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Medicine Science International Medical Journal

ORIGINAL ARTICLE

Medicine Science 2022;11(4):1557-63

Lower back pain in patients applying to family health center

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Received 01 August 2022; Accepted 09 November 2022
Available online 25.11.2022 with doi: 10.5455/medscience.2022.08.173

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Abstract

Lower back pain is a musculoskeletal system problem with a high prevalence, causing disability and adversely affecting the domestic economy. To decrease the prevalence and morbidity of lower back pain, individual, psycho-social, and vocational risk factors should be identified properly. Our research aims to assess the lower back prevalence in primary healthcare services, risk factors, and knowledge and behaviors to prevent lower back pain. Our research is a cross-sectional study that uses face-to-face surveys with individuals who visited the family healthcare centers in Mersin for any reason and consented to participate in our study. The average age of 217 patients is (18-80). 54.4% of the participants are female, while 45.6% of them are male. 83.8% stated that they have experienced lower back pain at least once in their lifetime and 76.3% of these participants reported that they have had lower back pain in the last year. 41.9% of the participants defined themselves as happy, whereas those who had lifelong lower back pain were more likely to define themselves as unhappy/neither happy nor unhappy (p:0.013). Lifelong low back pain was found to be significantly higher in those who did not exercise (p:0.014). It is found that it is higher for those who have advanced age, do not consider themselves happy, do not exercise, and cannot receive support from their supervisors. In-service training should be provided.

Keywords: Lower back pain, family healthcare, risk factors, prevalence

Introduction

Lower back pain is a musculoskeletal system problem that negatively affects all ethnic groups, and many individuals as well as disability and the national economy. It is also a disease with a high prevalence and high treatment costs, and it may cause disability and labor loss. The research conducted in developed countries indicates that the lifetime prevalence of lower back pain changes between 59-80% and more importantly the knowledge of chronic lower back pain is not sufficient [1-3]. The causes of many lower back pains are usually non-specific and related factors should be evaluated very well [4]. The meta-analyses conducted revealed that the mechanism of the disability caused by lower back pain is not fully known and begs for more research [5]. Although there are studies on the prevalence of lower back pain and related factors in our country, their number is still not adequate. To decrease the prevalence and morbidity of lower back pain, we should identify the individual, psycho-social, and occupational risk factors well. Our study aims to identify the prevalence of lower back pain in patients visiting the selected Family Healthcare Centers, to determine the factors affecting lower back pain, and to assess knowledge and behaviors to prevent lower back pain.

Material and Methods

Our study was conducted under the Helsinki Declaration Principles. The ethics approval for our research was obtained at meeting no.80 of the University of Cukurova Ethics Committee for Non-Invasive Clinical Trials on 31.08.2018. The study is cross-sectional and conducted in Mersin. Mersin is the 11th most populated city in Turkey, located on the coast of the Mediterranean Sea, with a population of 1.814.468 according to the mid-year numbers of 2018, and one of the largest harbors in Turkey. It has a total of 13 districts, 4 of which are central, and it is highly developed in terms of industry, maritime sector, and tourism.

We carried out our research in 17 family healthcare centers scattered throughout the city center. The family healthcare centers in

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Turkey provide diagnosis, treatment, and rehabilitative healthcare services to the whole society without any age restrictions. We used a questionnaire that we created according to the lower back pain research methods advice of the International Institutes of Health Pain Consortium [6]. We carried out face-to-face interviews with individuals who are 18 years old or older and who consented to participate in our research. We did not have any other criteria than age and consent and the only exclusion criterion was leaving the questionnaire uncompleted. Our questionnaire was Likert type and consisted of 39 questions assessing demographical information and questions that let participants assess their own lower back pain and measure their health status and behaviors related to lower back pain. We received the oral and written consents of the participants.

To determine the necessary number of participants for the study and to randomize the participation in Mersin, we reached the physicians at 17 Family Healthcare Centers located in various areas in the city center and we found out the daily number of patients aged 18 or older visiting the healthcare centers. We identified the number of patients during the data collection period as 450, taking into consideration the 10% rate of those who are not willing to respond. We found the sample size as 208 people using the OpenEpi online sampling program with over 80% power, 5% margin of error, 95% confidence interval, and 50% unknown frequency over this universe [7].

We performed the statistical analysis using the Statistical Package for Social Sciences (SPSS 23.0 IBM SPSS Inc., Chicago, IL) program. The conformity of the variables to the normal distribution was examined using visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov/ Shapiro-Wilk tests), and non-normally distributed data were presented as median (min-max). We used the Pearson Chi-Square test and Yates Corrected Chi-Square test for categorical data and presented with Crude Odd's ratio with a 95% confidence interval.

Results

There was a total of 217 participants in the study, of these 118 females and 99 males. The socio-demographics of the participants are summarized in Table 1. The average age of the participants was 40 (18-80), average weight was 75.72±14.05 (min:44.0–max:116,0), and the average BMI was calculated as 27.092 ±4.84 (min:17.70- max:47.67). 61.8% of the participants never smoked, while 18% were smokers. 20.7% of the participants did low-impact exercises for less than 2.5 hours in a week, whereas 55.8% stated that they did not exercise at all. When we ask the participants to assess their health, 53.7% responded good, 40.3% fair, 3.2% bad, and 2.8% very good. 78.8% of the patients were married, whereas 28.1% were high school graduates, 22.1% were public officers, and 39.2% had desk jobs. When asked about the daily activities that can cause lower back pain, 66.5% answered heavy lifting-pushing-pulling, 36.3% stooping frequently, 33.9% doing desk jobs, 33.9% doing household chores, and 32.0% doing heavy physical work.

181 of the participants (83.8%) stated that they have had lower back pain at least once in their life (LTLBP), and 157 out of these participants (76.3%) said that they have had lower back complaints in the last year. When asked for the duration of the lower back pain they experience, 114 participants (72%) responded that it lasted less than a week. 131 of those who had lower back pain complaints (72.7%) said that their pain increased because of physical activity-standing up, whereas 87 participants (48.3%) reported that heavy lifting made their pain worse. 162 participants (82.7%) stated that their sleep is interrupted by the pain. Asked for their opinions about the reason for their lower back pain, 51.7% related their pain to work conditions/heavy lifting, 19.1% to hernia, 17.4% to sedentary lifestyle and weight gain, 5.1% to false movements, and 4.5% to accompanying diseases. 88.2% told that they resorted to resting to relieve their lower back pain and 20.67% reported that they used hot/cold applications to relieve low back pain. When the participants are asked what they do first to relieve their pain, 41.1% waited for it to disappear itself, 34.4% consulted a physician, 21.7% took a self-prescribed medication, and 2.8% had a bonesetter to fix it. The first institution they visited was a family healthcare center (41.6%) and state hospitals (37.2%). 31.4% of the participants got an MRI scan for their lower back pain, while 36.7% had an x-ray. The treatments used are respectively medication (77.3%), rest (68.8%), complementary medicine methods such as acupuncture and bioenergy (15.3%), physiotherapy (5.7%), and having a bonesetter to fix it (3.4%) (Table 2).

While no significant relationship was found between lower back pain complaint and gender, weight, BMI, and smoking, lifelong lower back pain complaint was found to correlate with age (p:0.049). While 41.9% of the participants described themselves as generally happy, those with lifelong lower back pain were more likely to describe themselves as unhappy/neither happy nor unhappy (p:0.013). Lifelong lower back pain was found to be significantly higher in those who did not receive support from their supervisor in the work environment (p:0.0006). Lifelong lower back pain was found to be significantly higher in those who did not do sports (p:0.014). The comparison of dependent and independent variables that are related to lower back pain is given in Table 3.

Discussion

In our study, 56.5% of the professionals stated that their working environment was stressful, 67.5% did not receive support from their supervisor, and 52.1% stated that they have financial problems. Additionally, 41.9% of the participants described themselves as generally happy, while those who suffered from lifelong lower back pain were more likely to describe themselves as unhappy/neither happy nor unhappy. Lifelong lower back pain was found to be significantly higher in those who did not receive support from their supervisor in their working environment. These findings, again in line with the literature, show that stress is associated with lower back pain.

Lower back pain is pain around the waist and hips that might or might not affect the legs and it is a condition that a lot of people experience at least once in their lifetime [6]. It is thought that apart from causing pain in individuals, an estimated 5-10% of lower back pain cases have social and economic consequences due to loss of labor and cost of healthcare costs [7]. The meta-analysis, which mentions 28 epidemiological studies on lower back pain, demonstrated that the prevalence of chronic lower back pain between the ages of 24-39 is 4.2%, while this rate increases to 19.6% between the ages of 20-59. According to the same meta-analysis, the rate quadruples for those aged 50 or older. Literature also shows that being female, low socio-economic level, low educational level, and smoking increases the prevalence of lower back pain [8].

Table 1. Socio-demographic profile

	Number	(%)*	Total
Gender			
	Female	118	54.4
	Male	99	45.6
			217
Marital status			
	Single	34	15.7
	Married	171	78.8
	Divorced	4	1.8
	Widowed	8	3.7
			217
Educational Status			
	Literate	10	4.6
	Primary school	47	21.7
	Secondary school	27	12.4
	High school	61	28.1
	College/University	49	22.6
	Master's/Doctoral degree	15	6.9
			217
Social security status			
	Not existing	5	2.3
	General health insurance	207	95.8
	Private health insurance	4	1.8
			216
Pregnancy status (current)			
	No	87	95.6
	Yes	4	4.4
			91
Profession			
	Housewife	64	30
	Running her/his own business	15	6.9
	Public officer	47	22.1
	Worker	22	10.3
	Student	10	4.7
	Unemployed	2	0.9
	Private sector/Office worker	32	14.7
	Farmer	9	4.2
	Retired	12	5.5
			213
Working for the last year**			
	Housewife/household chores	76	35
	By sitting	85	39.2
	By generally standing/without heavy works	24	11
	By lifting heavy weights	29	13.4
	Not employed	12	5.5
			≠217
Is your workplace stressful?			
	No	121	43.5
	Yes	93	56.5
			214
Are you supported by your supervisor at the workplace?			
	No	69	67.5
	Yes	143	32.5
			212
Are you content with your workplace?			
	Not content	9	4.2
	Fairly content	55	25.7
	Content	138	64.5
	Very content	12	5.6
			214
Do you feel like you have financial difficulties?			
	No	102	47.9
	Yes	111	52.1
			213
How do you describe yourself?			
	Unhappy	8	3.7
	Neither happy or unhappy	69	31.8
	Sometimes happy	49	22.6
	Generally happy	91	41.9
			217
Do you smoke?			
	No. I never smoked	134	61.8
	I Smoked. but quitted	12	5.5
	Yes. I smoke	39	18
			185
How much do you exercise?			
	More than 2.5 hours. moderate intensity	3	1.4
	Less than 2.5 hours. light to moderate intensity	9	4.1
	More than 2.5 hours. light intensity	39	18
	Less than 2.5 hours. light intensity	45	20.7
	None	121	55.8
			185
How you rate your health in general?			
	Bad	7	3.2
	Fair	87	40.3
	Good	116	53.7
	Very good	6	2.8
			216

*Column percentage

Table 2. General Characteristics of Lower Back Pain in Participants

		Number	(%)*	Total
Have you ever had lower back pain?				
	No	35	16.2	216
	Yes	181	83.8	
What is the reason of your lower back pain in your opinion?				
	Sedentary lifestyle and weight	31	17.4	178
	Work conditions/heavy lifting	92	51.7	
	False physical movements	9	5.1	
	Operations/Diseases	8	4.5	
	Hernia	34	19.1	
	Posture disorder	1	0.6	
	Physical traumas	3	1.7	
Do you have lower back pain right now?				
	No	150	72.5	207
	Yes	57	27.5	
Have you had any lower back pain in the last one year?				
	No	49	23.7	206
	Yes	157	76.3	
If yes. how long did it last?				
	Less than 1 week	144	72	200
	1-3 months	5	2.5	
	3-6 months	46	23	
	More than 6 months	5	2.5	
Which of the activities below worsened your pain?**				
	Sitting	35	19.4	≠180
	Physical activities-Standing up	131	72.7	
	Walking	34	18.9	
	Laying down	16	8.9	
	Not related to activity	14	7.8	
	Heavy lifting	87	48.3	
Which of the activities below reduce your pain?**				
	Hot/Cold Application	37	20.67	≠179
	Resting	158	88.2	
	Moving	22	12.3	
	Never reduced	3	1.6	
Have you ever awakened by your pain at night?				
	No	34	17.3	196
	Yes	162	82.7	
Have you had any accidents/traumas that you think can be related to your lower back pain?				
	No	160	1.1	185
	Occupational accident	2	8.6	
	Heavy lifting	16	2.2	
	Falling down	4	1.1	
	In-car accident	2	0.5	
	Off-car accident	1	86.5	
What did you first do about your lower back pain?				
	Waited for it to go away itself	74	41.1	180
	Used self-prescribed medication	39	21.7	
	Had a bonesetter to fix it/ Bioenergy/ Patch	5	2.8	
	Consulted a physician	62	34.4	
What is the first healthcare institution that you visited?				
	Private clinic/ Polyclinic	3	2.2	137
	Private hospital	12	8.8	
	Family healthcare center	57	41.6	
	State/Research hospital	51	37.2	
	None	14	10.2	
Which tests did you get for your lower back pain?				
	Blood	50	29.6	≠169
	Urine	26	15.4	
	X-ray	62	36.7	
	Tomography	20	11.8	
	MRI	53	31.4	
	None	64	37.9	
Who ordered the tests you get for your lower back pain?				
	Myself	5	4.4	113
	Relative/Friend suggestion	2	1.8	
	Physician	105	92.9	
	Complementary medicine practitioner (unofficial)	1	0.9	
Which treatment(s) did you get for your lower back pain?				
	Bonesetter fixed it.	6	3.4	≠176
	Rest	121	68.8	
	Medication	136	77.3	
	Physical therapy	10	5.7	
	Acupuncture. bioenergy. etc.	27	15.3	
	None	4	2.3	

MRI: Magnetic Resonance Imaging *Column percentage is given **More than one option was selected

Table 3. Comparison of variables related to lower back pain in participants

	Lifelong lower back pain (+) (n. %*)	Lifelong lower back pain (-) (n. %*)	p	Crude OR
Giving a birth (n=181)				
Never	99 (81.8)	22 (18.2)	0.794*	-
1-3 Births	62 (81.6)	10 (13.9)		-
4-6 Births	16 (88.9)	2 (11.1)		-
>6 Births	4 (80.0)	1 (20.0)		-
Gender (n=181)				
Female	96 (82.1)	21 (17.9)	0.568**	-
Male	85 (85.9)	14 (14.1)		
Age Group				
18-24	14 (19.3)	9 (3.7)	**0.049****	**1.00****
25-34	34 (82.9)	7 (17.1)		**-**
35-44	54 (88.5)	7 (11.5)		**3.41 (1.43-8.08)**
45-54	42 (89.4)	5 (10.6)		**3.67 (1.39-9.73)**
55-64	24 (82.8)	5 (17.2)		**-**
≥65	13 (86.7)	2 (13.3)		**-**
Marital Status (n=181)				
Single	32 (76.2)	10 (23.8)	0.278**	-
Married	146 (85.9)	24 (14.1)		-
Divorced/Widower	3 (75.0)	1 (25.0)		-
Educational Status (n=181)				
Illiterate	7 (87.5)	1 (12.5)	0.686***	-
Secondary school or less	73 (86.9)	11 (13.1)		-
High school	50 (83.3)	10 (16.7)		-
College or higher	11 (35.5)	20 (64.5)		-
Social Security (n=215)				
No	4 (80)	1 (20)	0.176***	-
General Social Security	174 (84.5)	32 (15.5)		-
Private Assurance	2 (50)	2 (50)		-
Is your workplace stressful? (n=213)				
No	80 (86)	13 (14)	0.486***	-
Yes	99 (82.5)	21 (17.5)		-
Are you supported/appreciated by your supervisors at your workplace? (n=213)				
No	113 (79.6)	29 (20.4)	0.006*	**3.52 (1.28-9.62)**
Yes	65 (94.2)	4 (5.8)		**1.00****
Are you content with your workplace? (n=213)				
Not content -content a little	124 (83.2)	25 (16.8)	0.620***	-
Content-Very content	55 (85.9)	9 (14.1)		-
Do you have financial problems? (n=212)				
No	90 (88.2)	12 (11.8)	0.103***	-
Yes	88 (80)	22 (20)		-
How do you describe yourself? (n=216)				
Unhappy-neither happy nor unhappy	110 (79.1)	29 (20.9)	0.013***	**2.66 (1.16-6.16)**
Generally happy- Very happy	71 (92.2)	6 (7.8)		**1.00 ******
Do you smoke? (n=185)				
Yes	36 (92.3)	3 (7.7)	0.263	-
I quitted	10 (83.3)	2 (16.7)		-
Never smoked	109 (81.3)	25 (18.7)		-
How many hours do you exercise weekly? (n=216)				
None	108 (89.3)	13 (10.7)	**0.014**	**2.50 (1.18-5.28)**
At least 1.5 hour	73 (76.8)	22 (23.2)		**1.00****

*Row percentage is given. ** Yates corrected Chi-square test ***Pearson Chi-Square Test ****Reference Group

When we evaluated the prevalence studies in Turkey, a study from Eskisehir found that the prevalence of lower back pain was 50.7% and it might be associated with advanced age, female gender, and heavy lifting [9]. In another study, lifelong lower back pain prevalence was reported to be 47% and chronic lower back pain prevalence as 16% in Afyon, and they found that the majority of patients with chronic lower back pain were women, but gender and weight difference did not increase the risk of lower back pain [10]. Eryavuz et al. found that the lifetime prevalence of lower back pain in workers is 54% (62% in females, 51.8% in males), whereas the lifetime prevalence of lower back pain in females is significantly higher than in males [11]. A study conducted in Malatya city center reported that the prevalence of chronic lower back pain is 19.30%, while the lifetime prevalence of lower back pain is 86.30% [12]. In our study, 83.8% of the participants stated that they had lower back pain at least once in their life (LTLBP), and 76.3% of these participants stated that they had lower back pain in the last year. We attributed the difference in prevalence rates to the fact that the studies were conducted with different populations.

The literature shows that the prevalence of lower back pain increases each year [13-14]. The reason for the increase might be the important changes in our daily routines and work lives. The frequent use of computers and Technologies at home and work causes a sedentary life and this might lead to muscle weakness which eventually causes lower back pain. Spine degeneration and muscle and bone damage caused by advanced age might lead to lower back pain. In addition, lifestyle-related obesity creates a risk

for lower back pain by putting pressure on the muscles, joints, and spine in the lumbosacral region. Mikkoen et al. found that lower back pain is more common in those who smoke regularly [15]. Eryavuz et al. did not find a relationship between lower back pain and weight and height in their study [11]. In this study, no significant relationship was found between the complaint of lower back pain and gender, weight, BMI, and smoking, whereas lifelong lower back pain complaint was found to be significantly higher as age increases.

Lower back pain is related to physical, psycho-social, and economic conditions at home and the workplace. In their study which examines the relationship between physical activity and lower back pain, Heneweer et al. found that doing exercises is effective in preventing lower back pain, yet no exercise or heavy exercise has no relationship with lower back pain [16]. Our study found that lower back pain is significantly higher in those who do not exercise. A study carried out in Kuwait among healthcare employees indicates that factors such as lifestyle, psychological profile, activity required at work, and social security constitute a risk in terms of lower back pain [17]. Gatchel et al. identified that those who are widowed or divorced, and those who have financial difficulties are more likely to have lower back pain [18].

Work life might pose a risk for low back pain due to occupational and physical conditions. The risk of lower back pain is higher in heavy vehicle drivers due to heavy lifting, vibration, and continuous sitting positions [19]. Bejia et al. reported that lower back pain was more common in 350 hospital staff with a history of heavy lifting, while it was less common in those who exercise [20]. Female gender, heavy lifting, low socioeconomic level, working in stressful jobs, inability to exercise, and a history of multiple pregnancies are the risk factors for the occurrence of lower back pain [9-11].

In this study, 72.7% of the participants reported that their pain increased with physical activity-standing, and 48.3% with heavy lifting. When the participants were asked about their opinion on the cause of their lower back pain, 51.7% of them stated that they attributed it to work conditions/heavy lifting. When asked about the daily tasks that can cause lower back pain, 66.5% answered that they do Works that require heavy lifting-pushing-pulling; 36.3% frequent stooping, 33.9% desk jobs, 33.9% housework, and 32.0% heavy physical work. Yet we did not find any significant relationship between physical work and lower back pain, and we thought that the reason might be the limited data in our study. When the first resort of the participants for their lower back pain was questioned, 41.1% waited for it to disappear itself, 34.4% consulted a physician, 21.7% used a self-prescribed medication, and 2.8% had a bonesetter to fix it. 41.6% visited a family healthcare center first, while 37.2% visited a state hospital. Treatments used are respectively medication (77.3%), rest (68.8%), complementary medicine methods such as acupuncture, bioenergy (15.3%), physiotherapy (5.7%), and having a bonesetter to fix it (3.4%). This might be because people with lower back pain do not know when to consult which physician.

Study limitations

The data we obtained may not be satisfactory due to the factors like limited participants and having only patient statements on the questionnaire form, and the use of unvalidated reliability scales.

Conclusion

Our study has shown the effects of psycho-social factors like support from a supervisor, to lower back pain etiology more clearly. Even though our study has some limitations yet it can still shed light on future studies. Also, this study emphasized the importance of preventive family healthcare practices to prevent lower back pain. In-service training should be provided for lower back pain management in primary healthcare institutions. Thus, lower back pain management can be achieved by creating an accurate diagnosis, examination, and treatment protocols.

Conflict of interests
The authors declare that there is no conflict of interest in the study.

Financial Disclosure
The authors declare that they have received no financial support for the study.

Ethical approval
The ethics approval for our research was obtained at meeting no.80 of the University of Cukurova Ethics Committee for Non-Invasive Clinical Trials on 31.08.2018.

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