ORIGINAL ARTICLE

LOW BACK PAIN AMONG OCCUPATIONAL THERAPISTS AND ITS ASSOCIATED RISK FACTORS

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ABSTRACT

Low back pain (LBP) is one of the most common work-related health problems, affecting health care professionals. In Malaysia, research data on the prevalence of low back pain, and its associated risk factors, among occupational therapists, is currently lacking. In view of this situation this study is aimed at identifying the prevalence, associated risk factors, and effects of LBP, among occupational therapists in Malaysia. This cross-sectional study involves a total of 287 occupational therapists. The instruments used in this study include demographic information, a Nordic Musculoskeletal Questionnaire, and an Oswestry Low Back Pain Disability Questionnaire. Data were collected online, and processed with the use of SPSS-21. This study revealed a high lifetime (79.4%), and one-year (71.1%) LBP prevalence among occupational therapists, in comparison to the point LBP prevalence (28.6%). The significant risk factors associated to LBP were identified as gender, exercise status, work stress level, and a poor working posture. Among those afflicted with LBP, 53.4% experienced a reduction in work activity, while 81.6% were affected by a minimal functional disability. A substantial proportion of occupational therapists in Malaysia, endure functional disability associated with LBP, which consequently has a negative effect on their leisure time and working life. As such, efforts should be directed at introducing multilevel interventions, for the prevention and control of LBP, in terms of this highly vulnerable occupational group.

***Keywords**: Low Back Pain, Associated Risk Factors, Occupational Therapists*

INTRODUCTION

Low back pain (LBP) is defined as pain or discomfort, including radiating pain, which occurs specifically between the twelfth rib and the inferior gluteal folds (1). It is an extremely common condition, which most individuals encounter, at some point in their life. LBP is frequently the cause of morbidity among health care workers (2).

In most parts of the world, LBP is the major source of activity limitation and work absence (3). Although most people recover quickly from a new episode of LBP, one out of every five adults develop chronic, disabling LBP. As such, the socioeconomic burden brought about by LBP is considered significant. In Western countries, the societal costs, for back pain, are estimated to be between 1% and 2%, of the gross national product. The bulk of these costs (80%–90%) are incurred as a result of productivity loss, and disability (4). LBP can be categorised as acute, sub-acute or chronic. Affecting both young and old, LBP often calls for medical consultations. LBP prevalence varies in accordance with definitions and research populations, as well as across countries (5).

Occupational therapy is a form of health care, focusing on the physical, sensory or cognitive difficulties, affecting people of all ages. Due to their frequent practice of lifting, bending, stooping, twisting, turning, prolonged sitting or standing, occupational therapists are among the most susceptible to LBP. Recent evidence suggests that the annual incidence of musculoskeletal disorder (MSD), among occupational therapists and physiotherapists, is on the rise. A study in Iran verified the incidence of MSD among occupational therapists, as 76.4% (n=41) (6). According to the results from studies in this area, a therapist who works on 15 to 20 patients, during an 8-hour day, is more likely to suffer work-related injuries (7).

To date, data on the prevalence of LBP, among occupational therapists in Malaysia, is considerably lacking. The emphasis of this investigation is on the implementation of prevention strategies, to counter the prevalence and risk factors of LBP, affecting Malaysian occupational therapists.

METHODS

Study design

We opted for a cross-sectional study, as it is easy to conduct, applicable for the short-term period, and cost-effective to implement (8). The purposive sampling technique employed for this

study calls for the target population to meet the following criteria: (a) occupational therapist who works in Malaysia and (b), is able to read texts in English, and comprehend the message. Occupational therapists with spinal deformities, those had undergone back surgery, and occupational therapy students, were excluded from this study. Ethical approval, for this study, was derived from the Research Ethics Committee, of Universiti Teknologi MARA (REC/10/2020).

Instruments

Nordic musculoskeletal questionnaire (NMQ)

This questionnaire, which was assembled by Kuorinka, Jonsson, Kilbom, Vinterberg, Biering-Sørensen, Andersson, & Jørgensen in 1987, serves to establish and evaluate a standardized questionnaire methodology, to compare low back, neck, shoulder and general complaints, for use in epidemiological studies (9 and 10). The section in the NMQ, focusing on LBP, was referred to for this study. This section comprises eight items, and participants are required to respond, by marking the appropriate box with a cross. The NMQ is credited with an acceptable level of validity and reliability (11).

Oswestry low back pain disability

This assessment method, which was developed by Fairbank, Couper, Davies, and O'Brien in 1980, is also known as the Oswestry Disability Index (ODI). This test is considered the 'gold standard' for low back functional outcome instruments. Scores are correlated with levels of disability, ranging from minimal to bedbound. The good construct validity, attributed to the ODI, has to do with its consistency with other outcome calculations, and this capacity is supported, by its recognition as the benchmark for comparison, with regards to other outcome measures, employed for evaluating LBP-induced disability (12). The ODI comprises 10 items, and participants respond by checking one box in each item, for the statement which best applies to them.

Data collection procedures

Data collection commenced in November, 2020, and brought to a close in January, 2021. The questionnaires were distributed online via Facebook; "Occupational Therapists Network Malaysia (OTNM)" and "OT - Terapi Carakerja Untuk Kanak-Kanak Berkeperluan Khas" as well as through the WhatsApp group; "OT Brothers".

Data analysis

Data processing was performed by way of the statistical package for social sciences, version 21 (SPSS-21). Descriptive analysis was employed, to determine the prevalence and effects of low back pain, among occupational therapists. A chi-square or Fisher's exact test was conducted, to ascertain the association between demographic variables, as well as other possible factors, and low back pain.

RESULTS

A total of 287 occupational therapists participated in this investigation. Of this total, 84.7% (n=243) are female, while 15.3% (n=44) are male. Most of the participants (65.9%) are single, aged between 20 – 30 years (71.8%), with a BMI of less than 25 kg/m2 (59.2%), and are non-smokers (94.1%). Additionally, 54.4% of the participants are involved in workout routines, with 58.3% doing so at least twice a week, while 59% are involved in aerobic type of exercises. Most of the participants come with 1-4 years of working experience (33.4%), 61.7% work in the area of paediatrics, 79.1% experienced occasional stress at work, while 58.5% are unknowledgeable about work safety training (Table 1a and Table 1b).

Prevalence of LBP among occupational therapists

LBP among occupational therapists was measured by way of a yes or no answer, while the length of time they endured LBP was also recorded. The three categories of LBP prevalence considered for this study are lifetime prevalence, one-year prevalence and point (one-week) prevalence. According to our findings, lifetime and one-year, registered a high LBP prevalence of 79.4% and 71.1% respectively among occupational therapists, in comparison to the 28.6% LBP prevalence registered by the one-week point (Figure 1).

The relationship between demographic profiles and LBP prevalence

The relationship between lifetime, one-year as well as point prevalence, and the demographic data of occupational therapists, is illustrated in Table 2. The initial findings of this study, revealed a significant relationship between gender and LBP, with the lifetime prevalence and the one-year prevalence registering P = 0.005 and P = 0.023 respectively. However, the point prevalence of P = 0.569 indicates that it is not

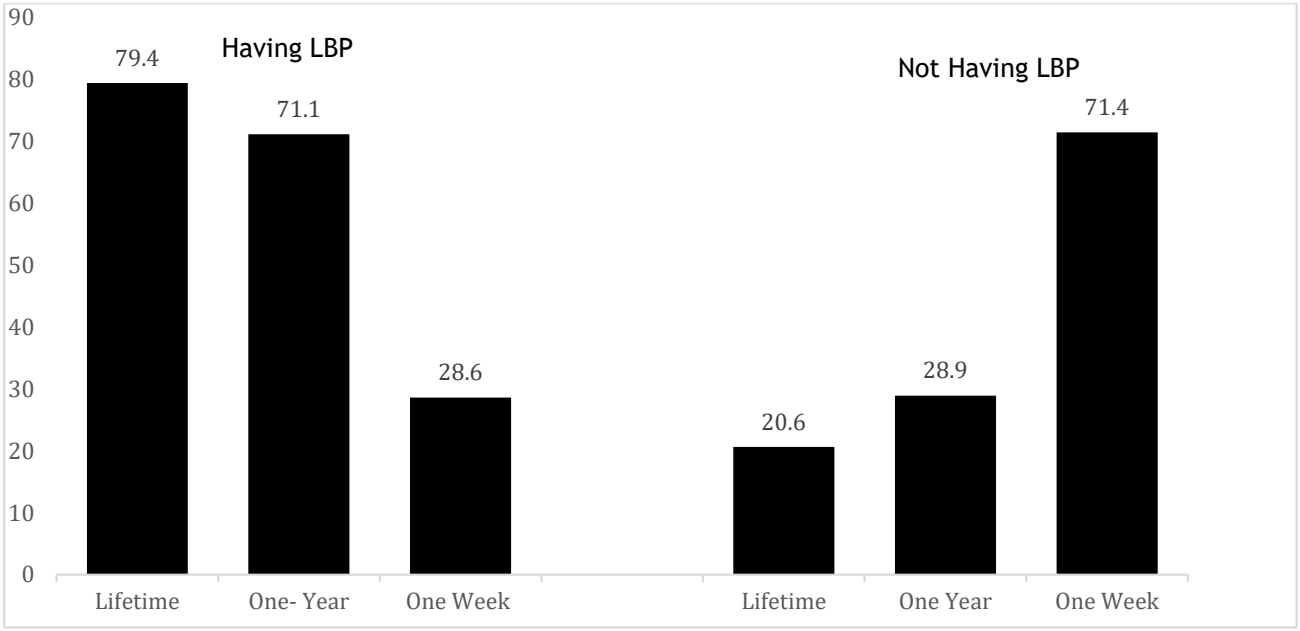

Figure 1: Prevalence of LBP among OT (n=287)

Table 1a: Demographic Profiles of Occupational Therapists (n=287)

Variables	N (%)
Gender	
Male	44 (15.3)
Female	243 (84.7)
Age Range	
20 - 30 years old	206 (71.8)
31 - 40 years old	70 (24.4)
41 - 50 years old	8 (2.8)
51 - 60 years old	3 (1.0)
Marital Status	
Single	189 (65.9)
Married	97 (33.8)
Divorced	1 (0.3)
BMI Level	
<25 kg/m2	170 (59.2)
≥25 kg/m2	117 (40.8)
Smoking Status	
Yes	17 (5.9)
No	270 (94.1
Exercise Status	
Yes	156 (54.4)
No	131 (45.6)
Frequency of Exercise	
0 – 2 times per week	91(58.3)
3 – 4 times per week	53(34.0)
5 – 7 times per week	9 (5.8)
> 7 times per week	3 (1.9)
Types of Exercise	
Aerobic	92 (59.0)
Strengthening	26 (16.7)
Flexibility	31 (19.9)
Other	7 (4.5)

Table 1b: Demographic Profiles of Occupational Therapists (n=287)

Variables	N
Work Experience	
Less than a year	62 (21.6)
1 – 4 years	96 (33.4)
5 – 8 years	82 (28.6)
9 – 12 years	23 (8.0)
More than 12 years	24 (8.4)
Area of Practice	
Orthopaedics and Surgical	24 (8.4)
Paediatrics	177 (61.7)
Mental Health	6 (2.1)
Geriatrics	5 (1.7)
Medical and Neurological	36 (12.5)
Special Education	10 (3.5)
Return to Work	11 (3.8)
Others	18 (6.3)
Work Stress	
Never	11 (3.8)
Sometimes	227 (79.1)
Often	49 (17.1)
Bad Working Posture	
Yes	216 (75.3)
No	71 (24.7)
Working Safety Training	
Yes	119 (41.5)
No	168 (58.5)

significantly related to LBP. Additionally, female occupational therapists were observed to have a higher level of LBP than their male counterparts, with a lifetime prevalence of 82.3%, a one-year prevalence of 73.7%, and a point prevalence of 29.2%.

No significant relationship was detected, between the age of occupational therapists and LBP, with the lifetime prevalence registered as P = 0.407, the one-year prevalence as P = 0.076, and the point prevalence as P = 0.872. The highest LBP one-year prevalence of 72.9%, was registered by occupational therapists aged between 31 and 40 years, while the highest lifetime prevalence of 80.6%, and the highest point prevalence of 29.6% were registered by occupational therapists between the ages of 20 and 30 years. According to the findings from this investigation, marital status is not significantly related to LBP, with the lifetime prevalence registered as P = 0.809, the one-year prevalence as P = 0.639, and the point prevalence as P = 0.314.

The relationship between the BMI level and LBP was revealed to be insignificant, with the lifetime prevalence recorded as P = 0.754, the one-year prevalence as P = 0.627, and the point prevalence as P = 0.224. However, the findings also revealed

that occupational therapists with a BMI above 25, endure a higher level of LBP, than those with a BMI below 25. The relationship between smoking status and LBP was also revealed to be insignificant, with the lifetime prevalence recorded as P = 0.128, the one-year prevalence as P = 0.274, and the point prevalence as P = 0.786. Besides, smoking status also did not have significant relationship with low back pain; lifetime prevalence (P=0.128), one-year prevalence (P=0.274) and point prevalence (P=0.786). Occupational therapists, who smoke, were observed to endure a higher LBP prevalence, than those who do not smoke.

Exercise status was revealed to have a significant relationship with LBP, registering a lifetime prevalence of P = 0.004. However, it has a non-significant relationship with one-year and point

LBP prevalence, which were recorded as P = 0.202 and P = 0.680 respectively. Occupational therapists, who exercised, were observed to have a lower prevalence of LBP, than occupational therapists who do not exercise. Also, the frequency and type of exercise, are not significantly related to LBP (P>0.05).

This study revealed that working experience and LBP are not significantly related, with the lifetime prevalence recorded as P = 0.315, the one-year prevalence as P = 0.063, and the point prevalence as P = 0.717. The lowest prevalence of LBP is attributed to occupational therapists, with a working experience exceeding 12 years. The occupational therapist's area of practice, is also not significantly related to LBP, with the lifetime prevalence recorded as P = 0.150, the one-year prevalence as P = 0.078, and the point prevalence as P = 0.722.

The work stress level of occupational therapists, was observed to be significantly related to LBP, with the lifetime prevalence registering P = 0.016. However, it did not portray a significant relationship with one-year prevalence and point LBP prevalence which were recorded as P = 0.146 and P = 0.805 respectively. The lowest LBP prevalence is attributed occupational therapists that never experience stress while at work. This undertaking also revealed a significant relationship between a poor working posture and LBP, with the lifetime prevalence recorded as P = 0.000 and the one-year prevalence as 0.001. However, it does not have a significant relationship with point LBP prevalence, which was recorded as P = 0.805. Occupational therapists saddled with a poor working posture, portrayed a higher LBP prevalence, compared to those with an appropriate working posture. And lastly, there is no indication of a significant relationship between workplace safety training and LBP, with the lifetime prevalence registering as P = 0.452, the one-year prevalence as P = 0.913, and the point prevalence as P = 0.791.

Table 2a: Relationship between Demographic Profiles and Prevalence of LBP

Profiles	n (%) Had LBP	n (%) Not having LBP	P- value Lifetime	1 Year	1 week
Gender			0.005[a]	0.023[a]	0.569 [a]
Male	28 (63.6)	16 (36.4)			
Female	200 (82.3)	43 (17.7)			
Age Range			0.407[b]	0.076 [b]	0.872[b]
20 - 30 years old	166 (80.6)	40 (19.4)			
31 - 40 years old	55 (78.6)	15 (21.4)			
41 - 50 years old	5 (62.5)	3 (37.5)			
51 - 60 years old	2 (66.7)	1 (33.3)			
Marital Status			0.809[b]	0.639[b]	0.314 [b]
Single	151 (79.9)	38 (20.1)			
Married	76 (78.4)	21 (21.6)			
Divorced	1 (100.0)	0 (0.0)			
BMI Level			0.754[a]	0.627 [a]	0.224 [a]
<25 kg/m2	134 (78.8)	36 (21.2)			
≥25 kg/m2	94 (80.3)	23 (19.7)			
Smoking Status			0.128[b]	0.274[b]	0.786 [b]
Yes	11 (64.7)	7 (35.3)			
No	217 (80.4)	53 (19.6)			
Exercise Status			0.004[a]	0.202[a]	0.680 [a]
Yes	114 (73.1)	42 (26.9)			
No	114 (87.0)	17 (13.0)			

Table 2b: Relationship between Demographic Profiles and Prevalence of LBP

Profiles	n (%) Had LBP	n (%) Not having LBP	P- value Lifetime	1 Year	1 week
Frequency of Exercise			0.813[b]	0.833 [b]	0.927 [b]
0 - 2 times per week	67 (73.6)	24 (26.4)			
3 - 4 times per week	38 (71.7)	15 (28.3)			
5 - 7 times per week	6 (66.7)	3 (33.3)			
>7 times per week	3 (100.0)	0 (0.0)			
Type of Exercise			0.967[b]	0.407 [b]	0.270 [b]
Aerobic	67 (72.8)	25 (27.2)			
Strengthening	20 (76.9)	6 (23.1)			
Flexibility	22 (71.0)	9 (29.0)			
Other	5 (71.4)	2 (28.6)			

[a]*Pearson's Chi-Square test,* [b]*Fisher's Exact Test*

Table 3: Effect of Low Back Pain to Occupational Therapists

Variables	N (%)
Hospitalized	
Yes	5 (2.2)
No	223 (97.8)
See Doctors	
Yes	60 (29.4)
No	144 (70.6)
Change Jobs	
Yes	29 (12.7)
No	199 (87.3)
Reduce Work Activity	
Yes	109 (53.4)
No	95 (46.6)
Reduce Leisure Activity	
Yes	90 (44.3)
No	113 (55.7)

Effects of low back pain on occupational therapists

The effects of LBP on occupational therapists are portrayed in Table 3. The majority (97.8%) of occupational therapists, in this experiment, had never been hospitalized for LBP. Only 5 (2.2%) occupational therapists required hospitalization for this ailment. 29.4% of occupational therapists had consulted doctors for their LBP issues. A high percentage (87.3%), of occupational therapists, never needed to switch jobs or duties due to LBP. Over the last 12 months, LBP caused to 53.4% of occupational therapists to reduce their work activity, and 44.3% to reduce their leisure activity.

Functional disability among occupational therapists

The degree of LBP disability differs among occupational therapists. As illustrated in Figure 2, 186 (81.6%) occupational therapists endured minimal disability, 37 (16.2%) endured moderate disability, while 4 (1.8%) endured severe disability. Only 1 (0.4%) occupational therapist is crippled due to LBP No occupational therapist, in this experiment, was rendered bed-bound, due to disability deriving from LBP

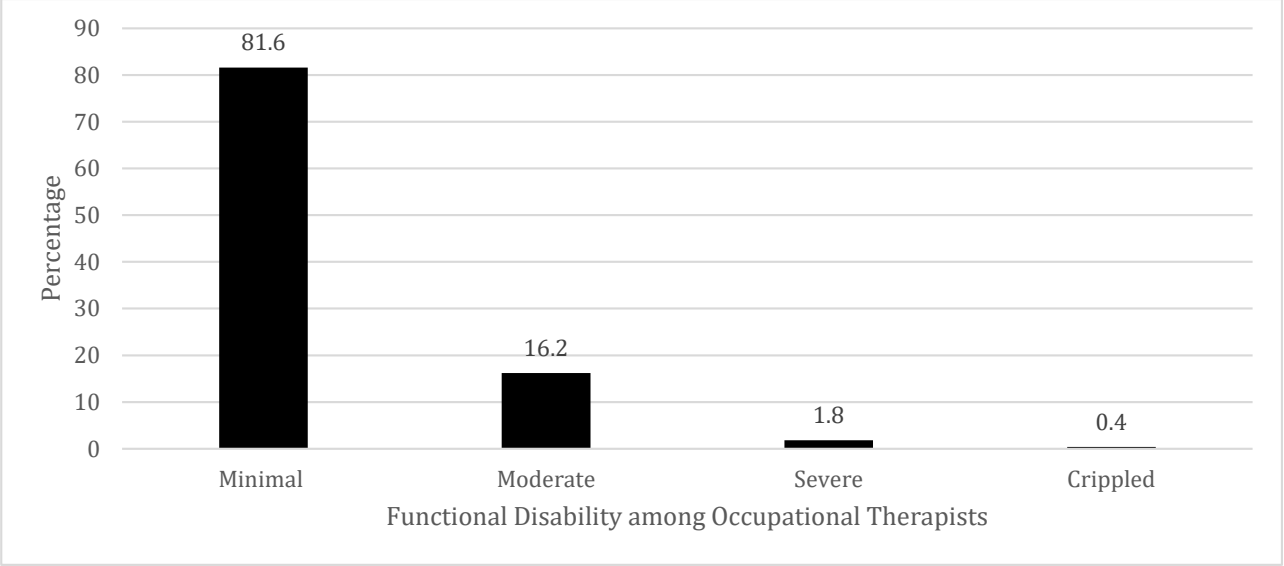

Figure 2: Functional Disability among Occupational Therapists

DISCUSSION

Prevalence of low back pain among Malaysian occupational therapists

LBP prevalence varies, in accordance with the criteria and research population involved, as well as from country to country. In this study, the point prevalence of LBP, among the participating occupational therapists, was recorded as 28.6%. This finding is relatively comparable, to that of a study conducted in India, involving doctors (13). However, in Slovenia, a study involving nurses registered a higher point LBP prevalence (1). This can be explained by the higher workload, and working conditions, experienced by these nurses, particularly the requirement for the heavy lifting of patients. The high rate, of MSD incidence among occupational therapists, could be due to demanding therapy sessions, the need to perform technical chores manually, and the repetitive movements that come with the job (6).

With regards to this study, the cumulative lifetime prevalence of LBP (79.4%), and the LBP prevalence over the past 12 months (71.1%), is comparable to the noteworthy LBP prevalence rates reported in literature, with variances ranging between 53% and 84% (14, 15 and 16), as well as between 28% and 73.5% (2, 17 and 18). The prevalence of LBP among healthcare workers may differ between developed and developing countries, within countries, and across regions. The methodological heterogeneity used for the assessment of LBP, as well as differences in the gender, profession, and age group of the other study populations, may explain the variability in LBP prevalence

Associated risk factors of low back pain

While the age of the respondents did not prove to be a significant LBP factor in our survey, ($P>0.05$), it was reported otherwise in other studies (19 and 20). This can probably be put down, to the younger age distribution of respondents, in our study. Similar findings were also derived, from studies involving healthcare providers in Nigeria and Ethiopia (5 and 18).

In our study, the gender, of the respondents, was revealed to be associated with lifetime and one-year LBP prevalence. Also, females exhibited higher prevalence than males. This revelation is in agreement with a study conducted in Denizli, involving healthcare workers (16). In several studies, LBP was reported to affect more women than men (1). It has been suggested, that this female preponderance, is due to the structural, anatomical and physiologic differences between males and females (21). The sex difference could also be related to gonadal steroid hormones, such as oestradiol, and testosterone modulated sensitivity to pain and analgesia (22).

The link, between obesity and a higher incidence of LBP, can be traced to the fact that, excess weight exerts strain on the weight-bearing spinal components (5). However, in our study, there was no evidence to indicate a significant association between the BMI level and LBP. This finding is in agreement with the results, derived through

several other investigations in this area (20 and 23). This circumstance may be attributed to the employment of protective measures against LBP, such as physical exercises. Moreover, as this study uses a self-reported questionnaire format, some respondents may not have provided an honest response, with regards to their BMI level.

Compelling experimental evidence, associates smoking, to the degeneration of the intervertebral disc (IVD). Smoking causes the vascular network, surrounding the intervertebral disc, to constrict, thus reducing the exchange of nutrients and anabolic agents, from the blood vessels to the disc (24). This situation exposes smokers to the risk of low back injuries. While the results from our undertaking did not establish any significant association between smoking and LBP ($P>0.05$), this is in contradiction with the results derived through a study conducted by Green et al., which reported a significant link between smoking and LBP (25). This deviance may be due to the low number of smokers, among the respondents in our study (5.9%). Again, as our study uses a self-reported questionnaire format, some respondents may not have provided an honest response, with regards to their smoking status.

While it is possible, that the physiological mechanisms, which come into play following marriage (22), reduce the possible occurrence of LBP, our investigation did not reveal any association between marital status and LBP. This finding is consistent, with the results derived through studies involving nurses in Ethiopia, and healthcare workers in Libya (26 and 27).

The results, from our study, indicate that physical exercise is associated, to the lifetime prevalence of LBP. This finding is in agreement with a study conducted in India, concerning the effects of LBP among doctors (13). The increased flow of blood, to the lower back area during exercise routines, may serve to reduce stiffness, and hasten the healing process (28). Contrastingly, a study conducted in Iran, involving nurses, did not detect any significant link, between physical exercise and LBP (15). Several factors can influence the results in this area. These include the nature, volume, and intensity level of the exercise routines (23).

Stress promotes the release of cortisol and adrenaline, which leads to the involuntary tightening of muscles down the spine (29). Prolonged tension, in this area, can culminate in LBP. The results from our study indicate an association between work stress and lifetime LBP prevalence. A study carried out in South India, involving nurses, also recorded a similar finding (30). While this finding is in agreement, with that of a study conducted in Malaysia, involving healthcare providers, a separate study, also conducted in Malaysia, involving doctors, came up with a contrasting finding (32).

According to the results from previous studies, LBP prevalence, among health professionals working in orthopaedic wards, is higher in situations where patient transfer occurs frequently (33). However, our investigation did not reveal any significant association, between the respondents' area of practice, and LBP. This deviance may be attributed, to the exceedingly low number of respondents in our study, in some of the areas of practice. A study conducted in South Korea, involving hospital nurses, also did not detect any association, between the area of practice, and LBP (34).

According to the results from this study, working experience is not significantly linked to LBP. A similar result was derived from an investigation involving healthcare workers in Libya (35). However, a study involving nurses in Slovenia, delivered a contrasting outcome (1). This study determined that the higher rate of back pain among inexperienced nurses could be attributed to their lack of knowledge and understanding with regards to patient-handling techniques. This deviance, from our finding, could be due to the high percentage of occupational therapists, who continue to adopt a poor working posture, regardless of their working experience.

Most of the occupational therapists involved in our investigation, employ a poor working posture. Muscle contractions that are forceful, static or repetitive, can cause tendons to stretch, compressing the vascular epitenon, peritenon, and endotenon microstructures. This in turn can lead to ischaemia, fibrillar tearing and inflammation (32). This study uncovered that a bad working posture, is significantly associated with lifetime, and one-year LBP prevalence. Similar findings were derived, from studies

conducted in South India and Iran, involving nurses (15 and 30). Contrastingly, a study involving operation room (OR) staff in Saudi Arabia, did not reveal any significant association, between working posture and low back pain (36). It has been proven, that coaching on the proper lifting techniques, can effectively reduce the occurrence of occupational back pain (37). However, it should be noted, that knowledge on proper ergonomics, may not translate into the prevention of LBP (31). Those with good ergonomic knowledge may not automatically apply this knowledge, while working. The results from our study indicate that there is no significant association, between safety training and LBP.

Effects of low back pain

Our investigation revealed, that 223 (97.8%) of the occupational therapists involved in this study, had never been hospitalized for LBP problems, and only 60 (29.4%) sought medical attention. The treatment rate is surprisingly low, considering the healthcare professionals' easy access to healthcare services. This anomaly could be due to the tolerable minimal and moderate disability, endured by the LBP sufferers, involved in our study. In a study conducted in Riyadh, involving medical practitioners, a mere 18% (n = 174) sought medical treatment for LBP issues (38).

Only 29 (12.7) occupational therapists involved in our study, felt the need to switch jobs due to LBP. Again, this could be due to the tolerable minimal and moderate disability, endured by the LBP sufferers. In a study involving medical practitioners in Dhaka, only 11.5% (n = 117) felt the need to switch jobs due to LBP (39).

Over the past 12 months, 109 (53.4%) of the occupational therapists in our study were forced to reduce their work activity, and 90 (44.3%) their leisure activity, due to LBP. In a study involving Kuwaiti physiotherapists, it was revealed that 6% (n = 143) of them reduced their number of working hours, and 29% reduced their non-work activities, due to LBP (40). Similarly, in an investigation conducted in Saudi Arabia, 41.8% (n – 143) experienced an interruption in their work life due to LBP (36). In yet another study in this area, the work activity of 73% (n = 248) of Saudi Arabian nurses had their work activity curtailed due to LBP (41).

In terms of functional disability, 186 (81.6%) of the occupational therapists in our study are afflicted with minimal disability, 37 (16.2%) with moderate disability, 4 (1.8%) with severe disability, and 1 (0.4%) is crippled due to LBP. In a previous study involving Pakistani health providers, it was revealed that 72.7% (n = 300) are afflicted with minimal disability due to LBP (42). Similarly, slightly more than half, or 50.4% (n = 250) of operating room (OR) nurses in an Indian hospital, were revealed to be minimally disabled by LBP (30). In contrast, a separate study, involving nurses in Turkey, revealed a higher moderate disability rate, than minimal disability rate, of 46.4% (n = 381) and 4.1% respectively (43). This disparity in findings may be attributed to differences in the gender, profession, and age group, of the various study population compilations.

CONCLUSION

The results, from this investigation, revealed that while the lifetime and one-year prevalence of LBT, among Malaysian occupational therapists is generally high, it is lower for the point prevalence. Gender, exercise status, work stress level, and working posture were identified as the risk factors associated with LBP. A substantial proportion of occupational therapists, endure functional disability stemming from LBP. This circumstance translates into a negative impact, on both their leisure time and working life. In view of this situation, multilevel interventions, for the prevention and control of LBP, among this highly vulnerable occupational group, ought to be in the pipeline. The replication of this study, for other countries, can stimulate comparisons and discussions, which can lead to improvements in the healthcare and caregiver domains. A long-term research programme should be considered, to delve into the management of those afflicted with chronic LBP. It may be advisable, to do away with self-reporting questionnaires, for future studies in this area, as respondents tend to overestimate their experiences with this format.

Conflict of interest

The authors declare no potential conflict of interest.

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