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# CHRONIC LOW BACK PAIN: IS THE MIND THE MISSING KEY TO QUALITY OF LIFE? A NARRATIVE REVIEW OF PSYCHOLOGICAL DETERMINANTS OF HEALTH-RELATED QUALITY OF LIFE

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## ABSTRACT

**Introduction and aim:** Chronic low back pain (CLBP) is a highly prevalent musculoskeletal condition and a major contributor to disability worldwide. Its impact extends beyond physical symptoms, affecting emotional well-being, daily functioning and overall health-related quality of life (HRQoL). Increasing evidence suggests that psychological factors play a central role in shaping outcomes in CLBP. This narrative review summarises and critically discusses recent evidence (2022-2025) on the relationship between psychological factors and HRQoL in adults with CLBP, with particular emphasis on depression, anxiety, pain catastrophizing, kinesiophobia and self-efficacy.

**Methodology:** A literature search was conducted in PubMed, Web of Science, Scopus, Google Scholar and the Cochrane Library. Original studies evaluating psychological factors in relation to pain, disability or HRQoL in adults with CLBP were included. Thirteen studies met the inclusion criteria, including cross-sectional and longitudinal designs, randomised controlled trials, one mediation analysis and one systematic review.

**Results:** CLBP was consistently associated with impaired HRQoL across physical, emotional and social domains. Older age and female sex were linked with greater disability and lower HRQoL. Depression and anxiety showed the strongest associations with reduced well-being and long-term functional decline. Pain catastrophizing was negatively associated with HRQoL and increased risk of symptom generalisation. Kinesiophobia was linked with functional deficits and mediated treatment-related improvements. Self-efficacy was associated with better psychological outcomes, although its responsiveness to intervention varied across studies.

**Conclusions:** Psychological factors are key determinants of HRQoL in patients with CLBP. Integrating psychological assessment into multidisciplinary care may improve quality of life and long-term management.

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## KEYWORDS

Chronic Low Back Pain, Psychological Factors, Health-Related Quality of Life, Biopsychosocial Model, Chronic Pain

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## 1. Introduction

Chronic low back pain (CLBP), defined as lower back pain persisting for more than three months, is one of the most prevalent musculoskeletal conditions and a leading cause of disability worldwide. This symptom can be present regardless of age, however, it is especially common among middle-aged and older adults [1]. The burden of CLBP extends beyond persistent nociceptive or neuropathic symptoms, significantly affecting daily functioning, job performance, and overall well-being. In many countries, CLBP is a cause of a significant proportion of primary care consultations and long-term analgesic use. The economic consequences are further exacerbated by work absenteeism and reduced productivity, resulting in both direct and indirect socioeconomic and medical burdens [2]. Despite advances in diagnostics and rehabilitation, the global prevalence of CLBP has increased by nearly 15% over the past two decades. This highlights the urgent need for a more comprehensive understanding of the factors that influence patients' outcomes [3].

Previous studies show that CLBP cannot be caused solely by mechanical or structural changes. Occupational factors, high body mass index, and smoking are still considered as the crucial primary risk factors for CLBP. Nevertheless, in recent years a psychosocial perspective has also become essential in understanding the complex presentation of this disorder [4]. The influence of psychological factors on symptom intensity, coping skills, and engagement in rehabilitation appears extremely important. Psychological aspects such as depression, anxiety, pain catastrophizing, kinesiophobia and low self-efficacy not only contribute to persistent pain and disability but also strongly influence health-related quality of life (HRQoL) among individuals with CLBP [1, 2, 5, 6].

Impairment of quality of life in CLBP is multidimensional, affecting the physical, emotional, and social domains. Some longitudinal and cross-sectional studies show that patients often report limitations in mobility, reduced participation in social activities, sleep disturbances and difficulties maintaining work-related roles [1, 7, 8]. Qualitative studies further show that individuals with chronic pain identify the majority of HRQoL domains as meaningful, including emotional balance, independence, interpersonal relationships and the ability to manage daily routines [9]. These findings reinforce the idea that CLBP should be approached not only as a biomedical problem but, more importantly, as a condition that deeply affects subjective well-being.

Given the growing body of research published in recent years, an updated synthesis of the associations between psychological factors and HRQoL in CLBP is needed. Several studies published between 2022 and 2025 provide new insights into long-term trajectories of disability [6], sex-related differences in quality of life [7], predictors of functional limitation [4, 10], the role of fear-avoidance mechanisms and self-efficacy in shaping treatment outcomes [11, 12, 13]. Collectively, these findings enhance the current understanding of the ways in which psychological variables interact with chronic pain.

The aim of this narrative review is to summarise and critically discuss recent evidence on the relationship between psychological factors and HRQoL in adults with CLBP. Emphasis is placed on potentially modifiable psychological determinants that are relevant to multidisciplinary clinical assessment and require targeted interventions. The review focuses on the most contemporary original studies published from 2022 to 2025, as these offer up-to-date perspective on the psychosocial mechanisms involved in CLBP.

## 2. Methodology

The search strategy in this narrative review focused on studies published between 2022 and 2025, reflecting the time frame during which most new research has emerged. Earlier studies were included only if referenced in selected articles.

The literature search was conducted in several databases, including PubMed, Web of Science, Cochrane Library, Google Scholar, and Scopus. Key words used were „chronic low back pain”, „CLBP”, „quality of life”, „health-related quality of life”, „HRQoL”, „depression”, „anxiety”, „pain catastrophizing”, „kinesiophobia”, and „self-efficacy”. All publications used in this review were written in English.

The review primarily included original empirical studies, such as cross-sectional analyses, prospective and retrospective cohort studies, and randomised controlled trials, provided they assessed at least one psychological factor in relation to pain, disability, functional outcomes, or HRQoL. One mediation analysis based on data from a randomised controlled trial was also incorporated because it offered valuable insight into psychological mechanisms underlying treatment effects, such as reduction in pain intensity and disability among people with CLBP [9]. In addition, one systematic review was included as it evaluated and synthesised some neuropsychological aspects directly relevant to quality-of-life outcomes that were not examined in more recent studies [14].

Studies were excluded if they focused exclusively on acute low back pain, postoperative or surgical cohorts, pediatric populations, or if they did not evaluate psychological or HRQoL measures.

A total of 13 studies meeting the above criteria were selected. Given the heterogeneity of study designs, populations, and outcome measures, a narrative review approach was chosen to summarise the most recent evidence on the association between CLBP in adults and HRQoL. No quantitative pooling or formal risk-of-bias assessment was performed, as the purpose of this review was descriptive and integrative rather than meta-analytic.

### 3. Results

**Table 1.** Characteristics and main findings of studies examining psychological factors and health-related quality of life (HRQoL) in adults with chronic low back pain (CLBP)

Author	Population	Comparison	Psychological factors assessed	HRQoL / outcome measures	Outcome relevant to HRQoL	Type of the study	Year
[1]	Adults with CLBP (n=180)	Adults without CLBP (n=1761)	Depression, anxiety	EQ-5D-5L	CLBP associated with significant impairment across all HRQoL domains, including anxiety/depression compared to controls	Cross-sectional	2022
[2]	Adults with CLBP (n=177)	Adults without CLBP (n=160)	Depression, anxiety	Depression and Anxiety Short Self-Rating Scale, EQ-5D-5L, Life Satisfaction Scale	Individuals with CLBP reported poorer HRQoL, more severe symptoms of depression and anxiety, lower functioning index compared to controls	Cross-sectional	2024
[4]	Adults with CLBP (n=76)	None	Depression, pain catastrophizing	PCS, BDI, ODQ	Depression and pain catastrophizing can predict disability in patients with CLBP, indirectly affecting quality of life	Cross-sectional	2023
[5]	Adults with CLBP (n=201)	None	Depression, anxiety, pain catastrophizing	SF-36, PASS-20, HADS	Depression and anxiety were significant predictors of both physical and psychological dimensions of HRQoL; pain catastrophizing was not found to be a significant predictor of any HRQoL dimension	Cross-sectional	2024

[6]	Adults with CLBP (n=225) at baseline, adults with CLBP (n=111) at 5-year follow-up	None	Depression, anxiety	HADS, ODI	Greater severities of depression and anxiety at baseline were significantly associated with greater disability at the 5-year follow-up point	Prospective cohort (5 year follow-up)	2023
[7]	Adults with CLBP (n=129) at baseline and 3-month follow-up	None	Depression, anxiety	EQ-5D-3L, ODI	Persistent HRQoL impairment over time; women reported greater emotional burden	Longitudinal (3-month follow-up)	2024
[8]	Adults with CLBP (n=128) at baseline and 2-year follow-up divided into 3 groups according to age (18-20 yrs, 30-50 yrs, 50-65 yrs)	Adults without CLBP (n=113)	Depression, anxiety	SF-36, ODI, HARS, HDRS	Older age associated with poorer HRQoL, greater disability, lower HARS and HDRS scores	Longitudinal (2-year follow-up)	2025
[9]	Adults with CLBP (n=26)	None	Mental health (including depression, anxiety)	PROMIS	Depression and anxiety were not perceived as the most important domains of HRQOL by adults with CLBP	Qualitative	2023
[10]	Adults with CLBP (n=1111)	None	Pain catastrophizing	PCS, CWP risk	Higher catastrophizing increased risk of progression to chronic widespread pain in patients with CLBP	Retrospective cohort	2024
[11]	Adults with CLBP (n=63)	None	Kinesiophobia	TSK, active target repositioning technique, stabilometric force platform	Kinesiophobia associated with impaired proprioception and postural stability	Cross-sectional	2023

[12]	Adults with CLBP (n=92)	None	Self-efficacy, well-being	GSF, RMDQ, WHO5I	Pain education improved pain, disability and well-being, but did not significantly change self-efficacy; baseline self-efficacy was a significant prognostic factor for psychological outcomes	RCT	2024
[13]	Adults with CLBP (n=75)	None	Depression and anxiety (defined as stress), self-efficacy, kinesiophobia	PSEQ, TSK, SF-36, Depression Anxiety Stress Scale (DASS)	Self-efficacy, stress and kinesiophobia mediated treatment effects on HRQoL and disability; intervention increased pain self-efficacy, decreased kinesiophobia, decreased stress	RCT with mediation analysis	2025
[14]	Adults with CLBP	None	Neuropsychological factors	SF-36, EQ-5D, WHOQOL, and Roland Morris Disability Questionnaire	Chronic pain associated with impaired cognitive and emotional HRQoL dimensions	Systematic review	2024

**Abbreviations:** CLBP - chronic low back pain; HRQoL - health-related quality of life; EQ-5D-3L / EQ-5D-5L - EuroQol 5-Dimension Questionnaire (3-level / 5-level); SF-36 - Short Form Health Survey-36; ODI / ODQ - Oswestry Disability Index / Questionnaire; RMDQ -Roland-Morris Disability Questionnaire; PCS - Pain Catastrophizing Scale; BDI - Beck Depression Inventory; HADS - Hospital Anxiety and Depression Scale; HARS - Hamilton Anxiety Rating Scale; HDRS - Hamilton Depression Rating Scale; PROMIS - Patient-Reported Outcomes Measurement Information System; TSK - Tampa Scale of Kinesiophobia;

PSEQ - Pain Self-Efficacy Questionnaire; WHO-5 / WHO5I - World Health Organization-5 Well-Being Index; GSF - General Self-Efficacy Scale; DASS - Depression Anxiety Stress Scale; CWP - chronic widespread pain; RCT - randomised controlled trial.

### 3.1. General health-related quality of life (HRQoL) impairment in chronic low back pain (CLBP)

Chronic low back pain (CLBP) is consistently associated with substantial negative impact on various domains of health-related quality of life (HRQoL). A large cross-sectional study conducted in Singapore indicates that individuals with CLBP experience limitations across both physical and psychological domains of functioning. Findings from Ge *et al.* show that low back pain was linked to significantly lower physical functioning, reduced vitality, and poorer mental well-being compared with the general population. CLBP corresponded to reporting problems in all domains of HRQoL as measured by EQ-5D-5L (descriptive system of five domains - mobility, self-care, usual activities, pain/discomfort, and anxiety/depression), which further highlights the broad impact of persistent pain on daily activities and participation [1].

A negative aspect of impairments caused by CLBP is their persistence, as shown by longitudinal evidence. A recent 2-year follow-up among adults with CLBP demonstrated stable deficits in HRQoL metrics, including ongoing limitations in quality of sleep, sustained reduction in life satisfaction, and continued functional restrictions despite continuous treatment [8]. Similar findings were reported in a cohort examining sex-related differences, in which both men and women showed long-term impairments across multiple HRQoL domains (measured using the EQ-5D-3L questionnaire), with certain emotional and social aspects differing slightly by sex [7].

The decline in quality of life appears to be multidimensional. Patients with CLBP frequently struggle with difficulties performing daily physical tasks, report reduced engagement in occupational and social roles and avoid meaningful activities due to concerns about pain exacerbation. These reports align with broader assessments indicating that CLBP is one of the chronic pain conditions most strongly associated with impaired physical, emotional, and social functioning [14].

Recent analyses further clarify the domains of life mostly affected by CLBP. Pain interference, fatigue, reduced independence, limited mobility, sleep disruption, and emotional strain are considered as the main contributors to diminished well-being [9]. These observations also align with quantitative models that describe how chronic pain shapes everyday functioning and subjective experience [2].

Overall, evidence consistently shows that CLBP causes persistent and wide-ranging impairment in HRQoL. Notably, the magnitude of negative impact often exceeds what would be expected based solely on pain severity. It suggests that additional factors - particularly psychological processes and coping patterns - play a vital role in determining patient outcomes and success in long-term treatment of CLBP.

### **3.2. Sex and age differences in health-related quality of life (HRQoL) among individuals with chronic low back pain (CLBP)**

Various sociodemographic factors have been shown to influence health-related quality of life (HRQoL) among patients with chronic low back pain (CLBP), with sex being considered as one of them. A longitudinal study investigating its role in CLBP demonstrated that both men and women experience substantial and persistent reductions in HRQoL. The most significant problems concerned pain (57.4%) and mental health disorders (70.5%), with alterations being slightly more frequent in women compared to men with CLBP. Other aspects of functioning that differed between sexes included greater emotional distress and reduced vitality reported by women, whereas men more frequently noted limitations in role functioning, self-care and daily physical activities. Although these variations were not consistent across all domains, the findings suggest that sex-related patterns may influence the way individuals perceive and manage CLBP [7].

Age also tends to affect differences in HRQoL. The two-year follow-up among working-age adults clearly demonstrated that older individuals (50-65 years) had significantly lower HRQoL, worse sleep quality, and greater disability than younger adults (18-30 years) with CLBP at the beginning of the investigation and throughout follow-up. Elderly patients showed significantly higher disability scores and lower SF-36 scores (an outcome measure comprising eight scales: physical functioning, physical role functioning, bodily pain, general health perceptions, vitality, social role functioning, emotional role functioning, and mental health), while younger adults exhibited better overall functioning and sleep quality. These findings suggest that advancing age may exacerbate functional limitations and make coping with chronic pain more difficult [8]. In line with this finding, another study that analysed predictors of disability in CLBP found that although age, residence, and work status were all significantly correlated with disability, only age remained an independent predictor in multivariable analysis [4]. These results collectively suggest that advancing age contributes meaningfully to functional decline and reduced quality of life among individuals with CLBP.

Overall, the available evidence indicates that both sex and age can modify the clinical presentation and severity of HRQoL impairment in CLBP. At the same time, all groups studied, regardless of sex or age, showed a consistent reduction in quality of life compared with expected levels, underlining the negative impact of CLBP.

### 3.3. Psychological factors associated with health-related quality of life (HRQoL) in chronic low back pain (CLBP)

#### 3.3.1 Depression

Depressive symptoms are one of the most consistently documented psychological factors associated with poorer health-related quality of life (HRQoL) in patients with chronic low back pain (CLBP). In a cross-sectional study examining psychological determinants of HRQoL, higher levels of depression were significantly associated with lower scores in multiple quality-of-life domains, including physical functioning, emotional well-being and general health perception. The authors reported that only depression was a significant predictor of both the psychological and physical dimensions of HRQoL [5]. Additionally, results from a study conducted by Ziętałewicz *et al.*, in which the individuals with CLBP were compared to people without this condition, showed that the group with CLBP exhibited more severe depressive symptoms than those without pain. This reinforces the fact that depression is not only associated with worse outcomes within CLBP populations but is also more severe among them compared with pain-free individuals [2].

Long-term evidence supports this association. A five-year prospective cohort study evaluating psychiatric symptoms in patients with CLBP found that baseline depression was significantly associated with disability at follow-up. Additionally, depression at baseline had a higher power to predict disability at follow-up as compared with insomnia [6]. Although the main outcome of the study was disability rather than HRQoL, the findings indicate that depressive symptoms contribute to worse long-term functional outcomes in patients with CLBP. Since disability and HRQoL are closely linked in chronic pain populations, the results suggest an important role of depressive symptoms in the overall deterioration of quality of life.

Combined, these findings demonstrate that depressive symptoms are strongly related to poorer HRQoL in CLBP. Depression appears to affect both the subjective perception of health and the long-term progression of functional impairment, emphasising the need for routine screening and psychological support in the management of CLBP.

#### 3.3.2 Anxiety

Anxiety is another psychological factor associated with poorer health-related quality of life (HRQoL) in patients with chronic low back pain (CLBP). Epidemiological comparisons show that people experiencing CLBP report problems related to anxiety significantly more often than individuals without chronic pain [1,2]. In one study, nearly three-quarters of CLBP patients reported a history of mental health difficulties, with anxiety being the most endorsed symptom, reported by 93.8% of those indicating psychological problems [7]. The cross-sectional study conducted by Dimitrijević *et al.*, assessed predictors of the psychological dimension of HRQoL in patients with CLBP. Anxiety emerged as the most influential factor in the regression model, surpassing other psychological variables [5]. These findings suggest that anxiety is not only frequent but pervasive, affecting a large proportion of patients with CLBP and has a central role in shaping the routine management of CLBP.

Longitudinal findings further reinforce this relationship. A five-year cohort study found that anxiety (as well as above-mentioned depression) measured at baseline was a stronger predictor of disability at follow-up than insomnia [6]. Although disability was the primary outcome, its close relationship with daily functioning and overall well-being suggests that anxiety has meaningful long-term consequences for patients' quality of life.

Overall, the evidence indicates that anxiety is highly prevalent among patients with CLBP and is regarded as a major determinant of general well-being and functional outcomes. These findings emphasise that anxiety should be routinely assessed in clinical settings, as it represents an important psychological factor influencing quality of life of people living with CLBP.

#### 3.3.3 Pain catastrophizing

Pain catastrophizing is an important cognitive factor considered in the context of chronic low back pain (CLBP). Its relationship with health-related quality of life (HRQoL) has been examined in several recent studies. Research indicates that higher levels of catastrophizing are generally linked with worse psychological well-being and reduced perceived quality of life. In studies assessing psychological determinants of HRQoL, catastrophizing was negatively correlated with both physical and psychological dimensions of quality of life. In contrast, greater pain acceptance showed an opposite effect and had a positive association with HRQoL [5]. These patterns are consistent with earlier findings suggesting that accepting the presence of chronic pain may ease emotional distress and support better daily functioning.

Nevertheless, catastrophizing does not consistently emerge as an independent predictor of HRQoL. In one study, although a statistically significant correlation between pain catastrophizing and HRQoL was found, it did not stand out as a significant predictor in the linear regression analysis [5]. This suggests that catastrophizing may influence HRQoL indirectly or interact with other psychological factors rather than serving as a primary determinant on its own.

The concept of pain catastrophizing has received increasing attention, particularly because it appears frequently among individuals with chronic conditions. It is described as a maladaptive cognitive response to pain, and it is often associated with anxiety and depressive symptoms [4].

Evidence from a large cohort of patients with CLBP further highlights the clinical relevance of catastrophizing. In the study conducted by Licciardone *et al.*, moderate and high levels of catastrophizing substantially increased the risk of progression to chronic widespread pain among patients with CLBP [10]. Elevated hazard ratios were observed across subcomponents such as rumination, magnification and helplessness, supporting the interpretation that catastrophizing is as an independent risk factor for the spread of symptoms and pain exacerbation.

In conclusion, pain catastrophizing shows a consistent negative association with HRQoL, whereas its independent predictive role for this parameter varies across studies. Nonetheless, its strong links to emotional distress, maladaptive coping and long-term pain progression underscore its importance as a target for psychological assessment and intervention in CLBP.

### 3.3.4 Kinesiophobia

Kinesiophobia, defined as fear of movement due to anticipated pain or injury, is a relevant psychological factor influencing patients with chronic low back pain (CLBP). Recent evidence explains several ways through which this fear contributes to disability and may indirectly shape health-related quality of life (HRQoL).

A randomised trial with mediation analysis demonstrated that reduction in kinesiophobia played a central role in the benefits of an intervention combining education and goal setting. Lower fear of movement accounted for approximately 58% of the total treatment effect (improvement in pain intensity). The study also reported a smaller but present indirect effect of kinesiophobia on disability outcomes. These findings suggest that decreasing fear-related avoidance may support modest functional gains in patients with CLBP [13].

The functional impact of kinesiophobia is further highlighted by biomechanical research. A cross-sectional study found that higher levels of kinesiophobia were moderately associated with impaired lumbar joint position sense and poorer postural stability. Pain was shown to mediate the relationship between kinesiophobia and these functional deficits. This finding could indicate a complex interaction between fear, pain experience and neuromuscular control. Although this study did not directly measure HRQoL, proprioceptive and balance impairments represent functional limitations that frequently contribute to reduced quality of life in patients with CLBP [11].

Collectively, current evidence suggests that kinesiophobia can contribute to both, emotional and physical, dimensions of CLBP. Its demonstrated mediating role in the treatment response highlights the importance of kinesiophobia as a target for therapeutic interventions aimed at improving outcomes in CLBP population.

### 3.3.5 Self-efficacy

Self-efficacy - the belief in one's ability to manage symptoms and engage in meaningful activities despite pain - has been identified as an important psychological factor that influences outcomes in chronic low back pain (CLBP). Recent evidence demonstrates that self-efficacy contributes not only to perceived well-being but also to the direct and indirect effects of treatment.

Findings from a randomised controlled trial using mediation analysis show that improvements in self-efficacy play a major role in explaining treatment-related changes in pain and disability [13]. In this study, increases in pain self-efficacy accounted for a substantial portion of the reduction in intensity of a pain, with an indirect effect of -0.6 points on a 0-10 scale and approximately 32% of the total treatment effect. The contribution of self-efficacy was even more pronounced for disability outcomes. Enhanced self-efficacy mediated 71% of the overall improvement in disability (indirect effect -7.5 points on a 0-100 disability scale), making it the strongest psychological mechanism driving functional recovery among those examined (including HRQoL and stress). These findings underline the importance of strategies that are building confidence, such as graded goal setting, which allow patients to experience small, progressive successes that reinforce adaptive coping.

In contrast, in a randomised controlled trial evaluating the effects of pain education combined with standard physiotherapy in patients with CLBP, no significant differences were observed for self-efficacy after the intervention [12]. Instead, significant improvements were present in pain intensity, disability and psychological well-being. Nevertheless, baseline self-efficacy emerged as a significant prognostic factor, predicting better well-being and higher self-efficacy at follow-up. These findings suggest that while pain education may not directly increase self-efficacy over the short term, self-efficacy remains a relevant psychological factor associated with recovery and quality of life in CLBP.

Overall, current evidence indicates that self-efficacy is a crucial modifiable factor in CLBP, shaping the impact of education and goal-setting interventions. Although not all interventions directly improve self-efficacy, higher levels of self-efficacy are associated with better psychological and functional outcomes. Its influence on both pain intensity and disability emphasises the value of therapeutic approaches that focus on enhancing patients' confidence and thus manage symptoms more effectively.

### **Discussion**

This narrative review highlights the complex nature of chronic low back pain (CLBP), showing that health-related quality of life (HRQoL) is shaped by an interplay of demographic, psychological and functional factors. The reviewed evidence consistently indicates that psychological determinants play a central role in explaining variability in HRQoL among adults with CLBP, often exceeding the contribution of biomedical parameters alone.

Across the included studies, age and sex emerged as relevant modifiers of HRQoL. Older individuals consistently reported greater disability and poorer overall well-being. These findings suggest that age-related functional decline may exacerbate the impact of chronic pain, what should be recognized during planning process of assessment and treatment strategies for people with CLBP. Sex-related differences were less consistent across studies. In some studies, women more frequently reported greater emotional distress and reduced vitality, whereas men more often experienced limitations in role functioning and daily physical activities. Although these variations were not consistent across all domains, these findings underscore the importance of considering demographic characteristics when interpreting HRQoL outcomes and tailoring clinical management.

Psychological factors demonstrated particularly strong and consistent associations with HRQoL. Depression and anxiety were repeatedly linked with lower quality of life and greater long-term disability, which further implies their central role in the burden of chronic pain. Cognitive and behavioural factors such as pain catastrophizing and kinesiophobia also contributed to poorer functioning. They did it either directly or indirectly through their interactions with pain intensity and emotional distress. The close connection between psychological fears and physical performance is further emphasised by functional findings, such as altered proprioception and reduced postural stability among patients with CLBP who are struggling with higher kinesiophobia.

Self-efficacy emerged as one of the most influential psychological mechanisms identified in recent research. Evidence from mediation analyses indicates that improvements in self-efficacy account for substantial upgrade of psychosocial interventions, affecting both pain and disability outcomes. These findings suggest that strengthening patients' confidence in their ability to manage symptoms may be a key component of CLBP treatment.

Overall, the reviewed literature demonstrates that HRQoL in CLBP cannot be understood solely through biomedical measures of pain or structural findings. Instead, psychological dimensions strongly influence how individuals experience and adapt to chronic pain. Several of the identified determinants – particularly depression, anxiety, kinesiophobia and self-efficacy – are modifiable and amenable to targeted intervention. Integrating psychological screening, interventions that enhance self-efficacy and reduce maladaptive fear responses may improve quality of life and promote more sustainable therapeutic outcomes for patients.

This review has several limitations. As a narrative review, it did not involve formal risk-of-bias assessment or quantitative synthesis, and the included studies were heterogeneous in design, populations and outcome measures. Additionally, only English-language publications were considered. Nevertheless, by focusing on the most recent literature, this review provides an up-to-date synthesis of psychological mechanisms relevant to HRQoL in CLBP and highlights key targets for future research and clinical practice.

## Conclusions

Chronic low back pain affects quality of life through a combination of psychological, demographic and functional factors. Evidence from recent studies shows that depression, anxiety, pain catastrophizing, kinesiophobia and low self-efficacy are strongly associated with poorer well-being and greater disability. Among these factors, self-efficacy and movement-related fear appear to play particularly important roles as modifiable mechanisms influencing treatment response. These findings support the use of an approach that addresses both emotional and behavioural aspects of pain, alongside physical rehabilitation. Targeted interventions that reduce maladaptive beliefs and strengthen self-efficacy may improve health-related quality of life and contribute to more effective long-term management of CLBP.

## Authors' Contributions

Natalia Rosól: Conceptualization, supervision, writing - review and editing, correspondence.

Natalia Kruszewska: Literature search, data analysis and synthesis, manuscript drafting

Natalia Ziółkowska: Literature search, data analysis and synthesis, manuscript drafting

Michał Cholewiński: Literature review, critical revision of the manuscript.

Paweł Szajewski: Writing - review and editing.

Alicja Pełszyk: Supervision, methodological guidance, final approval of the version to be published.

Agata Pluta: Literature search, data curation.

Justyna Kącikowska: Critical revision of the manuscript, data curation

Daria Marciniak: Data curation, writing - review and editing.

Justyna Łapicka: Methodological guidance, writing - review and editing.

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## REFERENCES

- Ge, L., Pereira, M. J., Yap, C. W., et al. (2022). Chronic low back pain and its impact on physical function, mental health, and health-related quality of life: A cross-sectional study in Singapore. *Scientific Reports*, *12*, Article 20040. doi:10.1038/s41598-022-24703-7
- Ziętałewicz, U., & Bargiel-Matusiewicz, K. (2024). Model of quality of life in a group of people with chronic low back pain. *Health Psychology Report*, *12*(4), 337–351. doi:10.5114/hpr/185302
- Pereira Nery, E. C. H., Rocha, N. P., Cruz, V. T., & Silva, A. G. (2022). Association between chronic low back pain and cognitive function: A systematic review and meta-analysis. *Pain Practice*, *23*, 399–408. doi:10.1111/papr.13178
- Sirbu, E., Onofrei, R. R., Szasz, S., & Susan, M. (2023). Predictors of disability in patients with chronic low back pain. *Archives of Medical Science*, *19*(1), 94–100. doi:10.5114/aoms.2020.97057
- Dimitrijević, I., Hnatešen, D., Radoš, I., et al. (2024). Relationship between psychological factors and health-related quality of life in patients with chronic low back pain. *Healthcare*, *12*(25), Article 2531. doi:10.3390/healthcare12242531
- Wang, L. Y., Fu, T. S., Tsia, M. C., & Hung, C. I. (2023). Associations of depression, anxiety and insomnia with disability at five-year follow-up in outpatients with chronic low back pain: A prospective cohort study. *BMC Musculoskeletal Disorders*, *24*(1), Article 565. doi:10.1186/s12891-023-06682-6
- Pericot-Mozo, X., Suñer-Soler, R., Reig-Garcia, G., et al. (2024). Quality of life in patients with chronic low back pain and differences by sex: A longitudinal study. *Journal of Personalized Medicine*, *14*(5), Article 496. doi:10.3390/jpm14050496
- Stojanov, A., Djordjevic, G., Ljubisavljevic, S., Zivadinovic, B., & Stojanov, J. (2025). Quality of life and quality of sleep in the working population with chronic low back pain: A 2-year follow-up. *Medicine*, *104*(43), Article e45321. doi:10.1097/MD.00000000000045321

9. Eilayyan, O., Gogovor, A., Zidarov, D., et al. (2023). Identifying domains of health-related quality of life: The perspective of individuals with low back pain. *Journal of Patient-Reported Outcomes*, 7, Article 79. doi:10.1186/s41687-023-00597-5
10. Licciardone, J. C., Ibrahim, M., Baker, J., Thornton, T., & Vu, S. (2024). Pain catastrophizing and risk of progression to widespread pain among patients with chronic low back pain: A retrospective cohort study. *Musculoskeletal Science and Practice*, 69, Article 102886. doi:10.1016/j.msksp.2023.102886
11. Reddy, R. S., Alshahrani, M. S., Tedla, J. S., et al. (2023). Exploring the interplay between kinesiophobia, lumbar joint position sense, postural stability, and pain in individuals with chronic low back pain: A cross-sectional analysis. *Journal of Manipulative and Physiological Therapeutics*, 46(5–9), 294–304. doi:10.1016/j.jmpt.2024.09.004
12. Sidiq, M., Muzaffar, T., Janakiraman, B., Masoodi, S., & Vasanthi, R. K. (2024). Effects of pain education on disability, pain, quality of life, and self-efficacy in chronic low back pain: A randomized controlled trial. *PLoS ONE*, 19(5), e0294302. doi:10.1371/journal.pone.0294302
13. Walker, E., Jones, M. D., Gibbs, M. T., et al. (2025). Pain self-efficacy, kinesiophobia and health-related quality of life mediate pain and disability improvements with goal setting and education in people with chronic low back pain: A mediation analysis of a randomised trial. *Journal of Physiotherapy*, 71(4), 260–267. doi:10.1016/j.jphys.2025.09.005
14. Anselmo, A., Pagano, M., Cappadona, I., et al. (2024). A systematic review on the neuropsychological assessment of patients with low back pain: The impact of chronic pain on quality of life. *Journal of Clinical Medicine*, 13(20), Article 6149. doi:10.3390/jcm13206149