How to Cite:
Farid, M. I. N. A., Azhar, A. N. H., Iskandar, H. R., Abdiweli , H., & Selamat, H. A. (2022). A cross-sectional study on the prevalence of haemorrhoids among lorry drivers in Klang valley, Malaysia. *International Journal of Health Sciences*, *6*(S7), 5153-5161.
https://doi.org/10.53730/ijhs.v6nS7.13102

A cross-sectional study on the prevalence of haemorrhoids among lorry drivers in Klang valley, Malaysia

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***Abstract*---**Background: Haemorrhoid is often considered as one of the effects of prolonged sitting especially on a surface with high temperature which mainly occur among lorry drivers who are often exposed to this condition due to the engine located relatively under the driver's seat. This study aims to assess the prevalence of haemorrhoids among lorry drivers in Klang Valley, Malaysia. A cross sectional study was done by using consecutive sampling. Respondents that fulfill the inclusion and exclusion criteria were interviewed with validated questionnaires and data were analyzed using SPSS. Materials and Methods: A cross-sectional study was conducted in Klang Valley, Malaysia. The study was focused on the companies, shops with lorry drivers and lorries that had stop at the rest and services area along the highway in Klang Valley. The method of sampling used was a consecutive sampling with sample size of 70 respondents. All Malaysians who are currently working as a lorry

Manuscript submitted: 9 May 2022, Manuscript revised: 18 July 2022, Accepted for publication: 27 August 2022

driver regardless of type of company were selected as respondents. Data was collected through an assisted face to face interview and spread google form using a questionnaire from Truck Driver Behaviour and Perceptions Study (1991) by Accident Research Centre of MONASH University. Result: The prevalence of haemorrhoids among lorry drivers are 7.1%. According to our study, 7.2% are male that has haemorrhoids. The respondents with age of less than 50 who had haemorrhoids are 7.3%. There were 5.5% of Malay respondents had haemorrhoids compares to 13.3% from non-Malay respondents. Among lorry drivers who are prone to prolonged sitting, only 8.1% were diagnosed haemorrhoids. Only 6.8% were diagnosed with haemorrhoids among participants who were involved in the unloading the lorry. Conclusions: Overall results, the findings supported the result from the cited study with prevalence of haemorrhoid among lorry drivers in Klang Valley, 7.1%. However, there were no association for both risk factors of haemorrhoids that were usually faced by the lorry drivers namely involvement in unloading the goods or weight lifting and prolonged sitting in relation with the working hours. Their lorry's company already improvised or installed an ergonomically designed driver seat, interrupt driving periodically for rest and exercises also they started to use safe lifting and moving techniques for heavy workload or use mechanical aids in lifting.

Keywords---Haemorrhoids, piles, lorry drivers, truck, long vehicle, prolonged sitting, weight lifting, heat.

Introduction

Hemorrhoids, also called piles are masses or clumps of tissues which consist of muscle and elastic fibers with enlarged, bulging blood vessels and surrounding supporting tissues present in the anal canal of an individual. It is a condition characterized by the prolapsed of an anal cushion that may result in bleeding and pain. One of the major causes of hemorrhoids is sitting for long periods of time.

A study done by Rizwan Mansoor Khan et al. (2015), stated that out of 311 patients diagnosed with haemorrhoids, 50 patients (16.1%) were working as drivers.This corresponds with a study by Geetha (2020) shown that incidence of haemorrhoids among long vehicle drivers was 13.9%. Meanwhile, a study done by Najar et al. (2017), revealed that out of 911 subjects, 291 (31.94%) subjects were working as drivers. According to the European Conference of Ministers of Transports (ECMT) stated that 46 out of 650 international truck drivers from six EEC countries have health complaints of haemorrhoids (7%).

As a result, lorry drivers are more prone to developing them due to the long hours spent sitting behind the wheel. Lorry drivers and hemorrhoid**s** are often associated together by many people. Lorry drivers as a group, face more occupational stress and are more prone to illnesses than the general working population. The bane of lorry drivers is the tendency to develop hemorrhoids due to prolonged sitting and exposure to prolonged heat.

Thus, this study was designed to determine the prevalence of haemorrhoids among lorry drivers in Klang Valley, Malaysia. Therefore, findings can then be used to increase the awareness regarding prolonged sitting on a heated lorry seat as a one of the occupational risks that may contribute to development of haemorrhoids.

I. Research Methodology

A cross sectional study was conducted at Klang Valley, Malaysia. The study was focused on the companies, shops with lorry drivers and lorries that had stop at the rest and services area along the highway in Klang Valley, Malaysia. A consecutive sampling with sample size of 70 respondents. All Malaysians who are currently working as a lorry driver regardless of type of company were selected as respondents. Data was collected through an assisted face to face interview and spread google form using a questionnaire from Truck Driver Behaviour and Perceptions Study (1991) by Accident Research Center of MONASH University. Data collection will be done between March 2020 until August 2020.

The data has been analysed using descriptive statistics to get the frequency and relative frequency (percentage) for haemorrhoids among lorry drivers. The association was determined by Pearson chi-square and Fisher exact test. The level of significance was set at $p<0.05$ and confidence level at 95%.

II. Research Findings

A total of 70 participants participated in this study, giving an overall response rate of 100%.

Table 1. General prevalence of haemorrhoids among lorry drivers in Klang Valley

Haemorrhoids status	Frequency (n)	Percentage (%)
Yes	5	7.1
No	65	92.9
Total	70	100

The overall prevalence of lorry drivers who have haemorrhoids in Klang Valley is 7.1%.

Table 2. The prevalence of haemorrhoids among lorry drivers based on sociodemographic factors

Sociodemographic factors	Haemorrhoids		Total n (%)	P value
	Yes n (%)	No n (%)		
Gender				1.000
Male	5 (7.2)	64 (92.8)	69 (100)	
Female	0 (0)	1 (100)	1 (100)	
Age (years)				1.000
Less than 50	4 (7.3)	51 (92.7)	55 (100)	
50 and above	1 (6.7)	14 (93.3)	15(100)	
Ethnicity				**0.001 * 4 cells (66.7%) have expected counts less than 5. Minimum expected count is 0.07, chi square cannot be used**
Malay	3 (5.5)	52 (94.5)	55 (100)	
Indian	1 (7.1)	13 (92.9)	14 (100)	
Chinese	0 (0)	0 (0)	0 (100)	
Others	1 (100)	0 (0)	1 (100)	
Malay or non-Malay				0.290
Malay	3 (5.5)	52 (94.5)	55 (100)	

Non-Malay	2 (13.3)	13 (86.7)	15 (100)	

Out of 70 respondents, there was only 1 female respondent with all participants with haemorrhoids being male. However, gender was found not to be statistically significant (p=1.000)

There were 55 respondents with age of less than 50 and 4 of them (7.3%) had hemorrhoids as compared to the age group of 50 and above which consists of 15 respondents, only 1(6.7%) participants had hemorrhoids. However, there was no significant association between age groups and hemorrhoid (p=1.000). There was significant association.

There was no significant association between the ethnicity of Malay or non-Malay with haemorrhoids because the P-value was more than 0.05 (P= 0.290). There were 3 (5.5%) out of 55 Malay respondents while 2 (13.3%) out of 14 non-Malay respondents had hemorrhoids.

Table 3. The association between prolonged sitting and haemorrhoids among lorry drivers in Klang Valley

Prolonged sitting	**Haemorrhoids**		**Total n (%)**	**P value**
	Yes n (%)	**No n (%)**		
Yes	5(8.1)	57 (91.9)	62 (100.0)	1.000
No	0 (0)	8(100.0)	8 (100.0)	

Among lorry drivers who are prone to prolonged sitting, only 8.1% were diagnosed with haemorrhoids. However, statistically, there is no significance association between prolonged sitting and haemorrhoids among lorry drivers in Klang Valley (P>0.05) (Table 4.3).

Table 4. The association between haemorrhoids and weight lifting among lorry drivers in Klang Valley

Weight lifting	**Haemorrhoids**		**Total n (%)**	**P value**
	Yes n (%)	**No n (%)**		

Yes	3(6.8)	41(93.2)	44 (100.0)	1.000
No	2(7.7)	24(92.3)	26 (100.0)	

Weight lifting was found to not be statistically significant (p=1.00) with only 6.8% were diagnosed with haemorrhoids among participants who were involved in unloading the lorry (Table 4.4).

III. Discussions

According to the survey that was done in Klang Valley, the prevalence of haemorrhoids among lorry drivers are 7.1%. The percentage is much lower than lorry drivers that do not have haemorrhoids which is 92.9%. It is corresponding to the European Conference of Ministers of Transports (ECMT) stated that 46 out of 650 international truck drivers from six EEC countries have health complaints of haemorrhoids (7%). One of the commonest occupational health complaints among lorry drivers are the haemorrhoids. After the survey, result showed that our prevalence of haemorrhoids among lorry drivers are much lower when compared to a study done by Rizwan Mansoor Khan et al. (2015), stated that out of 311 patients diagnosed with haemorrhoids, 50 patients (16.1%) were working as drivers.This corresponds with a study by Geetha (2020) shown that incidence of haemorrhoids among long vehicle drivers was 13.9%. Meanwhile, a study done by Najar et al. (2017), revealed that out of 911 subjects, 291 (31.94%) subjects were working as drivers. The inconsistency in the prevalence of haemorrhoids between studies could be caused from the different distribution of age, sex and ethnicity of study subjects as well as the definition and diagnostic method for haemorrhoid. However, our study was conducted among lorry or truck drivers in Klang valley which may have resulted in relatively corresponding to the European Conference of Ministers of Transports (ECMT) about haemorrhoids than observed in other studies. This is because nowadays, their lorry's company already improvised or installed an ergonomically designed driver seat, interrupt driving periodically for rest and exercises also they started to use safe lifting and moving techniques for heavy workload or use any mechanical aids in lifting.

Based on this research we have found that the prevalence of hemorrhoid in male is 7.2% of 69 male lorry drivers. Rizwan Mansoor Khan, et al., suggested in their research done in 2015 in India that the prevalence of hemorrhoids in males is higher (75.9%) than in females (24.1%). A research done in UKM Medical Centre conducted in 2019 found that the prevalence among male patients who have hemorrhoid is 48.1%. Though in the research they have found that there was no clear significant association between gender and hemorrhoid ($p<0.05$) (Jalina, et al., 2019).

Based on this research, the prevalence of hemorrhoid is higher in those aged less than 50 year-old (7.3%). Based on Jalina, et al., in 2019, the prevalence of hemorrhoid is higher in those less than 50 year-old (65.9%) which corresponds to the result in our research. Rizwan Mansoor Khan, et al., on the other hand found

that it is higher in those age 40 year-old and above (58.2%). This result is supported well by an epidemiologic study done in 1990 in which found that 75% of those having hemorrhoids are of those who are at 45-65 years of age. The difference result may be due to the difference in the range of age group (johanson, et al., 2012). Another study done in India found that the prevalence of hemorrhoid is higher in those age 31-60 years old (68.05%) (A, M, &A., 2018).

Based on ethnic in our research with a total of 86.7% of our study population are malay, in which 5.5% of them were found to have hemorrhoids. This result is different than that in the research done in 2019 by Jalina, et al., in which they have found that the prevalence of hemorrhoids are much more common in Chinese population (59.0%) which also showed to have a significant odds ratio of 2.056 (1.174 - 3.601). The difference may be due to the different in our study population and the proportion of chinese lorry drivers in Malaysia may also affect the difference aside from the study design.

The study revealed that there is no significance between hemorrhoids and prolonged sitting among lorry drivers, although the prevalence rates for present illnesses including hemorrhoids among truck drivers were significantly higher than those of clerical workers (Koda et al., 2000). This is supported by a study done by Najar et al. (2017), revealed that 31.94% of patients diagnosed with hemorrhoids were working as drivers. As a result, lorry drivers are more prone to developing hemorrhoids due to the long hours spent sitting behind the wheel. However, prolonged sitting was postulated to increase the pressure on the anus, therefore resulting in hemorrhoids. It was also shown that good physical activity could help to regulate bowel function (Zeinab et al., 2011) and therefore, the occurrence of hemorrhoids would be less likely.

The study revealed that there is no significance between haemorrhoids and weight lifting among lorry drivers, as supported by a study in Kelantan which revealed 53.7% of patients with haemorrhoids have not lifted heavy objects (Jusoh et al., 2008). However, this is contrary to a study in Mangalore government and private tertiary hospitals in which there were 68.2% of haemorrhoids patients with a history of frequent lifting of heavy weights (Joseph, et al., 2018). As a result, weight lifting does not necessarily cause haemorrhoids for lorry drivers.

IV. Conclusion And Recommendations

Overall results, the findings supported the result from the cited study with prevalence of haemorrhoid among lorry drivers in Klang Valley, 7.1%. However, there were no association for both risk factors of haemorrhoids that were usually faced by the lorry drivers namely involvement in unloading the goods or weight lifting and prolonged sitting in relation with the working hours. Most of the cited studies also supported the non association of both risk factors. Their lorry's company already improvised or installed an ergonomically designed driver seat, interrupt driving periodically for rest and exercises also they started to use safe lifting and moving techniques for heavy workload or use mechanical aids in lifting.

Our study was limited by the lack of literature reviews as a result of very few studies being conducted on the lorry driver group particularly focusing on the hemorrhoids as the occupational hazard. Plus, known risk factors for haemorrhoids involving straining and increase in intra-abdominal pressure such as constipation, chronic sneezing and coughing were not excluded and other risk factors of hemorrhoid that were not studied in this research was diet as diet of high fiber is thought to reduce the risk of constipation, thus improving bowel function (Peery et al., 2015).

In addition, the model of the lorry was not taken into account as the revolution of the driver seat or heat emission from it, particularly ergonomics wise may be different as to the risk of developing hemorrhoids.

We would like to suggest for future researchers to fill in the many knowledge gaps especially as mentioned in the limitations. An emphasis on safety precautions during data collection especially privacy during phone call interviews, face to face interviews at the roadside, avoiding interviewing without a company and to obtain the permission of local authorities especially at the public rest stop particularly the district police department.

Acknowledgement

We would like to express our heartfelt appreciation to all those who have helped us complete our study. We would also like to thank University of Cyberjaya for giving us this opportunity to conduct this research. Most of all, the highest gratitude to the lorry and truck drivers who were willing to spend their time to become our respondents.

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