# Role of Obesity in Low Back Pain Related Disability

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## INTRODUCTION

Understanding the role of personal variables in the development of low back pain (LBP) is important not only for planning epidemiological studies but also for prevention efforts (1). Obesity has been shown to contribute an independent risk for LBP even after controlling for age, education, exercise level and employment status (2). This is likely because increasing height and weight would be expected to increase spinal loading during several activities and increase the movement about the lumbosacral joint. The aim in this study was to examine the associations between obesity and disability caused by LBP.

## METHODS

Sixty patients (45 females, 15 males) diagnosed as having mechanical LBP without any neurological impairment were included in the study after obtaining informed consent. Patients with BMI > 30 were accepted as the obese group (O) and others formed the non-obese group (N) (3). The Quebec Back Pain Disability Scale and Oswestry Disability Questionnaire were used to objectively assess the functional impairment.

Disease specific measures which focus on outcomes unique to a specific disease may supply information that would otherwise be missed by general health measures. The Oswestry questionnaire is a disease specific functional assessment measure and has been shown to be valid in Turkish patients with items covering pain, physical limitations, sleeping, sex life, social life and travelling (4). The Quebec back pain disability questionnaire inquires to what extent the LBP patients experience difficulties in performing 20 different activities. The visual Analog Scale (VAS) was used to inquire about pain intensity by self-report.

## RESULTS

Of 60 patients with LBP, 14 (23, 33%) were obese. There was no significant difference for disease duration and gender distribution between the obese and non-obese groups. There was significant difference between Oswestry and Quebec disability scores of obese and non-obese patients. No such difference could be demonstrated for VAS (Table). Presence of obesity displayed good correlation with indicators of disability whereas no such correlation could be demonstrated with VAS.

Table 1: Values for VAS, Oswestry and Quebec questionnaires for obese and non-obese groups ( mean ± S.D )

| | **Group N n:46** | **Group O n:14** | ***p* values** |
|---|---|---|---|
| VAS | 578 ± 277 | 524 ± 222 | 0514 |
| Oswestry | 1526 ± 846 | 2085 ±1056 | 0046 |
| Quebec | 32,67 ± 1798 | 4364 ±1786 | 0050 |

## DISCUSSION

Obesity is related to poor physical functioning and limitations in daily life (5). There are controversies about effect of obesity on LBP symptoms. Huang showed that the relative risks of back pain for one unit standard deviation increase in BMI was 1.47 whereas Tsuritani *et al* reported that they failed to reveal a significant influence of obesity on LBP (6, 7). The primary aim was not to demonstrate whether obesity can be considered in the aetiology of LBP but to determine whether obesity is a factor responsible for disability in LBP patients. In the present study, there was an increase of disability in patients with LBP when there was co morbid obesity.

Pain related disability is related to human tolerance but here pain was not the primary factor for disability in LBP as the difference for VAS between groups was not significant. It was also shown that increase in BMI correlated with poor results in disability indices but VAS displayed no such correlation.

Based on the observation in this study, patients with LPB did not suffer from worse pain if they were obese but they experienced a more disabled life due to their weight.

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