*Original Article*

# Prevalence of low back pain among a group of Turkish men and its effect on quality of life

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**ABSTRACT**

***Objective:*** To assess the prevalence of Low back pain (LBP) in a Turkish male population, and its impact on their Quality of Life (QoL).

***Methodology:*** This is a cross-sectional study conducted on people aged 30 years and above in a western town of Turkey between July, 1st and Aug., 31st 2009. The questionnaire included information about the participants' sociodemographic characteristics; information concerning the LBP, and the SF-36 Quality of Life Scale (SF-36) form. The statistical analysis was carried out using Chi-square ($x^2$), student's t test, and One-Way ANOVA test, with a value of $p < 0.05$ statistically significant.

***Results:*** The prevalences of obesity and LBP were 17.1% and 46.3%, respectively. The mean scores for subjects with LBP from all the domains in the SF-36 scale were significantly lower than those of subjects without LBP ($p < 0.05$, per one). The prevalence of those with mechanical LBP was 78.7% and that of those with non mechanical was 21.3%. In all the domains of SF-36, as the severity of LBP increased, the scores received from the domains of SF-36 showed decrease ($p < 0.05$, per one).

***Conclusion:*** Low Back Pain (LBP) is very common among men, especially older ages which reduces the quality of life seriously.

**KEY WORDS:** Low back pain, Quality of life, Men, Chronic pain grade, Prevalence, Severity.

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## INTRODUCTION

Low back pain (LBP) is the main symptom of most lumbar spine diseases and it is a frequent multietiological syndrome.[1] LBP is usually classified as dependent on mechanical factors, nonmechanical factors, and visceral disease. The mechanical factors related to disc herniation, degenerative disease, spinal stenosis, spondylolisthesis, and compression fractures are the most frequently encountered.[2] The most important risk factors for the LBP are known to is the older age, female gender, low socioeconomic level, low education level, obesity, smoking cigarette, medical comorbidities, occupation, lack of physical exercise, depression, history of trauma, spinal anatomy factors, imaging abnormalities, and lifting heavy loads beyond a person's physical capacity.[3]

The prevalence of LBP varies across different populations. In studies conducted in various countries, the prevalence of LBP has been reported to vary

between 37.8%-67.6%.[4,5] Similarly, many studies in Turkey have indicated that the prevalence varied between 34.0-51%.[6,7]

Reduced quality of life (QoL) is common for patients suffering from chronic LBP, and the goal of treatment is to optimize patients' QoL in terms of less pain and better functioning. Mechanical and organic factors together with sensory, affective and emotional factors cause disability and deterioration of QoL.[8,9] The patients with LBP not only suffer from physical discomfort, but also functional limitation that might cause disability and interfere with their QoL.[10]

The study sought to address several areas of the subject: the prevalence of LBP in a group of male population, the sociodemographic factors affecting prevalence, and also impact of LBP on their QoL.

## METHODOLOGY

This study is a cross-sectional study conducted on people aged 30 years and over who were settled in the Sivrihisar town center of Eskisehir, western Turkey, between July, 1st and August, 31st 2009.

There were 13 quarters in the town center of Sivrihisar at the study time. Each of the 13 quarters was considered as a set. The three out of those (Hizirbey, Yenice and Cumhuriyet quarters) were selected for this study by a draw.

Fifty three men (7.0%) were not included in the sample group since they did not accept our invitation to participate or since they were absent at their houses at that particular time. Hence, the study group was composed of 700 persons who were visited in their houses one by one and by receiving their informed verbal consent.

The questionnaires were filled in by individuals themselves. Because five persons out of the study group were illiterate, answers to questions on the questionnaire were received by the researchers. In addition, people who did not understand the questions were given necessary explanations by the doctors. It took approximately 15-20 minutes to fill in each questionnaire by the individuals.

The questionnaire prepared using the literature in accordance with the purpose of the survey consisted of two parts.[6,11-13] One included information about sociodemographic characteristics such as age, education level, job status, marital status, income level, social health insurance and obesity); presence, type and severity of LBP. The other one included the SF-36 QoL Scale. The original questionnaire was developed by Ware and Sherbourne[14] and reliability and validity studies for Turkish version of SF-36 were

performed by Kocyigit et al.[15] It is a self-evolution instrument consisting of 36 items which provides assessment in eight domains: physical functioning, social functioning, role limitations due to emotional problems (role-emotional), role limitations due to physical problems (role-physical), bodily pain, vitality, mental health, and general health perception. In this study, we used the Turkish version of SF-36, which has good reliability and validity in the Turkish validation study. The subjects answered the questions in SF-36 scale as reasonable for their status within the last 4 weeks. The scores that subjects obtained from the scale ranged between 0 and 100. The higher scores received from the scale showed that the HRQOL increased in a positive way.

Following the completion of the questionnaires and inventory, their body mass indexes (BMIs) were calculated by measuring their heights and weights. Those BMIs were 25 kg/m$^2$ and over were evaluated as obese or owerweight.[16] Body weight was measured with domestic scales and height with a meter rule.

In this study, LBP was defined as discomfort in the spinal area with or without radiation into the leg to below the knee for at least 1 day during the preceding 12 months.[17] Acute mechanical back pain is a common medical problem. Acute pain is pain that has been present for less than four to six weeks. Mechanical means the source of the pain may be in the spinal joints, discs, vertebrae, or soft tissues. Acute mechanical back pain may also be called acute low back pain, lumbago, idiopathic low back pain, lumbosacral strain or sprain, or lumbar syndrome.

The pain was accepted as a type of mechanical back pain if it does not show a familial transition, if its beginning is acute, if morning stiffness is not available, if it decreases with exercise and increases with rest, and if it is unilateral; and was accepted as a type of nonmechanical back pain if it shows a familial transition, if it shows an insidious onset, if morning stiffness is available, if it increases with exercise and decrease with rest, and if it is generally bilateral and is widely observed.

The Chronic Pain Grade was used for assessment of the severity of back pain intensity.[18] According to this scale, those who were "Pain free, disability free" were assessed as mild cases, those who were "Low-intensity pain, low disability" and "High-intensity pain, low disability" as moderate cases and those who were "High disability-moderately" as severe cases.

In this study, those unemployed and pensioners were considered to be not working. The statistical analysis was carried out using Chi-square ($x^2$),

Table-I: Some characteristics of those with/without low back pain.

| Characteristics | Low back pain | | | Statistical analysis X²; p value |
| --- | --- | --- | --- | --- |
| | Yes (n %) | No n (%) | Total n (%) | |
| Age group (year) | | | | |
| 30-44 | 72 (30.1) | 167 (69.9) | 239 (34.1) | 38.931; 0.000 |
| 45-59 | 122 (52.6) | 110 (47.4) | 232 (33.1) | |
| 60 and over | 130 (56.8) | 99 (43.2) | 229 (32.8) | |
| Educational level | | | | |
| Illiterate | 33 (61.1) | 21 (38.9) | 54 (7.7) | 22.432; 0.000 |
| Primary/secondary | 201 (51.7) | 188 (48.3) | 389 (55.6) | |
| High/university | 90 (35.0) | 167 (65.0) | 257 (36.7) | |
| Employment status | | | | |
| Employment | 224 (42.9) | 298 (57.1) | 522 (74.6) | 9.399; 0.002 |
| Unemployment | 100 (56.2) | 78 (43.2) | 178 (25.4) | |
| Family income status | | | | |
| Good | 48 (37.5) | 80 (62.5) | 128 (18.3) | 19.212; 0.000 |
| Middle | 178 (43.3) | 233 (56.7) | 411 (58.7) | |
| Bad | 98 (60.9) | 63 (39.1) | 161 (23.0) | |
| Obese or overweight | | | | |
| Yes | 215 (49.5) | 219 (50.5) | 434 (62.0) | 4.862; 0.027 |
| No | 109 (41.0) | 157 (59.0) | 266 (38.0) | |
| Total | 324 (46.3) | 376 (53.7) | 700 (100.0) | |

student's t test, and One-Way ANOVA test. A value of $p<0.05$ was considered statistically significant.

## RESULTS

The mean age of the participants was 52.56±14.10, with a range of 30 to 90 years. Two hundred and thirty nine (34.1%) of them were in the age group of 30–44, 232 (33.1%) in the age group of 45-49, and 229 (32.7%) in the age group of 60 and over. Most of the participants had an educational level of primary and secondary school (n=389, 55.6%). Nearly 10% were illiterate (n=54, 7.7%). Most men were married (85.6%). About 25% of them did not have a job (25.4%). The number of people with good incomes was only 128 (18.3%) and 37 men were deprived of social health insurance (5.3%).

In the study group, the prevalences of obesity and low back pain were 17.1% and 46.3%, respectively. Table-I shows the distribution of those with LBP and without LBP by some characteristics.

Table-II shows the mean scores of subjects with/ without LBP. The mean scores for subjects with LBP from all the domains in the SF-36 scale were significantly lower than the mean scores of subjects without LBP (p<0.05, for each one).

The number of those with mechanical LBP was 255 (78.7%) and the number of those with non mechanical LBP 69 (21.3%). The distribution of the severity

Table-II: Mean scores of SF-36 domains of individuals with/without low back pain.

| Domains | SF-36 score | | Statistical analysis |
| --- | --- | --- | --- |
| | Low back pain | | |
| | Yes (n=324) (mean±SD) | No (n=376) (mean±SD) | t test; p value |
| Physical functioning | 69.83±27.52 | 89.89±21.38 | 10.841; 0.000 |
| Role-physical | 52.32±49.91 | 87.97±32.10 | 11.387; 0.000 |
| Bodily pain | 61.54±24.67 | 86.81±21.91 | 14.353; 0.000 |
| General health perception | 49.81±20.61 | 67.08±16.50 | 12.299; 0.000 |
| Vitality | 47.41±17.39 | 61.48±19.47 | 10.012; 0.000 |
| Social functioning | 76.89±26.61 | 89.26±18.41 | 7.229; 0.000 |
| Role-emotional | 62.96±48.37 | 85.82±34.77 | 7.244; 0.000 |
| Mental health | 55.22±17.13 | 65.67±17.38 | 7.984; 0.000 |

of LBP was as follows: mild 36.4% (n=118), moderate 48.8% (n=158), severe 14.8% (n=48). In all the domains of SF-36, as the severity of LBP increased, the scores received from the domains of SF-36 showed decrease (p<0.05, for each one). The average scores received from the domains of SF-36 scale by the types of severity of LBP are presented in Table-III.

## DISCUSSION

The present study found a high prevalence of LBP (46.3%) reported among male individuals. This figure is consistent with previous studies reporting rates between 37.8% and 67.6%.[4-7] Similarly, the previous studies conducted in Turkey indicated that the prevalence of LBP among a group of men ranged between 34% and 51%.[6,7] A reason for the variation in these estimates may be the use of selected groups of men, and the absence of a universally accepted method of defining LBP probably as greatly as the methods of collecting data, the study definitions of LBP and pain, and the study populations themselves.

LBP is usually seen with lumbar disc degeneration. Age is an important factor in the formation of lumbar disc degeneration. Therefore, aging may have a positive effect on the incidence of LBP. It has been reported that the prevalence of LBP reached to 50% with increasing age, especially over 60 years of age.[19] Leboeuf-Yde et al. reported that LBP reached peak level in the middle ages. In this study, in parallel with the above studies, it was found that the prevalence of LBP increased with age (p<0.05).[20]

A high level of education, having a job, and a higher family income level are the indicators of socioeconomic status. Various studies indicated that the prevalence of LBP was lower in those having high socioeconomic level, working in administrative positions.[21] As expected, this study also found that the prevalence of LBP was lower in those with a higher level of education, having a job, and with a good income level (p<0.05 for each one).

In the current study, the prevalence of LBP was found to be higher in obese and overweight when compared to non-obese and non-overweight (p<0.05). This result is consistent with the literature.[22,23] In studies investigating the relationship between chronic LBP and obesity, it has been determined that obesity was found to be a serious risk factor, which plays a role in the etiology of chronic LBP, particularly among women. Especially, it is indisputable that obesity increases the load on the spine and the risk of osteoporosis and LBP, reducing bone mineral density in women.[22] It has been indicated that the risk for LBP was higher in studies on obese workers.[23]

LBP is known to reduce the quality of life.[24] There are some studies reporting that the QoL of patients with LBP is improved by surgical treatment.[24,25] In this study, the mean scores for subjects with LBP from all the domains in the SF-36 scale were significantly lower than the mean scores of subjects without LBP (p<0.05, for each one). In addition, in all the domains of SF-36, as the severity of LBP increased, the scores received from the domains of SF-36 showed decrease (p<0.05, for each one). Those results indicate that the QoL in those with LBP seriously reduces and treatment should start as soon as possible.

According to these study results, we conclude that LBP is very common among men, especially among older ages, which reduces quality of life seriously. Health education programs need to address this lack of awareness to facilitate their prevention and control and they should be referred to specialized health centers as soon as possible.

Table-III: The severity of low back pain and mean scores of SF-36 domains.

| SF-36 | The severity of low back pain | | | Statistical analysis |
|---|---|---|---|---|
| Domains | Mild (n=118) (mean±SD) | Moderate (n=158) (mean±SD) | Severe (n=48) (mean±SD) | F test; p value |
| Physical functioning | 78.31±22.68 | 68.10±27.37 | 54.69±31.60 | 14.255; 0.000 |
| Role-physical | 63.56±48.33 | 50.32±49.92 | 31.25±46.84 | 7.704; 0.001 |
| Bodily pain | 75.27±18.01 | 58.11±24.09 | 45.69±24.67 | 39.651; 0.000 |
| General health perception | 57.39±19.39 | 46.12±19.56 | 43.28±21.97 | 13.900; 0.000 |
| Vitality | 49.83±15.91 | 47.34±17.24 | 41.67±20.19 | 3.826; 0.023 |
| Social functioning | 91.95±12.61 | 71.20±26.79 | 58.59±32.43 | 42.569; 0.000 |
| Role-emotional | 77.12±42.19 | 59.49±49.25 | 39.58±49.42 | 11.810; 0.000 |
| Mental health | 57.97±14.46 | 54.96±17.59 | 49.33±20.22 | 4.461; 0.012 |

## ACKNOWLEDGEMENTS

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