Original Article

Prevalence of Work-Related Low Back Pain among Health Care Professionals in Tabuk, Saudi Arabia

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ABSTRACT

Background and Aims: Low back pain (LBP) is common among health care professionals (HCPs). The aim of this study was to analyse the prevalence and selected risk factors of LBP among HCPs in different medical institutions in Tabuk, Saudi Arabia.

Methods: Using convenience sampling, 160 subjects (28 physical therapists, 52 physicians, and 80 nurses) were included in this study. Cornell Musculoskeletal Discomfort Questionnaire (CMDQ) and self-assessment back pain information sheet were administered. Descriptive analysis was used to study the general characteristics of the participants. Relationship between LBP and selected risk factors were tested using Chi-square and ANOVA. Data was analysed using SPSS ver. 20.0.

Results: The one-week prevalence of LBP was found 57% among nurses, 50% among physicians and 36% among physical therapists. Many risk factors were found to have significant relationship with LBP ($p<0.05$) such as occupation, severity of pain, gender, education status, activities of daily living, limitation of activities in lifting and prolonged standing. The results also revealed a statistically significant difference among nurses, physicians, and physical therapists with respect to pain scale ($p = 0.002$). In particular, the pain level was higher in nurses (M= 4.55) than in physicians (M= 3.31). No significant differences were found between physical therapists (M= 3.75) and nurses or physicians with respect to mean score of pain scale.

الملخص

الأهداف: آلام أسفل الظهر هي من الحالات الشائعة بين الممارسين الصحيين، لذلك هدفت هذه الدراسة لدراسة انتشار آلام أسفل الظهر والعوامل المؤدية إليه بين الممارسين الصحيين في مؤسسات طبية مختلفة في منطقة تبوك، المملكة العربية السعودية.

الطريقة: باستخدام أسلوب العينة المريحة، تم إدراج ١٦٠ مشارك (٢٨ أخصائي علاج طبيعي و ٥٢ طبيب و٨٠ ممرضًا) في هذه الدراسة. طبقت عليهم استبانة كورونيل لقياس عدم الراحة العضلية الهيكلية (Cornell Musculoskeletal Discomfort Questionnaire) واستبانة تقييم ذاتي لآلام الظهر. لتحليل البيانات، تم استخدام الإحصاء الوصفي لوصف الخصائص العامة للمشاركين، ولتحليل العلاقة بين آلام أسفل الظهر وعوامل الخطر فقد تم استخدام اختبار مربع كاي (Chi-square) للمتغيرات المصنفة واختبار تحليل التباين للمتغيرات الكمية (ANOVA). تم تحليل البيانات باستخدام برنامج (SPSS ver. ٢٠,٠).

النتائج: أظهرت النتائج ان نسبة انتشار آلام أسفل الظهر في الاسبوع الواحد هي ٥٧٪ بين الممرضين و ٥٠٪ بين الأطباء و٣٦٪ بين أخصائي العلاج الطبيعي. كما أظهرت النتائج علاقة ذات دلالة إحصائية ($p < ٠,٠٥$) بين العديد من العوامل وآلام أسفل الظهر مثل المهنة، مستوى الألم، الجنس، المستوى التعليمي، مستوى الأنشطة في الحياة اليومية، محدودية الأنشطة في الرفع والوقوف لفترات طويلة. كما أظهرت النتائج فروق ذات دلالة إحصائية ($p < ٠,٠٠٢$) بين الممرضين والأطباء وأخصائيي العلاج الطبيعي فيما يتعلق بمستوى الألم. على وجه الخصوص، كان مستوى الألم أعلى بين الممرضين (المتوسط ٤,٥٥) من الأطباء (المتوسط ٣,٣١). لكن لم تظهر النتائج فروق ذات دلالة إحصائية بين أخصائيي العلاج الطبيعي (المتوسط ٣,٧٥) والممرضين أو الأطباء في مقياس الألم.

الخلاصة: تشير نتائج الدراسة ان معدل انتشار آلام أسفل الظهر بين الممرضين

Conclusions: Nurses are found with more prevalence rate of LBP than physicians and physical therapists. This might be due to adoption of poor ergonomics and it requires preventive and appropriate treatment measures to improve their quality of life and work productivity.

Keywords: Low back pain, Health care professionals, Occupational risk, Prevalence, Saudi Arabia.

أعلى من الأطباء وأخصائيو العلاج الطبيعي. وقد يعزى ذلك لبيئة العمل الغير مناسبة مما يتطلب إجراءات وقائية وعلاجية ملائمة لتحسين نمط الحياة والانتاجية في العمل لدى هذه الفئة.

الكلمات الدالة: آلام أسفل الظهر، الممارسون الصحيون، المخاطر المهنية، معدل الانتشار، المملكة العربية السعودية

INTRODUCTION

Low back pain (LBP) is one of the most common work-related musculoskeletal disorders (MSDs) among health care professionals (HCPs).[1] Work-related MSDs are defined as a subset of MSDs that arise from occupational exposures.[2] Work-related MSDs refer to non-traumatic inflammatory or degenerative disorders of the musculoskeletal structures of the neck, back, upper or lower extremities, and they develop over time and arise when the adaptive and repair capacities of affected structures have been exceeded.[3]

LBP is defined as pain, muscle tension, or stiffness localized below the costal margin and above the inferior gluteal folds, with or without leg pain (sciatica).[4] The prevalence of LBP in the adult general population as published in 2000 shows point prevalence of 12–33% and 1-year prevalence ranging between 22% – 65%, and life time prevalence up to 84%.[5] LBP is one of the important problems for occupational health care workers such as physical therapists,[6] physicians[7] and nurses.[8] Work-related LBP causes disability and affects the health care, workers' activities of daily living (ADL),[9] and work productivity.[10] MSDs are more common among HCPs due to exposure of wide range of work-related risk factors that may results in various types of occupational disorders.[11]

Proper ergonomic practices could reduce the severity of MSDs.[12] The studies emphasizes that mechanisms leading to the work-related musculoskeletal pain are multifactorial.[13] The main risk factors of LBP are bad postures, bending, twisting and frequent lifting.[14] It is generally accepted that the physical posture of the HCPs, while having ultimate care, should be relaxed, the entire muscles are in good balance and any weakness outside of this neutral position for a prolonged period of time will cause musculoskeletal discomfort.[15]

A few studies have been conducted to understand the prevalence and risk factors of work-related LBP among the HCPs in Saudi Arabia. However, no such studies in the combination of physical therapists, nurses and physicians were done in the hospital setting. Therefore, the purpose of this study was to analyze the prevalence and selected risk factors of work-related LBP among HCPs in various hospitals and polyclinics in Tabuk, Saudi Arabia. To our knowledge, this is the first study to analyze the prevalence and selected risk factors of LBP among HCPs in different hospitals in Tabuk, Saudi Arabia.

MATERIALS AND METHODS

Study Design: A cross-sectional design was utilized in this study.

Study setting and Participants

In this study, a total of 175 participants from six hospitals and four polyclinics in Tabuk were included using convenience sampling method. The sample size was determined using the prevalence of LBP in study population. This was calculated by using a power of 80% and $\alpha = 0.05$ to detect a difference of 20%. Accordingly, a total sample size of at least 160 was determined. Participants were included based on the following criteria: has to be in direct contact with patients, work as physical therapists, nurses or physicians, work in both government and private hospitals or polyclinics. Subjects were excluded if they worked part time, pregnant or currently on leave from their duties (e.g., maternity or sick leave).

This study was approved by the Research Ethics Committee, University of Tabuk, Tabuk, Saudi Arabia. The participants were invited to take part in the study on voluntary basis. They received written informed consent explaining the aims of the study. The participants' confidentially were protected at all time.

Questionnaires

The main aim of this study was to measure the one-week prevalence rate of LBP among HCPs utilizing the Cornell Musculoskeletal Discomfort Questionnaire (CMDQ) for Male and Female[16] (Appendix A1 and A2). All other MSDs were captured as well using the same questionnaire. The CMDQ is a 54-item questionnaire containing a body map diagram and questions about the prevalence of musculoskeletal ache, pain or discomfort in 18 regions of the body during the previous week. Respondents indicate frequency of discomfort on an ordinal scale from 0 (none) to 4 (daily) and severity of discomfort from 1 (slightly uncomfortable) to 3 (very uncomfortable). The level at which the discomfort interfered with work was scored from 0 (no interference) to 2 (substantial interference). Test-retest reliability for a group completing the CMDQ at a 3-week interval found a 7% difference in responses for upper body parts and a 1% difference for lower body parts.17

A self-assessment LBP information sheet (Appendix B) was used to record the respondents' demographic information and selected risk factors of LBP. The sheet consists of five sections: (1) demographic information, such as age, gender, marital status, educational level, height, weight and body mass index (BMI); (2) lifestyle information, such as smoking habits and working hours; (3) the numerical pain rating scale (NPRS) score; (4) information about the duration of LBP, effects of LBP on ADL and work activities, medications intake and history of LBP surgery; (5) perceived stress level in work environment and previous back care education about LBP.

Data Analysis

Data was analyzed using Excel and Statistical Package of Social Studies (SPSS, Windows Version 20.0) for descriptive (mean, range, percentage and standard deviation)

and inferential statistics. In inferential statistics, Chi-square test was used for categorized variables and ANOVA for the numerical variables. A $p < 0.05$ was identified as statistically significant for all statistical tests used.

RESULTS

Out of 175 respondents, 160 respondents (66 males and 94 females) with mean age of 35.5 ±12.4 years completed the two questionnaires. Fifteen respondents were excluded due to incomplete questionnaire. Response rate was observed as 91.4% (Figure 1). The description of the subjects included in the final analysis is shown in Table 1. Overall mean BMI of subjects was found as slightly overweight (25.82 kg/m2). The BMI of physical therapists, physicians and nurses were observed as 25.87 kg/m2, 28.77 kg/m2 and 23.90 kg/m2, respectively. The average NPRS score of subjects having only LBP was found 4.01.

Figure 1. Flow diagram for participants recruitment.

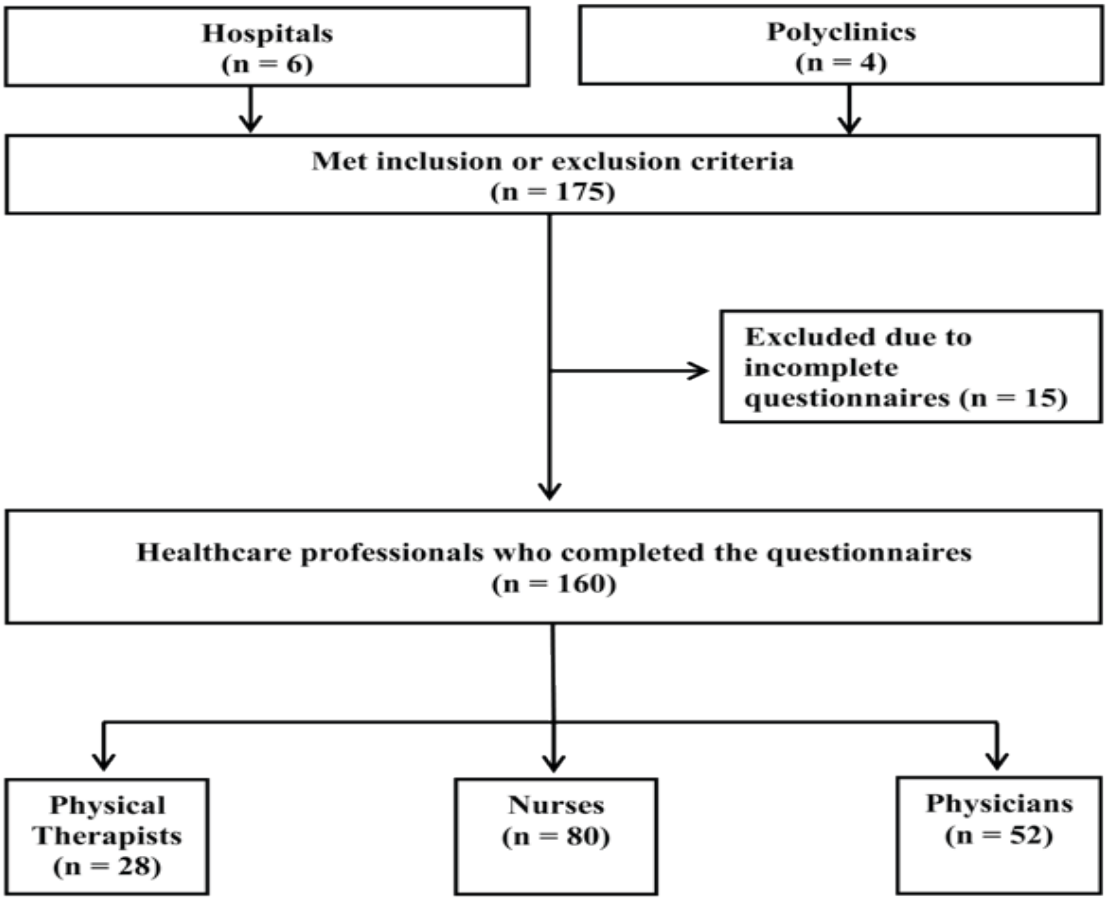


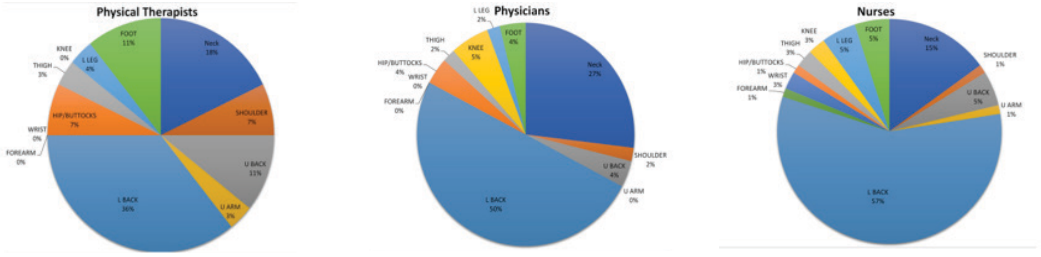
Table 1 Characteristics of the participants

Occupation Mean		Age (yrs)		Height (cm)		Weight (kg)		BMI (kg/m^2)		Pain scale	
		S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	
PT n=28	Male (12)	30.17	7.41	170.75	3.55	76.83	21.73	26.27	7.11	2.67	1.44
	Female (16)	31.19	7.10	158.87	5.34	64.50	9.51	25.58	3.77	4.56	1.55
	Total	**30.75**	**7.11**	**163.96**	**7.54**	**69.79**	**16.77**	**25.87**	**5.35**	**3.75**	**1.76**
Physician n=52	Male (41)	48.46	13.04	171.26	8.11	87.54	16.98	28.92	4.29	3.07	2.09
	Female (11)	39.91	15.27	160.00	6.16	74.82	17.30	28.18	4.73	4.18	2.64
	Total	**46.65**	**13.90**	**168.88**	**8.97**	**84.85**	**17.67**	**28.77**	**4.35**	**3.31**	**2.24**
Nurses n=80	Male (13)	29.23	5.12	166.08	8.83	73.46	19.04	26.44	5.71	5.00	2.52
	Female (67)	30.23	7.44	156.53	6.44	57.60	12.72	23.41	4.57	4.46	1.77
	Total	**30.01**	**7.06**	**158.08**	**7.68**	**60.18**	**14.99**	**23.90**	**4.86**	**4.55**	**1.90**
Total N=160	Male (66)	41.35	14.25	170.14	7.82	82.82	19.04	27.95	5.24	3.38	2.21
	Female (94)	31.53	9.13	157.33	6.31	60.79	13.95	24.33	4.71	4.45	1.84
	Total	**35.55**	**12.46**	**162.61**	**9.40**	**69.88**	**19.50**	**25.82**	**5.23**	**4.01**	**2.06**

PT: Physical Therapists, BMI: Body Mass Index

Out of 160 respondents, 28 were physical therapists (17.5%), 52 were physicians (32.5%) and 80 were nurses (50%). Among physical therapists, the highest one-week prevalence of work-related MSDs was found for LBP (36%), followed by neck pain (18%), then upper back pain and foot pain with 11% prevalence rate. The rest of MSDs had 7% or less prevalence rate (Figure 2A). For physicians, LBP was also found the most common complaint during the last week with 50% prevalence rate. This was followed by neck pain and knee pain with 27% and 5% prevalence rate, respectively (Figure 2B). In nurses, 57% reported LBP over the last week, 15% had neck pain and 5% constituted of pain in upper back, lower leg and foot regions (Figure 2C).

Figure 2. One-week prevalence of musculoskeletal disorders among participants:



[2A]: Physical Therapists. [2B]: Physicians [2C]: Nurses

Table 2 shows the association between the selected risk factors and LBP level, as measured by NPRS, using chi-square test. The analysis revealed significant association between gender and severity of pain ($p = 0.002$), where 60% of females had moderate to severe pain. Contrary to this, 47% of males experienced moderate to severe pain.

While analyzing the education level, a significant association was found between educational background and severity of pain ($p = 0.008$), where 63% of bachelor's degree holders are prone to moderate to severe pain. Likewise, a significant association was observed between the type of occupation and severity of pain ($p = 0.012$), where 61% of nurses experienced moderate to severe pain in comparison to 53% of physical therapists and 48% of physicians.

Furthermore, 72% of subjects with moderate to severe LBP indicated that his/her pain interferes with ADL. A significant association was also found between limitation of activities such as lifting (70%) and prolonged standing (69%) with respect to severity of pain ($p = 0.001$ and 0.008, respectively). Nevertheless, severity of pain perceived by the subjects showed no significant association towards marital status, working hours, smoking habit, medications intake, prior exposure to surgery, perceived stress at work environment and patient education ($p > 0.05$).

It should be noted that the severity of pain (mild – moderate – severe) was categorized based on the NPRS score. Zero score in the NPRS represents no pain, while 10 indicates worst pain imaginable. The NPRS score is often used to divide patients into groups who are in need of pain treatment (moderate and severe pain) and those who are not (mild pain). According to Diane C. Zelman et al.18, a NPRS score of 0–3 is categorized as mild pain, 4–6 moderate pain and a score ≥ 7 as severe pain. In this study, severity of pain was categorized based on the same categorization method.

The results of the one-way ANOVA revealed statistically significant difference among nurses, physicians and physical therapist with respect to pain level, $F(2, 157) = 6.39$, $p = 0.002$. In that case, a Scheffe's test was conducted to examine the difference among professions. The Scheffe's post hoc tests showed that the pain level was signifi-

Table 2 Association between selected risk factors and low back pain level

Category			*df*	*Chi-square value*	*p-value*
Gender	Male (n =66)		3	15.199	0.002*
	Female (n =94)				
Marital status	Single (n =65)		3	7.047	0.070
	Married (n =95)				
Education level	Doctorate (n =15)		9	22.240	0.008*
	Master (n =20)				
	Bachelor (n =108)				
	Diploma (n =17)				
Occupation	Physical Therapists (n =28)		6	16.259	0.012*
	Nurses (n =80)				
	Physicians (n =52)				
Working hours	Less than 30 hours (n =38)		6	2.686	0.847
	30 to 40 hours (n =46)				
	More than 40 hours (n =76)				
Smoking	Yes (n =15)		3	2.094	0.553
	No (n =145)				
Effects of LBP on daily activities	Yes (n =83)		3	13.805	*0.003
	No (n =77)				
Activities limited during LBP	Lifting	Yes (n =59)	3	16.058	*0.001
		No (n =101)			
	Pushing	Yes (n =26)	3	2.580	0.461
		No (n =134)			
	Patient handling	Yes (n =27)	3	2.904	0.407
		No (n =133)			
	Prolonged sitting	Yes (n =29)	3	1.302	0.729
		No (n =131)			
	Prolonged standing	Yes (n =60)	3	11.705	*0.008
		No (n =100)			
	Walking	Yes (n =26)	3	5.020	0.170
		No (n =134)			
Taking medications	Yes (n =36)		3	2.382	0.497
	No (n =124)				
Underwent prior surgery for LBP	Yes (n =15)		3	3.731	0.292
	No (n =145)				
Perceived stress level in work environment	Mild (n =71)		6	8.041	0.235
	Moderate (n =71)				
	Severe (n =18)				
Received education about LBP	Yes (n =95)		3	0.802	0.849
	No (n =65)				

LBP: low back pain, *Significant at 0.05 level

cantly higher in nurses (M= 4.55) than in physicians (M= 3.31). However, in this study, no statically significant differences were found between physical therapist (M= 3.75) and nurses or physicians with respect to mean score of pain scale (Table 3).

Table 3 Scheffe's post hoc test for mean score of pain scale among professions

Comparison	*Mean difference*	*F*	*p-value*
Physical therapists vs. Physicians	0.44	0.88	0.640
Physical therapists vs. Nurses	0.80	3.34	0.192
Physicians vs. Nurses	1.24	12.19	0.003*

*Significant at 0.05 level

DISCUSSION

In our study, 48% of participants had experienced LBP over last week. Nurses experienced more LBP than any other hospital workers. It has been previously reported that the lifetime prevalence of LBP among nurses ranged between 70% and 80%, annual prevalence ranged between 15% and 45% and point prevalence was 30%.9 In a study that was conducted in Italy to investigate the musculoskeletal problems among Italian nurses, they found that the 12-months prevalence of LBP ranged from 33% to 86%.[19] Another epidemiological study revealed that Greek nurses reported significantly more backof Lr studies using the Nordic Musculoskeletal Questionnaire (NMQ), on which the CMDQ is based, reported 7-day prevalence rates complaint (75%) than Dutch nurses (62%) in the past 12 months.20 Other studies reported 69% one-week prevalence for neck, shoulder, upper and LBP among Swedish nurses21 and 61.2% back pain among nurses in Germany,22 which is similar to our results.

Physicians were observed as the second common HCP with the prevalence of LBP (50%). This is consistent with the findings by Karen et al.[7]. The occurrence of MSDs among hospital physicians is due to multiple physical exposures23 or duration of keeping awkward postures or because of walking distance during work.[24] These factors may lead to different complaints of the musculoskeletal system that are known to be related to hospital work.

In this study, LBP was found to be common among physical therapists, but comparatively less than nurses and physicians. This may be due to small sample size of physical therapists used in this study. A recent study reported 35.6% point-prevalence of LBP among physical therapists.[25] Another study by Salik and Oczan[26] reported the occurrence of LBP as 26% among physical therapists (n =120) in Izmir-Turkey. These prevalence rates, although with different time lines, are comparable with our findings.

Risk factors like smoking, high BMI, advancing age, female gender, inactivity, long standing time, and perceived stress were significantly associated with the presence of LBP worldwide and in Saudi Arabia.[27-32] But in our study, there is no association found between severity pain and marital status, work-

ing hours, smoking habits, limitation of activities such as pushing, prolonged sitting and walking, medication intake, history of LBP surgery, job stress and perceived education. This is consistent with results by Landry et al.33 which states that there is no association between LBP and common risk factors such as age, sex, professional experience, smoking and exercise.

In our study, some of the risk factors were found to have significant relationships with LBP such as ADL, limitations of activities in lifting and prolonged standing among HCPs. The above findings are consistent with other studies that targeted physical therapist2 nurses and physicians.11 Other studies report that the occurrence of LBP is due to frequent patient transfer and repositioning.34,35 In order to avoid work-related LBP among HCPs, posture training, patient handling, ergonomics and back care education program should be introduced during their undergraduate study courses. This would give them the opportunity to learn how to use their postures without putting too much effort on the body and use their forces efficiently and effectively. It has been recommended that frequent workshops and seminars should be organized for physical therapists and other HCPs who are handling the patients frequntly.2 Hospitals and other health care facilities need to be prepared with the necessary equipment that would assist to minimize work-related MSDs among HCPs (e.g., patient lifter, frames to sit and stand, sliding boards, suspension frame, adjustable beds, walking frames). The administration facility should report LBP incidence rates36 and comprehensive, safe patient handling methods need to be developed.

CONCLUSION

Nurses have more prevalence rate of LBP (57%) than physicians (50%) and physical therapists (36%). Insufficient ergonomic knowledge and extreme postures sustained for prolonged periods and their repetitiveness may contribute to this occurrence. Preventive measures are necessary to reduce the role of work-related LBP such as adequate relaxation, back care education program and ergonomic advices. Ergonomic assessment of work place risk factors and the greater use of back care interventions are recommended.

LIMITATIONS

A limitation of this study is the relatively small sample size, which was also limited to one region in Saudi Arabia. This may limit the generalizability of our findings. Another limitation is the limited risk factors investigated in this study. Wider range of potential work-related risk factors should be included in future studies.

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LIST OF ABBREVIATIONS:

LBP: low back pain; MSD: musculoskeletal disorder; HCP: health care professional; ADL: activities of daily living; CMDQ: Cornell Musculoskeletal Discomfort Questionnaire; BMI: body mass index; NPRS: numerical pain rating scale.

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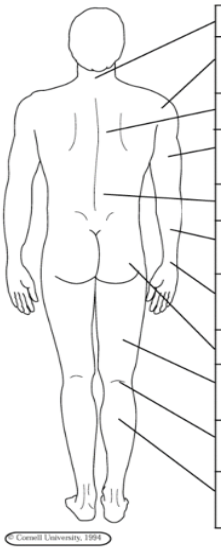
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Appendices

Appendix A1: Cornell Musculoskeletal Discomfort Questionnaire – Male

Appendix A2: Cornell Musculoskeletal Discomfort Questionnaire – Female



The diagram below shows the approximate position of the body parts referred to in the questionnaire. Please answer by marking the appropriate box.		During the last work week how often did you experience ache, pain, discomfort in:					If you experienced ache, pain, discomfort, how uncomfortable was this?			If you experienced ache, pain, discomfort, did this interfere with your ability to work?		
		Never	1-2 times last week	3-4 times last week	Once every day	Several times every day	Slightly uncomfortable	Moderately uncomfortable	Very uncomfortable	Not at all	Slightly interfered	Substantially interfered
Neck		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Shoulder	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Upper Back		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Upper Arm	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lower Back		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Forearm	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wrist	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hip/Buttocks		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Thigh	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knee	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lower Leg	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐



The diagram below shows the approximate position of the body parts referred to in the questionnaire. Please answer by marking the appropriate box.		During the last work week how often did you experience ache, pain, discomfort in:					If you experienced ache, pain, discomfort, how uncomfortable was this?			If you experienced ache, pain, discomfort, did this interfere with your ability to work?		
		Never	1-2 times last week	3-4 times last week	Once every day	Several times every day	Slightly uncomfortable	Moderately uncomfortable	Very uncomfortable	Not at all	Slightly interfered	Substantially interfered
Neck		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Shoulder	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Upper Back		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Upper Arm	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lower Back		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Forearm	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wrist	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hip/Buttocks		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Thigh	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Knee	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lower Leg	(Right)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	(Left)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Appendix B: Self-assessment back pain information sheet

SELF-ASSESSMENT BACK PAIN INFORMATION SHEET

Age: _____ years Gender: ☐ Male ☐ Female

Marital Status: ☐ Single ☐ Married Occupation: _____

Education level: ☐ Doctorate (PhD) ☐ Masters ☐ Bachelor ☐ Diploma

Height: _____ centimeters Weight: _____ Kilograms BMI: _____

Experience: _____ years Working Hours: ☐ > 30 ☐ 30-40 ☐ <40

Smoking: ☐ Yes ☐ No ☐ Blood Pressure: _____ / _____mmHg

Pain scale (NPRS):



Duration of LBP: _____ years/months/weeks

Effects of LBP on daily activities: ☐ Yes ☐ No

Activities limited during LBP:
☐ None ☐ Lifting ☐ Pushing ☐ Patient handling ☐ Prolonged sitting
☐ Prolonged standing ☐ Walking ☐ Others

Taking Medications: ☐ Yes ☐ No Underwent Surgery for LBP: ☐ Yes ☐ No

Perceived stress level in work environment: ☐ Mild ☐ Moderate ☐ Severe

Received Education about LBP: ☐ Yes ☐ No

Note: LBP: Low back pain, BMI: Body Mass Index, NPRS: Numerical Pain Rating Scale.

Name: _____ ***Signature:*** _____ ***Date:*** _____