RESEARCH ARTICLE

Quality of life in patients of low back pain with radiculopathy: A descriptive analytical study from Punjab

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ABSTRACT

Background: Low back pain with radicular symptoms is one of the most prevalent musculoskeletal disorders and leading cause of disability. Radicular back pain can be defined as a diffuse process affecting more than one underlying nerve root that causes pain and depending on the severity of symptoms may cause loss of sensation and motor function. Quality of life (QOL) is a multidimensional patient-based outcome criterion which can be used to describe the impact of health condition on the patient as well as the effects of the treatment. Low back pain interferes with QOL and work performance.

Aim and Objectives: To analyze the QOL in patients of low back pain with radiculopathy

Materials and Methods: This descriptive-analytical study was carried out on 364 low back pain patients and healthy people in Government medical college, Patiala, India, from January 2021 to June 2021. We used SF-36 questionnaire to assess QOL, which allows calculating eight different scores (on a scale of 0–100), a physical component scale (PCS), and a mental component scale (MCS) summary. Mean Mental (MCS) and Physical (PCS) component summary scores were assessed and compared with healthy people involved in the study. Overall, a higher PCS and MCS score indicates better QOL.

Results: Out of 364 patients enrolled, 311 patients with mean age of 49.1 ± 11.9 years were included for the study. SF-36 was administered and assessed. The result from this questionnaire showed that mean PCS and mean MCS were significantly lower in the low back pain patients compared to the normative population and were statistically significant.

Conclusion: Patients of low back pain with radiculopathy have poor QOL compared to normative individuals. Lower QOL in patients necessitates getting early treatment, educating the patient, and rehabilitation. It is vital to give more attention to the QOL of the patient as it is an untouched domain.

KEY WORDS: Quality of Life; Low Back Pain; Radiculopathy

INTRODUCTION

Low back pain with radiculopathy is a recurrent condition that has a significant socioeconomic consequence. The estimated annual global incidence of LBP in adults is 15% with a 30% point prevalence.[1] In India, the prevalence of low back pain is particularly alarming, with roughly 60% of Indians reporting low back pain at some point in their lives.[2] It affects up to 23% of the population in north India.[3]

Patients of low back pain with radiculopathy have a quality of life (QOL) influenced by their subjective assessment of the disease as well as their objective health status.[4,5] This part of the QOL changes on the efficacy of the therapeutic procedures used.[6,7]
Despite advances in the medical research, there is still no clear best strategy for treating patients of low back pain with radiculopathy. Different approaches to therapy are used, such as medicine, physical agents, and even kinesitherapy. Furthermore, there is no conclusive evidence on the benefits of conservative treatment over surgical treatment outcomes.

The outcome of low back pain with radiculopathy patient’s treatment can be measured in various ways, i.e., symptoms, functionality, general well-being, working inability level, and satisfaction with the treatment. For these purposes, standardized QOL evaluation methods is used.

QOL is an essential outcome in the care of patients of low back pain with radiculopathy. During the course of disease, low back pain patient’s QOL may be compromised. Until recently, the most widely used instrument to assess the QOL in low back pain is SF-36.

Available data on QOL of low back pain patients with radiculopathy in India is very limited. This study is designed to measure the QOL among low back pain with radiculopathy patients and its impact on QOL.

MATERIALS AND METHODS

The present study was conducted in Physical Medicine and Rehabilitation (PMR) Department, Government Medical college, Patiala, Punjab, India, from January 2021 to June 2021. The study was approved by the Institutional Ethics Committee of Government Medical College Patiala. All patients gave their written informed consent before beginning of the study.

Source of Data

All patients of chronic low back pain with radiculopathy coming to the PMR Department.

Inclusion Criteria

1. Patient age >18 years – <70 years
2. Presenting with CLBP with radiculopathy with pain DETECT score >18 and LANSS score of >12.

Exclusion Criteria

1. Drug abuse
2. Pregnancy
3. Other severe coexisting diseases (such as Liver failure, severe hypertension, convulsion and kidney dysfunction, and Heart dysfunction).

All patients of low back pain with radiculopathy who came to the Department of PMR OPD were clinically assessed, screened, and informed about the study’s kind and purpose. The participants gave their informed consent and were recruited in the study. A complete history was taken and clinical examination was performed, and patient demographic data were registered. Neuropathic pain was assessed using pain detect score and LANSS score. For assessing QOL SF-36 score was used at the time of first attendance in OPD. Patients had to have low back pain with a radicular component, which is pain that radiates through the spine from the back and hip into the legs. Leg discomfort might be accompanied with numbness, tingling, and muscle weakness. The pain DETECT score was then used to determine whether there was a radicular component to the pain. The study comprised patients who scored higher than 18 on the pain DETECT scale. We also use the LANSS score to confirm the radicular component of pain, with individuals scoring higher than 12 enhancing our clinical diagnosis of the radicular component of low back pain.

SF-36

At their first visit to the OPD, the SF-36 score was utilized to assess QOL, and the SF-36 score of a Normative individual was calculated throughout the study period. The SF-36 questionnaire assesses eight domains of health-related QOL. The results are scored and transformed on a scale of 0 (worst health) to 100 (highest health) (best score). A physical component scale (PCS) and a mental component scale (MCS) can be used to report SF-36 results (MCS).

Statistical Analysis

The information gathered was processed and analyzed using IBM SPSS software version 20 for Windows. All patients of low back pain with radiculopathy were analyzed at their first visit to OPD on the scale as mentioned previously. Comparison between mean values of each scale for low back pain patients with radiculopathy to normative individual using unpaired t-test was done.

RESULTS

Three hundred and sixty-four patients were analyzed during their 1st OPD visit and out of 364 patients 341 patients gave their informed consent to participate in the study and 311 patients were included in the study. The average age was 49.1 (SD = 11.9, range from 18 to 70 years) and there were 61% male patients and 39% female patients. Other general characteristics of patient is given in Table 1.

The average values of the SF-36 PCS and MCS calculated at the start of the study as well as normative data are given in Table 2.

The value of mean physical health component score of patients evaluated with SF-36 questionnaire was 28.77. When compared to the entire population standard, it was
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**Table 1: General characteristics of patients**

<table>
<thead>
<tr>
<th>Characteristics of patients</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)±SD</td>
<td>49.1±11.9</td>
</tr>
<tr>
<td>Sex (%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>61</td>
</tr>
<tr>
<td>Female</td>
<td>39</td>
</tr>
<tr>
<td>Education%</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>8</td>
</tr>
<tr>
<td>Upto 12th std</td>
<td>46</td>
</tr>
<tr>
<td>College (UG)</td>
<td>40</td>
</tr>
<tr>
<td>PG</td>
<td>6</td>
</tr>
<tr>
<td>Marital status %</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>82</td>
</tr>
<tr>
<td>Unmarried</td>
<td>18</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
</tr>
<tr>
<td>Dominant problems %</td>
<td></td>
</tr>
<tr>
<td>Pain in leg</td>
<td>41</td>
</tr>
<tr>
<td>Tingling and numbness in legs</td>
<td>27</td>
</tr>
<tr>
<td>Weakness and pain in legs</td>
<td>32</td>
</tr>
</tbody>
</table>

**Table 2: Comparison of SF-36 different domains in low back pain with radiculopathy patients and normative individuals**

<table>
<thead>
<tr>
<th>SF-36 components</th>
<th>LBP with radiculopathy</th>
<th>Normative individuals</th>
<th><em>P</em>-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical functioning</td>
<td>58.61</td>
<td>91.11</td>
<td>0.0001</td>
</tr>
<tr>
<td>Role physical</td>
<td>38.35</td>
<td>93.58</td>
<td>0.0001</td>
</tr>
<tr>
<td>Bodily pain</td>
<td>49.42</td>
<td>87.66</td>
<td>0.0001</td>
</tr>
<tr>
<td>General health perception</td>
<td>47</td>
<td>79.15</td>
<td>0.0001</td>
</tr>
<tr>
<td>Energy/vitality</td>
<td>53.04</td>
<td>76.93</td>
<td>0.0001</td>
</tr>
<tr>
<td>Social functioning</td>
<td>57</td>
<td>85.27</td>
<td>0.0001</td>
</tr>
<tr>
<td>Role emotional</td>
<td>57</td>
<td>78.82</td>
<td>0.0001</td>
</tr>
<tr>
<td>Mental health</td>
<td>74.51</td>
<td>93.47</td>
<td>0.0044</td>
</tr>
<tr>
<td>PCS</td>
<td>28.7</td>
<td>48.16</td>
<td>0.0001</td>
</tr>
<tr>
<td>MCS</td>
<td>30.21</td>
<td>44.25</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

PCS: Physical component scale, MCS: Mental component scale

significantly lower (*P* < 0.001). When compared to the entire normative persons, the mean Mental component score was 30.21, which was statistically lower (*P* < 0.001).

**DISCUSSION**

When considering the low back pain with radiculopathy, there are many questions that need an answer. On one hand, epidemiological, psychosocial, and economical aspects are there; on the other side, nature of illness and effect of treatment also having significant impact. The annual global incidence of LBP in adults is roughly 15%, with a point prevalence of around 30%. According to Papageorgiou *et al.*, [21] at least half of all individuals will experience low back discomfort at some point in their lives. Around 20–30% of the affected patients have persistent problem for 1–2 years. The need for surgery is around 10%. There is no consensus regarding surgical treatment is better over medical treatment, neither there is a common and acceptable generalized treatment for low back pain with radiculopathy. Studies into QOL of patients with low back pain with radiculopathy in India are still very rare. That’s why it is very important to find QOL in the patients of low back pain with radiculopathy.

In our study, we found mean SF-36 scores in low back pain patients with radiculopathy were below normative individuals. Similar findings were seen in study done by Ksenija *et al.*, they also found that domains of SF-36 were affected but study done by Ahdhi *et al.* in Puducherry, India on Indian women did not found any deterioration in the QOL but this study did not consider the radicular pain.

In the present study mean PCS was 28.7 and mean MCS was 30.21, which was below as compared to the normative individuals, i.e., PCS was 48.16 and MCS was 44.25. In another study done by Boskovic *et al.*, [22] they found that physical component was significantly below the normative data but the mental component score was not statistically significantly lower as compared to the Normative data. Haladaj *et al.* also tell in their study that the QOL index was statistically lower in the patients. Other few studies also found that the QOL in low back pain patients is low as compared to the normal population. One significant finding in our study was that not only physical component was lower but the mental component score was also significantly lower in the affected patients.

Strength of our study was that we have addressed both the Physical component score as well as mental component score that determines not only physical but also mental components of patients suffering from low back pain with radiculopathy. One more major strength of our study was that we have done this study on a large number of participants so the chances of error were reduced. There were a few limitations in our study like it was single center study and PCS and MCS was calculated only once no follow-up was done. Further long duration of the study with evaluation of follow-up patients and their PCS and MCS can be helpful.

**CONCLUSION**

QOL in patients of low back pain with radiculopathy was significantly affected in both components, i.e., physical component as well as mental component as compared to normative individuals.

Lower QOL in low back pain patients necessitates getting early treatment, educating patients regarding impact of
low back pain on their mental and physical health, and the importance of rehabilitative measures to be induced early in the treatment of patient.

The treatment options for radicular pain are still evolving and it is very important to treat these patients effectively to limit the damage to their mental health as well as physical health. There are very few studies available on this, further research is needed to improve QOL of low back pain with radiculopathy patients.

REFERENCES


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