RESEARCH ARTICLE

Knowledge around back pain and spinal disorders among Saudi patients: A cross-sectional study

Waleed Mohammad Awwad,[1] Saud Mohammed Alfayez,[2] Abdullah Nasser Bin Dous,[3] Qais Abdulmohsin Alrabiei,[4] Abdullah Abdulaziz Altowim,[5] Abdulaziz Saud Almutair,[6] Orfan Arafah[7]

Abstract

Objective: To assess the knowledge of patients about low back pain and spinal disorders.

Methods: This cross-sectional study was conducted at King Saud University, Riyadh, Saudi Arabia, from December 2015 to February 2016, and comprised patients presenting with lower back pain. The low back pain knowledge questionnaire was translated to Arabic and distributed, after adding more questions, among patients. The scores were calculated as per the published guidelines. SPSS 21 was used for data analysis.

Results: There were 153 patients in the study. The reliability test revealed a Cronbach's alpha score of 0.834 for all items. The overall mean age was 40.2±19.3 years (range: 15-76 years). Besides, 61(39.9%) participants were males and 92(60.1%) were females. The overall median score was 9 (interquartile range: 0-19) out of 24 points. Both educational level and monthly income were found to be dependent variables ($p<0.001$; $p=0.007$).

Conclusion: The majority of patients with lower back pain had limited knowledge about their condition and the related complications.

Keywords: Spine, Knowledge, Questionnaire, Low back pain. (JPMA 67: 1228; 2017)

Introduction

Low back pain (LBP) is a common health problem and is considered a major cause of disability among various age groups.[1-3] The prevalence of LBP is estimated to be around 10% by the age of twenty years and 19.6% between twenty and fifty-nine years.[4,5] LBP is more common among elderly patients, affecting 25.1% of men and 35.1% of women aged sixty years and above.[6] In the countries of the Gulf Cooperation Council (GCC), LBP is considered a major health problem with a prevalence ranging from 18.8-64.6%.[7-9]

LBP in Saudi Arabia is associated with many conditions, including vitamin D deficiency and obesity.[10,11] Some activities of daily living such as carrying heavy objects, lifting while twisting and sudden movement of the torso have also been linked to LBP among the Saudi population.[12,13]

It is essential to ensure that the patients have proper understanding of the condition they are suffering from. In this regard, several studies conducted in different countries have investigated the level of knowledge in patients with back problems.[14,15] The majority of these studies revealed unawareness of patients about the spine and its disorders.[14-17] For instance, Tavafian et al., who assessed the attitude and awareness of Iranian patients towards LBP, found that 74% of them had little knowledge about LBP and its risk factors.[18] That being said, educational interventions to correct the misconceptions and unawareness have proven to be effective in managing the pain and disability, especially if combined with other treatment modalities like physiotherapy.[19-21]

The current study was planned to assess the knowledge and awareness of LBP among Saudi patients.

Patients and Methods

This cross-sectional study was conducted at the College of Medicine of the King Saud University, Riyadh, Saudi Arabia, from December 2015 to February 2016, and comprised patients presenting with lower back pain. Approval for the study was obtained from the institutional review board. The LBP knowledge questionnaire (LKQ), developed and validated by Maciel et al.,[15] was utilised to assess patients' knowledge about LBP. The questionnaire consisted of three different domains about LBP: general aspects, concepts and treatment. Questions about basic anatomy, back pain definition along with causes, classifications, methods of diagnosis and general management were already included in the LKQ. In addition to the demographic questions (age, gender, marital status, educational level and monthly income), five more questions about epidemiology, complications and prognosis were added to be interpreted independently. The questionnaire was translated from English to Arabic by three experts in both languages and back

[1-3,7]Orthopedic Department, King Saud University Medical City, [5,6]College of Medicine, King Saud University, Riyadh, [4]Security Forces Hospital, Riyadh, Kingdom of Saudi Arabia.

Correspondence: Saud Mohammed Alfayez. Email: alfayezsaud@gmail.com

to English by two different translators to confirm an adequate equivalency between the Arabic and English versions. The questionnaire was also reviewed by spine surgeons who had been practising for years in Arabic- and English-speaking countries to ensure linguistic validity.[22] Both male and female patients aged between 15 and 76 years with non-specific chronic LBP regardless of the exact duration were included in the study. Patients with cognitive impairment and those who underwent spine surgery were excluded.

The questionnaire was distributed to all the eligible patients who visited the orthopaedic spine clinics in King Saud University Medical City. The objectives were explained to all participants. Informed consent was obtained from all participants and they were free to withdraw from the study at any time. For patients under the age of 18, the consent was obtained from the patients and their parents. The data was entered into an Microsoft Excel. The scores of each participant for the three domains, i.e. general aspects, concepts and treatment, were calculated by summing all the correct answers with total scores of nine, four and eleven points, respectively. The overall score was also calculated through summing the scores for the three domains as per the published guidelines.[15] SPSS 21 was used for data analysis. The means, medians, standard deviations (SD) and percentages were obtained. Cronbach's alpha was utilised to assess the internal consistency among LKQ items.[23] Since our data was not normally distributed, a non-parametric Mann-Whitney U test was used to compare the groups. P<0.05 was considered statistically significant.

Results

There were 153 patients and all completed the questionnaire. The overall mean age was 40.2±19.3 years (range: 15-76 years). The number of male respondents was 61(39.9%) and that of females was 92(60.1%). Patients with higher level of education (bachelor's degree and above) accounted for 72(47%) of the study population while the remainder received secondary education or lower 81(53%).

Table-1: Numbers and percentages of each category of the demographic variables.

Demographic Variables		N (%)
Gender	Male	61 (39.9%)
	Female	92 (60.1%)
Age	less than thirty years old	72 (47.1%)
	more than thirty years old	81 (52.9%)
Educational Level	Secondary education and lower	81 (52.9%)
	Higher Education	72 (47.1%)
Monthly Income	Less than five thousand Saudi riyals	59 (38.6%)
	Five thousandSaudi riyals or more	94 (61.4%)

*Obtained through Mann-Whitney U test.

Monthly income of 94(61.4%) participants was more than 5,000 Saudi riyals while the rest had less (Table-1).

The questionnaire's internal consistency revealed a Cronbach's alpha score of 0.834 for the twenty-four LKQ items.

The overall scores for the participants without any demographic restrictions had a median (range) of 9 (0-19) with a mean value of 9.16±4.86 out of a total of 24 points. Regarding the general spine aspects, including causes, symptoms and diagnostic methods, 97(63.4%) of the population scored less than five points out of nine. The majority of the participants, i.e.144(94.1%), scored less than three out of four in the concepts and definitions section while 109(71.2%) scored less than seven out of eleven in the treatment section (Table-2).

While comparisons based on the gender and age showed no significant difference in the total score, both the educational level and monthly income were dependent variables (p<0.001 and p=0.007, respectively) (Table-3).

The extra questions about LBP and spine disorders in general were answered by all participants. The majority 103(67.3%) answered yes when asked whether LBP was common among the Saudi community. Moreover,

Table-2: The LKQ scores across categories of the demographic variables.

Demographic Variables		General Aspects	Concepts	Treatment	Overall Score
		Median (mean ± standard deviation)			
Gender	Male	3 (4±2)	1 (1±1)	5 (4±3)	8 (9±5)
	Female	4 (4±2)	1 (1±1)	5 (5±3)	10 (9±5)
Age	less than thirty years	3 (4±2)	1 (1±1)	5 (5±3)	9 (9±5)
	more than thirty years	3 (4±2)	1 (1±1)	5 (4±3)	10 (9±5)
Education	Secondary education and lower	3 (3±2)	1 (1±1)	4 (4±3)	7 (7±5)
	Higher Education	5 (4±2)	1 (1±1)	6 (6±2)	12 (11±4)
Income	Less than five thousand Saudi riyals	3 (3±2)	1 (1±1)	4 (4±3)	8 (8±5)
	Five thousandSaudi riyals or more	4 (4±2)	1 (1±1)	6 (5±3)	11 (10±5)
All Participants		3 (4±2)	1 (1±1)	5 (5±3)	9 (9±5)

LKQ: Low back pain knowledge questionnaire.

Table-3: Comparison of the LKQ scores between categorical groups based on the education level and monthly income.

Section	Variable	Group	Mean Rank	Sum of Ranks	p-value*
General Aspects	Education	Secondary education and lower	60.93	4935.00	<0.001
		Higher Education	95.08	6846.00	
	Income	Less than five thousand Saudi riyals	65.35	3855.50	0.009
		Five thousand Saudi riyals or more	84.31	7925.50	
Concepts	Education	Secondary education and lower	67.08	5433.50	0.002
		Higher Education	88.16	6347.50	
	Income	Less than five thousand Saudi riyals	65.62	3871.50	0.008
		Five thousand Saudi riyals or more	84.14	7909.50	
Treatment	Education	Secondary education and lower	62.20	5038.00	<0.001
		Higher Education	93.65	6743.00	
	Income	Less than five thousand Saudi riyals	69.28	4087.50	0.085
		Five thousand Saudi riyals or more	81.85	7693.50	
Overall Score	Education	Secondary education and lower	59.54	4823.00	<0.001
		Higher Education	96.64	6958.00	
	Income	Less than five thousand Saudi riyals	64.80	3823.00	0.007
		Five thousand Saudi riyals or more	84.66	7958.00	

*Obtained through Mann-Whitney Utest
LKQ: Low back pain knowledge questionnaire.

113(73.9%) respondents believed that non-traumatic spine disorders did not lead to paraplegia. Besides,142(93%) answered that sexual dysfunction was not a complication of chronic disorders involving the lower spine segments, and 123(80.4%) believed that there was no relation between someone with chronic back pain who presented with either faecal or urinary incontinence. Furthermore, around 70(46%) respondents believed that it was more likely that acute LBP would progress into chronic.

Discussion

The present study evaluated the level of knowledge of patients with non-specific LBP about their condition and other problems related to the spine. It was evident that the patients had a limited knowledge about lower back pain since the median score was 9 out 24 representing only 37.5% of the correct answers. Although people with higher education scored significantly more correct answers than the others, they still had a relatively low level of knowledge as their median was 12, representing exactly 50% of all correct answers. In the original study done by Maciel et al., Brazilian patients had also a low level of knowledge as their average scores in all sections were below 50% with a mean of nine correct answers out of 24.[15]

The study revealed several misconceptions including the fact that patients with non-traumatic spine disorders believed that their conditions could not be complicated by paraplegia due to any aetiology. It is also very likely that they would not recognise that their spine condition could be the underlying cause of their sexual dysfunction which can improve after surgery. A relatively high percentage of them (46%) assumed that acute back pain would progress into chronic in the majority of patients. Furthermore, it is very important to emphasise on educating patients with spine disorders about the red flags of caudaequina syndrome (CES), including faecal or urinary incontinence, which 80.4% of our patients did not know about. Unfortunately, what contradicts the aforementioned misconceptions have been thoroughly studied and discussed in the literature for a long time and they are not findings that spine surgeons and healthcare providers have recently discovered and need time to implement them in practice.[24-33] We believe these misconceptions, along with the exaggerated fear from complications, are probably the reason why 56% of Saudi patients refused surgery when it was offered to them by their treating physicians.[34]

Since the educational level and income were significantly associated with higher knowledge scores, we ran a Spearman's correlation coefficient to assess degree of correlation between the two variables. Although the correlation was significant (p=0.01), it was a weak correlation as Spearman's coefficient was 0.21.[35] We think it is because patients with higher income have better access to various health care institutions which increases the probability of them receiving educational services.

One limitation of the current study was that it was conducted in a single setting with a relatively small sample size.

Conclusion

The majority of patients with lower back pain in our study

had limited knowledge about their condition and the related complications. Therefore, it is necessary to start educational campaigns and programmes targeting the general population and those with back pain in particular.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Diamond S, Borenstein D. Chronic low back pain in a working-age adult. Best Pract Res Clin Rheumatol 2006; 20: 707-20.
2. Cecchi F, Debolini P, Lova RM, Macchi C, Bandinelli S, Bartali B, et al. Epidemiology of back pain in a representative cohort of Italian persons 65 years of age and older: the InCHIANTI study. Spine 2006; 31: 1149-55.
3. Bockowski L, Sobaniec W, Kulak W, Smigielska-Kuzia J, Sendrowski K, Roszkowska M. Low back pain in school-age children: risk factors, clinical features and diagnostic managment. Adv Med Sci 2007; 52 Suppl 1: 221-3.
4. Meucci RD, Fassa AG, Faria NM. Prevalence of chronic low back pain: systematic review. Rev Saude Publica 2015; 49: 1
5. Leboeuf-Yde C, Kyvik KO. At what age does low back pain become a common problem? A study of 29,424 individuals aged 12-41 years. Spine 1998; 23: 228-34.
6. Palma R, de Conti MH, Quintino NM, Gatti MA, Simeão SF, de Vitta A. Functional capacity and its associated factors in the elderly with low back pain. Acta Ortop Bras 2014; 22: 295-9.
7. Bener A, Verjee M, Dafeeah EE, Falah O, Al-Juhaishi T, Schlogl J, et al. Psychological factors: anxiety, depression, and somatization symptoms in low back pain patients. J Pain Res 2013; 6: 95-101.
8. Bener A, El-Rufaie OF, Siyam A, Abuzeid MSO, Toth F, Lovasz G. Epidemiology of low back pain in the United Arab Emirates. Int J Rheumatol Dis 2004; 7: 189-95.
9. Al-Arfaj AS, Al-Saleh SS, Alballa SR, Al-Dalaan AN, Bahabri SA, Al-Sekeit MA, et al. How common is back pain in Al-Qaseem region. Saudi Med J 2003; 24: 170-3.
10. Al-Shammari SA, Khoja TA, Kremli M, Al-Balla SR. Low back pain and obesity in primary care, Riyadh, Saudi Arabia. Saudi Med J 1994; 15: 223-6.
11. Al Faraj S, Al Mutairi K. Vitamin D deficiency and chronic low back pain in Saudi Arabia. Spine 2003; 28: 177-9.
12. Bin Homaid M, Abdelmoety D, Alshareef W, Alghamdi A, Alhozali F, Alfahmi N, et al. Prevalence and risk factors of low back pain among operation room staff at a Tertiary Care Center, Makkah, Saudi Arabia: a cross-sectional study. Ann Occup Environ Med 2016; 28: 1.
13. Al-Saleem SA, Ali A, Ali SI, Alshamrani AA, Almulhem AM, Al-Hashem MH. A Study of School Bag Weight and Back Pain among Primary School Children in Al-Ahsa, Saudi Arabia. Epidemiology (Sunnyvale) 2016; 6; 222
14. Werber A, Zimmermann-Stenzel M, Moradi B, Neubauer E, Schiltenwolf M. Awareness of the German population of common available guidelines of how to cope with lower back pain. Pain Physician 2014; 17: 217-26.
15. Maciel SC, Jennings F, Jones A, Natour J. The development and validation of a Low Back Pain Knowledge Questionnaire - LKQ. Clinics (Sao Paulo 2009; 64: 1167-75.
16. Lobo ME, Kanagaraj R, Jidesh V. An insight into adolescents' knowledge and attitudes on low back pain and its occurrence. Int J Ther Rehabil 2013; 20: 246-54 9.
17. Elzarka A. Test your knowledge. Back pain. Aust Fam Physician 2003; 32: 51-2.
18. Tavafian SS, Eftekhar H, Mohammad K, Jamshidi AR, Assasi N, Shojaeezadeh D, et al. Patient's Knowledge, Perception and Belief about the Reasons of Low Back Pain. Iranian J Publ Health 2004; 33: 57-60.
19. Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. Aust J Physiother 2002; 48: 297-302.
20. Moseley GL, Nicholas MK, Hodges PW. A randomized controlled trial of intensive neurophysiology education in chronic low back pain. Clin J Pain 2004; 20: 324-30.
21. Buchbinder R, Jolley D, Wyatt M. Population based intervention to change back pain beliefs and disability: three part evaluation. BMJ 2001; 322: 1516-20.
22. Wild D, Eremenco S, Mear I, Martin M, Houchin C, Gawlicki M, et al. Multinational trials-recommendations on the translations required, approaches to using the same language in different countries, and the approaches to support pooling the data: the ISPOR Patient-Reported Outcomes Translation and Linguistic Validation Good Research Practices Task Force report. Value Health 2009; 12: 430-40.
23. Zehnder P, Aghayev E, Fekete TF, Haschtmann D, Pigott T, Mannion AF. Influence of previous surgery on patient-rated outcome after surgery for degenerative disorders of the lumbar spine. Eur Spine J 2016; 25: 2553-62.
24. Jameson RM. Paraplegia and prostatic cancer. Eur Urol 1983; 9: 267-9.
25. Vandenbussche E, Schmider L, Mutschler C, Man M, Jacquot C, Augereau B. Brown tumor of the spine and progressive paraplegia in a hemodialysis patient. Spine 2004; 29: E251-5.
26. New PW, Rawicki HB, Bailey MJ. Nontraumatic spinal cord injury: demographic characteristics and complications. Arch Phys Med Rehabil 2002; 83: 996-1001.
27. Akbas NB, Dalbayrak S, Kulcu DG, Yilmaz M, Yilmaz T, Naderi S. Assessment of sexual dysfunction before and after surgery for lumbar disc herniation. J Neurosurg Spine 2010; 13: 581-6.
28. Berg S, Fritzell P, Tropp H. Sex life and sexual function in men and women before and after total disc replacement compared with posterior lumbar fusion. Spine J 2009; 9: 987-94.
29. Patrick N, Emanski E, Knaub MA. Acute and Chronic Low Back Pain. Med Clin North Am 2016; 100: 169-81.
30. Traeger AC, Henschke N, Hubscher M, Williams CM, Kamper SJ, Maher CG, et al. Estimating the Risk of Chronic Pain: Development and Validation of a Prognostic Model (PICKUP) for Patients with Acute Low Back Pain. PLoS Med 2016; 13: e1002019.
31. Gardner A, Gardner E, Morley T. Cauda equina syndrome: a review of the current clinical and medico-legal position. Eur Spine J 2011; 20: 690-7.
32. Hansen RB, Biering-Sorensen F, Kristensen JK. Urinary incontinence in spinal cord injured individuals 10-45 years after injury. Spinal Cord 2010; 48: 27-33.
33. Jeyarajah S, King A, Papagrigoriadis S. Faecal incontinence as presentation of an ependymomas of the spinal cord. World J Surg Oncol 2007; 5: 107.
34. Behairy YM, Al-Shehri H, Al-Azzam SA, Al-Zahrani AG. A survey of patients attitude toward low back surgery in a major center in Saudi Arabia. Saudi Med J 2003; 24: 594-7.
35. Evans JD. Straightforward statistics for the behavioral sciences. Pacific Grove: Brooks/Cole Pub. Co.; 1996.