

First Aid Facilities in Workplaces in Brunei Darussalam for 2013 – 2014

Kyaw Naing Win^{1*} and Hjh Sri Suriyati Shamsiana Binti Haji Bujang²

¹Occupational Health Physician, Occupational Health Division, Ministry of Health, Bandar Seri Bagawan, Brunei Darussalam, BA 1311.

²Health Inspector, Occupational Health Division, Ministry of Health, Bandar Seri Bagawan, Brunei Darussalam, BA 1311.

*Corresponding Author: Win KN, Occupational Health Division, Ministry of Health, Environmental Health Services, Bandar Seri Begawan, Brunei Darussalam BA 131; Email : knwin2005@yahoo.com

Rec date: Oct 31, 2015; Acc date: Nov 30, 2015; Pub date: Dec 7, 2015

Copyright: © 2015 Win KN, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Introduction: First aid is a well-established way to improve the management of medical emergencies. It is commonly used to minimize consequences resulting from injuries or illnesses until care from a nurse or doctor is available. The provision of first aid is especially important in workplaces where adult spend a quarter of their lives. The main aim and objective of this study is to determine the availability and condition of first aid facilities in workplaces in Brunei Darussalam for 2013 – 2014.

Methods: Occupational Health Division, Ministry of Health, Brunei Darussalam conducted routine periodic inspection at various workplaces using a checklist. Information on first aid facilities was gathered from the checklist collected during the visits for the year 2013 - 2014. The information collected includes demographic profile of the study sample (type of industries and type of services), availability of first aid box, first aid room and first aider.

Results: A total of 125 inspection visits were done for the year 2013 – 2014. The majority of these workplaces visited are of private service, 93 (74.4%). In addition to that, out of 125 workplaces, 46 (36.8%) of the first aid boxes are in satisfactory conditions, 25 (20.0%) provide first aid room and 21 (16.8%) has sufficient first aiders.

Conclusions: The first aid facilities in workplaces in Brunei Darussalam are mostly of unsatisfactory conditions especially those in private services and the first aid system needs improvement. As a recommendation, awareness of the importance of an effective first aid system is needed amongst employers and employees.

Keywords: First aid; First aid facilities; Workplace

Introduction

First aid is defined as the emergency care provided for injuries or sudden illnesses until medical treatment is available (Occupational safety and health administration, 2006). Before the term first aid existed, soldiers during the war were trained to treat their fellow soldiers at the field until the medics arrived. From there, an army surgeon recommended “pre-medical treatment” training for civilians as “first aid personnel” [1]. Since then there has been numerous advancements in medical techniques as well as improvements in first aid and most of these were driven by war [2]. First aid system continues to develop and progress and there is now a clear difference between first aid and emergency medicine.

First aid is a well-established way to improve the management of medical emergencies. It is commonly used to minimize consequences resulting from injuries or illnesses until care from a nurse or doctor is available (OSHA, 2006) [3]. The provision of first aid is especially important in workplaces where adult spend a quarter of their lives [3]. The types and levels of hazards differ in different workplaces as not all workplaces are exposed to similar hazards. Workplaces such as offices and schools have relatively low hazard levels compared to construction sites, factories or warehouses where the levels of hazards are usually high [4]. There are numerous factors to be considered for the requirements of first aid provision at work such as size and type of the

workplace, work environment of the employees, number of employees, type of hazards, tools and chemicals that employees are dealing with, accessibility to medical services and many more. However, essentially every workplace should at least have a standard first aid box or kit [5]. Annually, there are approximately 268 million non-fatal workplace accidents and 160 million new cases of work-related illnesses worldwide especially in rapidly developing countries in Asia [6]. In addition to that, it is estimated that there are 2 million deaths annually that occur as a result of workplace accidents & work-related illnesses [6, 3]. Occupational accidents and diseases affect the lives of the employees. They could also indirectly have a negative impact on the productivity of the organizations or companies they work for and eventually on the welfare of the entire societies [7]. Provision of immediate and efficient first aid could minimize the severity of illness and injuries as well as reduce chances of permanent damage of workers due to accidents at workplaces. This might vastly improve medical recovery and in some cases, lifesaving as it could determine between life and death. Nowadays, there are various innovative techniques and tools that made first aid simple and effective [1]. The importance of first aid is usually overlooked and deemed as a small priority to many companies. The 1991 Guidelines on Basic First Aid training in OSHA state that “The outcome of occupational injuries depends not only on the severity of the injury, but also on the rendering of first aid care.” In order to reduce the outcome of occupational accidents, an effective first aid system is needed (OSHA, 2006). Currently there is no collective data on the availability and condition of first aid facilities in Brunei Darussalam.

Aim

The aim of this study is to determine the availability and condition of first aid facilities amongst the workplaces in Brunei for 2013 and 2014 as well as to find out any association between types of services of workplaces and first aid facilities.

Methods

Study design

This study is a cross-sectional study design of different types of industries in Brunei Darussalam on the availability of first aid facilities at the workplaces for the year 2013-2014.

Data Collection

In Brunei Darussalam, first aid facilities in workplaces are monitored by the Occupational Health Department, Ministry of Health through periodic inspection visits. Data was collected from the checklist collected during inspection visits. This data includes types of industry, types of service, availability of first aid box, first aid room and first aider.

Statistical Analysis

The collected information will be entered and analyzed using SPSS version 21 to draw out relationships between several variables. The analysis will include descriptive statistics to describe demographics profile of study sample. Descriptive studies such as frequency and percentages will be used to describe the demographics of the study sample. Confidence level of 95% will be used for relevant test statistic and a p-value of <0.05 will be considered as significant.

Results

Variable	n (%)
Type of Services	
Government	32 (25.6)
Private	93 (74.4)
Type of Industry	
Fishing	1 (0.8)
Mining and Quarrying	5 (4.0)
Manufacturing	39 (31.2)
Electricity, gas and water supply	4 (3.2)
Wholesale and Retail Trade	37 (29.6)
Transport, Storage and Communications	1 (0.8)
Health and Social Work	19 (15.2)
Education	12 (9.6)
Construction	1 (0.8)
Others	6 (4.8)

Table 1: Demographic profile of study sample for 2013 - 2014.

A total of 125 inspection visits were done between 2013 and 2014. Industries are classified according to International Standard Industrial Classification of all Economic Activities (ISIC-Rec. 3) [8]. Table 1 shows the demographic profiles of the study sample for 2013 – 2014.

Demographic profile

Majority of the study sample are of private services, 93 (74.4%) and the rest of government services, 32 (25.6%). As for type of industries, most of the study sample are of manufacturing industry, wholesale and trade industry, health industry and education which make up for 39 (31.2%), 37 (29.6%), 19 (15.2%) and 12 (9.6%) respectively. A small portion is made of mining and quarrying, 5 (4.0%), electricity, gas and water supply, 4 (3.2%), fishing, 1 (0.8%), transport, storage and communications, 1 (0.8%), construction, 1 (0.8%) and others.

Condition of first aid facilities

The condition of first aid facilities of the study sample is shown in Table 2.

Variable	n	%(95% CI)
First Aid Box		
Satisfactory	46	36.8 (28.0, 44.8)
Unsatisfactory	69	55.2 (46.4, 64.0)
Without	10	8.0 (3.2, 13.6)
First Aid Room		
With	25	20.0 (12.8, 27.2)
Without	100	80.0 (72.8, 87.2)
First Aider		
With (sufficient)	21	16.8 (10.4, 24.0)
With (insufficient)	3	2.4 (0, 5.6)
With (expired)	2	1.6 (0, 4.0)
Without	99	79.2 (72.0, 86.4)

Table 2: Condition of first aid facilities amongst the workplaces in 2013 - 2014.

Amongst the 125 workplaces visited, 46 (36.8%) of the first aid boxes are in satisfactory condition, 69 (55.2%) are unsatisfactory and 10 (8.0%) do not provide first aid boxes. 25 (20.0%) of the workplaces provide first aid room leaving 100 (80.0%) without first aid rooms. As for first aiders, 21 (16.8%) have sufficient first aiders, 3 (2.4%) have insufficient first aiders, 2 (1.6%) have first aiders but with expired license and majority is without first aiders, 99 (79.2%).

Association between types of service and condition of first aid box

The results revealed that 14 (44%) in government sector and 32 (34%) in private sector have satisfactory first aid box conditions. However, further analysis showed that there is no significant association between the types of service of the workplaces and the condition of the first aid box facilities ($p = 0.345$) (Table 3).

Variable	First Aid Box				
Type of Service	n	Satisfactory n(%)	Unsatisfactory n(%)	X2 (df)	P value
Government	32	14(43.8)	18(56.3)	0.89(1)	0.345a
Private	93	32(34.4)	61(65.6)		

^aChi-square test

Table 3: Association between types of service and condition of first aid box for 2013 - 2014.

Association between types of service and availability of first aid room

However, there is a significant association between types of service and the availability of first aid room ($p < 0.001$) (Table 4).

Variable	First Aid Room				
Type of Service	n	With n(%)	Without n(%)	X2 (df)	P value
Government	32	16(50.0)	16(50.0)	24.2(1)	< 0.001a
Private	93	9(9.7)	84(90.3)		

^a Chi-square test

Table 4: Association between types of service and availability of first aid room for 2013 - 2014.

The proportion of workplaces that do not provide first aid room is significantly higher in the private services, 84 (90.3%) compared to the government services, 16 (50.0%).

Association between types of service and availability of first aiders

The proportion of workplaces with first aiders is significantly higher in government services, 17 (53.1%) compared to the private services, 9 (9.7%). Further analysis showed that there is also a significant association observed between types of services and availability of first aiders ($p < 0.001$) (Table 5).

Variable	First Aider				
Type of Service	n	With n(%)	Without n(%)	X2 (df)	P value
Government	32	17(53.1)	15(46.9)	27.3(1)	< 0.001a
Private	93	9(9.7)	84(90.3)		

^a Chi-square test

Table 5: Association between types of service and availability of first aiders for 2013 - 2014.

Discussion

Effective first aid system at workplaces is an important factor to improve the consequences of accidents and sudden illnesses at work.

This can result in a healthy and safe environment as well as develop better risk perception amongst workers [9]. Findings from this study revealed that most of the first aid boxes in the workplaces visited are unsatisfactory, 69 (55.2%). In addition to that, most of the workplaces do not provide first aid rooms and lack of first aiders especially in private sector. This could be due to the lack of awareness of a standard first aid system where a first aid room should be provided amongst the private sector workplaces. In addition to that, the workplaces have limited available rooms or spaces to create a proper first aid room.

The majority of the visited workplaces are of manufacturing, wholesale and retail trade industry, construction, education, health and social work industries. According to Brunei Darussalam's Workplace Safety and Health (First-Aid) Regulations, 2012, the first aid regulations in the order are to be applied to these industries [10]. The Workplace Safety and Health (First Aid) Regulations, 2012 includes minimum contents of first aid boxes and ratio of first aiders to number of persons employed. For every workplace with more than 25 persons employed, there should be first aiders available with the ratio of one first aider for every 100 persons employed in the workplace. However, this regulation is yet to be enforced in workplaces in Brunei Darussalam (Workplace safety and health order, 2009). Workplaces in some countries such as New Zealand are required to follow guidance on the provision of first aid facilities and training. Such guideline includes a proper framework of first aid training and also states that every workplace should provide competent first aiders [11].

Brunei Darussalam's first aid regulations are quite similar to Singapore and Malaysia's first aid guidelines and regulations [12, 13]. Malaysia's first aid guideline provides more details such as the outline of a standard first aid room and guidelines to proper maintenance of first aid box [13]. In order to ensure first aid system actually contributes to increasing health and safety in workplaces, it is necessary to verify its effectiveness such as the required content of first aid box, condition and standard of first aid rooms and availability of trained first aiders. A study by Lingard showed that first aid training enhances employees' motivation to avoid occupational injuries and illnesses and improves their risk control behavior [14].

First aid training had a positive effect on the occupational safety and health behavior. Participants expressed greater concern about taking risks at work after receiving first aid training. Another similar finding was found in another study amongst workers in construction firms in Australia where they measured the workers' performances pre- and post-first aid training. Their findings also suggest positive effect on occupational safety and health behavior [15]. However, these studies only showed the resulting behavior of the workers post-first aid training but not the overall effect of the first aid system as a whole towards the performance of the companies.

Limitations of study

This study has a few limitations that should be highlighted. The information we collected were already entered in the Occupational Health Department database and there is a possibility that some of the data were entered incorrectly.

Another limitation is that there were more than 125 inspection visits done for 2013 – 2014 but a number of these visits were not properly recorded and there are a few missing reports. In addition to that, there are unequal distributions of types of industry visited and so this compromises the accuracy of the findings and that it does not represent the whole study population.

Conclusion

In conclusion, the first aid facilities in workplaces in Brunei Darussalam are mostly unsatisfactory especially in private sectors and the first aid system needs improvement. As a recommendation, awareness of the importance of an effective first aid system that meet the need of current and future workplace environment is needed amongst employers and employees.

This could include guidelines on the minimum contents of first aid box, first aid training amongst employees as well as regular monitoring of the first aid facilities in the workplace. A further study could be conducted to compare health and safety behavior before and after first aid training amongst employees.

Acknowledgement

I would like to thank Pg Dr Hj Khalifah Pg Hj Ismail, Director General of Health Services, Ministry of Health, Brunei Darussalam as well as Dr Alice Lai, Head of Occupational Health Division, Ministry of Health, Brunei Darussalam for their support. Finally, I would like to acknowledge Nur Izzah Afiqah Abd Latif, Master of Public Health Student, University Brunei Darussalam, Jalan Tungku Link, Brunei Darussalam, BE 1410 for carried out the data collection, analysis and wrote the draft manuscript.

REFERENCES

1. Priolcar X (2012). First-aid at workplace-past, current and future. *Indian Journal of Occupational and Environmental Medicine*;16: 1–2.
2. Larcen A, Julien H (2010). [First-aid in France. Current situation and future perspectives]. *Bulletin de l'Académie Nationale de Médecine*;194: 1071–1093.
3. World Health Organization (WHO) (2013).
4. Reinhold K, Tint P (2008). Hazard profile in manufacturing: determination of risk levels towards enhancing the workplace safety. *Journal of environmental engineering and landscape management*;17: 69-80.
5. Health and safety authority (HSA) (2008). Guidelines on First Aid at Places of Work.
6. International Labour Organization (ILO), (2005).
7. Chen MS, Chan A (2010). Occupational health and safety in China: the case of state-managed enterprises. *Workplace health and quality of life: international surveys*: 43-59.
8. International Labour Organization (ILO) (1990). International Standard Industrial Classification of all Economic Activities (ISIC-Rev.3).
9. Papaleo B, Cangiano G, Calicchia S, Marcellini L and Colagiaco C, et al. (2012) [The organization and management of First Aid in the workplace: critical issues and innovations to be introduced]. *Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia*; 34: 71–75.
10. Workplace Safety and Health Order (2012). Brunei Darussalam Government Gazette.
11. Robertson AC (2013). Workplace First Aid in New Zealand. University of Otago.
12. Workplace Safety and Health Act (2011). Chapter 354A, Section 65. Workplace Safety and Health (First-Aid) Regulations.
13. Department of Occupational Safety and Health, Malaysia (2004). Guidelines on first-aid in the workplace (2nd ed).
14. Lingard H (2002). The effect of first aid training on Australian construction workers' occupational health and safety motivation and risk control behavior. *Journal of Safety Research*;33: 209–230.
15. Lingard H (2001). The effect of first aid training on objective safety behaviour in Australian small business construction firms. *Construction Management and Economics*;19: 611–618.