

Research Paper Review

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Is low back pain associated with worse healthrelated quality of life six months later?

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Background Information:

Low back pain (LBP) is the leading cause of years lived with disability worldwide (1). Very few studies have looked at the impact of LBP on health related quality of life (HRQoL). HRQoL includes physical, social and psychological, work role and vitality functioning in a global construct. It is important to study the impact of low back pain on HRQoL in a large population-based cohort while controlling for confounding. This allows us to understand if LBP has an independent association with worse HRQoL or just clusters within other comorbidities and socioeconomic conditions that lead to worse HRQoL.

Pertinent Results:

LBP had a dose response relationship with worsening HRQoL, with a decrease in physical HRQoL six months later after controlling for age, income, arthritis, neck pain and kidney disorders. For each worsening grade of LBP (compared to grade 0 LBP), there was a decrease in HRQoL six months later. The score on the physical component scale of the SF-36 questionnaire (0-100 scale) decreased with each increasing grade of LBP compared to grade 0 LBP (measured on the von Korff chronic pain questionnaire): grade III-IV 10.23, 95% CI 12.46-7.99; grade II 6.72 95% CI 8.79-4.65; grade I 1.77, 95% CI 3.18-0.36. Controlling for baseline physical HRQoL in the above model reduced this association (compared to grade 0 LBP, grade II to IV LBP reduced physical HRQoL; grade III-IV 2.57,

95% CI 4.68-0.47; Grade II 2.34, 95% CI 4.22-0.46). Mental HRQoL did not have a dose response gradient with graded LBP. Grade III-IV LBP compared to grade 0 LBP had a small but significant association, reducing the score on the mental HRQoL SF-36, while controlling for age, income, BMI, exercise frequency, smoking, arthritis, headaches, allergy, breathing disorders, cancer and kidney disorders (3.08, 95% CI 5.66-0.50).

Clinical Application & Conclusions:

Compared to grade 0 LBP, increasing LBP between grades II to grade III-IV reduced physical component scale scores on the SF-36 questionnaire six months later by clinically significant amounts. There was no dose response seen between grades of LBP and mental component scale scores on the SF-36 questionnaire. HRQoL can be used by clinicians to measure the impact of well-being on individuals from chronic diseases, disability and the effects treatment. Low back pain is one of the factors that can severely impact the HRQoL of individuals. As those of us in practice are aware, health is not just the absence of disease, but it is the quality of one's life. Therefore, from a public health perspective, low back pain needs to be continually addressed by clinicians, third party payers, employers and governments. To improve the HRQoL in LBP patients, special attention should be provided to preventing and treating disabiling LBP of greater pain intensity.

Study Methods:

This study used data from the Saskatchewan Health and Back Pain Survey which is a large prospective population-based survey. The survey measured LBP at baseline using the VonKorff Chronic Pain Questionnaire. Six months later, HRQoL was measured using the Short-Form-36 (SF36) physical component scale and mental component scale. Confounding variables were considered from baseline socioeconomic, co-morbidity and health measures on each subject. Linear regression was then used to measure the association between grades of LBP and HRQoL six months later, while controlling for potential confounding.

Study Strengths / Weaknesses:

The main strength of this study is the use of a large prospective, population-based random sample of adults from the general population. This study also utilized a valid and reliable measure of LBP and HRQoL. Finally this study used multivariable regression to control for extensive confounding. One of the limitations of this analysis was the response rate to the survey of 55%, although this may not have had a large impact on the results. The attrition analysis revealed that respondents were older (4.8 years) than non-responders but their baseline physical and mental HRQoL were similar. It is possible that a study with a larger number of subjects might be more able to better assess LBP grade and mental HRQoL.

Additional References:

1. Vos T, Flaxman AD, Naghavi M, et al. Years lived with disability (YLD's) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012; 380: 2163–2196.