health (DOSH) officers from the OH Section to find the root cause of the incidence or to identify hazards that arise from any work activities. Directives on workplace improvement, stop-work order or court prosecutions will be taken against the employer depending on the degree of non-compliance to the occupational safety and health-related laws and regulations. Cases will be given proper diagnoses and concluded as occupational disease if it is related to the hazard that arises from the work activity at the workplaces (DOSH, 2021).

In most industries, occupational safety programs are preferred over OH programmes. This is due to the lack of knowledge and awareness on occupational diseases and poisoning. Focus on multiple aspects of occupational diseases and poisoning has found great importance for better improvements. Therefore, notification of occupational disease and poisoning plays an important role on hazard identification, early detection, prevention, and treatment of occupational diseases (DOSH, 2021).

Failure of occupational diseases and poisoning notification are a major challenge in many countries including Malaysia. Among the reasons are the difficulties in diagnosing occupational diseases and the lack of standard procedures to diagnose occupational disease (Mohd Roze, 2021). The burden of occupational diseases and distribution is important to achieve the occupational safety and health goals successfully (Subramanian, 2017). With the fact that the occupational disease and poisoning in Malaysia is under-reported, the Occupational Safety and Health Master Plan has put a target to increase the notification by 30% (OSHMP, 2020). Legal enforcement, standard settings and promotional activities are the strategic interventions that have been put in place by DOSH, Pahang to achieve this target. The objective of this paper is to demonstrate the post-intervention trend of reported occupational diseases and poisoning in Pahang from the year 2016- 2019. Based on the results, the manuscript will further describe the success story, reasons for under-reporting the occupational diseases and poisoning, challenges and propose for OH services improvements.

Materials and Methods:

Secondary data were collected from the Notification of Occupational Diseases and Poisoning database, DOSH Pahang from year 2016-2019. The data were analysed using the SPSS version 22, descriptively presented and discussed. The variables for analysis include the year of incidence, gender, age, ethnicity, and nationality of employees, industrial sectors and types of occupational diseases and poisoning. Notification of occupational disease and poisoning form (JKKP 7) contains notified information, affected person information, occupational disease and poisoning details and description of work that led to occupational disease and poisoning.

Results:

The total occupational diseases and poisoning reported to DOSH Pahang from 2016 to 2019 was 1867 cases. The total number of occupational diseases reported were 1.7 to 2.1-times increment by year, in which there was a 6-time higher number of reported cases from 2016-2019 (Table 1). Majority of the reported cases were among the Malays which contributed to more than 70% from the total case followed by non-Malaysian (12.1%), Chinese (5.6%), Indians (3.9%) and other races (0.9%).

Approximately 95.1% of the occupational diseases are contributed by occupational noise related hearing disorders, followed by occupational musculoskeletal disorders (48, 2.6%) and occupational poisoning (16, 0.9%). The details of occupational diseases and poisoning reported to DOSH Pahang from 2016-2019 is presented in Figure 1. Out of 1867 reported cases, only 2 cases were classified as non-occupational related diseases after investigations were conducted by the OH unit, DOSH, Pahang.

A total of 1688 (90%) cases notified to DOSH Pahang from 2016-2019 were from manufacturing companies. This is followed by hotels (72 cases, 3.8%), civil service (48 cases, 2.6%), mining and quarrying (33 cases, 1.8%) and construction (15 cases, 0.8%). Most of the occupational musculoskeletal disorders, occupational poisoning and skin disorders were also reported from manufacturing companies. All 12 cases reported as having occupational lung diseases were from the civil services. The types of disease based on industrial sectors is shown in Table 2.

Table 1: Demographic characteristics of workers with occupational diseases in Pahang from 2016-2019 (n=1867).

Variables	Total Number of Cases, N (%)
Year of Incidence (year)	
2016	153 (8.2)
2017	258 (13.8)
2018	536 (28.7)
2019	920 (49.3)
Age (year)	
<31	279 (14.9)
31-40	412 (22.1)
41-50	480 (25.7)
51-60	623 (33.4)
>60	58 (3.1)
Gender	
Male	1749 (93.7)
Female	118 (6.3)
Ethnicity	
Malay	1447 (77.5%)
Chinese	105 (5.6%)
Indian	73 (3.9%)
Others	16 (0.9%)
Non-Malaysian	226 (12.1%)

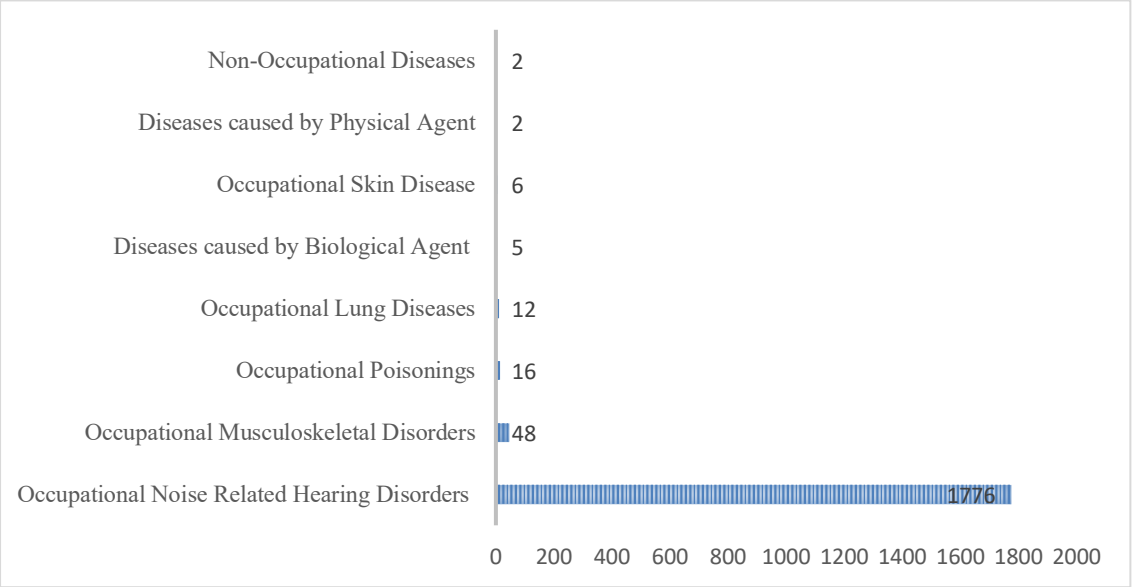

Figure 1: Occupational Diseases and Poisoning Reported to DOSH Pahang from 2016-2019

Table 2: Occupational diseases and poisoning by industrial sectors reported to DOSH Pahang, 2016-2019

Occupational Diseases	Industrial Sectors												Total
	Manufacturing	Hotel	Civil Service	Mining and Quarrying	Construction	Business Trade	Facility – Gas	Transport	Agriculture	Communication	Facility- Electric	Wholesale Trade	
Diseases caused by biological agent	1	-	4	-	-	-	-	-	-	-	-	-	5
Diseases caused by physical agent	2	-	-	-	-	-	-	-	-	-	-	-	2
Occupational noise related hearing disorder	1627	72	25	32	15	1	2	2	-	-	-	-	1776
Occupational lung disease	-	-	12	-	-	-	-	-	-	-	-	-	12
Occupational musculoskeletal disorder	42	-	1	1	-	2	-	-	-	1	1	-	48
Occupational poisoning	12	-	4	-	-	-	-	-	-	-	-	-	16
Occupational skin disease	3	-	1	-	-	-	-	-	1	-	-	1	6
Non-occupational diseases	1	-	1	-	-	-	-	-	-	-	-	-	2
Total	1688	72	48	33	15	3	2	2	1	1	1	1	1867

no case was reported

Discussion:

The study revealed that most of the reported cases were among workers aged 51-60 years old. This may be due to the long-term exposure to the hazards that arise from the work activity. Latent occupational disease generally means the disease emerges at older ages due to chronic exposure (Oliver, 2015). Otherwise, the trend of occupational diseases and poisoning according to age may be masked by the healthy workers effect whereby elderly workers with diseases may not still be in the workforce (Baillargeon, 2001). The study also revealed that the majority of occupational diseases and poisoning notified were among the Malay males. This is because of a higher percentage of workforce in Pahang were males and the majority of the population in Pahang are Malays (DOSM, 2021; Pahang State Government, 2021).

The findings of this study revealed that DOSH Pahang has met the objective to increase the number of reported occupational diseases and poisoning by 30%, which is in line with the OSHMP 2020. DOSH Malaysia has recorded a total of 30,958 notifications of occupational diseases and poisoning in 2016-2019. The overall notification to DOSH Malaysia across all states also shows an increased notification of occupational diseases and poisoning by more than 30% from 2016 to 2020. Pahang dominated 6% of notifications from the total DOSH notifications (DOSH, 2019).

The national and Pahang statistics showed that the reported occupational noise-related hearing disorders (noise-induced hearing loss, hearing impairment and permanent standard threshold shift) are the highest in the rank compared to other diseases for the year 2016 -2019 (DOSH, 2019). DOSH Pahang received a total 1776 notification of occupational noise-related hearing disorders from 2016-2019. This figure contributed to 6% of the total national figure within the same period. From this total, 1627 cases were reported from the manufacturing sector. This is because the manufacturing industry is the largest sector in Pahang. The data also revealed that there were 72 occupational noise-related hearing disorder cases

were notified from the hotel industry. These cases were reported from the hotels' laundry section that uses machines or equipment that can produce noises when washing, agitation, rinsing, drying, ironing and folding.

The occupational noise related hearing disorders in Malaysia was the highest notification in Pahang because of the availability of a systematic assessment tool as explained in OSH (Noise Exposure) Regulations 2019 and Industry Code of Practice (ICOP) for the Management of Occupational Noise Exposure and Hearing Conservation 2019 (OSHA 2019). The ICOP supports the establishment of diagnosis of occupational noise-related hearing disorders. The ICOP is a legally bound document published by DOSH as well as a guidance to fulfil the requirements of OSH (Noise Exposure) Regulations 2019 by the industries. Unlike other occupational hazards, noise exposure has a very comprehensive step by step approach for work environment and worker's health surveillance. The low number of other occupational disease reporting is not a true picture on the burden of occupational disease, but they are subject to under-reporting because of many reasons, one of it is the lack of legally defined assessment tools for the specific hazards.

The overall strategies of OSHMP 2020 include the government leadership, strengthening of occupational safety and health (OSH) management at the workplace, OSH sharing and network, mainstreaming industrial hygiene and international OSH strategic alliance. Among these five OSHMP 2020 strategies, Strategy 4 of the mainstreaming industrial hygiene was adopted to increase the reporting of occupational diseases and poisoning (DOSH, 2016). To execute this Strategy 4, OH Section of DOSH, Pahang has implemented firm legislative enforcement, standard setting, and promotional activities with an objective to increase awareness on the importance of occupational diseases and poisoning notification among OHD, OHP, SHO and employers and employees.

Firm legislative enforcement

DOSH, Pahang has executed firm punitive action for non-compliance to NADOPOD Regulations 2004 as one of the efforts to achieve OSHMP 2020. According to OSH NADOPOD Regulations 2004, any worker suffering or suspected to have occupational diseases due to work activity, the employer shall notify to the nearest DOSH office within 7 days using an approved form. Every registered medical practitioner or medical officer attending to or called in to visit a patient whom he suspects or diagnose suffering from occupational disease or poisoning shall notify the Director General in approved form within 7 days and must also notify the employer as well. The focus of OSH NADOPOD Regulations 2004 is to provide comprehensive, reliable data on occupational diseases, so that OSH activities can be organized to prevent occupational diseases, protect workers' health, and enhance workers' productivity, to help in planning strategies and programmes for social security schemes, and for compensating the victims of occupational diseases. Anyone who contravenes the provision of this regulations commits an offence and shall on conviction be liable to a fine not exceeding ten thousand ringgit or to imprisonment for a term not exceeding one year or both. OH Division of DOSH takes stern punitive actions against the employer or medical practitioners who fails to comply with OSH NADOPOD Regulation 2004. It creates awareness and guides the employers as well as the medical practitioners in reporting occupational diseases and poisoning cases which leads to the significant spike of reported cases in Malaysia.

Standard Settings

Studying OSH policies, drafting and amending OSH-related regulation, guidelines and ICOP are some of the activities under standard setting services by DOSH. Recently, DOSH has released the OSH (Noise Exposure) Regulations 2019 together with the ICOP for the Management of Occupational Noise Exposure and Hearing Conservation 2019 as a guidance to the employers in order to comply with the regulatory requirements (DOSH 2019). The guidelines and ICOPs are developed to provide a practical guidance on how to comply with, how to find out the root cause of occupational diseases and implement the requirements of the Occupational Safety and Health Acts (OSHA) 1994 (Rampal, 2006). It creates the awareness on notification of occupational diseases and poisoning among the employers and competent person. DOSH had also published the Guidelines on Ergonomics Risk Assessment (ERA) at Workplace 2017, Guidelines on Heat Stress Management at Workplace 2016, Guidelines on Occupational Health Services 2015, and A Manual of Recommended Practice on Assessment of the Health Risks Arising from the Use of Chemical Hazardous to Health at the Workplace (DOSH, 2021).

Certificates of competency have been issued to individuals with the qualification in the relevant field as required by the relevant acts and regulations. Appointment of OHD, SHO, Ergonomic Trained Person (ETP), Chemical Health Risk Assessment (CHRA) Assessors, Hygiene Technician I and II, Noise

Risk Assessor (NRA) and others as competent person are also done by DOSH. The competent person is to conduct OSH related activities in the industries to increase the knowledge, compliance and awareness of the acts and regulations among employers.

In 2016, the Systematic Occupational Health Enhancement Level Programme (SOHELP) was introduced under OSHMP 2020 by DOSH to help the industries to comply with relevant regulations pertaining to OH, particularly in the field of noise, chemical and ergonomics in Malaysia. The aim was to enhance OH standard at workplace by meeting the regulatory requirements on occupational health-related regulations. It creates knowledge regarding occupational diseases that are caused by hazard noise, chemical and ergonomics among employers, SHO, OHD and OHP. This SOHELP programme has successfully lead to an increase of notification of occupational disease and poisoning mainly due to exposure to noise, chemical and ergonomics. Industries in Pahang has actively participated in this programme and SOHELP programme was conducted every year by DOSH state office.

Enhancement of Awareness and Promotional activities

The NADOPOD sticker was introduced to create awareness on the importance of notification among employers with regards to OSH NADOPOD Regulations 2004. This approach leads to a significant spiking of reported occupational disease and poisoning cases in 2016-2019 from the employers, SHO, OHD and OHP. The sticker highlights the regulatory statement on notification according to the NADOPOD Regulations 2004 and penalty for non-compliance. The stickers were distributed by Pahang DOSH officers to all industries around Pahang including the government and private sectors during their routine activity or enforcement. Following this successful story in Pahang, the NADOPOD sticker program was implemented at all states in Malaysia to increase the reporting of occupational diseases and poisoning cases.

Along with the sticker programme, DOSH Pahang was able to disseminate the information and provide guidance pertaining to the safety and health legislation to improve knowledge on OSH among employees and employers. DOSH Pahang also conduct talks, seminars, programmes and training on OSH NADOPOD Regulations 2004, occupational diseases and poisoning and industrial hygiene related topics. Indeed, it has created awareness among the employees, SHO, OHD and OHP regarding the importance of notification of occupational diseases and poisoning.

Conclusion:

The firm legislative enforcement, standard settings and promotional activities with regards to activities under OSHA 1994 has increased the notification of occupational diseases and poisoning to more than 30%, as targeted by OSHMP 2020. However, the under-reporting is still prevalent in some types of occupational diseases and poisoning such as occupational skin, lung and infectious diseases. Occupational noise related hearing disorders is the highest notified disease in Pahang because of the comprehensive approach in the work environment and worker's health surveillance programme bound with legal requirements. This approach shall be used to increase the notification of other occupational hazards related diseases and disorders.

Conflict of Interest:

Authors declare none.

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