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THE ASSOCIATION BETWEEN DEMOGRAPHIC STATUS AND OCCUPATIONAL RELATED BACK PAIN AMONG SHIPPING PORT WORKERS

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Abstract

Back ground and objectives:*Work activities in shipping port are known to be a physically demanding task. The risk of getting occupational related back pain among them is relatively high. Currently, there is limited data that can be used to determine the status of occupational related back pain among them in local setting. The aim of study is to evaluate the prevalence of occupational related back pain among shipping port workers.* ***Methods:****This is a cross sectional descriptive type of study. The respondents were shipping port workers receiving physiotherapy treatment for their occupational related back pain at the shipping medical center. A set of questionnaire were distributed to gather their demographic data and back pain pain intensity.****Results:****A total of 81 respondent eligible to this study with mean age of is 34.9 (±8.78), maximum pain intensity recorded was 5/10. Majority (n=59) of respondent seeking physiotherapy treatment were engaged with crane maneuver. The activity that increase the incidence of back pain is driving heavy vehicle (n=27) and adopting prolong trunk bending (n=20). There is no statistically significant (p>0.005) association between pain intensity, age, body mass index (BMI) and waist measurement.* ***Conclusion:****This study didn't investigate employees knowledge and their working habit at workplace. Such factors cannot be denied and should be investigated to determine its relationship with occupational related back pain. Subsequently, a constructive preventive measures should be tailored accordingly in order to curb occupational related back pain among shipping port workers.*

Keywords:*Shipping port workers, occupational related back pain, physiotherapy treatment.*

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INTRODUCTION

Occupational related back pain can be defined as pain and discomfort over paravertebral region due to performing physically demanding task. Factors such adopting awkward posture at work, performing repetitive motion task with extreme trunk motion, prolong sitting and standing job activities are known to be contributing factors of occupational related back pain1. Numerous studies indicate that occupational related back pain to be a major cause reduced work capabilities and causing substantial financial consequences due to workers' compensation, medical expenses, and poor productivity2,3. In the shipyard industry, working environments is known to be well-established risk factors for predisposing low back pain. Many of the shipping port workers are often required to adopt awkward postures for significant periods of the workday. The prevalence study done by Andersen.(2003) on workers involve in heavy industry found that the incidents of back pain is significantly high among workers involved in manual materials handling activities, manoeuvre heavy vehicle, performing repetitive and static work process, and from the effects of sitting on vibration originating from machinery. The shipping port workers were exposed to hazardous working condition and have high probability of suffering occupational related back pain 3. Prevalence study conducted by Evangelos et al. (2006) found that 38% of shipping port workers suffered back pain and majority were blue collar types of workers. The recent study conducted by Izham et al (2013) on prevalence of occupational related disorders among shipping port in Selangor found that 45% of workers whom seek for physiotherapy intervention was diagnosed of occupational back pain. In addition, 50% of them were engaged in maneuver heavy vehicles. There is consistent finding between both studies on the incident of back pain among shipping port workers. There is other study found that 80% of occupational related injuries were due to workers attitude towards practicing hazardous practice at workplace 7. Such factors seems to be a complex phenomenon which is difficult to understand and yet to be proven scientifically. However, such theory cannot be decline totally without an effort to determine the relationship between workers attitude and safety at workplace. Currently no study was conducted to determine the prevalence of occupational related back pain among shipping port workers. It gave difficulty to health care provider to design suitable intervention to curb such occupational related disorders. Therefore, there is a need for studies addressing this issue, especially in the context of work in the shipping port industry. The objective of this study is to determine the association between shipping workers demographic data and the occupational related back pain.

METHODOLOGY

This is a cross sectional prevalence type of study conducted on shipping port workers. The research tool is self-administerquestionnaire.The respondents were shipping port workers receiving physiotherapy treatment for their occupational related back pain at the shipping medical center. In order to control the confounding factors, injury that due to pathological back pain diseases, underwent any back surgery and involve in motor vehicle accident were categorized as exclusion criteria. The screening process to determine the eligibility of respondent is carry out by the researchers. . The researcher compile the eligible workers name list before distributing study questionnaire to their respective department. The questionnaire form consists of two section. Section one is on the demographic data of workers, consists of age,

years of working experience, nature of work, waist measurement and body mass index data. Section two is dependent data on back pain intensity and level of discomfort experienced by them.To minimize the data collection bias, respondents need to kept the completed answer questionnaire in the given envelop and dispatch it to the shipping health clinic. Written consent obtain from the University ethic committee and written permission from head of Physiotherapy Department prior to data collection exercise.

Analysis

Descriptive type of analysis were used to describe the demographic status and area of back pain. The demographic data used to determine association of occupational related back pain incidence is shipping port workers age, years of working, body mass index and waist circumference. Regression analysis was used to determine the association between demographic data and occupational related back pain.

RESULT

Total numbers of patients eligible is 81 and most of them were male (100%). Their age were varies with mean age is 34.9 (±8.78). Minimum pain intensity reported is 2/10 and the maximum 5/10 (Table 1). The pain intensity is seem to be low due to probability of workers was on pain medication and undergone physiotherapy treatment.

	n	%	Mean	sd	Min	Max
Gender						
Male	81	100				
Age (years)			34.9	±8.78	20	68
Years of working (years)			9.42	±5.26	1	18
BMI (w/m²)			24.6	±4.14	15.9	35.2
Waist measurement (cm)			34.0	±3.29	29	44
Back pain intensity			3.51	±0.79	2	5
Job nature						
Maneuver cargo crane	59	72.8				
Computer work	9	11.1				
Supervisor task	7	8.6				
Driving lorry	4	4.9				
Building Maintenance task	1	1.2				
Forklift driver	1	1.2				
Activity contribute to back pain (Self-perceived)						
Driving and maneuver heavy vehicle	27	33.3				
Adopt prolong trunk bending posture	20	24.7				
Lifting heavy loads	17	21				
Performing repetitive trunk motion	14	17.3				
Prolong sitting	3	3.7				

Table 1.: Individual characteristics and determinants profiles of back pain among shipping port workers (n=81)

	Upper back		Mid back		Lower back		Whole back	
	N	%	N	%	N	%	N	%
Job nature								
Maneuver cargo crane	3	5.1	3	5.1	21	35.6	32	54.2
Computer work					3	33.3	6	66.7
Supervisor task					3	33.4	4	66.6
Driving lorry			1	25	2	50	1	25
Building Maintenance task							1	25
Forklift driver					1	100		
Job activity								
Driving and maneuver heavy vehicle and lorry			9	33.3	14	51.9	4	14.8
Adopt prolong trunk bending posture	1	5	5	25	7	35	7	35
Lifting heavy loads			2	11.8	6	35.5	9	52.9
Performing repetitive trunk motion	1	7.2	3	21.4	3	21.4	7	50
Prolong sitting					3	100		

Table 2: Descriptive information on area of back pain, job nature and job activity.

	Min	Max	*r*	*p - value*
Age	20 years	68 years	0.11	> 0.005
Years of working	1 year	18 years	0.03	> 0.005
Body Mass Index	15.9 kg/m^2	35.2 kg/m^2	0.23	> 0.005
Waist measurement	29 cm	44 cm	0.08	> 0.005

Significant value < 0.005; statistical test Linear Regression

Table 3: The relationship of pain intensity experience among shipping port workers with age, years of working and BMI

The descriptive type of assessment tool were used to reveal the relationship between job nature, job activities and level of back pain. Maneuver cargo crane (n=32) is the highest reported incidentfor whole back pain compare to the driving forklift and doing building maintenance (n=1) respectively (Table 2). Adopting leaning forward posture for a longer period of time during maneuver cargo crane is the possible cause for such injury.

The incident of back pain is consistent with previous study which indicate that adopting an awkward body posture contribute to the occupational back pain among shipping port workers. Linear regression were used to determine the any significant association between demographic data and occupational related back pain (Table 3). However the association between workers age, years of working, Body mass index (BMI) and waist measurement is not statistically related with occupational back pain *(P>0.005).*

DISCUSSION

The total numbers of respondent that fulfil the inclusion criteria is 81. All of the respondent involve is male. The reason is because of work nature in shipping port is physically demanding task and required strength [6, 8]. Such job nature is obviously suitable for male compared to female. The association of back pain and abdominal obesity is not statistically related in this study, even though numerous study indicate that there is a positive association. An increase in lumbar curvature following trunk bending will be obvious to individual with abdominal obesity [9]. Study indicate that, those with waist measurement of more 80 cm has 1.8 fold of getting back pain [10]. In this study the waist measurement among male workers is 34 cm (±3.29) and the finding is not consistent with previous studies.

The strength of this study is it using primary data to obtain information from the employees engaging in the shipping port activities. Their occupational task and work nature are varies. Even their underlying diseases, previous trauma and history of back surgery and known to be confounding factors to back pain. To control such confounding, inclusion and exclusion criteria is stipulated to ensure the back injury is due to occupational related [11].

Method of collecting questionnaire forms through seal envelop seem to be good approach of minimising internal validity. However it has implication of poor respond rate which might reduce inference power. In this study the respond rate is consider to be

encouraged figure. The patient that coming to physiotherapy centre is representing study respondent. They will bring the questionnaire placed in sealed envelope and drop it in the collection drop box prior to their rehabilitation session with therapist.

The limitation of study is the bias threat to recall the information on pain intensity that already occur for certain period. Respondent encounter difficulty to determine the exact intensity which it may not reveal a true information on pain episode. The data on medication taken to curb the pain episode was not recorded. The pain intensity recorded and revealed by respondent may not be an exact intensity. It is suggested that for future study, the period of incident pain episode and data collection exercise should be minimised within shorter period of time to enable respondent to remember and the details of type of medications should be recorded in order to determine their exact pain score.

CONCLUSION

This study has revealed that workers age, different type of work categories, working experience, and body mass composition were not relatively associated with the occupational related injuries. This study didn't investigate employees knowledge and their working habit at workplace. Such factors cannot be denied and should be investigated to determine its relationship with occupational related back pain. Subsequently, a constructive preventive measures can be tailored in order to curb occupational related back pain among shipping port workers.

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