KNOWLEDGE ON OCCUPATIONAL HEALTH AND SAFETY AMONG HEALTHCARE WORKERS IN PENAMPANG, PUTATAN AND INANAM HEALTH CLINICS SABAH

Dr Shamsul Kamal bin Abd. Latip @ Mohd.

Master of Public Health
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<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>COPs</td>
<td>Code of practices</td>
</tr>
<tr>
<td>df</td>
<td>Degrees of freedom</td>
</tr>
<tr>
<td>DOSH</td>
<td>Department of Occupational Safety and Health</td>
</tr>
<tr>
<td>GNP</td>
<td>Gross National Product</td>
</tr>
<tr>
<td>HAIs</td>
<td>Health care associated infections</td>
</tr>
<tr>
<td>HBV</td>
<td>Hepatitis B Virus</td>
</tr>
<tr>
<td>HCV</td>
<td>Hepatitis C Virus</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>M</td>
<td>Mean</td>
</tr>
<tr>
<td>NSI</td>
<td>Needle stick injuries</td>
</tr>
<tr>
<td>OHS</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>OHU</td>
<td>Occupational Health Unit</td>
</tr>
<tr>
<td>OSH</td>
<td>Occupational safety and health</td>
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<td>Occupational Safety and Health Act</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
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<tr>
<td>SD</td>
<td>Standard deviation</td>
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<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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ABSTRACT

The objective of this study was to determine the level of knowledge on general OHS, OHS legislation, occupational hazards and PPE among healthcare workers in Penampang, Putatan and Inanam Health Clinics, Sabah.

A cross sectional study was administered to a sample of healthcare workers in the 3 health clinics. The healthcare workers were divided into 3 main groups; professional, supporting medical and supporting non medical. The healthcare workers were also divided into 2 groups (junior and senior) based on their length of service. An 18-item self administered questionnaire was used. The questionnaire covered the 4 topics stated in the objective. Level of knowledge was categorized into good (≥75%) and fair (< 75%).

The response rate was 88.8% (182 respondents). Overall level of knowledge on occupational health and safety was fair, with a mean score of 67.8%. The respondents were more knowledgeable about PPE, with a mean score of 95.2% and less knowledgeable about OHS legislation with a mean score of 59.3%. Their mean score for occupational hazards and general OHS knowledge were 68.6% and 62.3% respectively. Results also showed that more healthcare workers from professional group had good knowledge on occupational health and safety (43.5%) and length of service had no effect on the level of knowledge on occupational health and safety of the healthcare workers.

Conclusion from this study is that the OHU, Sabah State Health Department together with Kota Kinabalu and Penampang Area Health Office need to make more efforts to promote and increase the knowledge on occupational health and safety among the healthcare workers in the 3 health clinics.
ABSTRAK

Tujuan kajian ini adalah untuk menentukan tahap pengetahuan mengenai kesihatan dan keselamatan pekerjaan secara umum, undang-undang kesihatan dan keselamatan pekerjaan, bahaya pekerjaan dan peralatan keselamatan diri (PPE) di kalangan pekerja kesihatan di Klinik Kesihatan Penampang, Putatan dan Inanam, Sabah.

Penyelidikan secara 'cross sectional' dilaksanakan keatas pekerja kesihatan di 3 klinik kesihatan tersebut. Para pekerja kesihatan dibahagikan kepada 3 kumpulan utama; profesional, sokongan perubatan dan sokongan bukan perubatan. Para pekerja kesihatan juga dibahagikan kepada 2 kumpulan (junior dan senior) berdasarkan tempoh perkhidmatan. Senarai soalan yang digunakan mengandungi 18 soalan yang perlu diisi sendiri. Senarai soalan meliputi 4 topik yang disenaraikan dalam objektif. Tahap pengetahuan dikategorikan sebagai baik (≥ 75%) dan memuaskan (<75%).

Kadar respon adalah 88.8% (182 responden). Tahap pengetahuan secara keseluruhan mengenai kesihatan dan keselamatan pekerjaan adalah memuaskan, dengan skor purata 67.8%. Responden lebih berpengetahuan mengenai peralatan keselamatan diri (PPE), dengan skor purata 95.2% dan kurang pengetahuan mengenai undang-undang kesihatan dan keselamatan pekerjaan, dengan skor purata 59.3%. Skor purata mereka untuk bahaya pekerjaan ialah 68.6% manakala skor purata untuk pengetahuan mengenai kesihatan dan keselamatan pekerjaan secara umum ialah 62.3%. Keputusan juga menunjukkan lebih ramai para pekerja kesihatan dari kumpulan profesional mempunyai pengetahuan yang baik mengenai kesihatan dan keselamatan pekerjaan
(43.5%) dan tempoh perkhidmatan tidak mempengaruhi tahap pengetahuan mengenai kesihatan dan keselamatan pekerjaan para pekerja kesihatan.

Kesimpulan dari kajian ini ialah Unit Kesihatan Pekerjaan, Jabatan Kesihatan Negeri Sabah bersama-sama dengan Pejabat Kesihatan Kawasan Kota Kinabalu dan Penampang perlu lebih banyak berusaha untuk mempromosikan dan meningkatkan pengetahuan mengenai kesihatan dan keselamatan pekerjaan di kalangan para pekerja kesihatan di 3 klinik kesihatan tersebut.
Chapter 1

Introduction.

1.1 Background.

Millions of workers die or are injured or fall ill every year as a result of workplace hazards. More than 250 million work-related accidents occurred every year. Over 160 million workers fall ill annually due to workplace hazards and exposures while an estimated of more than 1.2 million workers die as a result of occupational accidents and diseases (Alli, 2001).

It is estimated that the annual losses due to work-related diseases and injuries, in terms of compensation, lost work days, interruptions of production, training and retraining, medical expenses and so on, routinely amount to over 4 percent of the total gross national product (GNP) of all the countries in the world. In Germany and Norway, the direct cost of work accidents and diseases annually is DM56 billion and NOK40 billion respectively. Whereas in the United States, the annual cost of accidents in the manufacturing sector is more than US$190 billion.

In 1999, at the 87th session of International Labour Conference, Director General of International Labour Organisation (ILO), Juan Somavia declared that “the primary goal of the ILO today is to promote opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and human dignity”. This is the concept of decent work.

Hence, to reduce the high number of deaths, accidents and diseases related to workplace hazards, all governments, employers and workers should work together to improve the occupational health and safety at their respective workplaces. Measures to ensure these improvements should be discussed and agreed among the ILO constituents. Successful health
and safety practice is based on good relationship and teamwork between employers and workers as well as taking into account the opinions of the people concerned.

Occupational health is concerned with health in its relation to work and the working environment. Initially when we think of occupational health, we are only looking at it with regards to occupational diseases or injuries caused by the work itself, the working environment and the work that is being done.

As time evolved, the understanding of occupational health has become wider. The Joint ILO/WHO Committee on Occupational Health in 1950 had made a broader definition of occupational health:

“Occupational health should aim at : the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations ; the prevention among workers of departures from health caused by their working conditions ; the protection of workers in their employment from risks resulting from factors adverse to health ; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological ability and, to summarise : the adaptation of work to man and of each man to his job”.

From the definition above, it is clear that occupational health covers a wide field. Hence to make sure that it is understood by workers from various occupations, close networking between many specialist from different background such as medicine, psychology and engineering is needed.
1.2 Literature review.

Healthcare workers are exposed to many types of occupational diseases and hazards. Examples of occupational diseases listed by the occupational health section in Department of Occupational Safety and Health (DOSH), Malaysia are occupational lung diseases, occupational skin diseases and musculoskeletal diseases. Whereas examples of occupational hazards that healthcare workers may be exposed to are biological hazards (infectious agents such as bacteria and virus), ergonomic hazards (improper lifting of weight), physical hazards (such as ionizing radiation from X-ray and heat) and psychosocial hazards (combative patients, excessive job demands and sexual harassment).

Research carried out at two hospitals in Jamaica to assess the knowledge, compliance and practice of occupational infection control among healthcare workers found that healthcare workers were aware of the risk of transmission of infection, but their compliance with universal precautions was inadequate (Foster et al., 2010a). Sixty three percent of the healthcare workers were aware that utilizing needles for drawing blood could expose them to the transmission of infections but only 38% wore gloves. In this study, a comprehensive programme to educate the healthcare workers regarding compliance with universal precautions was recommended to improve their knowledge and practice.

Healthcare workers are also exposed to blood borne pathogens from needle sticks and other sharps-related injuries. The primary route of occupational exposure to blood borne pathogens is accidental percutaneous (through the skin) injury. The Occupational Safety and Health Administration in the United States of America estimate that 5.6 million workers in the healthcare industry and related occupations are at risk of occupational exposure to blood borne pathogens.
pathogens. Blood borne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and others. Any workers handling sharp devices or equipment such as scalpels, sutures, hypodermic needles, blood collection devices, or phlebotomy devices are at risk. Healthcare workers such as Medical Officers and Nurses are most frequently injured because they daily use sharp devices and equipment such as above. For example, needles are used by them to inject medications, vaccines and for blood taking. Many of these needle stick injuries (NSI) occur after the needles are used and during disposal activities. Hence they must know how to properly dispose needles and what to do when NSI occur. Post exposure prophylaxis following NSI is very important to minimize infection of diseases. Health staffs are advised to follow protocol in the hospital and report the incidence. Apart from that, they must have their blood tested for HBV, HCV and HIV. A study carried out at two hospitals in Jamaica to assess the prevalence of NSI and other high risk exposures among physicians and nurses found that 52% of physicians and 40% of nurses had NSI (Foster et al., 2010b).

Another serious problem that healthcare workers face is Health care-associated infections (HAIs). Nurses do have high knowledge about this, but they have low compliance to standard precautions (Parmeggiani et al., 2010).

Study on NSI cases in Sabah in the year 2000 showed that the cases notified had increased from 38 in the year 1999 to 47 in the year 2000 (Lim, 2004). The increase in number of cases signifies the increase in awareness among the staffs of the need to report such injuries. Categories of staffs involved in the NSI are shown in Table 1.1.
Table 1.1 showed that majority of the cases involved nurses (74.47%). This is due to them being in close direct contact with patient care. Analysis done by Occupational Health Unit (OHU) noted that junior staffs (68.09%) were more prone to NSI compared to senior staffs (31.91%) which is probably due to their lack of experience. Apart from that, analysis also noted that majority of the staffs have poor knowledge on universal infection control precautions (UICP) and the main mechanism of NSI is due to indiscriminate disposal of needles (44.78%).

It is apparent that healthcare workers at all levels are exposed to occupational injuries as well as diseases while performing their duties. Therefore knowledgeable healthcare workers especially those that are in charge of the health clinics are very important because they play a role in making sure that their workplace are safe and in guiding staffs under them to take further actions if accidents happened to these staffs.

In Texas, a study was conducted to identify occupational exposure risk factors associated with the development of new-onset asthma (Arif et al., 2009). Participants in the study consisted of Texas licensed healthcare professionals. They were divided into 4 groups; physicians, respiratory therapist, occupational therapist and nurses. In this study, nurses have been identified
as having the highest risk of developing new-onset asthma. The reasons behind it were exposure to medical instrument cleaning and general cleaning products and disinfectants; and the use of pre-2000 powdered latex gloves. Based on this study, suggestion was made to substitute the powdered latex gloves with a less allergenic alternative (Arif et al., 2009). This study also recommended that the cleaning products and disinfectants be replaced with environmentally friendly ‘green chemicals’ and the nurses be provided with better personal protective equipments.

In Malaysia, a study conducted showed that the level of knowledge and awareness towards occupational safety and health (OSH) aspects among workers in medical laboratory in Klang Valley was low (Anuar et al, 2009). Only 60.5% of the respondents were aware that OSHA 1994 existed.

Another study conducted, where the participants were doctors, nurses, medical support staffs, administrative officers and others; showed that the level of OSH awareness and knowledge among healthcare professionals in Malaysia was moderate (Lugah et al, 2010). It also found that the proportion of participants who had good OSH knowledge was low. In addition, the awareness of the existence of OSHA 1994 was moderate where the participants mean score was only 55.3%. Conclusion from this study suggested that healthcare organizations should conduct more workshops and training for specific healthcare worker groups in order to increase knowledge on OSH.

In Malaysia, the OSHA was implemented in 1994 in response to the need to cover a wider employee base and newer hazards introduced in the workplace. The OSHA 1994 is enforced by the Department of Occupational Safety and Health (DOSH), (previously known as Factory and
Machinery Department). Its primary aim is to promote awareness on safety and health among the workers in Malaysia.

The Act was derived from the philosophy of the Roben’s Commission and Health & Safety At Work Act 1974 in UK, emphasizing on self-regulation and duties of employers, employees and designers/manufacturers. The employer’s duties include the provision of a safe system of work, training, maintenance of work environment and arrangement for minimizing the risks as low as reasonably practicable. In short, the responsibility on OSH is made to rest on those who create the risks (employers) and those who work with the risk (employees).

Under the OSHA 1994, National Council for Occupational Safety and Health was established. This Council comprised of 15 council members with tripartite representation from the Government, employers, employees and OSH professionals. The legislation also contains provision for formulating regulations and Code of Practices (COPs), which indicates “what should be done” and thus assists the employer to comply with the Act.

The regulation made under OSHA 1994 is shown in Table 1.2 whereas Table 1.3 shows the distribution of Accidents and Fatality Frequency in some Sectors in Malaysia from 1977 to year 2000.
TABLE 1.2 The regulation made under OSHA 1994

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Year</th>
</tr>
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<tbody>
<tr>
<td>Employer's Safety and Health General Policy Statement (Exception)</td>
<td>1995</td>
</tr>
<tr>
<td>Control of Industrial Major Accident Hazards</td>
<td>1996</td>
</tr>
<tr>
<td>Safety and Health Committee</td>
<td>1996</td>
</tr>
<tr>
<td>Classification, Packaging, and Labelling of Hazardous Chemicals</td>
<td>1997</td>
</tr>
<tr>
<td>Safety and Health Officer</td>
<td>1997</td>
</tr>
<tr>
<td>Safety and Health Officer Order</td>
<td>1997</td>
</tr>
<tr>
<td>Prohibition of Use of Substance</td>
<td>1999</td>
</tr>
<tr>
<td>Use and Standards of Exposure of Chemicals Hazardous to Health</td>
<td>2000</td>
</tr>
</tbody>
</table>


TABLE 1.3 Distribution of Accidents and Fatality Frequency by Sectors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and quarrying</td>
<td>Accidents</td>
<td>924</td>
<td>1640</td>
<td>1563</td>
<td>2644</td>
<td>626</td>
</tr>
<tr>
<td></td>
<td>Fatality</td>
<td>11</td>
<td>18</td>
<td>21</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Case fatality</td>
<td>11.9</td>
<td>10.9</td>
<td>13.4</td>
<td>4.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Manufacturing and processing</td>
<td>Accidents</td>
<td>28068</td>
<td>31801</td>
<td>28592</td>
<td>54925</td>
<td>41331</td>
</tr>
<tr>
<td></td>
<td>Fatality</td>
<td>30</td>
<td>36</td>
<td>54</td>
<td>86</td>
<td>282</td>
</tr>
<tr>
<td></td>
<td>Case fatality</td>
<td>1.0</td>
<td>1.1</td>
<td>1.8</td>
<td>1.5</td>
<td>6.8</td>
</tr>
<tr>
<td>Construction</td>
<td>Accidents</td>
<td>6807</td>
<td>3323</td>
<td>4069</td>
<td>3123</td>
<td>4873</td>
</tr>
<tr>
<td></td>
<td>Fatality</td>
<td>44</td>
<td>16</td>
<td>28</td>
<td>40</td>
<td>159</td>
</tr>
<tr>
<td></td>
<td>Case fatality</td>
<td>6.4</td>
<td>4.8</td>
<td>6.8</td>
<td>12.8</td>
<td>32.6</td>
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<tr>
<td>Civil Service</td>
<td>Accidents</td>
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<td>-</td>
<td>-</td>
<td>3126</td>
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<tr>
<td></td>
<td>Fatality</td>
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<td>-</td>
<td>-</td>
<td>40</td>
<td>97</td>
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<tr>
<td></td>
<td>Case fatality</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12.7</td>
<td>11.7</td>
</tr>
</tbody>
</table>

Source: Rampal (2002)

Table 1.3 indicates that the manufacturing and processing industry has the highest number of accidents whereas case fatality is the highest in the construction industry.
The implementation and enforcement of the OSHA 1994 is viewed as a milestone development in the prevention of the occupational accidents, injuries and diseases in Malaysia. For OSHA 1994 to work more effectively, various parties namely the government, employers and employees should be more active and cooperate more closely.

1.3 Statement of the problem.

Any jobs or occupation carries with them some kind of hazards. People who work in the Health Department are not exempted from these hazards. Healthcare workers are prone to various occupational accidents, injuries and diseases due to the nature of their strenuous working hours and to the fact that they are in close contact with patients.

For example, people who work in laboratories have the risk of getting needle prick injuries and occupational lung diseases due to exposure to various biological hazards such as bacteria and viruses. Whereas health attendants and drivers have the risk of musculoskeletal injuries due to lifting patients and heavy objects. With regards to Medical Officers, Assistant Medical Officers and Nurses, they may have the risk of getting occupational stress due to the demands from patients and workload that have been placed on their shoulders.

Hence this study is to find out whether the healthcare workers are well equipped with occupational health and safety knowledge.

1.4 Research questions.

The questionnaire in this study is designed to investigate:

1. What are the sociodemographic characteristics of the healthcare workers involved in this study?
2. What are the level of knowledge on occupational health and safety among the healthcare workers?

3. Is there any significant difference in the knowledge on occupational health and safety between the three main groups of healthcare workers?

4. Is there any significant association between the level of knowledge on occupational health and the length of service (junior and senior)?

1.5 Objective of the study.

1.5.1 General objective.

To determine the level of knowledge on occupational health and safety among healthcare workers in Penampang, Putatan and Inanam Health Clinics, Sabah.

1.5.1 Specific objectives.

1. To determine the sociodemographic characteristics of the healthcare workers involved in this study.

2. To determine the level of knowledge on occupational health and safety among the healthcare workers.

3. To determine the differences in the knowledge on occupational health and safety between the three main groups of healthcare workers.

4. To determine the association between the level of knowledge on occupational health and safety and length of service (junior and senior).